

SULLIVAN COUNTY

MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

DAILY NEWS
**NATURAL
DISASTER!**



CONTRIBUTORS

Sullivan County Hazard Mitigation Planning Committee

Jurisdictional Representatives

Name	Title	Department	Agency/Organization
Chris May	Presiding	County Commission	Sullivan County
Mindy Chapman	City Government	Administration	City of Newtown
Phyllis Blondefield	Chairman	City Government	Village of Pollock
Crystal Bupp	City Administrator	City Government	City of Milan
Laurie Stafford	City Clerk	City Government	Village of Humphreys
Rachel Hale	City Clerk	City Government	City of Green City
Stephanie Hubbard	Superintendent	Administration	Newtown Harris R-III
Shannon Bain	Principal	Administration	Newtown Harris R-III
Ashley Pauley	Superintendent	Administration	Milan C-2
Tennille Banner	Superintendent	Administration	Green City R-I

Stakeholder Representatives

Name	Department	Jurisdiction
Kris Good	ARGS Ham Radio	Sullivan County
Cindy Allen	Sheriff's Office	Sullivan County
Joshua Bennett	Administration	Sullivan County Memorial Hospital
Laden DeJones	Green Castle Fire	Green Castle
Mindy Chapman	City Government	City of Newtown
Phyllis Blondefield	City Government	City of Pollock
Terry C. Purcy	Medicine Creek Fire Department	Medicine Creek Fire Department
Zachary Hoover	Fire Department	City of Milan
Robert Trenty	Smithfield Foods	Sullivan County
Mike Katil	Smithfield Foods	Sullivan County
Wanda Macgruder	Sullivan County Health Department	Sullivan County
DeEtta Jones	City Government	City of Browning
Amy Peterson	City Government	Newtown
Colby Leslie	City Government	Green City
Bobby Williams	Public Water	Sullivan County
Laurie Stafford	City Government	Village of Humphreys
Rachel Hale	City Government	Green City
Staphanie Hubbard	City Government	Newtown Harris
Shannon Bain	City Government	Newtown Harris
Kelly Bicknell	City Government	Green City
Kelly Cochran	City Government	Green City
Crystal Bupp	City Government	Milan
Michael Williams	County Government	Sullivan County
Rye Paige	County Government	Sullivan County
Chris May	County Government	Sullivan County
Rachael Hall	County Government	Sullivan County
Ashley Pauley	Administration	Milan C-2
Tennille Banner	Administration	Green City R-I

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EXECUTIVE SUMMARY

The purpose of hazard mitigation is to reduce or eliminate long-term risk to people and property from hazards. Sullivan County and participating jurisdictions and school/special districts developed this multi-jurisdictional local hazard mitigation plan update to reduce future losses from hazard events to the County and its communities and school/special districts. This plan is an update of the previous plan that was approved by FEMA on [insert date]. The plan and the update were prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 to result in eligibility for the Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance Grant Programs.

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

- Unincorporated Sullivan County
- City of Milan
- City of Green City
- City of Green Castle
- Village of Humphreys
- Village of Pollock
- Newtown Harris R-III
- Milan C-2
- Green City R-I

Humphreys initially participated in the planning process but did not meet all the established requirements for official participation, the Village Board voted to not adopt the plan. When the future five-year update is developed for this plan, this jurisdiction will be invited again to participate. The City of Newtown attended a meeting but did not provide a completed questionnaire and did not adopt the plan. They will be invited to participate in the next plan update.

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

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

- Goal 1: Eliminate loss of life, minimize injuries and reduce property damage caused by tornadoes, severe thunderstorms including high winds, hail, and lightning.

- Goal 2: Minimize property damage due to flooding, levee failure, and dam failure; including high hazard potential dams (HHPD).
- Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures, and wildfire.
- Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather.
- Goal 5: Minimize injuries and property damage due to seismic and/or geological events.

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
Structure and Infrastructure Projects								
County 2025.2	Maintain transportation infrastructure	Sullivan Co	High	2	Flooding	x		
County 2025.3	Generators	Sullivan Co	Low	1,3,4,5	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
County 2025.4	Debris Removal	Sullivan Co	Low	1,4,5	Earthquakes, Severe thunderstorms, Severe winter weather, Tornado	x		
County 2025.5	Outdoor warning siren	Sullivan Co	High	1,2,3,4	Flooding, Dam Failure, Severe thunderstorms, Tornado, Wildfire	x	x	
CGCA 2025.2	Maintain transportation infrastructure	Greencastle	High	2	Flooding	x		
CGCA 2025.3	Generators	Greencastle	Low	1,3,4,5	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
CGCA 2025.4	Outdoor warning siren	Greencastle	High	1,2,3,4	Flooding, Dam Failure, Severe thunderstorms, Tornado, Wildfire	x	x	
CGCA 2025.5	Storm shelters and safe rooms	Greencastle	High	1,3,4,5	Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
CGC 2025.2	Maintain transportation infrastructure	Green City	Medium	2	Flooding	x		
CGC 2025.3	Generators	Green City	High	1,3,4,5	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
CGC 2025.4	Install/upgrade warning siren, Weather radios, emergency alert systems	Green City	High	1,2,3,4	Flooding, Dam Failure, Severe thunderstorms, Tornado, Wildfire	x	x	
CGC 2025.5	Storm shelters and safe rooms	Green City	High	1,3,4,5	Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
CGC 2025.6	Flood studies and flood reduction projects	Green City	High	2	Flooding	x	x	
CGC 2025.7	Routine dam inspections	Green City	High	2	Dam failure	x	x	
CM 2025.3	Generators	Milan	High	1,3,4,5	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
CM 2025.3	Maintain & Upgrade transportation infrastructure	Milan	Medium	2	Flooding	x	x	
CM 2025.4	Storm shelters and safe rooms	Milan	High	1,3,4,5	Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
CM 2025.5	Install/upgrade warning siren, Weather radios, emergency alert systems	Milan	High	1,2,3,4	Flooding, Dam Failure, Severe thunderstorms, Tornado, Wildfire	x	x	
VP 2025.2	Storm shelters and safe rooms	Pollock	High	1,3,4,5	Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
VP 2025.3	Install/upgrade warning siren, Weather radios, emergency alert systems	Pollock	High	1,2,3,4	Flooding, Dam Failure, Severe thunderstorms, Tornado, Wildfire	x	x	
GCSD 2025.2	Storm shelters and safe rooms	Green City R-I	High	1,3,4,5	Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
GCSD 2025.3	Generators	Green City R-I	High	1,3,4,5	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
MSD 2025.2	Storm shelters and safe rooms	Milan C-2	High	1,3,4,5	Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
MSD 2025.3	Generators	Milan C-2	High	1,3,4,5	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
NHSD 2025.2	Storm shelters and safe rooms	Newtown-Harris R-II	High	1,3,4,5	Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
Natural Systems Protection								
County 2025.4	Debris Removal	Sullivan Co	Low	1,4,5	Earthquakes, Severe thunderstorms, Severe winter weather, Tornado	x		
CGC 2025.7	Routine dam inspections	Green City	High	2	Dam failure	x	x	
CM 2025.6	Participation in the NFIP	Milan	High	2	Flooding	x	x	x
Planning and Regulation								
CGC 2025.6	Flood studies and flood reduction projects	Green City	High	2	Flooding	x	x	
CGC 2025.7	Routine dam inspections	Green City	High	2	Dam failure	x	x	
CM 2025.7	Participation in the NFIP	Milan	High	2	Flooding	x	x	x
Education and Outreach								
County 2025.1	Mitigation education	Sullivan Co	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	x
County 2025.6	N.O.A.A. Weather Radios	Sullivan Co.	High	1,2,3,4	Flooding, Dam Failure, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
CGCA 2025.1	Mitigation education	Greencastle	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	x
CGC 2025.1	Mitigation education	Green City	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	x
CM 2025.1	Mitigation education	Milan	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	X
VP 2025.1	Mitigation education	Pollock	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	X
GCSD 2025.1	Mitigation education	Green City R-1	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	x
MSD 2025.1	Mitigation education	Milan C-2	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	x
NHSD 2025.1	Mitigation education	Newtown-Harris RII	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	x

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 E, and a model resolution is included on the following page.

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

Model Resolution

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

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

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

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

1 INTRODUCTION AND PLANNING PROCESS

1	INTRODUCTION AND PLANNING PROCESS	1.1
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1.1 PURPOSE

Hazard mitigation is defined as “any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards”. While natural hazards will continue to occur and at their worst will result in death and destruction of both property and infrastructure, this plan was undertaken to minimize the impact that these hazards will have on the people and property of Sullivan County. Sullivan County and the participating jurisdictions and school districts developed this multi-jurisdictional local hazard mitigation plan update to reduce future losses from inevitable hazardous events.

The jurisdictions participating in this plan are the unincorporated areas of Sullivan County, the jurisdictions participating in this plan understand that adopting the plan is a prerequisite for mitigation grant eligibility and understand that failure to adopt this plan will make them ineligible for mitigation grants.

The following legislation gives FEMA authority to require these plans: Robert T Stafford Disaster and Emergency Act (Public Law 93-288) as amended by the Disaster Mitigation Act of 2000 (Public Law 106-390), 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.

The following publications from FEMA were used as guidance in the development of this hazard mitigation plan for Sullivan County. FEMA’s Local Mitigation Planning Handbook, May 2023, FEMA’s Local Mitigation Plan Review Guide, October 1, 2011, and the Local Mitigation Planning Policy Guide April 19, 2023. The previous Sullivan County Hazard Mitigation Plan, which was approved on May 20, 2021, was also used in the development of this update.

1.2 BACKGROUND AND SCOPE

The Sullivan County Hazard Mitigation Plan is the update of a plan that was approved May 20, 2021. Hazard Mitigation Plans must be renewed every five years and then must be adopted by the participating jurisdictions within the plan. Both the plan and the update were prepared pursuant to the requirements of the Disaster Mitigation Act of 2000. This plan once completed and adopted will result in eligibility for the Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance Grant Programs.

The following local governments and school districts participated in both the original plan as well as the plan updates. This will allow them to adopt the plan and secure eligibility for Hazard Mitigation Grant Funding.

- Sullivan County
- City of Milan
- City of Green City
- City of Green Castle
- Village of Pollock
- Newtown Harris R-III
- Green City R-I
- Milan C-2

Sullivan County and the participating entities listed above developed a Multi-Jurisdictional Hazard Mitigation Plan that was approved by FEMA in May of 2021 (hereafter referred to as the 2021 Hazard Mitigation Plan). This current planning effort serves to update that previously approved plan.

The information that is contained in the Sullivan County Hazard Mitigation Plan will be used to help guide and coordinate mitigation activities for local land use policy and decisions in the future.

1.3 PLAN ORGANIZATION

This latest (2026) updated version of the Sullivan County Hazard Mitigation Plan involved review, evaluation, and amendment of the existing plan. It addresses the same natural hazards that were addressed in the original plan, with changes outlined in the table below (See Table 1.1 below). Following is a breakdown of the organization of the 2026 Sullivan County Hazard Mitigation Plan Update.

- Chapter 1: Introduction and Planning Process
This section of the plan provides an introduction to the multi-jurisdictional planning process and a detailed look at the participation of the local jurisdictions and school districts. It also detailed the purpose of local hazard mitigation planning and outlined the requirements enacted by the Federal Emergency Management Agency.
- Chapter 2: Planning Area Profile and Capabilities
This section of the plan provides general background information and demographic statistics for Sullivan County and its various jurisdictions as well as the disaster response and recovery capabilities found in the county. This section identifies key personnel, organizational leaders, and outlines existing emergency plans. Additionally, it provides a brief assessment of each municipality's readiness regarding hazard mitigation.
- Chapter 3: Risk Assessment
This section of the plan, the risk assessment, identifies and explores the types of natural hazards that pose a risk to the county, and the likelihood that each hazard will occur. It provides a profile of identified hazards and explains the impact to the County and the various jurisdictions should such hazards occur.
- Chapter 4: Mitigation Strategy

This section of the plan presents the multi-jurisdiction mitigation strategies in response to the risk assessment. This chapter outlines the overall goals to reduce a disaster's impact, specific objectives toward achieving those goals, and implementation plans for the county to complete.

- Chapter 5: Plan Implementation and Maintenance
The final chapter outlines the Hazard Mitigation Plan maintenance procedures.
- Appendix A: Sources
- Appendix B: Planning Documentation & Invitations
- Appendix C: Questionnaires, Surveys, Public Comment, and STAPLEE Worksheets
- Appendix D: List of Critical Facilities (Redacted from Public View)
- Appendix E: Resolutions of Adoptions

The following table (Table 1.1) below identifies significant changes in the 2025 update of the Hazard Mitigation Plan for Sullivan County.

Table 1.1. Changes Made in Plan Update

Plan Section	Summary of Updates
Executive Summary	<ul style="list-style-type: none"> • Added Mitigation Action Matrix Table • Revised the executive summary and resolution to match order of template • Updated goals from previous plan to better reflect hazards mitigated by current proposed actions
Chapter 1 - Introduction and Planning Process	<ul style="list-style-type: none"> • Updated members of the Mitigation Planning Committee (MPC) and participating jurisdictions formally adopted the MPC.
Chapter 2 - Planning Area Profile and Capabilities	<ul style="list-style-type: none"> • Changes include updating maps, identifying most current state plan, and updating demographic data using 2020 Census and American Community Survey Information • inviting neighboring jurisdictions to participate. • Updated charts, graphs, tables, maps, and other information where necessary
Chapter 3 - Risk Assessment	<ul style="list-style-type: none"> • Combined extreme heat and extreme cold into one hazard: extreme temperatures. • Updated section with current Census information, agricultural summary, and confirming that current data is correct. • Incorporated information from the current 2023 Missouri State Hazard Mitigation Plan. • Previous events updated for each hazard
Chapter 4 - Mitigation Strategy	<ul style="list-style-type: none"> • 2020 mitigation goals and strategies reviewed by planning committee and updated • The mitigation category of each action was added to the action worksheets

Chapter 5 - Plan Implementation and Maintenance	<ul style="list-style-type: none"> Updated the MPC meeting for evaluating and updating the plan to annually
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1.4 PLANNING PROCESS

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

Sullivan County, Missouri contracted with Green Hills Regional Planning Commission (GHRPC) to facilitate and coordinate the update of the multi-jurisdictional, local hazard mitigation plan. In fulfillment of the role, GHRPC:

- Assisted in establishing a Mitigation Planning Committee (MPC) as defined by the Disaster Mitigation Act (DMA),
- Assessed 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,
- Ensured 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),
- Facilitated the entire plan development process,
- Identified the data that MPC participants could provide and conduct the research and documentation necessary to augment that data,
- Assisted in soliciting public input,
- Produced the draft and final plan update in a FEMA-approvable document and coordinated with the Missouri State Emergency Management Agency (SEMA) and (FEMA) plan reviews.

This plan was developed after the release of *FEMA's Local Mitigation Planning Policy Guide, Effective April 19, 2023*.

The following table (**Table 1.2**) shows the MPC members and the entities they represent, along with their titles. Each of the following representatives participated directly in the development of the plan. They attended the meetings and actively participated in the development of the plan. The MPC was comprised of representatives from each jurisdiction on a voluntary basis rather than as an official act by any of the jurisdictions. Each member of the MPC was actively involved in the meetings and the decisions for the Hazard Mitigation Plan. These members were either present at the public meetings or met individually with the GHRPC staff member in charge of developing the plan. All jurisdictions met their responsibilities for the planning process by:

- Attending at least one meeting
- Completing the Data Questionnaire to the best of their ability
- Reviewing and returning the Action Worksheets
- Returning the Adoption Resolution (Found in Appendix E)

Table 1.2. Jurisdictional Representatives of Sullivan Mitigation Planning Committee

Name	Title	Department	Agency/Organization
Chris May	Presiding	County Commission	Sullivan County
Mindy Chapman	City Government	Administration	City of Newtown
Phyllis Blondefield	Chairman	City Government	Village of Pollock
Crystal Bupp	City Administrator	City Government	City of Milan
Laurie Stafford	City Clerk	City Government	Village of Humphreys
Rachel Hale	City Clerk	City Government	City of Green City
Stephanie Hubbard	Superintendent	Administration	Newtown Harris R-III
Shannon Bain	Principal	Administration	Newtown Harris R-III
Ashley Pauley	Superintendent	Administration	Milan C-2
Tennille Banner	Superintendent	Administration	Green City R-I

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			
Sullivan County	X	X	X	X	X	X
City of Green City	X	X	X	X	X	
Village of Humphreys	X	X	X	X	X	
City of Milan	X	X	X	X	X	X
City of Newtown	X	X	X	X	X	
Village of Pollock	X	X	X	X	X	
Green City R-I	X	x			X	
Milan C-2	X	X			X	
Newtown-Harris R-III	X	X			X	

Table 1.4. Participants of the Sullivan County Hazard Mitigation Plan

Name	Department	Jurisdiction
Kris Good	ARGS Ham Radio	Sullivan County
Cindy Allen	Sheriff's Office	Sullivan County
Joshua Bennett	Administration	Sullivan County Memorial Hospital
Laden DeJones	Green Castle Fire	Green Castle
Mindy Chapman	City Government	City of Newtown
Phyllis Blondefield	City Government	City of Pollock
Terry C. Purcy	Medicine Creek Fire Department	Medicine Creek Fire Department
Zachary Hoover	Fire Department	City of Milan
Robert Trenty	Smithfield Foods	Sullivan County
Mike Katil	Smithfield Foods	Sullivan County
Wanda Macgruder	Sullivan County Health Department	Sullivan County
DeEtta Jones	City Government	City of Browning
Amy Peterson	City Government	Newtown
Colby Leslie	City Government	Green City
Bobby Williams	Public Water	Sullivan County
Laurie Stafford	City Government	Village of Humphreys

Rachel Hale	City Government	Green City
Staphanie Hubbard	Administration	Newtown Harris R-III
Shannon Bain	Administration	Newtown Harris R-III
Kelly Bicknell	City Government	Green City
Kelly Cochran	City Government	Green City
Crystal Bupp	City Government	Milan
Michael Williams	County Government	Sullivan County
Rye Paige	County Government	Sullivan County
Chris May	County Government	Sullivan County
Rachael Hall	County Government	Sullivan County
Ashley Pauley	Administration	Milan C-2
Tennille Banner	Administration	Green City R-I

1.4.1 Multi-Jurisdictional Participation

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

The Disaster Mitigation Act requires that each jurisdiction participate in the planning process and officially adopt the plan. Minimum criteria for participation were determined at the planning meeting that each jurisdiction must attend one meeting to be considered a “participant.” These plan participation requirements include:

- Designation of a representative to serve on the MPC;
- Participation in at least one meeting, including planning, MPC meetings, by either direct participation or authorized representation, or one-on-one with planning staff;
- Sufficient information to support plan development by completion and return of Data Collection Questionnaires and validating/correcting critical facility inventories;
- Provision of progress reports on mitigation actions from the previously approved plan and identified additional mitigation actions for the plan;
- 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;
- Actively solicit input from the public, local officials, and other interested parties about the planning process and provide an opportunity for them to comment on the plan;
- Provide documentation to show time donated to the planning effort; and
- Formally adopt the mitigation plan.

Data for this plan was gathered in part through a series of meetings held within Sullivan County. The planning process for the Sullivan County Hazard Mitigation Plan began during the summer of 2025, with discussions involving elected officials, school districts, health and emergency service providers, community members, and other interested parties, and the planning committee was formed. (See Table 1.2 and Table 1.3)

Participants that were involved were asked to identify critical infrastructure, rank the likelihood of disaster occurrence, perform a susceptibility analysis based on these factors, and determine appropriate mitigation strategies for each individual disaster. This data was recorded and assimilated into this plan by GHRPC staff. The MPC membership showed a range of knowledge and abilities to address the mitigation categories shown in Table 1.4.

GHRPC staff and County officials engaged in extensive outreach. There were invitations sent throughout the county to churches, civic organizations, health departments, clinics, and various organizations throughout the county. Sullivan County is a rural county with several small jurisdictions. These jurisdictions lack the resources to send paid staff members to meetings, and in some cases lack resources to attend virtual meetings. Additionally, the lack of available funding to provide local match for mitigation grant funding is an impediment to participation within some of the jurisdictions. GHRPC staff also engaged in repeated contact with all jurisdictions in the county, this included emails, phone calls, and in-person attempts to contact staff of jurisdictions within the county.

All documentation of the planning process, including outreach contacts, meeting sign-in sheets, social media postings, flyers, and meeting minutes can be found in Appendix B.

In accordance with Missouri’s “sunshine law” (RSMo 610.010, 610.020, 610.023, and 610.024), the public was notified each time the plan was presented for review. Input from each public official (city and county) was solicited by email or mailing an explanatory letter with notice of the posted draft on the Green Hills Planning Commission’s website. These were disbursed on a schedule that allowed officials sufficient time to review the draft prior to the next public County Commission or City Council meeting. Participation was solicited by letter or email from each of the following jurisdictions:

- Sullivan County
- City of Milan
- City of Green City
- City of Green Castle
- City of Newtown
- Village of Humphreys
- Village of Pollock
- Milan C-2
- Green City R-I
- Newtown Harris R-III

Finally, city and county officials were encouraged to invite others from any county, state, or federal agency as well as local businesses that had an interest in contributing to the planning process. Input from the public was solicited through reminders at public gatherings, press releases, letters to various businesses and community organizations, and a Public Survey. The surrounding jurisdictions were invited to review the county’s plan draft via the GHRPC website. The plan draft was available for review for 30 days. The plan was published on GHRPC’s website on 11/20/2025. A press release was sent out to the news agencies in the area regarding the plan’s availability for review and/or comment.

Table 1.5 below shows the representation of each participating jurisdiction at the planning meetings, the provision of responses to the Data Collection Questionnaire, and update or development of mitigation actions. Sign-in sheets and other documentation for participation are in Appendix B.

Table 1.5. Jurisdictional Participation in Planning Process

Jurisdiction	Kick-off Meeting	Meeting #2	Meeting #3	Data Collection Questionnaire Response	Update/Develop Mitigation Actions
Sullivan County	X	X	X	X	X
City of Milan		X		X	X
City of Green City	X	X	X	X	X
City of Green Castle	X	X	X	X	X
Village of Pollock	X			X	X
Newtown-Harris R-III	X			X	X
Milan C-2	Phone meeting			X	X
Green City R-I	Phone meeting			X	X

1.4.2 The Planning Steps

The sources utilized for the plan and development process used the following: FEMA’s Local Mitigation Planning Handbook (May 2023), Local Mitigation Plan Review Guide (October 1, 2011), 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). The United States Census Bureau, the United States Geological Society, the United States Army Corps of Engineers, the Missouri Department of Natural Resources, the Missouri Department of Conservation, the Center for Agriculture, Resources and Environmental Systems at the University of Missouri-Columbia, Sullivan County HAZUS data, the National Climatic Data Center, and the Missouri State Hazard Mitigation Plan provided additional information regarding severe thunderstorm and winter weather, wildfire, tornado, earthquake, and flood hazards effecting Sullivan County. Other sources utilized for this plan are included in Section 3.

The development of this plan update followed the 10-step planning process adapted from FEMA’s Community Rating System (CRS) and Flood Mitigation Assistance programs, so to ensure funding eligibility requirements for the Hazard Mitigation Grant Program, Building Resilient Infrastructure and Communities, Community Rating System, and Flood Mitigation Assistance Program.

Table 1.6. County Mitigation Plan Update Process

Community Rating System (CRS) Planning Steps (Activity 510)	Local Mitigation Planning Handbook (2023) 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 5: Review Community Capabilities 44 CFR 201.6(b)(2) & (3)
Step 4. Assess the hazard	Task 4: 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
Step 7. Review possible activities	

Step 8. Draft an action plan	44 CFR 201.6(c)(3)(iii)
Step 9. Adopt the plan	Task 8: Review and Adopt the Plan
Step 10. Implement, evaluate, revise	Task 7: Keep the Plan Current
	Task 9: Create a Safe and Resilient Community 44 CFR 201.6(c)(4)

Step 1: Organize the Planning Team (Handbook Tasks 1, 2, and 5)

- The initial “Meeting #1” in Sullivan County occurred as follows:
 - 109 N. Main Street Milan Courthouse: August 14th, 2025, from 3pm-3:45pm.
 - Virtual meeting: August 15th, 2025, from 3pm-4pm
- The meeting #1 focused on hazard mitigation planning. Participating jurisdictions need to complete a questionnaire, attend at least one meeting, provide suggestions for the plan, and adopt the plan. The GHRPC has been reaching out to stakeholders. The planning process includes 3 in person and 3 virtual meetings. This first meeting focused on outreach and hazard identification. Attendees received a “Hazard Identification for Harrison County” worksheet.
- The meeting addressed Hazard Mitigation Planning, in which there is an existing plan, needs updates every 5 years, planning is a requirement for HMGP grants. To be a participating jurisdiction, you need to complete a questionnaire, attend meetings, provide suggestions, and review and adopt the plan. The meeting was then opened for questions.
- The data collection questionnaire was distributed to each of the attendees at meeting #1.
- Meeting attendees were encouraged to post flyers about upcoming meetings and the public opinion survey.
- Planning Meeting #2
 - September 2, 2025, in person, 109 N Main St. Milan, MO 3-4:30pm
 - September 3, 2025, virtual 10-10:30am
- Both meetings discussed the Sullivan County Hazard Mitigation Plan Update, provided a brief overview of what had been discussed at Meeting #1, specifically the purpose of the hazard mitigation plan, requirements for eligibility, and hazards identified in Sullivan County.
- Attendees discussed and ranked regional hazards, identified vulnerable assets using a worksheet, and reviewed mitigation strategies including prevention, protection, mitigation, response, and recovery. The meeting included introductions, explanations of asset categories, and concluded with a Q&A before adjourning at 11:30am.
- Planning Meeting #3
 - October 15, 2025, 217 E 2nd St. in Milan, Missouri. 3-4:30pm
 - October 16, 2025, virtual Meeting from 10 – 10:30am
- The focus of Meeting #3, both in-person and virtual, was action prioritization and plan

- maintenance.
- Attendees were given STAPLEE worksheets for each action in their jurisdiction. Once attendees completed STAPLEE worksheets for the actions, they were encouraged to discuss hazards that had not been mitigated and new actions were discussed if desired.
- The following information about the public meetings and the location in the appendix of this plan can be found as follows:
 - The outreach efforts, including envelope scans and address labels; Facebook posts, meeting flyers, survey monkey QR code can be found in Appendix B.
 - Meeting information such as agendas, meeting minutes, and sign-in sheets, and other documentation relating to the planning process can be found in Appendix B.
 - Other products of the public meetings such as hazard identification, risk assessment products, and vulnerable asset identification worksheets can be found in Appendix B.
- The Data Collection Questionnaires, STAPLEE worksheets, Survey, and Survey Results can be found in Appendix C.
- Public comments were solicited, but none were made during this period of planning or after plan was published on GHRPC's website on November 18, 2025, and until submission to SEMA on December 20, 2025.
- During the planning process, in addition to the public meetings, there were also numerous phone calls, emails, and in person conversations with jurisdictions to help with plan requirements, to answer questions, to encourage participation, and to confirm meeting times.

Table 1.7. Schedule of MPC Meetings

Meeting	Topic	Date
Kick-off Meeting/ Meeting #1	Outreach and Hazard Identification	August 14, 2025 & August 15, 2025
Planning Meeting #2	Risk Assessment and Mitigation Strategies	September 2, 2025 & September 3, 2025
Planning Meeting #3	Action Prioritization, Adopting the Plan, & Plan Maintenance	October 15, 2025 & October 16, 2025

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

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

- Prior to the kick-off meetings scheduled in Sullivan County, the GHRPC staff produced social media posts with meeting times and locations, flyers for distribution throughout the county, and this information was sent to all jurisdictions which were encouraged to publish and display the information about the hazard mitigation plan and the meeting times. The

meetings were also advertised on the GHRPC website and Facebook pages, and the Facebook post was also forwarded to all jurisdictions within Sullivan County. (Copies of the Facebook post, flyer, and QR code for the public opinion survey and survey results can be found in Appendix B).

- Prior to the kick-off meeting scheduled in Sullivan County invitation letters were sent out to all jurisdictions in the planning area, civic organizations, food pantries, churches, emergency services, and special districts. (Please see Appendix B for a complete list).
- Additionally, the neighboring communities, located outside of the county, but with populations and structures located within Sullivan County were also invited to attend. (Please see Appendix B for a complete list of people and organizations invited to attend).
- All meetings, both in person and virtual, were public meetings and information about the meetings was distributed throughout the county. During the planning process, prior to the publication of the plan draft, there was opportunity for any citizen of Sullivan County to attend the meetings and/or make comment.
- The initial meetings for the Hazard Mitigation Plan for Sullivan County were conducted in person with representatives from the County. At the Kick-off meeting in Gallatin, the FEMA requirements for public participation were mentioned. All people attending were asked to complete the survey and share with others located in the county. Printed flyers were distributed with information about upcoming meetings and a link to the public opinion survey.
- The Hazard Mitigation Committee also agreed to mention the upcoming meetings at their respective churches, civic organizations, meetings, and in passing when speaking with people from the community.
- The draft of the plan was made available to the public and members of the planning committee; there was a draft of the plan on the GHRPC website. The plan was made available for review from November 18 to December 20, 2025. The availability of this plan for public review was advertised on local social media pages and press releases were sent to news outlets in Sullivan County.
- All available information about the public meetings, attendance, press releases, paperwork completed at meetings, public surveys, questionnaires, agendas, power point presentation, and all other available documentation can be found in the Appendices as follows:
 - Planning Documentation & Invitations: Appendix B
 - Press Release regarding public comment on the plan draft: Appendix B
 - Questionnaires & Completed Surveys: Appendix C
 - Action Plans/STAPLEE Worksheets: Appendix C
- Both at the public meetings, virtual and in-person, no public comment was made regarding the plan.
- During the publication of the plan draft there were no comments made prior to the submission of the plan to SEMA.
- There were 5 responses to the public opinion survey. The data collected can be found in Appendix C.

Step 3: Coordinate with Other Departments and Agencies and Incorporate Existing Information
(Handbook Task 2)

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

There are few organizations that are multijurisdictional in nature whose interests' interface with hazard mitigation planning in Putnam County. These groups were included in the emailed invitation to the Meeting #1 in Milan, Missouri at the Sullivan County Courthouse. In small communities, local officials wear multiple hats out of necessity. The agencies and interest groups who were invited to take part in the hazard mitigation plan update are listed below.

- Neighboring Communities:
 - City of Laredo
 - City of Novinger
 - City of Browning
- Local and Regional agencies involved in hazard mitigation activities:
 - Green Castle Community Fire District
 - Green City Fire/Rescue
 - Green City Rural Fire Department
 - Medicine Creek Fire Protection District
 - Milan Fire Department
 - Milan Rural Fire Department
 - Winigan Rural Fire Department
 - Sullivan County Ambulance District
 - Sullivan County Sheriff
 - Newtown Physician Clinic
 - Lee Clinic
 - Sullivan County Memorial Physicians
 - Northeast Family Health
 - Sullivan County Hospital
- Agencies with the authority to regulate development:
 - City of Milan
 - City of Green Castle
 - City of Green City
 - City of Newtown
 - Village of Humphreys
 - Village of Pollock
 - Greencastle Emergency Coordinator
 - Newtown Emergency Coordinator
 - Osgood Emergency Coordinator
 - Sullivan County Emergency Manager
 - Milan Floodplain Administrator

- **Businesses & Academia**
 - Milan C-2
 - Green City R-I
 - Newtown Harris R-III
 - Sullivan County Water Supply #1
 - Sullivan County Farm Supply
 - Smithfield's Farmland foods
 - Simmons Animal Nutrition
 - MFA Agri Servies
 - High Hopes Employment Services
 - Mideast Fabrication
- **Other Private and non-profit interest, including underserved/vulnerable populations**
 - Sullivan County Food Pantry
 - Stover's Residential Care Facility
 - Milan Health Care Facility
 - Rolling Hills Assisted Living
 - Sullivan County Memorial Hospital
 - Sullivan County Senior Center
 - Milan Christian Church
 - St Mary's Catholic Church
 - Bread of Life Christian Fellowship
 - Peace Lutheran Church

The Data Collection Questionnaires that all participants completed were the basis for data incorporated into the plan. These documents provided a wealth of information on the capabilities of participants, their experience with administering FEMA projects, their critical facilities, and many more items relevant to the plan.

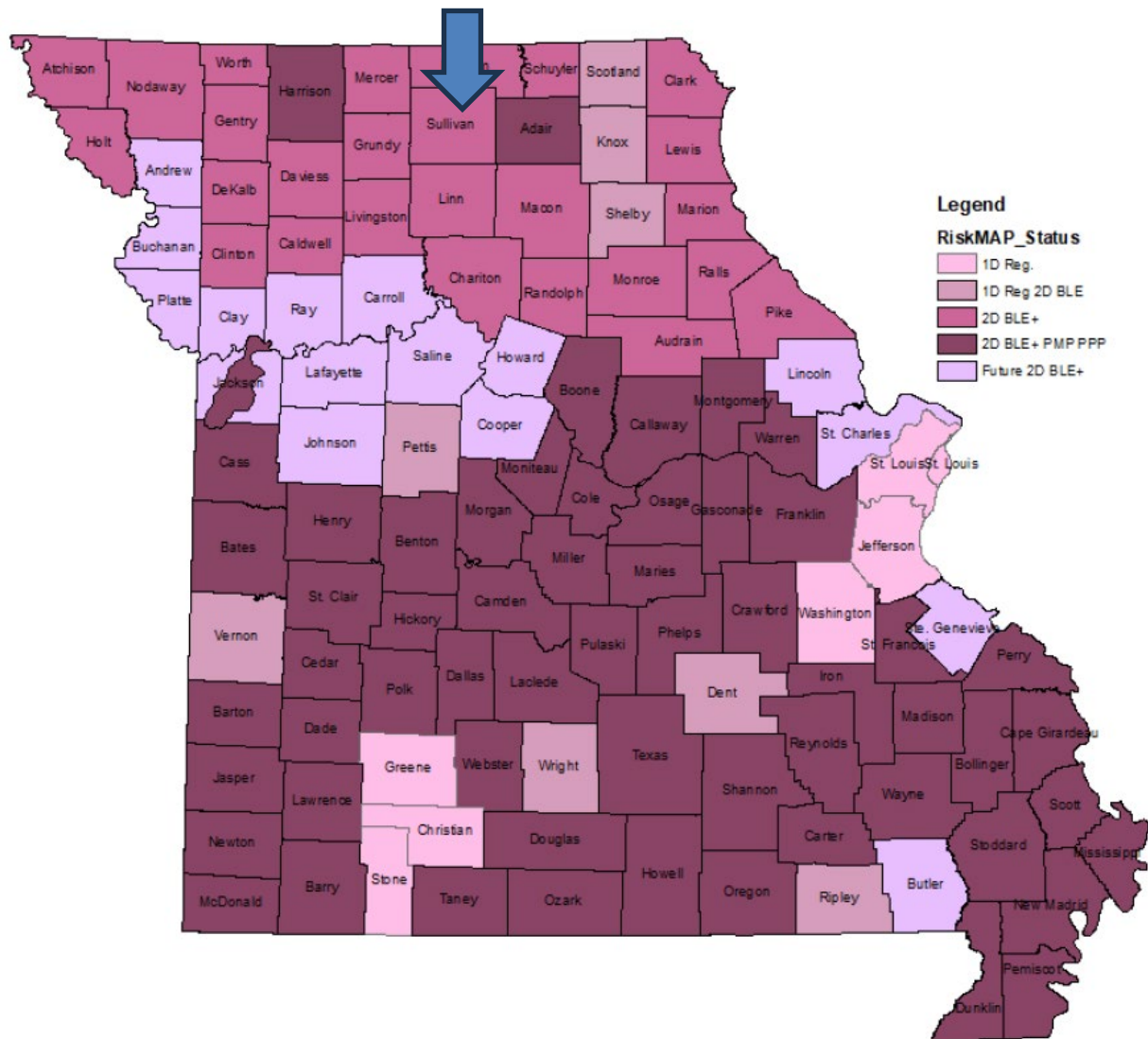
In addition to the invitations sent out to various stakeholders throughout the planning area, meeting notices were provided to all jurisdictions as well as flyers and social media posts that were used to promote the meetings. This information was also made available on GHRPCs website and Facebook page. A copy of the address labels, invitations, flyers, and social media posts can be found in Appendix B of the plan.

A Survey Monkey public survey was created to solicit public comments. The link and the QR code were made available to all jurisdictions, published on social media, and published on the flyers that were sent to all jurisdictions.

The draft of the Sullivan County Hazard Mitigation Plan was published on Green Hills Regional Planning Commission's website on August 29, 2025. Contact information was provided to any individual that wanted to make a comment on the plan and the ability to make a comment was enabled on the GHRPC website.

Coordination with FEMA Risk MAP Project

Figure 1.1. RiskMAP Study Status Map



Source: 2023 Missouri State Hazard Mitigation Plan

According to the Missouri State Hazard Mitigation Plan, a Statewide Needs Assessment was conducted, and the above figure summarizes the mapping status of each county. Sullivan County is classified as a county in the discovery phase with 2D BLE models under development that are planned to move forward with regulatory mapping using 2D results. Shown in the above figure with a blue arrow.

Integration of Other Data, Reports, Studies, and Plans

- The most current data, reports, studies, and plans were reviewed in order to input the data that mostly represents the current view of Putnam County and its local jurisdictions. The resources used were:
- Hazard Mitigation Plans from areas near the planning area
- the University of Missouri Extension Reports

- Flood Insurance Studies (FIS), Flood Insurance Rate Maps (FIRMs)
- State Fire Reports, Wildland/Urban Interface and Intermix areas from the SILVIS Lab
- Department of Forest Ecology and Management - University of Wisconsin
- Local comprehensive plans, economic development plans, capital improvement plans
- US Department of Agriculture's (USDA) Risk Management Agency Crop Insurance Statistics
- Local budgets.
- Current Missouri State Hazard Mitigation Plan (2023)
- Missouri Department of Natural Resources (DNR)
- National Inventory of Dams (NID)
- US Department of Agriculture's (USDA) Risk Management Agency Crop Insurance Statistics
- 2020 and 2023 Census
- 2021 Sullivan County Hazard Mitigation Plan

Relevant information from the above-listed sources was reviewed by the Mitigation Planning Committee as appropriate and included in the update of the Putnam County Hazard Mitigation Plan. Additional resources are listed in Appendix A and cited in the plan where appropriate.

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

- During Meeting #1 the MPC identified and profiled their hazards. The process of identifying hazards at this meeting included:
 - previous disaster declarations in the county
 - hazards in the most recent State Hazard Mitigation Plan
 - hazards identified in the previously approved hazard mitigation plan.
 - Anecdotal accounts of specific occurrences in the jurisdictions
- The MPC reviewed each jurisdiction's completed Data Collection Questionnaire to incorporate additional risk assessment information.
- The MPC reviewed and incorporated data from existing plans, studies, reports, and technical information as well as information available through internet research and GIS analysis.
- The Risk Assessment chapter of the plan provides additional detail on conclusions drawn from the data reviewed.

Step 5: Assess the Problem: Identify Assets and Estimate Losses (Handbook Task 4)

- In cases where vulnerability estimates were unavailable, data from the 2023 Missouri State Hazard Mitigation Plan was utilized as the best and most recent data available SEMA was also able to share some preliminary data from the 2023 State Plan update.
- The following information was used to determine the assets and estimate losses in Sullivan County: census, GIS data, HAZUS, and the Data Collection Questionnaire.
- Losses were estimated using the Missouri State Hazard Mitigation Plan and available HAZUS data for Sullivan County.
- At the 2nd meeting, the initial draft of the risk assessment was available, chapter 3 of the

- plan.
- The MPC performed a risk assessment using data from Chapter 3 of the plan. Jurisdictions attending the meeting were encouraged to identify vulnerabilities that may have been overlooked or that they concluded were important. See appendix B for the vulnerability assessment worksheets.

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

At the 2nd planning meeting the MPC reviewed the goals of the previously approved plan, they made the determination to update the goals to better address the specific hazards to the region and make implementation and planning more efficient. The goals can be found in Chapter 4 of the Sullivan County Hazard Mitigation Plan. They were listed as follows:

- Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorms/high winds, hail, and lightning.
- Goal 2: Minimize property damage due to flooding, levee failure, and dam failure.
- Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures, and wildfire.
- Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather.
- Goal 5: Minimize injuries and property damage due to seismic and/or geological events.

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

- The 3rd Planning Meeting was when the MPC reviewed the mitigation strategy from the previously approved plan. Each jurisdiction was aware that they must have at least one action plan for each hazard included in the plan.
- The jurisdictions determined which actions would be retained, modified, or deleted from the previous plan. The individual jurisdictions provided information on any progress made on the actions from the previous plan, and if they were still feasible.
- MPC members were encouraged to continue forward only those actions that substantively addressed long-term risks identified in the risk assessment.
- The FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)* was made available to the planning committee. It was suggested that this would be a valuable resource in guiding the planning activities to mitigate hazards in the planning area.
- Participants were encouraged to focus on long-term mitigation solutions and consideration was given to the potential cost of each project in relation to the anticipated future cost savings.
- The Sullivan County Hazard Mitigation Planning Committee utilized the STAPLEE method for evaluating the priority and effectiveness of each action.

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

The action worksheets, including the plan for implementation, submitted by each jurisdiction for the updated Mitigation Strategy are included in Chapter 4.

Step 9: Adopt the Plan
(Handbook Task 8)

Each jurisdiction is aware that they must adopt the plan prior to submission to SEMA. Each jurisdiction will document the adoption of the plan. This documentation can be found in Appendix E.

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

At the 3rd planning meeting, where actions were scored and decided upon, the MPC along with the GHRPC Planner agreed to meet at least annually to determine if actions were ongoing or completed. It was determined that the Hazard Mitigation Committee would schedule annual meetings to discuss any needed updates, changes, or progress on the plan's actions. It was determined that at these meetings, any amendments that were needed in the plan would be discussed and undertaken if necessary. It was also determined that any jurisdiction would use this annual meeting to develop NOIs for SEMA if desired. There is more detailed information about the strategy for plan maintenance in Chapter 5 of the Sullivan County Hazard Mitigation Plan.

2 PLANNING AREA PROFILE AND CAPABILITIES

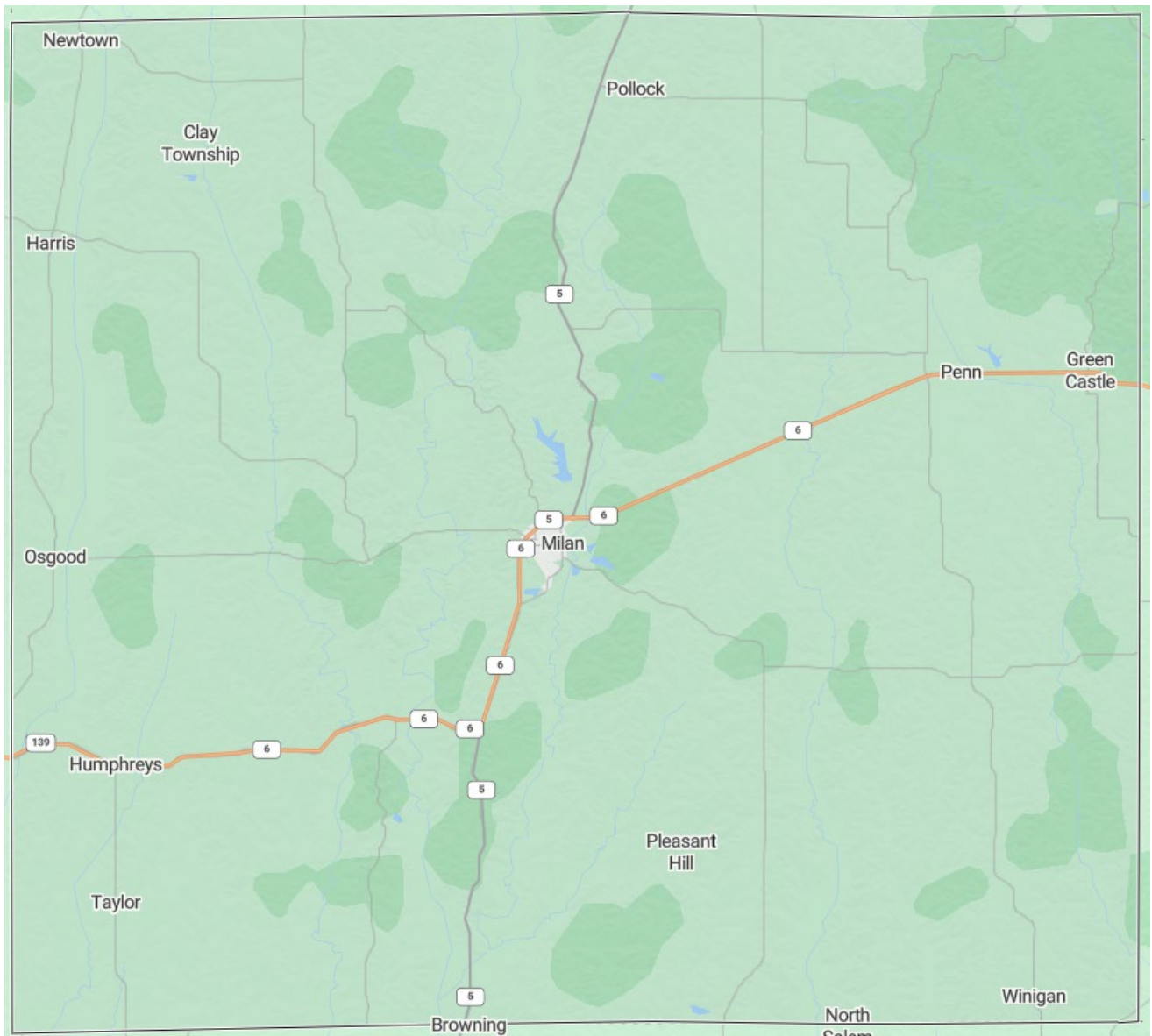
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2.1 SULLIVAN COUNTY PLANNING AREA PROFILE

Sullivan County, located in northern Missouri, is a rural county with a strong agricultural foundation, particularly in livestock raising and feeding. With a population of just under 6,000, its county seat and largest city is Milan. Beyond agriculture, the local economy is supported by manufacturing, healthcare, and retail trade. Historically organized in 1845 and named after General John Sullivan, the county's landscape features rolling terrain and numerous creeks, making it ideal for farming, and it is notable for having one of the highest Hispanic or Latino populations in Missouri.

Sullivan County is situated in the northern part of Missouri, centrally located within the state's northern tier. It is bordered by Putnam County to the north, Adair County to the east, Linn County to the south, and Grundy and Mercer Counties to the west. Its county seat, Milan, is positioned roughly in the geographical center of the county, serving as a hub for the surrounding rural areas. This northern placement within Missouri means it shares characteristics with the broader North Missouri region, known for its agricultural landscapes and distinct four-season climate.

Figure 2.1. Maps of Sullivan County



2.2 Sullivan County, Missouri (In Red)



2.1 Geography, Geology and Topography

Sullivan County, Missouri, encompasses 652 square miles in the northern part of the state, characterized by its rolling topography. The landscape is quite diverse, ranging from fertile bottomlands along its various creeks to undulating prairie and broken hillsides. Major waterways such as Medicine, Locust, East Locust, Yellow, and Spring Creeks flow generally north to south, providing ample water resources that are crucial for the county's dominant agricultural industry, particularly livestock. The highest point in the county, approximately 1,060 feet above sea level, is found near its northern border with Putnam County, while the lowest point, around 740 feet, lies where Locust Creek exits the county to the south.

Geologically, Sullivan County is situated within the broader North American Craton. The bedrock consists primarily of sedimentary rocks, including limestone, dolomite, sandstone, and shale, deposited over millions of years by ancient seas that periodically covered Missouri during the Paleozoic Era. While specific detailed geological surveys for the entire county might be limited, general regional geology indicates that these formations are common. The surface is often covered by layers of dirt and sediment, with coal thought to underlie about half the county, though little mining has occurred. Limestone is also found in significant quantities along streams, mainly used for local construction purposes.

Sullivan County, Missouri, is largely defined by its numerous creeks and their associated watersheds, which are integral to its agricultural landscape and water resources. Prominent among these are Locust Creek and East Locust Creek, both significant tributaries that flow generally southward through the county. The East Locust Creek Watershed, in particular, has been a focus of major development, including the Roy Blunt Reservoir, a multi-purpose project designed to provide water supply for a broader regional population, offer flood risk reduction, and create recreational opportunities. These waterways, along with others like Medicine, Yellow, and Spring Creeks, form the drainage network that supports the county's farming and livestock operations, ultimately contributing to the larger Grand River watershed system in northern Missouri.

2.2 Climate

Sullivan County, Missouri experiences a humid continental climate, characterized by distinct four seasons with significant temperature variations throughout the year. Summers are typically hot and humid, with average high temperatures in July reaching the upper 80s Fahrenheit and lows in the upper 60s. Winters are cold, with average high temperatures in January in the low 40s and average lows in the low 20s. Spring and autumn offer milder temperatures, though rapid weather changes are common during these transitional periods.

The county receives a substantial amount of precipitation annually, averaging around 40-42 inches per year. Rainfall is generally well-distributed throughout the year, with the wettest months typically being May and June due to spring and early summer thunderstorms. While snowfall does occur in winter, it is usually not excessively heavy. Sullivan County is susceptible to various weather phenomena common to the Midwest, including thunderstorms, occasional severe weather, and periods of both drought and heavy rainfall.

Figure 2.3 NOAA climate summary for Green City Missouri

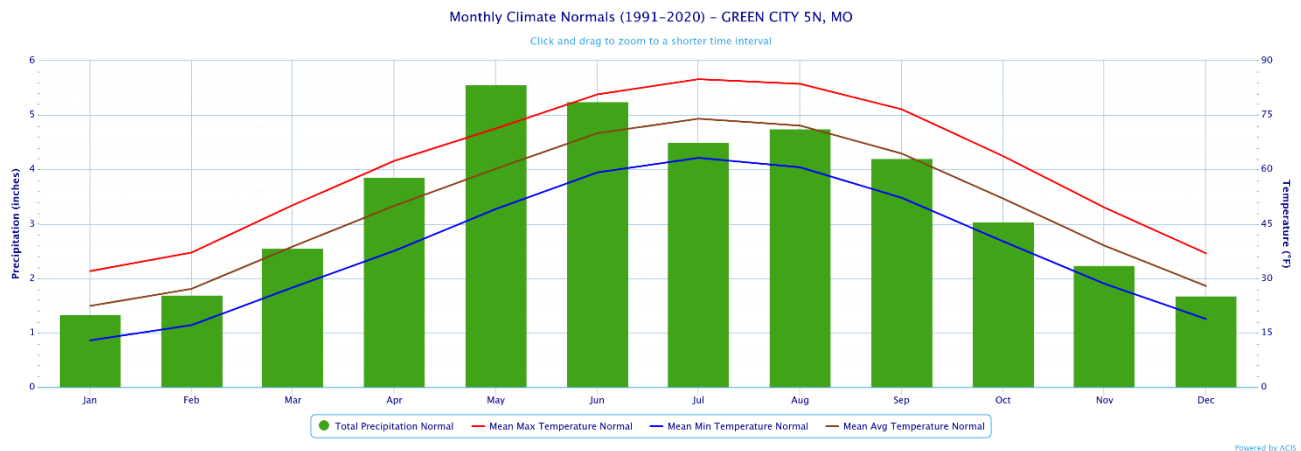


Table 2.1. Green City NOAA Climate normals

Month	Total Precipitation Normal (inches)	Mean Max Temperature Normal (°F)	Mean Min Temperature Normal (°F)	Mean Avg Temperature Normal (°F)
January	1.34	32.0	12.9	22.4
February	1.70	37.1	17.1	27.1
March	2.56	50.2	27.5	38.8
April	3.87	62.4	37.6	50.0
May	5.57	71.3	49.1	60.2
June	5.25	80.7	59.2	70.0
July	4.51	84.9	63.2	74.0

Month	Total Precipitation Normal (inches)	Mean Max Temperature Normal (°F)	Mean Min Temperature Normal (°F)	Mean Avg Temperature Normal (°F)
August	4.75	83.6	60.6	72.1
September	4.21	76.6	52.2	64.4
October	3.04	63.7	40.2	52.0
November	2.25	49.5	28.5	39.0
December	1.69	36.9	18.8	27.9
Annual	40.74	60.7	38.9	49.

Source: NOAA NCDC Data 1990-2020

2.3 Population/Demographics

Sullivan County, Missouri, is a rural area that has experienced a steady population decline over the past century, reaching an estimated 5,759 residents in 2025. This represents a significant decrease from its peak of over 20,000 residents in 1900, largely due to shifts in agricultural practices and overall rural depopulation trends. The median age in Sullivan County is 44.2 years, notably higher than both the Missouri and national averages, indicating an older population demographic.

In terms of ethnic diversity, Sullivan County is predominantly White (around 83% non-Hispanic White). However, it stands out in Missouri for having a comparatively higher percentage of Hispanic or Latino residents, with approximately 18% of the population identifying as such, making it one of the most heavily Hispanic/Latino counties in the state. The median household income was about \$55,500 in 2023, which is below the state and national averages, and the county's poverty rate of around 14.7% is higher than the state average.

Table 2.2. Sullivan County Population 2010-2020 by Jurisdiction

Jurisdiction	2010 Population	2020 Population	2023 Annual Population Estimate or ACS Population	# Change (2010-2023)	% Change (2010-2023)
Sullivan County	6,714	5,999	5903	-811	-12.1%
Sullivan County Unincorporated	2,432	3,106	2,877	445	-18.3%
City of Milan	1,960	1,819	1,883	-77	-3.9%
City of Green City	657	602	560	-97	-14.8%
City of Green Castle	275	224	331	56	-8.5%
City of Newtown	183	113	112	-71	-38.8%
Village of Humphreys	118	89	121	3	2.5%
Village of Pollock	89	46	19	-70	-78.7%

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

Table 2.3. Population of Sullivan County under 5 and over 65

Jurisdiction	Population Under 5	% Population Under 5	Population 65 and over	% Population 65 and over
Sullivan County	377	6.3%	1204	20.1%
City of Milan	157	8.6%	226	12.4%
City of Green City	35	5.8%	144	23.9%
City of Green Castle	19	8.5%	57	25.4%
City of Newtown	4	3.5%	28	24.8%
Village of Harris	3	4.6%	16	24.6%
Village of Humphreys	4	4.5%	6	6.7%
Village of Pollock	0	0%	13	28.3%

Source: U.S. Census Bureau, Profile of General Population and Housing Characteristics (DP1)

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.

To visually compare the SoVI® scores at a state and national level, they are mapped using quantiles. Scores in the top 20% of the United States are more vulnerable counties (red) and scores in the bottom 20% of the United States indicate the least vulnerable counties (blue). A low SoVI score number means that the county is more resilient to hazard events, and a high SoVI score number means the county is less resilient. Putnam County has a medium SoVI score.

Figure 2.3 below shows the SoVI scores for Putnam County from 2010 - 2014 at both the state and national levels. Daviess County has a medium SoVI score of as compared to the other counties in the state and as compared to other counties in the United States. As you can see, the score remained the same regardless of comparison level.

Figure 2.4 Social Vulnerability to Environmental Hazards, State of Missouri

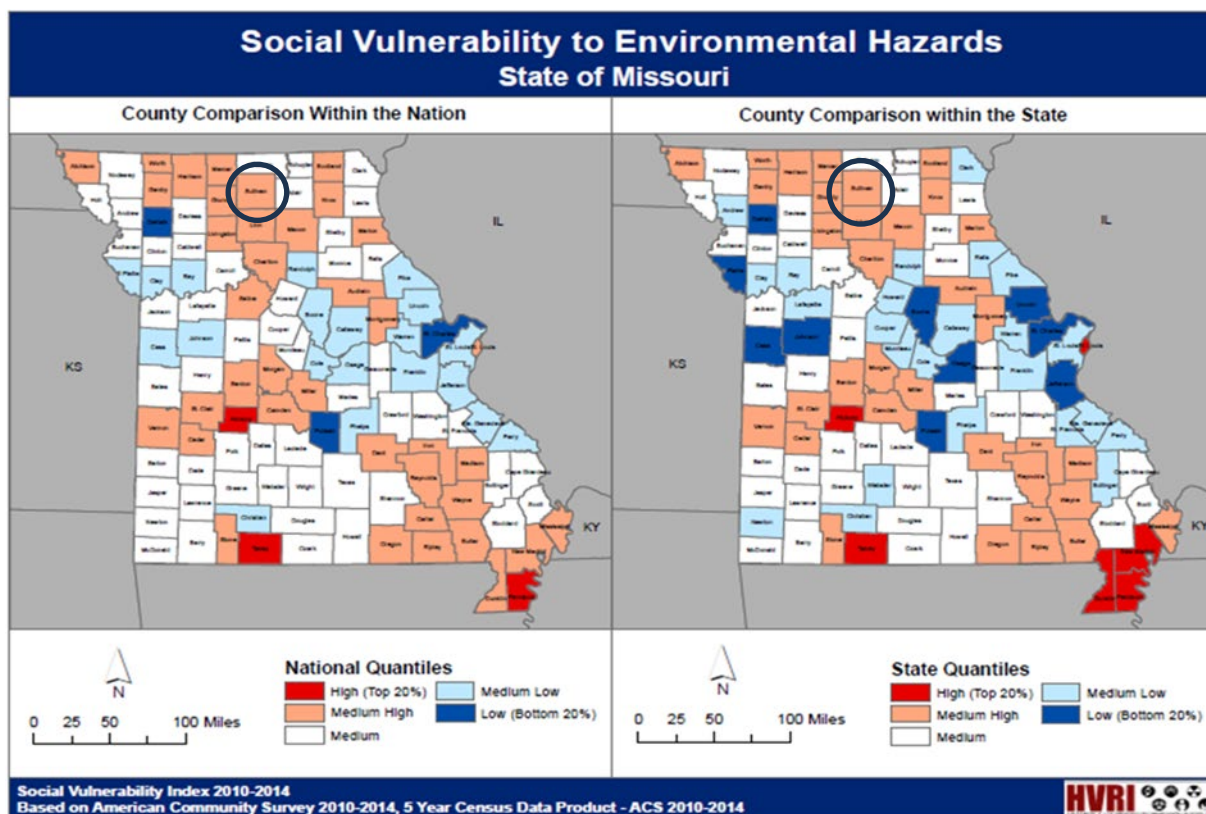


Table 2.4. Unemployment, Poverty, Education, and Language Percentage Demographics, Sullivan County, Missouri

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
Sullivan County	2,673	1.3%	14.7%	46.9%	9.1%	16.5%
City of Milan	884	3.2%	12.5%	44.0%	8.9%	43.7%
City of Green City	198	0.0%	28.9%	52.4%	2.7%	11.2%
City of Green Castle	146	0.7%	10.6%	65.7%	4.0%	0.3%
City of Newtown	53	0.0%	9.8%	46.1%	15.8%	5.4%
Village of Humphreys	38	0.0%	43.8%	45.0%	24.0%	0.0%
Village of Pollock	7	0.0%	52.6%	70.0%	0.05	0.0%
State of Missouri	3,195,524	2.2%	12.0%	29.4%	20.2%	7.0%
Nationwide	173,038,975	2.7%	12.5%	25.9%	21.8%	22.5%

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

2.4 Occupations

Sullivan County, Missouri, has a relatively small labor force, with around 2,610 employees as of

2023, reflecting a slight decline of about -1.1% from the previous year. The county's economy is primarily driven by three key sectors: Manufacturing, which is the largest employer with approximately 678 people, followed by Health Care & Social Assistance (356 people), and Retail Trade (310 people). While agriculture remains a foundational element of the county's identity, these other industries represent the most common formal employment opportunities for residents.

Looking at specific occupations, the most prevalent job groups among Sullivan County residents are Production Occupations (538 people), reflecting the strong manufacturing presence, followed by Management Occupations (235 people), and Sales & Related Occupations (215 people). The unemployment rate in Sullivan County has generally been low, at 3.3% as of April 2025, which is lower than the long-term average. The median household income in 2023 was approximately \$55,500, with higher-paying industries typically including Utilities, Information, and Finance & Insurance.

Table 2.5. Occupation Statistics, Sullivan County, Missouri

Place	Management, Business, Science, and Arts Occupations	Service Occupations	Sales and Office Occupations	Natural Resources, Construction, and Maintenance Occupations	Production, Transportation, and Material Moving Occupations
Sullivan County	688	415	397	330	777
City of Milan	169	163	76	89	336
City of Green City	22	35	26	27	88
City of Green Castle	49	21	23	14	37
City of Newtown	16	1	3	20	13
Village of Humphreys	0	6	0	12	20
Village of Pollock	1	0	3	3	0

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

2.5 Agriculture

The 2022 Census of Agriculture for Sullivan County, Missouri, reveals a robust and highly productive agricultural sector, despite a slight decrease in the number of farms. The county reported 642 farms, a slight reduction from 2017, but the total land in farms increased by 3% to 318,779 acres, leading to a larger average farm size of 497 acres. The market value of agricultural products sold in Sullivan County reached an impressive \$183,587,000, representing a 3% increase since 2017. This strong revenue highlights the county's significant contribution to Missouri's overall agricultural output.

A key finding from the 2022 Census is the overwhelming dominance of livestock, poultry, and related products, which accounted for a substantial 78% of the county's total agricultural sales. Crops, while still important, made up the remaining 22%. Specifically, Sullivan County had nearly 37,000 head of cattle and calves and over 121,000 hogs and pigs. Forage (hay/haylage) was the top crop by acreage at over 53,000 acres, followed by soybeans and corn for grain. The census also provided insights into the demographics of farm operators, with 1,080 producers, indicating a multi-operator structure for many farms. The average age of producers in Sullivan County aligns with national trends, showing an aging farming population but also the presence of new and beginning farmers.

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

Table 2.6. FEMA HMA Grants in Sullivan County from 1993-2025

Disaster Declaration	Project Type	Sub-Grantee	Date Approved	Project Total
PDMC-PJ-07-MO-2005-023	402.1: Infrastructure Protective Measures (Roads and Bridges)	Sullivan County Commission	2005-09-07	\$449,787
Total				\$449,787

Source: Federal Emergency Management Agency, September 2025

2.7 FEMA Public Assistance (PA) Grants in Planning Area

In the last 25 years, 2000-2025, 13 different federally declared disasters have impacted Sullivan County resulting in \$6,740,684.30 in impacts to the county.

On average since 2000 Sullivan County has had a federally declared disaster every 2 years.

Roads and Bridges were the commonly damaged items with 286 projects, which lead to \$5,038,774.18 in damages. Utilities sustained the second highest level of damage with 26 projects totaling \$1,309,556.34 in damages.

Table 2.7. FEMA PA Grants in Sullivan County from 1993-2024

Disaster Declaration	Project Type	Project Size	Project Total
1412	Roads and Bridges	Small	\$15,228.30
1412	Roads and Bridges	Small	\$29,444.53
1412	Roads and Bridges	Large	\$75,830.28
1412	Roads and Bridges	Small	\$33,745.92
1412	Roads and Bridges	Small	\$9,245.15
1412	Roads and Bridges	Small	\$11,173.68
1412	Utilities	Small	\$43,898.20
1412	Roads and Bridges	Small	\$25,200.01
1412	Roads and Bridges	Small	\$4,124.53
1412	Roads and Bridges	Small	\$34,012.00
1412	Roads and Bridges	Small	\$17,041.00
1708	Roads and Bridges	Small	\$14,204.80
1708	Roads and Bridges	Small	\$7,997.50
1708	Roads and Bridges	Small	\$7,454.04
1708	Roads and Bridges	Small	\$11,855.00
1708	Roads and Bridges	Small	\$4,454.21
1708	Roads and Bridges	Small	\$21,796.25
1708	Roads and Bridges	Small	\$11,299.75
1708	Roads and Bridges	Small	\$10,206.50
1708	Roads and Bridges	Small	\$5,048.00
1708	Roads and Bridges	Small	\$4,614.00
1708	Roads and Bridges	Small	\$23,036.30

1708	Roads and Bridges	Small	\$8,889.95
1708	Roads and Bridges	Small	\$54,571.70
1708	Roads and Bridges	Small	\$7,346.00
1708	Roads and Bridges	Small	\$26,905.88
1708	Roads and Bridges	Small	\$6,962.50
1708	Roads and Bridges	Small	\$23,962.35
1708	Roads and Bridges	Small	\$8,837.30
1708	Roads and Bridges	Small	\$17,933.85
1708	Roads and Bridges	Small	\$10,668.50
1708	Roads and Bridges	Small	\$25,467.00
1708	Roads and Bridges	Small	\$7,085.50
1708	Roads and Bridges	Small	\$16,316.00
1708	Roads and Bridges	Small	\$19,557.45
1708	Roads and Bridges	Small	\$14,522.00
1708	Roads and Bridges	Small	\$16,333.80
1708	Roads and Bridges	Small	\$16,570.40
1708	Roads and Bridges	Small	\$6,231.10
1736	Utilities	Small	\$5,477.88
1736	Roads and Bridges	Small	\$10,202.37
1736	Roads and Bridges	Small	\$3,291.03
1736	Debris Removal	Small	\$5,562.92
1736	Roads and Bridges	Small	\$17,588.44
1736	Debris Removal	Small	\$2,312.68
1736	Roads and Bridges	Small	\$3,014.91
1736	Roads and Bridges	Small	\$12,717.00
1736	Roads and Bridges	Small	\$3,965.56
1736	Roads and Bridges	Small	\$7,963.40
1736	Roads and Bridges	Small	\$7,591.64
1736	Roads and Bridges	Small	\$4,632.85
1736	Emergency Protective Measures	Small	\$4,212.96
1736	Roads and Bridges	Small	\$2,371.31
1736	Roads and Bridges	Small	\$1,260.68
1736	Roads and Bridges	Small	\$3,193.26
1736	Roads and Bridges	Small	\$5,236.52
1736	Debris Removal	Small	\$8,108.00
1736	Emergency Protective Measures	Small	\$5,624.14
1736	Debris Removal	Small	\$3,000.00
1736	Roads and Bridges	Small	\$3,404.49
1736	Roads and Bridges	Small	\$1,763.78
1773	Roads and Bridges	Small	\$4,634.04
1773	Roads and Bridges	Small	\$4,957.20
1773	Roads and Bridges	Small	\$17,509.71
1773	Roads and Bridges	Small	\$13,823.79
1773	Roads and Bridges	Small	\$23,052.71
1773	Water Control Facilities	Small	\$8,704.50
1773	Roads and Bridges	Small	\$5,724.28
1773	Roads and Bridges	Small	\$8,553.85
1773	Roads and Bridges	Small	\$4,040.00
1773	Roads and Bridges	Small	\$9,861.59
1773	Roads and Bridges	Small	\$29,176.77
1773	Roads and Bridges	Small	\$60,693.17
1773	Roads and Bridges	Small	\$12,138.59
1773	Roads and Bridges	Small	\$10,048.54
1773	Roads and Bridges	Small	\$3,141.84
1773	Roads and Bridges	Small	\$9,850.77
1773	Roads and Bridges	Small	\$5,872.54
1773	Utilities	Small	\$32,767.97
1773	Roads and Bridges	Small	\$10,498.54
1773	Roads and Bridges	Small	\$19,755.72

1773	Roads and Bridges	Small	\$5,033.72
1773	Roads and Bridges	Small	\$15,047.28
1773	Roads and Bridges	Small	\$33,504.64
1773	Roads and Bridges	Small	\$14,724.56
1773	Roads and Bridges	Small	\$7,789.89
1773	Utilities	Small	\$50,798.18
1773	Utilities	Small	\$53,949.22
1773	Roads and Bridges	Small	\$4,140.48
1773	Roads and Bridges	Small	\$27,725.32
1773	Utilities	Small	\$8,892.60
1773	Roads and Bridges	Small	\$23,858.13
1773	Roads and Bridges	Small	\$4,978.12
1773	Roads and Bridges	Small	\$16,717.82
1773	Roads and Bridges	Small	\$13,436.63
1773	Roads and Bridges	Small	\$6,608.26
1773	Roads and Bridges	Small	\$24,484.12
1773	Roads and Bridges	Small	\$5,690.20
1773	Roads and Bridges	Small	\$15,888.51
1773	Roads and Bridges	Small	\$18,839.74
1773	Roads and Bridges	Small	\$20,463.12
1773	Roads and Bridges	Small	\$1,760.58
1773	Roads and Bridges	Small	\$15,098.78
1773	Roads and Bridges	Small	\$8,844.50
1773	Roads and Bridges	Small	\$22,943.23
1773	Roads and Bridges	Small	\$26,372.07
1773	Roads and Bridges	Small	\$15,040.05
1773	Utilities	Small	\$2,974.25
1773	Roads and Bridges	Small	\$9,672.73
1773	Debris Removal	Small	\$12,241.82
1773	Roads and Bridges	Small	\$3,811.74
1773	Emergency Protective Measures	Small	\$1,794.10
1773	Roads and Bridges	Small	\$8,472.36
1773	Roads and Bridges	Small	\$7,147.96
1773	Roads and Bridges	Small	\$1,735.80
1773	Roads and Bridges	Small	\$11,455.97
1773	Roads and Bridges	Small	\$19,921.57
1773	Roads and Bridges	Small	\$27,344.80
1773	Roads and Bridges	Small	\$24,752.70
1773	Water Control Facilities	Small	\$4,074.50
1773	Utilities	Small	\$2,492.00
1773	Roads and Bridges	Small	\$15,242.92
1773	Roads and Bridges	Small	\$2,002.23
1773	Roads and Bridges	Small	\$21,856.01
1773	Roads and Bridges	Small	\$9,391.00
1773	Roads and Bridges	Small	\$23,240.79
1773	Roads and Bridges	Small	\$6,521.84
1773	Roads and Bridges	Small	\$4,219.73
1773	Roads and Bridges	Small	\$9,517.55
1773	Utilities	Small	\$2,572.50
1773	Utilities	Small	\$5,683.33
1773	Roads and Bridges	Small	\$10,260.76
1773	Roads and Bridges	Small	\$1,680.11
1773	Roads and Bridges	Small	\$3,383.98
1773	Roads and Bridges	Small	\$3,196.00
1773	Roads and Bridges	Small	\$15,143.45
1773	Roads and Bridges	Small	\$2,110.26
1773	Roads and Bridges	Small	\$1,003.61
1773	Roads and Bridges	Small	\$7,325.90
1773	Utilities	Small	\$21,499.32

1773	Utilities	Small	\$22,763.77
1773	Roads and Bridges	Small	\$37,203.90
1773	Roads and Bridges	Small	\$21,282.80
1773	Roads and Bridges	Small	\$28,646.17
1773	Roads and Bridges	Small	\$17,230.11
1773	Roads and Bridges	Small	\$25,457.00
1773	Roads and Bridges	Small	\$11,446.73
1773	Roads and Bridges	Small	\$8,594.77
1773	Roads and Bridges	Small	\$5,853.80
1773	Roads and Bridges	Small	\$7,103.57
1773	Roads and Bridges	Small	\$7,732.19
1773	Roads and Bridges	Small	\$13,011.31
1773	Roads and Bridges	Small	\$11,717.61
1773	Roads and Bridges	Small	\$11,165.83
1809	Roads and Bridges	Small	\$4,368.24
1809	Parks, Recreational Facilities, and Other	Small	\$5,836.16
1809	Roads and Bridges	Small	\$12,002.29
1809	Roads and Bridges	Small	\$5,087.08
1809	Roads and Bridges	Small	\$19,494.03
1809	Roads and Bridges	Small	\$2,325.76
1809	Utilities	Small	\$24,763.78
1809	Roads and Bridges	Small	\$5,813.36
1809	Debris Removal	Small	\$2,374.50
1809	Roads and Bridges	Small	\$14,229.85
1809	Roads and Bridges	Large	\$82,239.80
1809	Roads and Bridges	Small	\$14,414.48
1809	Roads and Bridges	Small	\$15,181.04
1809	Roads and Bridges	Small	\$2,402.21
1809	Roads and Bridges	Small	\$4,064.98
1809	Roads and Bridges	Small	\$5,300.70
1809	Roads and Bridges	Small	\$4,795.62
1847	Roads and Bridges	Small	\$3,337.88
1847	Roads and Bridges	Small	\$10,009.52
1847	Roads and Bridges	Small	\$7,830.00
1847	Roads and Bridges	Small	\$5,128.06
1847	Roads and Bridges	Small	\$15,548.15
1847	Roads and Bridges	Small	\$13,620.65
1847	Roads and Bridges	Small	\$7,078.08
1847	Utilities	Large	\$79,305.35
1847	Roads and Bridges	Small	\$36,531.64
1847	Roads and Bridges	Small	\$5,124.00
1847	Roads and Bridges	Small	\$10,650.94
1847	Debris Removal	Small	\$9,486.00
1847	Roads and Bridges	Small	\$19,360.30
1847	Roads and Bridges	Small	\$38,157.48
1847	Utilities	Small	\$50,358.01
1847	Roads and Bridges	Small	\$5,974.00
1847	Roads and Bridges	Small	\$37,582.82
1847	Roads and Bridges	Small	\$47,696.92
1934	Roads and Bridges	Small	\$2,411.11
1934	Roads and Bridges	Small	\$2,097.19
1934	Roads and Bridges	Small	\$2,053.03
1934	Roads and Bridges	Small	\$1,783.62
1934	Roads and Bridges	Small	\$8,602.80
1934	Roads and Bridges	Small	\$5,553.27
1934	Roads and Bridges	Small	\$11,925.41
1934	Roads and Bridges	Small	\$3,555.79
1934	Roads and Bridges	Small	\$41,513.91
1934	Roads and Bridges	Small	\$18,361.43

1934	Roads and Bridges	Small	\$15,454.82
1934	Roads and Bridges	Small	\$4,265.65
1934	Roads and Bridges	Small	\$3,047.27
1934	Roads and Bridges	Small	\$2,450.56
1934	Roads and Bridges	Small	\$3,399.94
1934	Roads and Bridges	Small	\$2,594.89
1934	Roads and Bridges	Small	\$19,901.32
1934	Roads and Bridges	Small	\$33,356.82
1934	Roads and Bridges	Small	\$11,889.80
1934	Roads and Bridges	Small	\$17,242.90
1934	Utilities	Large	\$287,419.52
1934	Debris Removal	Small	\$1,096.00
1934	Roads and Bridges	Small	\$7,357.99
1934	Roads and Bridges	Small	\$3,477.15
1934	Roads and Bridges	Small	\$9,594.20
1934	Roads and Bridges	Small	\$2,733.57
1934	Roads and Bridges	Small	\$3,858.54
1934	Roads and Bridges	Small	\$3,910.17
1934	Roads and Bridges	Small	\$6,440.15
1934	Roads and Bridges	Small	\$11,732.43
1934	Roads and Bridges	Small	\$6,212.61
1934	Roads and Bridges	Small	\$6,684.20
1934	Roads and Bridges	Small	\$4,660.00
1934	Roads and Bridges	Small	\$9,011.56
1934	Roads and Bridges	Small	\$12,384.71
1934	Roads and Bridges	Small	\$26,736.00
1934	Roads and Bridges	Small	\$12,307.50
1934	Roads and Bridges	Small	\$5,321.79
1934	Roads and Bridges	Small	\$12,144.94
1934	Roads and Bridges	Small	\$30,924.71
1934	Roads and Bridges	Small	\$2,703.90
1934	Roads and Bridges	Small	\$5,354.42
1934	Roads and Bridges	Small	\$56,574.77
1934	Roads and Bridges	Small	\$21,807.42
1934	Roads and Bridges	Small	\$6,822.46
1934	Roads and Bridges	Small	\$36,861.63
1934	Roads and Bridges	Small	\$12,190.53
1934	Roads and Bridges	Small	\$2,382.08
1934	Roads and Bridges	Small	\$5,500.00
1934	Roads and Bridges	Small	\$5,868.28
1934	Roads and Bridges	Small	\$2,958.42
1934	Roads and Bridges	Small	\$11,293.30
1934	Roads and Bridges	Small	\$2,100.00
1934	Roads and Bridges	Small	\$3,709.21
1934	Roads and Bridges	Small	\$23,929.93
1934	Debris Removal	Small	\$2,304.00
1934	Roads and Bridges	Small	\$1,630.45
1934	Roads and Bridges	Small	\$12,860.92
1934	Roads and Bridges	Small	\$7,562.98
1934	Roads and Bridges	Small	\$4,991.00
1934	Roads and Bridges	Large	\$69,540.20
1934	Roads and Bridges	Small	\$4,285.07
1934	Roads and Bridges	Small	\$7,733.17
1934	Roads and Bridges	Small	\$6,166.53
1934	Roads and Bridges	Small	\$16,505.93
1934	Roads and Bridges	Small	\$46,605.56
1934	Roads and Bridges	Small	\$5,102.55
1934	Roads and Bridges	Small	\$2,309.53
1934	Roads and Bridges	Small	\$2,680.21

1934	Roads and Bridges	Small	\$2,242.91
1934	Roads and Bridges	Small	\$12,183.26
1934	Roads and Bridges	Small	\$3,322.76
1934	Roads and Bridges	Small	\$14,424.37
1934	Roads and Bridges	Small	\$4,150.97
1934	Roads and Bridges	Small	\$13,775.04
1934	Roads and Bridges	Small	\$23,549.54
1934	Roads and Bridges	Small	\$7,946.91
1934	Roads and Bridges	Small	\$3,537.66
1961	Emergency Protective Measures	Small	\$3,070.00
1961	Emergency Protective Measures	Small	\$3,862.55
1961	Emergency Protective Measures	Small	\$2,338.50
1961	Emergency Protective Measures	Small	\$9,126.76
1961	Roads and Bridges	Small	\$4,021.20
1961	Roads and Bridges	Small	\$3,212.07
1961	Emergency Protective Measures	Small	\$9,986.11
1961	Roads and Bridges	Small	\$5,783.83
1961	Roads and Bridges	Small	\$5,535.74
1961	Emergency Protective Measures	Small	\$7,575.00
1961	Roads and Bridges	Small	\$5,649.25
1961	Emergency Work Donated Resources	Small	\$260.00
1961	Emergency Protective Measures	Small	\$20,502.34
1961	Emergency Work Donated Resources	Small	\$730.67
1961	Roads and Bridges	Small	\$2,096.82
1961	Emergency Protective Measures	Small	\$2,901.32
1961	Emergency Protective Measures	Small	\$2,386.50
1961	Emergency Protective Measures	Small	\$52,392.22
1961	Emergency Protective Measures	Small	\$9,788.10
1961	Emergency Protective Measures	Small	\$8,178.49
1961	Roads and Bridges	Small	\$6,613.16
4130	Roads and Bridges	Large	\$92,139.86
4130	Roads and Bridges	Small	\$5,968.90
4130	Roads and Bridges	Small	\$34,232.22
4130	Debris Removal	Small	\$1,082.50
4130	Roads and Bridges	Small	\$54,765.01
4130	Roads and Bridges	Small	\$7,206.54
4130	Roads and Bridges	Small	\$5,074.90
4130	Utilities	Large	\$107,921.35
4130	Roads and Bridges	Small	\$20,255.67
4130	Debris Removal	Small	\$1,560.00
4130	Roads and Bridges	Small	\$9,711.00
1934	Roads and Bridges	Small	\$3,709.21
4130	Roads and Bridges	Small	\$2,392.80
4130	Roads and Bridges	Small	\$14,785.88
4130	Roads and Bridges	Small	\$1,722.95
4200	Roads and Bridges	Small	\$3,824.19
4200	Roads and Bridges	Small	\$114,413.34
4200	Roads and Bridges	Small	\$31,597.82
4200	Roads and Bridges	Small	\$56,800.46
4200	Roads and Bridges	Small	\$33,423.32
4200	Roads and Bridges	Small	\$40,708.05
4200	Utilities	Small	\$106,647.18
4200	Roads and Bridges	Small	\$45,059.98
4200	Roads and Bridges	Small	\$15,743.82
4200	Roads and Bridges	Small	\$64,697.70
4200	Roads and Bridges	Small	\$6,298.54
4200	Roads and Bridges	Small	\$32,290.97
4238	Roads and Bridges	Small	\$90,141.16
4238	Roads and Bridges	Small	\$86,929.63

4238	Public Utilities	Small	\$108,104.00
4238	Roads and Bridges	Large	\$47,169.29
4238	Roads and Bridges	Small	\$94,526.21
4238	Roads and Bridges	Small	\$99,461.98
4238	Roads and Bridges	Small	\$107,252.72
4238	Roads and Bridges	Large	\$80,877.13
4238	Roads and Bridges	Small	\$106,425.76
4238	Roads and Bridges	Small	\$100,762.60
4238	Public Utilities	Small	\$1,000.00
4238	Roads and Bridges	Small	\$99,380.59
4238	Roads and Bridges	Small	\$45,414.65
4451	Roads and Bridges	Small	\$23,544.67
4451	Utilities	Small	\$60,051.56
4451	Roads and Bridges	Small	\$4,368.57
4451	Roads and Bridges	Small	\$4,335.86
4451	Roads and Bridges	Small	\$61,850.32
4451	Management Costs	Small	\$1,348.88
4451	Utilities	Small	\$112,701.34
4451	Parks, Recreational Facilities, and Other	Small	\$15,484.94
4451	Water Control Facilities	Small	\$55,113.50
4451	Roads and Bridges	Small	\$26,761.08
4451	Roads and Bridges	Small	\$8,606.29
4451	Utilities	Small	\$15,105.49
4451	Management Costs	Small	\$251.14
4451	Utilities	Small	\$22,641.60
4451	Utilities	Small	\$32,900.31
4451	Roads and Bridges	Small	\$22,148.76
4451	Utilities	Small	\$122,170.39
4451	Utilities	Small	\$6,234.44
4451	Management Costs	Small	\$6,137.71
4451	Roads and Bridges	Small	\$5,738.19
4451	Management Costs	Small	\$5,649.38
4451	Management Costs	Small	\$582.73
4451	Roads and Bridges	Small	\$28,655.51
4451	Emergency Protective Measures	Small	\$10,052.83
4451	Utilities	Small	\$27,566.80
4490	Emergency Protective Measures	Small	\$4,340.20
4490	Emergency Protective Measures	Small	\$6,091.61
4130	Roads and Bridges	Small	\$2,392.80
Total			\$6,740,684.30

Source: Federal Emergency Management Agency – June 2025

2.2 JURISDICTIONAL PROFILES AND MITIGATION CAPABILITIES

2.2.1 Unincorporated Sullivan County

Sullivan County is in the northern part of Missouri, centrally positioned within the state's northern tier. Its history traces back to being part of the vast Louisiana Purchase in 1803, with the first permanent American settlements appearing around 1836. Initially part of Chariton County, it was officially organized as Sullivan County on February 14, 1845, named in honor of Revolutionary War General John Sullivan. The county seat, Milan, was strategically established near its geographical center, serving as a hub for the primarily agricultural community that would face significant challenges, including the divisions of the Civil War, before flourishing with the arrival of the railroad in the late 19th century.

Sullivan County, Missouri, operates under a traditional county government structure, with key political offices largely focused on local administration and services. The primary governing body is the County Commission, which typically consists of a Presiding Commissioner and two Associate Commissioners representing different districts within the county. These elected officials are responsible for legislative decisions, overseeing county finances, and managing various county departments to ensure the smooth operation of local government. Other crucial elected countywide officials include the County Clerk, who handles records and elections; the Assessor, responsible for property valuation; and the Collector/Treasurer, who manages county funds and tax collection.

Beyond the commission and core administrative roles, Sullivan County has several other essential political offices and departments that serve the public. These include the Prosecuting Attorney, who handles legal matters and criminal prosecution for the county; the Sheriff, responsible for law enforcement and maintaining public safety; and the Circuit Clerk, who manages court records and judicial administration. Additionally, departments like the Public Administrator, Recorder of Deeds, and Coroner provide specialized services vital to the community's well-being and legal framework. These offices, along with departments like the Health Department, work collaboratively to deliver a wide range of services, from public health initiatives to maintaining official records and ensuring justice.

Mitigation Initiatives/Capabilities

The County has few ordinances in place.

The County has had limited mitigation activities due to limited capabilities. The County expanding its mitigation capabilities is unlikely, due to limited capabilities, both financially and in terms of staff availability.

Table 2.8. Unincorporated Sullivan County Mitigation Capabilities

Capabilities	Status, Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	Unknown
Builder's Plan	Unknown
Capital Improvement Plan	Unknown
City Emergency Operations Plan	NA

County Emergency Operations Plan	Yes
Local Recovery Plan	No
County Recovery Plan	No
City Mitigation Plan	NA
County Mitigation Plan	Yes
Debris Management Plan	No
Economic Development Plan	No
Transportation Plan	No
Land-use Plan	Unknown
Flood Mitigation Assistance (FMA) Plan	Unknown
Watershed Plan	No
Firewise or other fire mitigation plan	No
School Mitigation Plan	No
Critical Facilities Plan	Unknown
Policies/Ordinance	
Zoning Ordinance	Unknown
Building Code	Unknown
Floodplain Ordinance	No
Subdivision Ordinance	Unknown
Tree Trimming Ordinance	Yes
Nuisance Ordinance	Unknown
Stormwater Ordinance	Unknown
Drainage Ordinance	Unknown
Site Plan Review Requirements	Unknown
Historic Preservation Ordinance	Unknown
Landscape Ordinance	Unknown
Seismic Construction Ordinance	Unknown
Program	
Zoning/Land Use Restrictions	No
Codes Building Site/Design	Unknown
Hazard Awareness Program	Unknown
National Flood Insurance Program (NFIP)	No
NFIP Community Rating System (CRS) program	No

Capabilities	Status, Including Date of Document or Policy
National Weather Service (NWS) Storm Ready	No
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	NA
Economic Development Program	No
Land Use Program	No
Public Education/Awareness	No
Property Acquisition	No
Planning/Zoning Boards	No
Stream Maintenance Program	No
Tree Trimming Program	Yes
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	Yes
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	No
Hazard Analysis/Risk Assessment (County)	Yes
Flood Insurance Maps	No
FEMA Flood Insurance Study (Detailed)	No
Evacuation Route Map	No
Critical Facilities Inventory	No
Vulnerable Population Inventory	No
Land Use Map	No
Staff/Department	
Building Code Official	No
Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	Yes
Emergency Management Director	Yes
NFIP Floodplain Administrator	No
Emergency Response Team	No
Hazardous Materials Expert	No
Local Emergency Planning Committee	Yes
County Emergency Management Commission	No
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	Yes
Local Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.)	Yes

Capabilities	Status, Including Date of Document or Policy
Local Funding Availability	
Apply for Community Development Block Grants	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	No
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	
Ability to incur debt through private activities	Yes
Withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire, 12/15/2025

2.2.2 Green City

Green City, Missouri, is a small town nestled in the northern part of Sullivan County, approximately 15 miles northeast of the county seat, Milan. Its location in this rural section of North Missouri places it amidst the rolling agricultural landscapes characteristic of the region. The town's grid pattern of streets is set at a diagonal to the roughly northeast-to-southwest alignment of the railroad tracks, reflecting their origins as a railroad town. While geographically small, its position within Sullivan County made it a vital point for trade and transportation in its early days.

The history of Green City begins in April 1880, when Sullivan County farmer Henry Pfeiffer commissioned surveyor Thomas J. Dockery to lay out the town in what was then a cornfield. The driving force behind its establishment was the Quincy, Missouri & Pacific Railroad, which laid tracks through the area in the early 1880s. A rail depot, built through local donations, quickly became the economic heart of the burgeoning community. Businesses, including a store and warehouse, soon followed, and S.H. Davis became the first postmaster, even moving a small building from the nearby village of Kiddville to serve as the first post office. Green City was officially incorporated on February 10, 1882.

Green City's early history was marked by rapid development, including the establishment of the Green City College in 1885, which provided both college preparatory and four-year collegiate programs. The town, like many in rural Missouri, faced challenges such as natural disasters, including a large tornado in 1918 that narrowly missed the town but devastated surrounding rural areas. A significant fire in 1931 destroyed much of the east side of the town square. Notably, the town also gained a footnote in American criminal history with the apprehension of notorious bank robber and "gangster" Fred "Killer" Burke near Green City in March 1933, after he had been living there under an assumed name. Though the railroad depot ceased operations in 1950, Green City continues today as a close-knit rural community.

Mitigation Initiatives/Capabilities

The city has a few ordinances in place, those ordinances address planning and zoning, along with dangerous and dilapidated buildings through building codes. The city does employ a code enforcement official to enforce building codes, nuisances, and dangerous and dilapidated buildings. The city does have some land use restrictions regarding new construction.

The city has had limited mitigation activities due to limited capabilities. The city expanding its mitigation capabilities is unlikely, due to limited capabilities, both financially and in terms of staff

availability.

Table 2.9. Green City Mitigation Capabilities

Capabilities	Status, Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	No
Builder's Plan	No
Capital Improvement Plan	No
City Emergency Operations Plan	No
County Emergency Operations Plan	Yes
Local Recovery Plan	No
County Recovery Plan	No
City Mitigation Plan	No
County Mitigation Plan	Yes
Debris Management Plan	No
Economic Development Plan	No
Transportation Plan	No
Land-use Plan	No
Flood Mitigation Assistance (FMA) Plan	No
Watershed Plan	No
Firewise or other fire mitigation plan	No
School Mitigation Plan	No
Critical Facilities Plan	No
Policies/Ordinance	
Zoning Ordinance	Yes, 7/23
Building Code	Yes, 7/23
Floodplain Ordinance	No
Subdivision Ordinance	Yes, 7/23
Tree Trimming Ordinance	Yes, 7/23
Nuisance Ordinance	No
Stormwater Ordinance	No
Drainage Ordinance	No
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
Landscape Ordinance	Yes, 7/23
Seismic Construction Ordinance	No
Program	
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	No
Hazard Awareness Program	No
National Flood Insurance Program (NFIP)	No
NFIP Community Rating System (CRS) program	No
National Weather Service (NWS) Storm Ready	No
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	No
Economic Development Program	No
Land Use Program	No
Public Education/Awareness	No
Property Acquisition	No

Planning/Zoning Boards	No
Stream Maintenance Program	No
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	No
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	No
Hazard Analysis/Risk Assessment (County)	No
Flood Insurance Maps	No
FEMA Flood Insurance Study (Detailed)	No
Evacuation Route Map	No
Critical Facilities Inventory	No
Vulnerable Population Inventory	No
Land Use Map	No
Staff/Department	
Building Code Official	Yes
Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	No
Emergency Management Director	No
NFIP Floodplain Administrator	No
Emergency Response Team	No
Hazardous Materials Expert	No
Local Emergency Planning Committee	No
County Emergency Management Commission	No
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
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, etc.)	Yes
Local Funding Availability	
Apply for Community Development Block	Yes
Fund projects through Capital	Unknown
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Unknown
Ability to incur debt through general obligation bonds	Unknown
Ability to incur debt through special tax bonds	Unknown
Ability to incur debt through private activities	No
Withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire, 11/2025

2.2.3 Greencastle

Greencastle, Missouri, is a small municipality located in the central-eastern part of Sullivan County, approximately 10 miles east of the county seat, Milan, and a short distance west of the Adair County line. Situated within the typical rolling agricultural terrain of North Missouri, its precise location was influenced by early settlement patterns and, significantly, the eventual arrival of railroad infrastructure. This positioning allowed Greencastle to serve as a local service center for the surrounding farming community.

The history of Greencastle predates its formal incorporation, with the first permanent home built around 1853 by Marion Sanders. A Methodist Episcopal Church was organized as early as 1845 just south of the town's later site. The town's plat was officially surveyed on March 12, 1857, and it quickly established essential services like a post office and the first general store. Greencastle was formally incorporated on August 8, 1881, reflecting its growing status as a community.

A pivotal moment in Greencastle's development was the construction of a depot for the Quincy, Missouri, and Pacific Railroad in 1883. The railroad transformed Greencastle into a transportation hub, facilitating the shipment of agricultural products and the influx of goods, and spurring further economic activity, including the establishment of a gristmill in 1879 and a creamery in 1885. While it experienced a population peak in the early 20th century, like many rural towns, Greencastle has seen its population decline in later decades, but it continues to function as a small, close-knit community in Sullivan County.

Mitigation Initiatives/Capabilities

The city has a few ordinances in place, but the ordinances it does have address nuisances and landscape requirements. These ordinances provide capabilities to address dangerous and dilapidated buildings.

The city has had limited mitigation activities due to limited capabilities. The city expanding its mitigation capabilities is unlikely due to limited capabilities, both financially and in terms of staff availability.

Table 2.10. Greencastle Mitigation Capabilities

Capabilities	Status, Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	County plan
Builder's Plan	No
Capital Improvement Plan	No
City Emergency Operations Plan	Yes
County Emergency Operations Plan	Yes
Local Recovery Plan	No
County Recovery Plan	No
City Mitigation Plan	No
County Mitigation Plan	Yes
Debris Management Plan	No
Economic Development Plan	County
Transportation Plan	No
Land-use Plan	NA

Flood Mitigation Assistance (FMA) Plan	No
Watershed Plan	No
Firewise or other fire mitigation plan	MDC
School Mitigation Plan	NA
Critical Facilities Plan	NA
Policies/Ordinance	
Zoning Ordinance	No
Building Code	No
Floodplain Ordinance	No
Subdivision Ordinance	Yes
Tree Trimming Ordinance	No
Nuisance Ordinance	Yes
Stormwater Ordinance	No
Drainage Ordinance	No
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
Landscape Ordinance	Yes
Seismic Construction Ordinance	No
Program	
Zoning/Land Use Restrictions	No
Codes Building Site/Design	Yes
Hazard Awareness Program	Under county plan
National Flood Insurance Program (NFIP)	Under county plan
NFIP Community Rating System (CRS) program	No
National Weather Service (NWS) Storm Ready	Yes
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	N/a
ISO Fire Rating	6
Economic Development Program	Green hills programs as available
Land Use Program	N/a
Public Education/Awareness	Yes
Property Acquisition	No
Planning/Zoning Boards	No
Stream Maintenance Program	No
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	County
Mutual Aid Agreements	Yes, water/sewer
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	No
Hazard Analysis/Risk Assessment (County)	Yes- county plan
Flood Insurance Maps	County plan
FEMA Flood Insurance Study (Detailed)	County plan
Evacuation Route Map	County plan
Critical Facilities Inventory	No
Vulnerable Population Inventory	No
Land Use Map	No
Staff/Department	
Building Code Official	N/a
Building Inspector	N/a
Mapping Specialist (GIS)	N/a
Engineer	No
Development Planner	No

Public Works Official	Yes- water/sewer part time
Emergency Management Director	Yes- fire chief- part time
NFIP Floodplain Administrator	No
Emergency Response Team	No
Hazardous Materials Expert	No
Local Emergency Planning Committee	County organization
County Emergency Management Commission	County
Sanitation Department	No
Transportation Department	No
Economic Development Department	No
Housing Department	No
Historic Preservation	No
Non-Governmental Organizations (NGOs)	
American Red Cross	Yes
Salvation Army	Yes
Veterans Groups	No
Local Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.)	Lions club
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	No
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	No
Withhold spending in hazard prone areas	No

Source: Local questionnaire 11/2025

2.2.4 City of Milan

Milan, Missouri, serves as the county seat of Sullivan County, located in the north-central part of the state. It is strategically positioned at the intersection of Missouri Routes 5 and 6, making it a central point for travel within the county. The city is situated at approximately 40°12'12"N latitude and 93°07'28"W longitude. Locust Creek flows past the west side of the city, and the Locust Creek Conservation Area is located a few miles to the southwest, highlighting its setting within a predominantly rural and agricultural region of northern Missouri.

Milan, the county seat of Sullivan County, Missouri, was laid out in 1845 and is believed to be named after Milan, Italy. Its strategic importance was recognized early on, leading to the establishment of a post office in 1847. The town's early growth was intrinsically linked to its role as the administrative center of Sullivan County; the first county courts met in Milan at the home of A.C. Hill in May 1845. The first courthouse was erected in 1847, solidifying its status as the hub for local governance and legal proceedings.

Milan has experienced several significant historical developments, including its official incorporation by the state legislature on February 9, 1859. The town also saw the construction of a second courthouse, the first brick structure in Milan, between 1857 and 1858, built on the site of an old V-

shaped Indian mound which was leveled for the public square. This second courthouse was unfortunately destroyed by fire in 1908, leading to the construction of the present Art Deco-style courthouse in 1939. Over the years, Milan has maintained its role as a vital service and commercial center for the surrounding agricultural community, with its history reflecting the broader trends of rural development in northern Missouri.

Mitigation Initiatives/Capabilities

The city has a few ordinances in place, those ordinances address planning and zoning, along with dangerous and dilapidated buildings through building codes.

The city has had limited mitigation activities due to limited capabilities. The city expanding its mitigation capabilities is unlikely, due to limited capabilities, both financially and in terms of staff availability.

Table 2.11. Milan Mitigation Capabilities

Capabilities	Status, Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	Unknown
Builder's Plan	NA
Capital Improvement Plan	No
City Emergency Operations Plan	Unknown
County Emergency Operations Plan	Unknown
Local Recovery Plan	Unknown
County Recovery Plan	NA
City Mitigation Plan	Unknown
County Mitigation Plan	Yes
Debris Management Plan	Unknown
Economic Development Plan	Unknown
Transportation Plan	Unknown
Land-use Plan	NA
Flood Mitigation Assistance (FMA) Plan	NA
Watershed Plan	NA
Firewise or other fire mitigation plan	Unknown
School Mitigation Plan	NA
Critical Facilities Plan	NA
Policies/Ordinance	
Zoning Ordinance	Yes
Building Code	Yes
Floodplain Ordinance	Yes
Subdivision Ordinance	NA
Tree Trimming Ordinance	Yes
Nuisance Ordinance	Yes
Stormwater Ordinance	Yes
Drainage Ordinance	NA
Site Plan Review Requirements	NA
Historic Preservation Ordinance	NA
Landscape Ordinance	NA
Seismic Construction Ordinance	NA
Program	
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	Yes

Hazard Awareness Program	NA
National Flood Insurance Program (NFIP)	Yes
NFIP Community Rating System (CRS) program	Yes
National Weather Service (NWS) Storm Ready	NA
Firewise Community Certification	Unknown
Building Code Effectiveness Grading (BCEGs)	Unknown
ISO Fire Rating	Unknown
Economic Development Program	Unknown
Land Use Program	Unknown
Public Education/Awareness	Unknown
Property Acquisition	Unknown
Planning/Zoning Boards	Yes
Stream Maintenance Program	NA
Tree Trimming Program	NA
Engineering Studies for Streams (Local/County/Regional)	NA
Mutual Aid Agreements	Yes
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	NA
Hazard Analysis/Risk Assessment (County)	NA
Flood Insurance Maps	No
FEMA Flood Insurance Study (Detailed)	No
Evacuation Route Map	NA
Critical Facilities Inventory	No
Vulnerable Population Inventory	No
Land Use Map	NA
Staff/Department	
Building Code Official	No
Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	Contracted
Development Planner	No
Public Works Official	-
Emergency Management Director	No
NFIP Floodplain Administrator	Yes
Emergency Response Team	Yes
Hazardous Materials Expert	No
Local Emergency Planning Committee	No
County Emergency Management Commission	No
Sanitation Department	-
Transportation Department	-
Economic Development Department	No
Housing Department	No
Historic Preservation	No
Non-Governmental Organizations (NGOs)	
American Red Cross	No
Salvation Army	No
Veterans Groups	Yes
Local Environmental Organization	No
Homeowner Associations	No
Neighborhood 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	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	-
Withhold spending in hazard prone areas	-

Source: Data Collection Questionnaire 12/2025

2.2.5 Village of Pollock

Pollock, Missouri, is a village located in the north-central part of Sullivan County, in northern Missouri. Its geographic coordinates are approximately 40°21'30"N latitude and 93°05'01"W longitude. The community is situated on Missouri Route M, about one mile east of Missouri Route 5, and is roughly two miles south of the Sullivan-Putnam county line. A section of the Burlington and Quincy Railroad also passes by the west side of the town, contributing to its rural, agricultural setting.

Pollock, Missouri, was established in July 1873 by H.F. Warner and William Lane, initially comprising thirty-two blocks. Its founding came during a period of significant expansion in northern Missouri, driven largely by agricultural development and the burgeoning railroad industry. The strategic location near a section of the Burlington and Quincy Railroad likely played a crucial role in its establishment, as rail access was vital for transporting goods and connecting to larger markets. In 1876, the town expanded with an additional fourteen blocks to the south through what was known as Godfrey's Addition, indicating early growth and a hopeful outlook for the community.

Like many small towns in Sullivan County, Pollock's history is deeply intertwined with the rural landscape and the lives of its inhabitants who primarily engaged in farming. While no single dramatic event defines its past, its continued existence for over 150 years speaks to the resilience of these small, close-knit communities. The village has maintained its quiet, rural character, serving as a local hub for residents in the surrounding agricultural areas throughout its history.

Mitigation Initiatives/Capabilities

The village has a few ordinances in place, existing ordinances mainly address, debris on properties, health safety, and fire hazards as well as dangerous and dilapidated buildings through building codes.

The village has had limited mitigation activities due to limited capabilities. The village expanding its mitigation capabilities is unlikely, due to the limited capabilities, both financially and in terms of staff availability.

Table 2.12. Pollock Mitigation Capabilities

Capabilities	Status, Including Date of Document or Policy
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Planning Capabilities	
Comprehensive Plan	No
Builder's Plan	No
Capital Improvement Plan	No
City Emergency Operations Plan	No
County Emergency Operations Plan	Yes
Local Recovery Plan	No
County Recovery Plan	No
City Mitigation Plan	No
County Mitigation Plan	Yes
Debris Management Plan	No
Economic Development Plan	No
Transportation Plan	No
Land-use Plan	No
Flood Mitigation Assistance (FMA) Plan	No
Watershed Plan	No
Firewise or other fire mitigation plan	No
School Mitigation Plan	NA
Critical Facilities Plan	No
Policies/Ordinance	
Zoning Ordinance	No
Building Code	No
Floodplain Ordinance	No
Subdivision Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	Yes, 2014
Stormwater Ordinance	No
Drainage Ordinance	No
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
Landscape Ordinance	No
Seismic Construction Ordinance	No
Program	
Zoning/Land Use Restrictions	No
Codes Building Site/Design	Yes, 2025
Hazard Awareness Program	No
National Flood Insurance Program (NFIP)	No
NFIP Community Rating System (CRS) program	No
National Weather Service (NWS) Storm Ready	No
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	No
Economic Development Program	No
Land Use Program	No
Public Education/Awareness	No
Property Acquisition	No
Planning/Zoning Boards	No
Stream Maintenance Program	No
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	No
Studies/Reports/Maps	

Hazard Analysis/Risk Assessment (Local)	No
Hazard Analysis/Risk Assessment (County)	No
Flood Insurance Maps	No
FEMA Flood Insurance Study (Detailed)	No
Evacuation Route Map	No
Critical Facilities Inventory	No
Vulnerable Population Inventory	No
Land Use Map	No
Staff/Department	
Building Code Official	Code enforcement
Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	No
Emergency Management Director	No
NFIP Floodplain Administrator	No
Emergency Response Team	No
Hazardous Materials Expert	No
Local Emergency Planning Committee	No
County Emergency Management Commission	No
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
Homeowner Associations	No
Neighborhood 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	No
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	No
Impact fees for new development	No
Ability to incur debt through general obligation bonds	Yes, maybe
Ability to incur debt through special tax bonds	Yes, maybe
Ability to incur debt through private activities	No
Withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire, 12/4/2025

2.2.6 Summary of Jurisdictional Capabilities

Table 2.13. Mitigation Capabilities Summary Table

CAPABILITIES	Uninc. Sullivan County	City of Green City	City of Greencastle	City of Milan	Village of Pollock
Planning Capabilities					
Comprehensive Plan	Unknown	No	Yes	Yes, 2001	No
Builder's Plan	Unknown	No	No	NA	No
Capital Improvement Plan	Unknown	No	No	No	No
City Emergency Operations Plan	NA	No	Yes	Unknown	No
County Emergency Operations Plan	Yes	Yes	Yes	Yes	Yes
Local Recovery Plan	No	No	No	No	No
County Recovery Plan	No	No	No	NA	No
City Mitigation Plan	NA	No	No	Yes	No
County Mitigation Plan	Yes	Yes	Yes	Yes	Yes
Debris Management Plan	No	No	No	No	No
Economic Development Plan	No	No	Yes	No	No
Transportation Plan	No	No	No	No	No
Land-use Plan	Unknown	No	NA	NA	No
Flood Mitigation Assistance (FMA) Plan	Unknown	No	No	NA	No
Watershed Plan	No	No	No	NA	No
Firewise or other fire mitigation plan	No	No	MDC	Yes	No
School Mitigation Plan	No	No	NA	NA	NA
Critical Facilities Plan	Unknown	No	NA	NA	No
Policies/Ordinance					
Zoning Ordinance	Unknown	Yes	No	Yes	No
Building Code	Unknown	Yes	No	Yes	No
Floodplain Ordinance	No	No	No	Yes	No
Subdivision Ordinance	Unknown	Yes	Yes	NA	No
Tree Trimming Ordinance	Yes	Yes	No	NA	No
Nuisance Ordinance	Unknown	No	Yes	NA	Yes
Stormwater Ordinance	Unknown	No	No	No	No
Drainage Ordinance	Unknown	No	No	No	No
Site Plan Review Requirements	Unknown	No	No	Yes	No

CAPABILITIES	Uninc. Sullivan County	City of Green City	City of Greencastle	City of Milan	Village of Pollock
Historic Preservation Ordinance	Unknown	No	No	No	No
Landscape Ordinance	Unknown	Yes	Yes	NA	No
Seismic Construction Ordinance	Unknown	No	No	NA	No
Program					
Zoning/Land Use Restrictions	No	Yes	No	No	No
Codes Building Site/Design	Unknown	No	Yes	No	Yes, 2025
Hazard Awareness Program	Unknown	No	Yes	NA	No
National Flood Insurance Program (NFIP)	No	No	Yes	Yes	No
NFIP Community Rating System (CRS) program	No	No	No	NA	No
National Weather Service (NWS) Storm Ready	No	No	Yes	No	No
Firewise Community Certification	No	No	No	No	No
Building Code Effectiveness Grading (BCEGs)	No	No	N/a	No	No
ISO Fire Rating	NA	No	6	5	No
Economic Development Program	No	No	Yes	No	No
Land Use Program	No	No	N/a	NA	No
Public Education/Awareness	No	No	Yes	No	No
Property Acquisition	No	No	No	NA	No
Planning/Zoning Boards	No	No	No	NA	No
Stream Maintenance Program	No	No	No	NA	No
Tree Trimming Program	Yes	No	No	NA	No
Engineering Studies for Streams (Local/County/Regional)	No	No	Yes	NA	No
Mutual Aid Agreements	Yes	No	Yes	Yes	No
Studies/Reports/Maps					
Hazard Analysis/Risk Assessment (Local)	No	No	No	NA	No

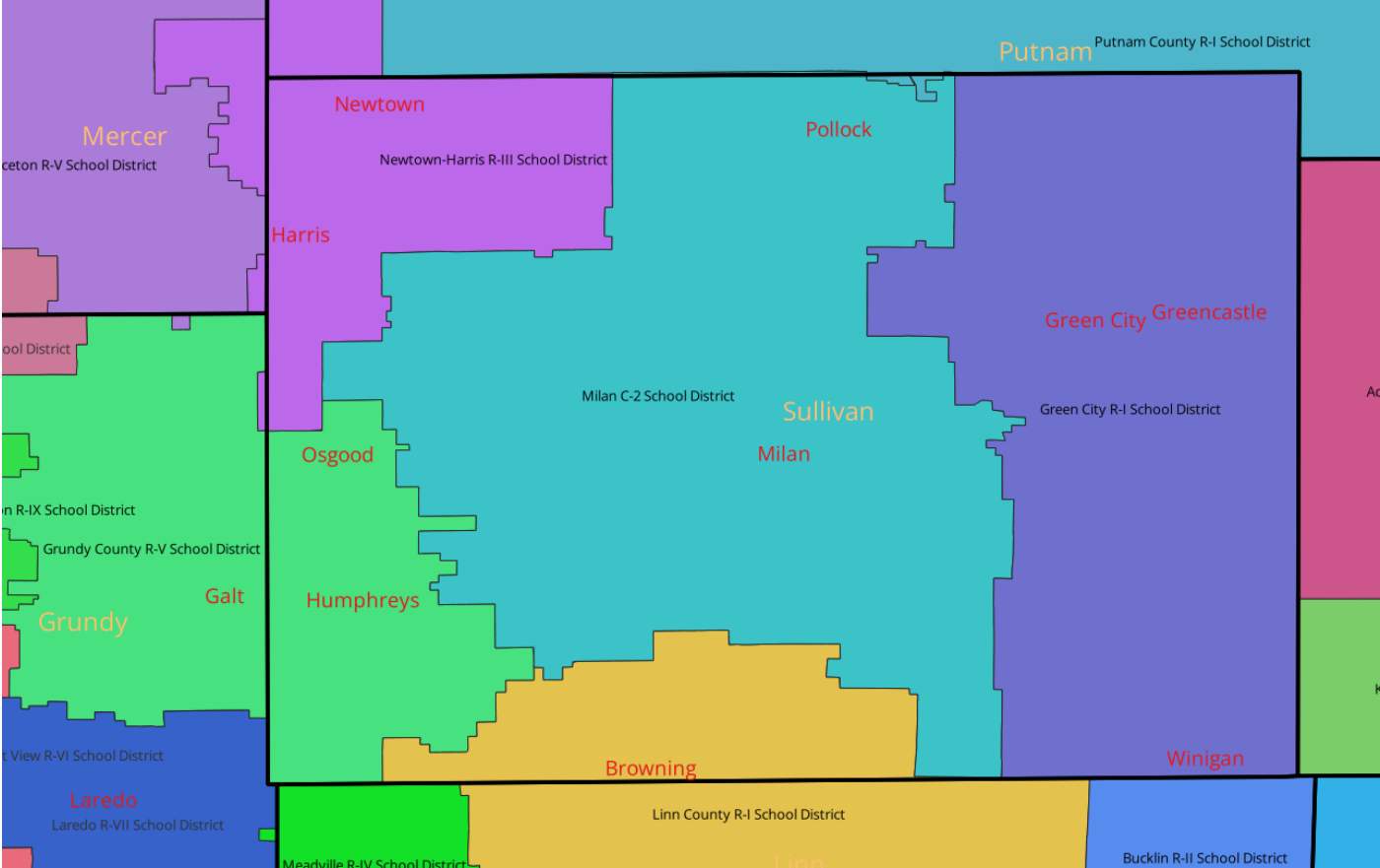
CAPABILITIES	Uninc. Sullivan County	City of Green City	City of Greencastle	City of Milan	Village of Pollock
Hazard Analysis/Risk Assessment (County)	Yes	No	Yes	NA	No
Flood Insurance Maps	No	No	Yes	No	No
FEMA Flood Insurance Study (Detailed)	No	No	Yes	No	No
Evacuation Route Map	No	No	Yes	NA	No
Critical Facilities Inventory	No	No	No	No	No
Vulnerable Population Inventory	No	No	No	No	No
Staff/Department					
Land Use Map	No	No	No	NA	No
Building Code Official	No	Yes	N/a	No	Yes
Building Inspector	No	No	N/a	No	No
Mapping Specialist (GIS)	No	No	N/a	No	No
Engineer	No	No	No	No	No
Development Planner	Yes	No	No	No	No
Public Works Official	Yes	No	Yes	Yes	No
Emergency Management Director	No	No	Yes	Yes	No
NFIP Floodplain Administrator	No	No	No	No	No
Emergency Response Team	No	No	No	NA	No
Hazardous Materials Expert	Yes	No	No	NA	No
Local Emergency Planning Committee	No	No	Yes	Yes	No
County Emergency Management Commission	No	No	No	No	No
Sanitation Department	No	No	No	No	No
Transportation Department	No	No	No	Yes	No
Economic Development Department	No	No	No	No	No
Housing Department	No	No	No	No	No
Historic Preservation	No	No	No	No	No
Non-Governmental Organizations (NGOs)					
American Red Cross	No	No	Yes	No	No
Salvation Army	No	No	Yes	No	No
Veterans Groups	Yes	No	No	Yes	No
Local Environmental Organization	No	No	No	No	No

CAPABILITIES	Uninc. Sullivan County	City of Green City	City of Greencastle	City of Milan	Village of Pollock
Homeowner Associations	No	No	No	No	No
Neighborhood Associations	No	No	No	No	No
Chamber of Commerce	No	Yes	No	No	No
Community Organizations (Lions, Kiwanis, etc.)	Yes	Yes	Yes	Yes	No
Local Funding Availability					
Apply for Community Development Block Grants	Yes	Yes	Yes	Yes	Yes
Fund projects through Capital Improvements funding	Yes	Unknown	Yes	Yes	No
Authority to levy taxes for a specific purpose	Yes	Yes	Yes	Yes	Yes
Fees for water, sewer, gas, or electric services	No	Yes	Yes	Yes	No
Impact fees for new development	No	Unknown	No	Yes	No
Ability to incur debt through general obligation bonds	Yes	Unknown	Yes	Yes	Maybe
Ability to incur debt through special tax bonds		Unknown	Yes	Yes	Maybe
Ability to incur debt through private activities	Yes	No	No	No	No
Withhold spending in hazard prone areas	No	No	No	No	No

Source: Local questionnaires 12/2025

2.2.7 School District Profiles and Mitigation Capabilities

Figure 2.4 Map of Sullivan County School districts



Source: Missouri DESE GIS layer – 11/2025

Newtown-Harris R-II School District

Newtown-Harris R-II School district has facilities located at 306 North Main Street.

Table 2.14. Newtown-Harris R-II Buildings and Enrollment Data, 9/20/2025

District Name	Building Name	Building Enrollment
Newtown-Harris R-II	Elementary	41
	High	36
Total:		77

Source: <https://dese.mo.gov/school-data>, 11/30/2025

Table 2.15. Newtown Harris R-II Mitigation Capabilities

Capabilities	Status, Including Date of Document or Policy
Planning Elements	
Master Plan	No
Capital Improvement Plan	Yes – 9/2025
Emergency Plan	Yes – 9/2025

Weapons Policy	Yes – 3/2010
Personnel Resources	
Full-Time Building Official	Yes
Emergency Manager	Yes
Grant Writer	Yes
Public Information Officer	Yes
Financial Resources	
Capital improvements Project fund	Yes
Local Funds	Yes
General Obligation Bond	No
Special Tax Bonds	No
Private Activities/Donations	Yes
State and Federal Funds	Yes

Source : Data Collection Questionnaire 11/2025

The school conducts severe weather and evacuation drills. Each school building is equipped with a PA system used for emergency announcements and staff also receive alerts through internal radio and phone systems. The school buildings have a designated interior shelter area, while they do not meet FEMA standards, they do meet the state safety standards.

The school conducts regular maintenance to prevent wind and water damage due to natural hazards.

The district is governed by a Board of Education consisting of the Board President and six elected board members.

The district has done little to expand mitigation capabilities since the last plan update due to limited capabilities and has little planned in the way of expanding mitigation capabilities due to limited budget and resources.

Milan C-2 School District

Milan C-2 School District has facilities located at 373 S Market St. in Milan, Missouri.

Table 2.16. Milan C-2 School District Buildings and Enrollment Data, 9/20/2025

District Name	Building Name	Building Enrollment
Milan C-2	Elementary	428
	High	189
Total:		606

Source: https://dese.mo.gov/school-data_11/30/2025

Table 2.17. Milan C-2 School District

Capabilities	Status, Including Date of Document or Policy
Planning Elements	
Master Plan	Yes
Capital Improvement Plan	Yes – 8/2025
Emergency Plan	Yes – 8/2025
Weapons Policy	Yes – 8/2015
Personnel Resources	
Full-Time Building Official	Yes

Emergency Manager	Yes
Grant Writer	Yes
Public Information Officer	Yes
Financial Resources	
Capital improvements Project fund	Yes
Local Funds	No
General Obligation Bond	No
Special Tax Bonds	No
Private Activities/Donations	No
State and Federal Funds	Yes

Source : Data Collection Questionnaire 11/2025

The school conducts severe weather and evacuation drills. Each school building is equipped with a PA system used for emergency announcements and staff also receive alerts through internal radio and phone systems. The school buildings have a designated interior shelter area. These shelter areas do not meet FEMA standards.

The district is governed by a Board of Education consisting of the Board President and six elected board members.

The district has done little to expand mitigation capabilities since the last plan update due to limited capabilities and has little planned in the way of expanding mitigation capabilities due to limited budget and resources.

Green City R-I

Green City R-I School District has facilities located at 301 East St. in Green City, Missouri.

Table 2.18. Green City R-I School District Buildings and Enrollment Data, 9/20/2025

District Name	Building Name	Building Enrollment
Green City R-I	Elementary	156
	High	79
Total:		235

Source: <https://dese.mo.gov/school-data>, 11/30/2025

Table 2.19. Green City R-I Mitigation Capabilities

Capabilities	Status, Including Date of Document or Policy
Planning Elements	
Master Plan	Yes
Capital Improvement Plan	No
Emergency Plan	Yes – 2020
Weapons Policy	Yes – 2020
Personnel Resources	
Full-Time Building Official	Yes
Emergency Manager	Yes
Grant Writer	No
Public Information Officer	Yes
Financial Resources	
Capital improvements Project fund	Yes
Local Funds	Yes
General Obligation Bond	Yes – Voter Approval

Special Tax Bonds	Yes – Voter Approval
Private Activities/Donations	Yes
State and Federal Funds	Yes

Source : Data Collection Questionnaire 11/2025

The school conducts severe weather and evacuation drills. Each school building is equipped with a PA system used for emergency announcements and staff also receive alerts through internal radio and phone systems. The school buildings have a designated interior shelter area. These shelter areas do not meet FEMA standards.

The district is governed by a Board of Education consisting of the Board President and six elected board members.

The district has done little to expand mitigation capabilities since the last plan update due to limited capabilities and has little planned in the way of expanding mitigation capabilities due to limited budget and resources.

Table 2.20. Summary of Mitigation Capabilities, Sullivan County Schools

Capability	Newtown-Harris R-III	Milan C-2	Green City R-1
Planning Elements			
Master Plan	No	Yes	Yes
Capital Improvement Plan	Yes – 9/2025	Yes – 8/2025	no
Emergency Plan	Yes – 9/2025	Yes – 8/2025	Yes, 2020
Weapons Policy	Yes – 3/2010	Yes – 8/2015	Yes, 2020
Personnel Resources			
Full-Time Building Official	Yes	Yes	Yes
Emergency Manager	Yes	Yes	Yes
Grant Writer	Yes	Yes	no
Public Information Officer	Yes	Yes	Yes
Financial Resources			
Capital improvements Project fund	Yes	Yes	Yes
Local Funds	Yes	No	Yes
General Obligation Bond	No	No	Yes-voter approval
Special Tax Bonds	No	No	Yes – voter approval
Private Activities/Donations	Yes	No	Yes
State and Federal Funds	Yes	Yes	Yes
Other			
Public Education Programs	No	Yes	Yes
Privately or Self-Insured	Private	Private	Private
Fire Evacuation Training	Yes	Yes	Yes
Tornado Sheltering Exercises	Yes	Yes	Yes
Public Address/Emergency Alert System	Yes	Yes	Yes
NOAA Weather Radios	Yes	Yes	Yes
Lock-Down Security Training	Yes	Yes	Yes
Mitigation Programs	No	No	No
Tornado Shelter/Saferoom	No	No	Yes, not FEMA cert.
Campus Police	Yes/SRO POST certified	No	No

Source: Data Collection Questionnaires 12/2025

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

The goal of the risk assessment is to estimate the potential loss in 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.

A Multi-Jurisdictional Local Hazard Mitigation Plan was adopted in 2021. This risk assessment is an update to the risk assessment previously prepared.

The risk assessment for Sullivan County and participating jurisdictions followed the methodology described in the 2023 FEMA *Local Mitigation Planning Policy Guide*, which outlines the following risk assessment requirements:

1. Description of all natural hazards that can affect the jurisdictions.
2. Inclusion of information on location for each identified hazard.
3. Provision of the extent of the hazards that can affect the planning area.
4. Inclusion of information on previous hazard events for each hazard that affects the planning area.

This chapter is divided into four main parts:

- **Section 3.1 Hazard Identification** identifies the hazards that threaten the planning area and provides a factual basis for elimination of hazards from further consideration;
- **Section 3.2 Assets at Risk** provides the planning area’s total exposure to natural hazards, considering critical facilities and other community assets at risk;
- **Section 3.3 Land Use and Development** discusses development that has occurred since the last plan update and any increased or decreased risk that resulted. This section also discusses areas of planned future development and any implications on risk/vulnerability;
- **Section 3.4 Hazard Profiles and Vulnerability Analysis** provides more detailed information about the hazards impacting the planning area. For each hazard, there are three sections:

1. Hazard Profile provides a general description and discusses the threat to the planning area, the geographic location at risk, potential Strength/Magnitude/Extent, previous occurrences of hazard events, probability of future occurrence, risk summary by jurisdiction, impact of future development on the risk;
2. Vulnerability Assessment further defines and quantifies populations, buildings, critical facilities, and other community/school or special district assets at risk to natural hazards; and
3. Problem Statement briefly summarizes the problem and develops possible solutions.

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.

Natural hazards can be complex, occurring with a wide range of intensities. Some events are instantaneous and offer no window of warning, such as earthquakes. Some offer a short warning in which to alert the public to take actions, such as tornadoes or severe thunderstorms. Others occur less frequently and are typically more expensive, with some warning time to allow the public time to prepare for, such as flooding. The Sullivan County Hazard Mitigation Planning Committee has determined that natural hazards will be the sole focus of the plan. To that purpose, man-made phenomena such as war, chemical contamination, and other man-made hazards will be excluded from the plan.

Happenings such as those listed below, which occur in a populated area, are referred to as hazardous events. It is not until significant property damage and loss of life result from a natural hazard that the phenomena are classified as a natural disaster.

3.1.1 Review of Existing Mitigation Plans

The MPC previously developed a multi-jurisdictional Hazard Mitigation Plan Update approved in 2021. Grundy County.

Levee failure was excluded from the mitigation planning process as there are no mapped levees nor associated levee protected areas within or immediately upstream of Grundy County. Sinkholes were excluded from the plan as there are no known sinkholes in Grundy County.

3.1.2 Review Disaster Declaration History

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, There have been no federally declared disasters since the last plan update

Disaster Declarations may be granted when the severity and magnitude of an event surpasses the ability of the local government to respond and recover. Disaster assistance is supplemental and sequential. When the local government's capacity has been surpassed, a state disaster declaration may be issued, allowing for the provision of state assistance. If the disaster is so severe that both the local and state governments' capacities are exceeded; a federal emergency or disaster declaration may be issued allowing for the provision of federal assistance.

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

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

Present

Disaster Number	Description	Declaration Date Incident Period	Individual Assistance (IA) Public Assistance (PA)
372	Severe Storm	4/19/1973	N/A
995	Flood	6/10/1993-10/25/1993	IA & PA
1054	Severe Storm	5/13/1995-6/23/1995	N/A
1403	Severe Ice Storm	1/29/2002-2/13/2002	IA & PA
1412	Severe Storm	4/24/2002-6/10/2002	PA
1524	Severe Storm	5/18/2004-5/31/2004	IA
1708	Severe Storm	5/5/2007-5/18/2007	IA & PA
1736	Missouri Severe Winter Storms	12/8/2007 – 12/15/2007	PA
1773	Severe Storm	6/1/2008-8/13/2008	IA & PA
1809	Severe Storm	9/11/2008-9/24/2008	IA & PA
1934	Severe Storm	6/12/2010-7/31/2012	IA & PA
1961	Severe Storm	1/31/2011-2/5/2011	IA & PA
3017	Drought	9/24/1976	PA
3232	Hurricane Katrina Evacuation	8/29/2005-10/1/2005	PA
3281	Severe Ice Storm	12/8/2007-12/15/2007	IA & PA
3303	Severe Ice Storm	1/26/2009-1/28/2009	IA & PA
3317	Severe Storm	1/31/2011-2/5/2011	IA & PA
4200	Severe Storms, Tornadoes, Straight-Line Wind, Flooding	9/9/2014-9/11/2014	PA
4238	Severe Storm	5/15/2015-7/27/2015	IA & PA
4451	Severe Storm	4/29/2019-7/5/2019	IA & PA
4490	Biological	1/20/2020-5/11/2023	IA & PA

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

3.1.3 Research Additional Sources

List the additional sources of data on locations and past impacts of hazards in the planning area:

- Missouri Hazard Mitigation Plans (2010, 2013, 2018, and 2023)
- Previously approved planning area Hazard Mitigation Plan (May 2021)
- Federal Emergency Management Agency (FEMA)
- Missouri Department of Natural Resources
- National Drought Mitigation Center Drought Reporter
- US Department of Agriculture's (USDA) Risk Management Agency Crop Insurance

Statistics

- National Agricultural Statistics Service (Agriculture production/losses)
- Data Collection Questionnaires completed by each jurisdiction
- State of Missouri GIS data
- Environmental Protection Agency
- Flood Insurance Administration
- Hazards US (Hazus)
- Missouri Department of Transportation
- Missouri Division of Fire Marshal Safety
- Missouri Public Service Commission
- National Fire Incident Reporting System (NFIRS)
- National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information (NCEI);
- Sullivan County and local Comprehensive Plans to the extent available
- Sullivan County Emergency Management
- Sullivan County Flood Insurance Rate Map, FEMA
- Flood Insurance Study, FEMA
- SILVIS Lab, Department of Forest Ecology and Management, University of Wisconsin
- U.S. Army Corps of Engineers
- U.S. Department of Transportation
- United States Geological Survey (USGS)
- Various articles and publications available on the internet; any such articles or publications will be cited in the plan where applicable.

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

After reviewing the hazards in the 2023 Missouri State Hazard Mitigation Plan as well as the disaster declaration history, the HMPC agreed on 9 natural hazards that significantly affect the planning area. These hazards are listed below in Table 3.2 with an “X” indicating the affected jurisdictions. Each of these hazards is profiled in further detail in the next section.

Levee Failure was omitted because there are no levees in the planning area and no areas of the planning area are in a levee protected location. Land Subsidence/Sinkholes were omitted because there are no known sinkholes in the planning area.

Table 3.2. Hazards Identified for Each Jurisdiction

Jurisdiction	Dam Failure	Drought	Earthquake	Extreme Temperatures	Flooding (River and Flash)	Severe Winter Weather	Thunderstorm/Lightning/ Hail/High Wind	Tornado	Wildfire
Sullivan County	X	X	X	X	X	X	X	X	X
City of Milan	-	X	X	X	X	X	X	X	X
City of Green City	X	X	X	X	X	X	X	X	X
City of Green Castle	X	X	X	X	X	X	X	X	X
Village of Pollock	X	X	X	X	X	X	X	X	X
Milan C-2			X	X	X	X	X	X	
Green City R-I			X	X	X	X	X	X	
Newtown Harris R-III			X	X	X	X	X	X	

3.1.5 Multi-Jurisdictional Risk Assessment

For this multi-jurisdictional plan, the risks are assessed for each jurisdiction where they deviate from the risks facing the entire planning area. The planning area is fairly uniform, in terms of climate and topography, as well as building construction characteristics. Accordingly, the geographic areas of occurrence for weather-related hazards do not vary greatly across the planning area for most hazards. Milan is slightly more urbanized within the planning area and has more assets that are vulnerable to the weather-related hazards and varied development trends impact the future vulnerability. Similarly, more rural areas have more assets (crops/livestock) that are vulnerable to animal/plant/crop disease. These differences are discussed in greater detail in the vulnerability sections of each hazard.

The hazards that vary across the planning area in terms of risk include dam failure, flash flood, and grass or wildland fire. The difference in hazards is explained in each hazard profile under a separate heading.

3.2 ASSETS AT RISK

This section assesses the population, structures, critical facilities and infrastructure, and other important assets in the planning area that may be at risk to natural hazards. **Table 3.3** shows the total population, building count, estimated value of buildings, estimated value of contents and estimated total exposure to parcels by jurisdiction.

3.2.1 Total Exposure of Population and Structures

For the 2023 State Plan, SEMA utilized a structure inventory dataset developed by the University of Missouri GIS Department (MSDIS) to determine the number of structures exposed to risks. MSDIS created a point and/or footprint dataset for every roof line in every county in the state of Missouri. This dataset is attributed with the type of structure such as Residential, Commercial, etc. This dataset, along with additional State Mitigation Planning Resources, is available on Google Drive in both GIS and Excel format and organized by County:

Unincorporated County and Incorporated Cities

The following three tables, population data is based on 2010 Census Bureau data. Building counts and building exposure values are based on parcel data developed by the State of Missouri Geographic Information Systems (GIS) database. This data, organized by County, is available on Google Drive through the link provided on the previous page. Contents exposure values were calculated by factoring a multiplier to the building exposure values based on usage type. The multipliers were derived from the Hazus and are defined below in Table 3.3. Land values have been purposely excluded from consideration because land remains following disasters, and subsequent market devaluations are frequently short term and difficult to quantify. Another reason for excluding land values is that state and federal disaster assistance programs generally do not address loss of land (other than crop insurance). It should be noted that the total valuation of buildings is based on county assessors' data which may not be current. In addition, government-owned properties are usually taxed differently or not at all, and so may not be an accurate representation of true value. Note that public school district assets and special districts assets are included in the total exposure tables assets by community and county.

Table 3.3 shows the total population, building count, estimated value of buildings, estimated value of contents and estimated total exposure to parcels for the unincorporated county and each incorporated city. For multi-county communities, the population and building data may include data on assets located outside the planning area. Table 3.4 that follows provides the building value exposures for the county and each city in the planning area broken down by usage type. Finally, Table 3.5 provides the building count total for the county and each city in the planning area broken out by building usage types (residential, commercial, industrial, and agricultural).

Table 3.3. Maximum Population and Building Exposure by Jurisdiction (\$ Values in Thousands)

Jurisdiction	2023 Annual Population Estimate	Building Count	Building Exposure (\$)	Contents Exposure (\$)	Total Exposure (\$)
Unincorporated Sullivan County	2,877	6545	\$190,724.78	\$109,753	\$300,478
City of Milan	1,883	747	\$108,135.30	\$63,497	\$171,632
City of Green City	560	324	\$40,952.19	\$22,001	\$62,953
City of Green Castle	331	102	\$13,529.31	\$7,961	\$21,490
City of Harris	0	39	\$4,298.24	\$2,254	\$6,552
City of Newtown	112	99	\$10,298.19	\$5,023	\$15,321
Village of Humphreys	121	63	\$9,759.75	\$3,808	\$13,568
Village of Pollock	19	46	\$5,588.26	\$3,012	\$8,600
Total	5,903	8019	\$383,286.02	\$217,309.00	\$609,762

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 6.0 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 (\$ Values in 1,000s)

Jurisdiction	Agricultural	Commercial	Education	Government	Industrial	Residential	Grand Total
Sullivan County	\$10,672.92	\$9,612.88	\$0	\$644.79	\$14,598.50	\$155,195.71	\$190,724.78
City of Milan	\$0	\$16,167.11	\$7,503.89	\$2,579.14	\$3,808.30	\$78,076.85	\$108,135.30
City of Green City	\$26.90	\$3,932.54	\$1,500.78	\$644.79	\$0	\$34,847.18	\$40,952.19
City of Greencastle	\$0	\$1,747.80	\$0	\$644.79	\$0	\$11,136.73	\$13,529.31
City of Newtown	\$62.08	\$1,310.85	\$1,500.78	\$0	\$0	\$7,424.49	\$10,298.19
Village of Humphreys	\$16.55	\$873.90	\$3,001.56	\$0	\$0	\$5,867.74	\$9,759.75
Village of Pollock	\$2.07	\$436.95	\$0	\$0	\$0	\$5,149.24	\$5,588.26
Total	\$10,795.00	\$34,300.50	\$13,507.00	\$4,513.50	\$18,406.80	\$307,876.67	\$389,399.47

Source: Missouri GIS Database, SEMA Mitigation Management Section

Table 3.5. Building Counts by Usage Type

Jurisdiction	Agriculture Counts	Commercial Counts	Education Counts	Government Counts	Industrial Counts	Residential Counts	Total
City of Milan	0	74	5	4	12	652	747
City of Green City	13	18	1	1	0	291	324
City of Greencastle	0	8	0	1	0	93	102
City of Newtown	30	6	1	0	0	62	99
Village of Humphreys	8	4	2	0	0	49	63

Village of Pollock	1	2	0	0	0	43	46
Unincorporated Sullivan	5,158	44	0	1	46	1,296	6,545
Totals	5,217	157	9	7	58	2,571	8,019

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

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

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

Public School District	Enrolment	Building Count	Building Exposure (\$)	Contents Exposure (\$)	Total Exposure (\$)
Green city R-I	264	1	\$14,705,255	\$3,457,250	\$18,162,505
Milan C-2	631	1	\$8,241,344	\$3,547,641	\$11,788,985
Newtown-Harris R-III	77	1	\$241,798,182	\$5,708,649	\$247,506,831

Source: [MCDS Portal | Missouri Department of Elementary and Secondary Education - MCDS \(mo.gov\)](#).

3.2.2 Critical and Essential Facilities and Infrastructure

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

Critical Facility: Those facilities essential in providing utility or direction either during the response to an emergency or during the recovery operation.

Essential Facility: Those facilities that if damaged, would have devastating impacts on disaster response and/or recovery.

High Potential Loss Facilities: Those facilities that would have a high loss or impact on the community.

Transportation and lifeline facilities: Those facilities and infrastructure critical to transportation, communications, and necessary utilities.

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

- Interview with County Emergency Management Director
- Interview with City Government Employees
- HAZUS
- Data Collection Questionnaires

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

Jurisdiction	Airport Facility	Bus Facility	Childcare Facility	Communications Tower	Electric Power Facility	Emergency Operations	Fire Service	Government	Housing	Shelters	Highway Bridge	Hospital/Health Care	Military	Natural Gas Facility	Nursing Homes	Police Station	Potable Water Facility	Rail	Sanitary Pump Stations	School Facilities	Stormwater Pump Stations	Tier II Chemical Facility	Wastewater Facility	TOTAL
Sullivan County				X	X	X	X	X	X		X						X	X	X				X	10
City of Milan		X	X	X		X	X	X	X	X	X	X			X	X	X		X	X		X	X	16
City of Green City		X	X			X	X	X	X	X					X		X		X	X			X	12
City of Green Castle									X	X	X													3
City of Harris									X	X	X													3
City of Newtown									X	X	X									X				4
Village of									X	X	X									X				4
Village of Pollock									X	X	X													3
Totals	0	2	2	0	0	2	3	3	8	7	7	1	0	0	2	1	3	1	3	4	0	1	3	55

Source: Missouri 2023 State Hazard Mitigation Plan and Hazard Mitigation Viewer; Data Collection Questionnaires; Hazus, etc.

The term “scour critical” refers to one of the database elements in the National Bridge Inventory. This element is quantified using a “scour index”, which is a number indicating the vulnerability of a bridge to scour during a flood. Bridges with a scour index between 1 and 3 are considered “scour critical”, or a bridge with a foundation determined to be unstable for the observed or evaluated scour condition.

The following figures (3.1 and 3.2) provide locations and conditions of the bridges in Sullivan County. There are currently 13 bridges in the County that would be considered scour critical. None of these bridges is located in an incorporated village or city, rather all are located within the unincorporated areas of Sullivan County.

Figure 3.1. Sullivan County Bridges

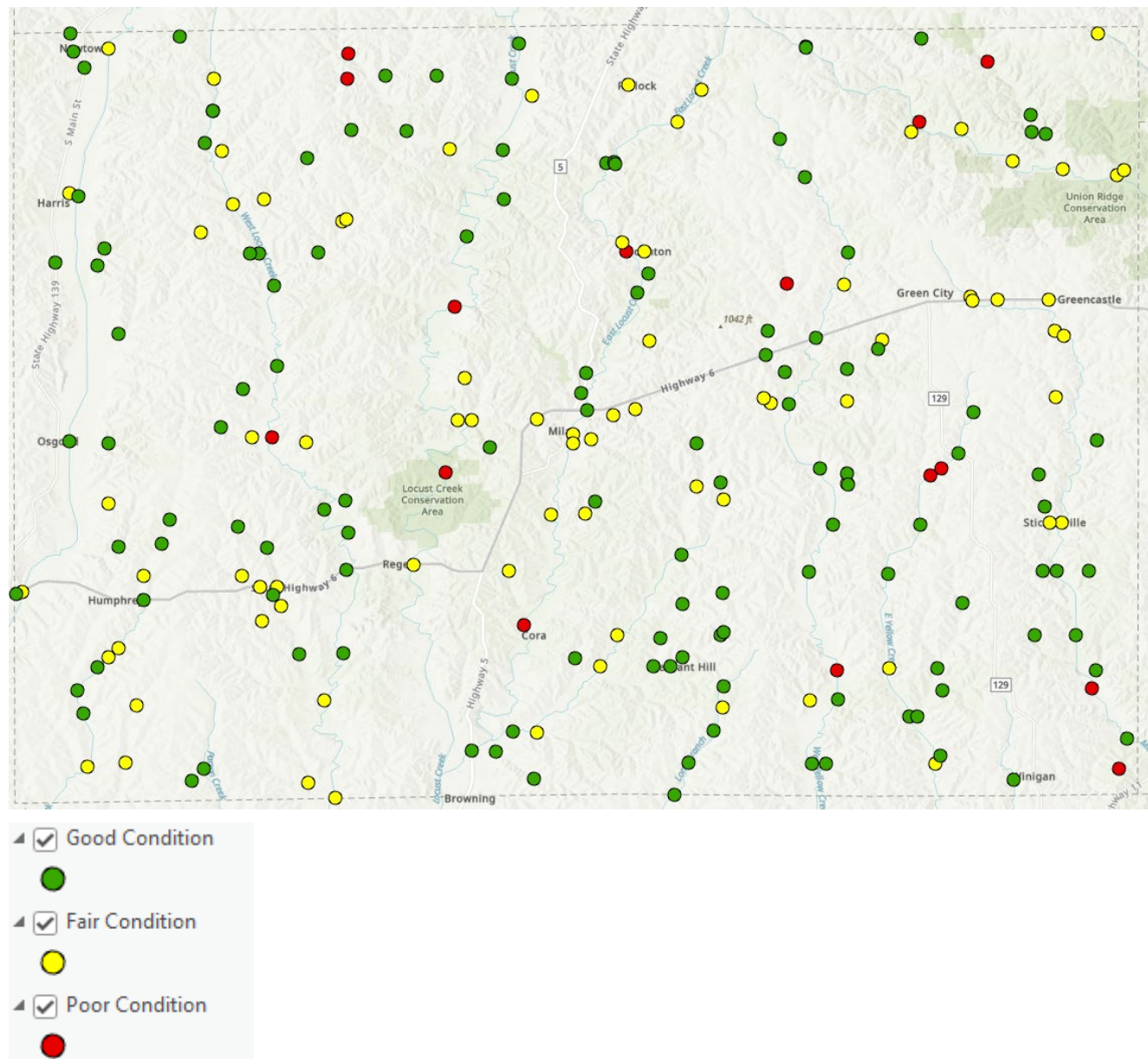
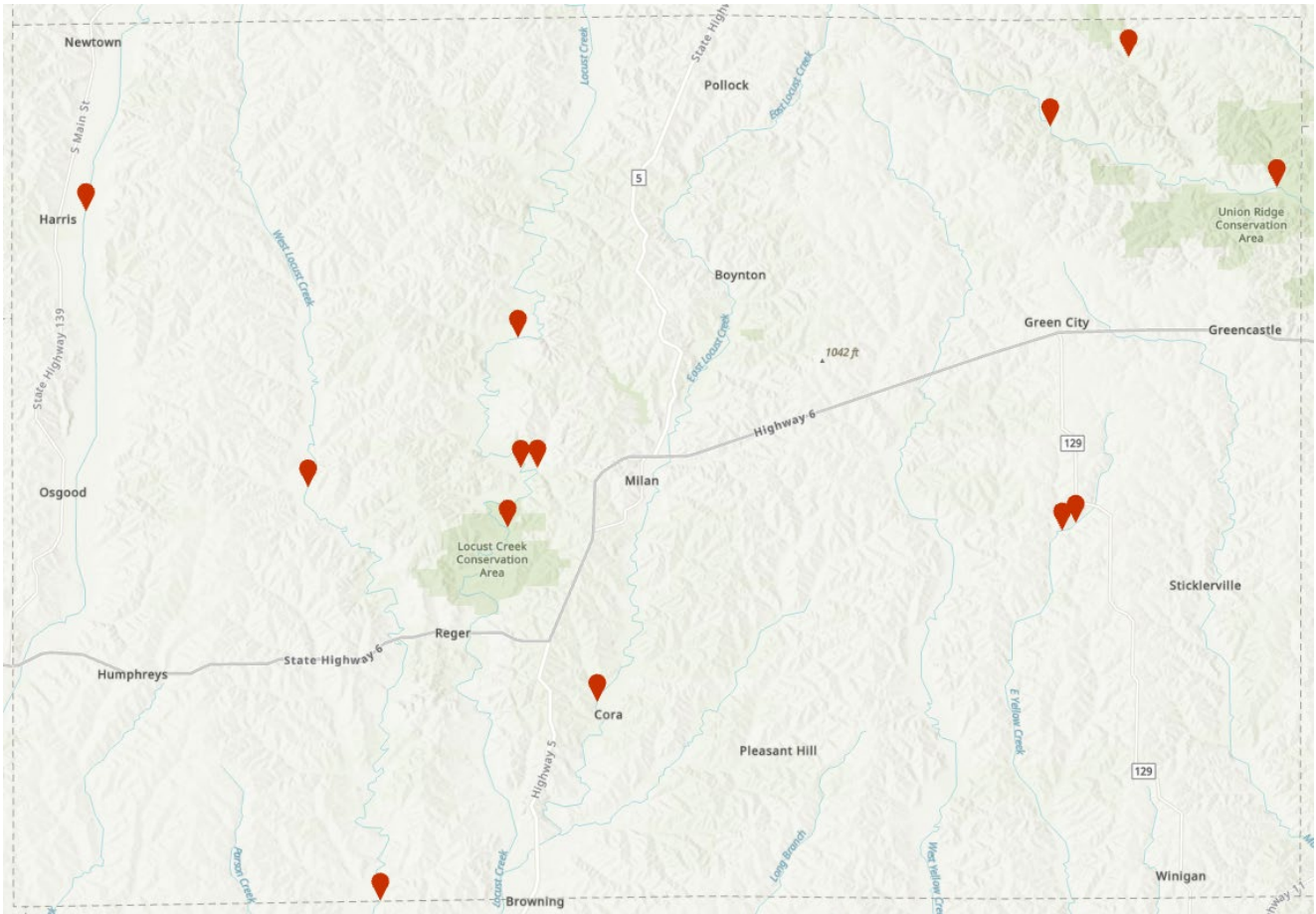


Figure 3.2. Sullivan County Structurally Deficient Bridges



3.2.3 Other Assets

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

- These types of resources warrant a greater degree of protection due to their unique and irreplaceable nature and contribution to the overall economy.
- Knowing about these resources in advance allows for consideration immediately following a hazard event, which is when the potential for damages is higher.
- The rules for reconstruction, restoration, rehabilitation, and/or replacement are often different for these types of designated resources.
- The presence of natural resources can reduce the impacts of future natural hazards, such as wetlands and riparian habitats which help absorb floodwaters.

Losses to economic assets like these (e.g., major employers or primary economic sectors) could have severe impacts on a community and its ability to recover from disaster.

Table 3.8. Threatened and Endangered Species in Sullivan County

Common Name	Scientific Name	Status
Mammals		
Gray Bat	Myotis grisescens	Endangered

Indiana Bat	Myotis sodalis	Endangered
Northern Long-eared Bat	Myotis septentrionalis	Endangered
Tricolored Bat	Perimyotis subflavus	Proposed Endangered
Fishes		
Topeka Shiner	Notropis topeka (=tristis)	Endangered
Insects		
Monarch Butterfly	Danaus plexippus	Proposed Threatened
Western Regal Fritillary	Argynnis idalia occidentalis	Proposed Threatened
Flowering Plants		
Eastern Prairie Fringed Orchid	Platanthera leucophaea	Threatened
Mead's Milkweed	Asclepias meadii	Threatened
Western Prairie Fringed Orchid	Platanthera praeclara	Threatened
Critical habitats		
There are no critical habitats at this location.		

Source: U.S. Fish and Wildlife Service, [Listed Species \(fws.gov\)](https://www.fws.gov/species/); also <https://ecos.fws.gov/ipac/>

Natural Resources: The Missouri Department of Conservation (MDC) provides a database of lands the MDC owns, leases, or manages for public use. The following table provides a list of the names and locations of parks and conservation areas in Grundy County.

Table 3.9. Parks in Sullivan County

Park / Conservation Area	Address	City
Rocky Ford Access	North of browning on Vernon Rd.	Browning
Locust Creek Conservation Area	South of Milan off highway 5	Milan
Elmwood Lake	North of Milan off highway 5	Milan
Sears Community Lake	Northeast of Milan off route RA	Milan
Union Ridge Conservation Area	North of Greencastle off route D	Greencastle
Dark Hollow Natural Area	North of Green City off highway 129	Green City
Morris Prairie CA	South of Unionville off route F	Unionville

Source: Missouri state parks website, online search engines – July 2025.

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

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

Property	Address	City	Date Listed
Camp Ground Church and Cemetery	W of Milan	Milan	9/23/1985
Green City Presbyterian Church	One East St.	Green City	2/10/2000
Green City Railroad Depot	202 Lincoln St.	Green City	1/15/1999
Henry Cemetery	E side of MO Z, approx 1 mi. S of	Reger	12/28/2005
Milan Railroad Depot	Jct. of E. Third St. and Short St.	Milan	1/4/1996
Quincy, Omaha and Kansas City Railroad	117 N. Water St.	Milan	1/7/1992

Source: National Register of Historic Places – Spreadsheet of NRHP Listed Properties

<https://www.nps.gov/subjects/nationalregister/data-downloads.htm>

Table 3.11. Major Non-Government Employers in Sullivan County

Employer Name	Main Locations	Product or Service	Employees
Smithfield Hog production	Milan	Food production	~1,5000

Source: Data Collection Questionnaires; local Economic Development Commissions

Agriculture: Agriculture plays an important role in the economy of Sullivan County. While exact employment numbers are not broken out by sector at the county level, the high number of farms (642) and the large share of land in agriculture (92%) suggest that a significant portion of the local workforce is tied to agriculture, either directly or indirectly.

Agriculture in Sullivan County is a cornerstone of the local economy as a major source of employment and business activity. It also is a driver of economic resilience and rural development.

Table 3.12. Economic Contribution of Missouri Agriculture and Forestry for Sullivan County

	Added Value (in \$million)	Output (in \$million)	Jobs Supported	Household Income Generated
Sullivan County	\$405.5	\$1,280.1	3,924	\$269.6 Million

Source: Missouri Department of agriculture

Table 3.13. Top crops in Sullivan County

Sullivan	Forage	Soybeans	Corn	Wheat	Corn for Silage
Acres	53,552	42,173	14,942	1,246	450

Source: 2022 USDA Census of Agriculture

Table 3.14. Top livestock by inventory in Sullivan County

Sullivan County	Hogs and Pigs	Cattle and Calves	Horses, Ponies, & Mules	Other animals	Poultry and Eggs	Sheep, goats, & wool
# Present	121,549	20,602	82	3	Not disclosed	Not disclosed

Figure 3.3. 2022 Census of Agriculture for Sullivan County (pg. 1)

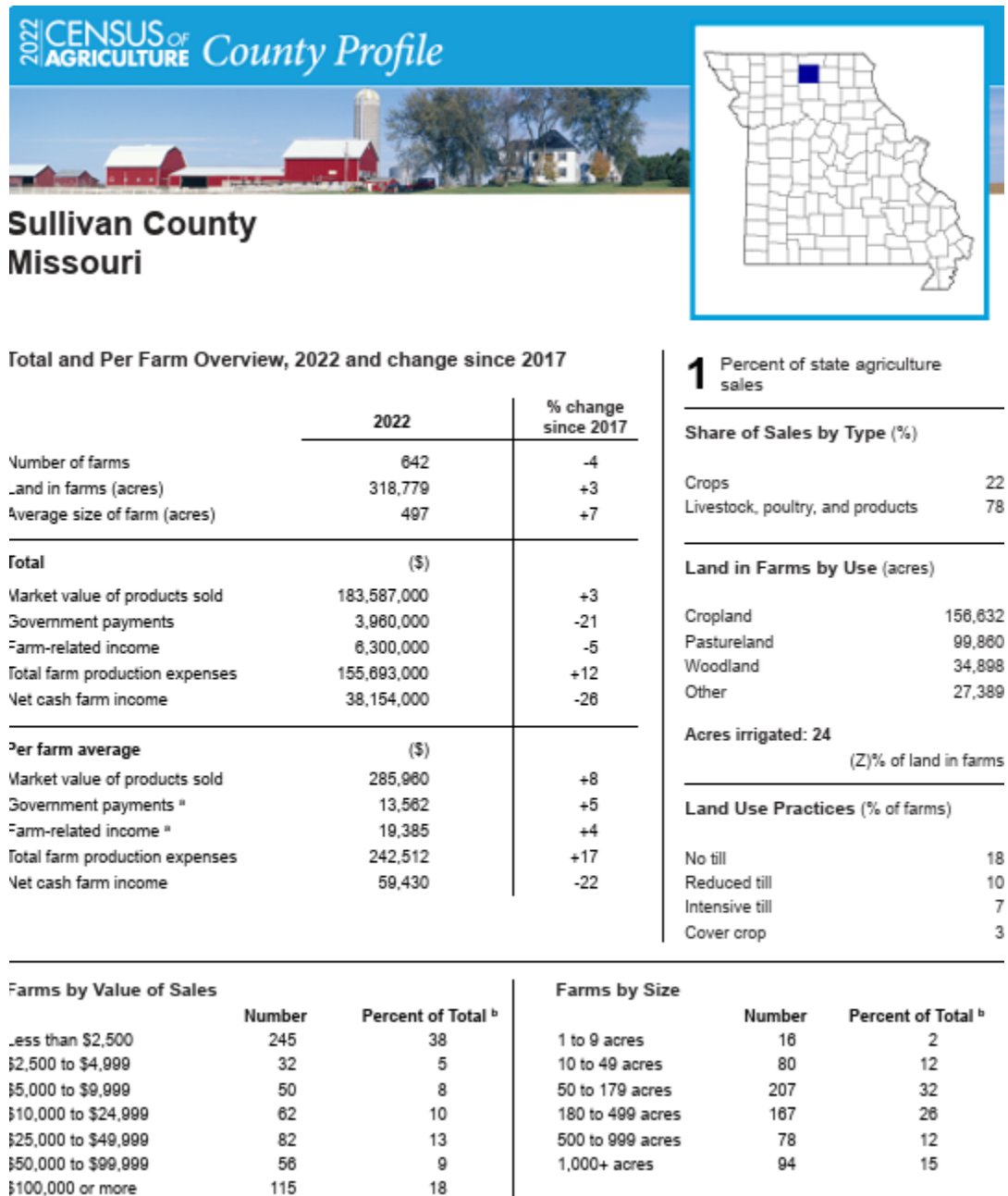


Figure 3.4. 2022 Census of Agriculture for Sullivan County (pg. 2)

Sullivan County
Missouri, 2022
Page 2

2022 CENSUS OF AGRICULTURE *County Profile*

Market Value of Agricultural Products Sold

	Sales (\$1,000)	Rank in State ^c	Counties Producing Item	Rank in U.S. ^c	Counties Producing Item
Total	183,587	27	114	911	3,078
Crops	41,264	63	114	1,422	3,074
Grains, oilseeds, dry beans, dry peas	33,528	64	109	1,104	2,917
Tobacco	-	-	2	-	267
Cotton and cottonseed	-	-	7	-	647
Vegetables, melons, potatoes, sweet potatoes	(D)	5	112	(D)	2,831
Fruits, tree nuts, berries	(D)	(D)	(D)	(D)	2,711
Nursery, greenhouse, floriculture, sod	(D)	(D)	(D)	(D)	0
Cultivated Christmas trees, short rotation woody crops	-	-	-	-	4
Other crops and hay	5,921	-	-	-	5
Livestock, poultry, and products	142,322	(D)	(D)	(D)	6
Poultry and eggs	(D)	(D)	(D)	(D)	7
Cattle and calves	20,602	-	-	-	7
Milk from cows	-	-	-	-	0
Hogs and pigs	121,549	(D)	(D)	(D)	4
Sheep, goats, wool, mohair, milk	(D)	(D)	(D)	(D)	7
Horses, ponies, mules, burros, donkeys	82	-	-	-	7
Aquaculture	-	-	-	-	0
Other animals and animal products	3	-	-	-	9

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Producers ^d	1,080	Percent of farms that:	Top Crops in Acres ^e
Sex			
Male	693	Have internet access	67
Female	387		
Age		Farm organically	-
<35	62		
35 – 64	555	Sell directly to consumers	(Z)
65 and older	463		
Race		Hire farm labor	19
American Indian/Alaska Native	-		
Asian	-	Are family farms	95
Black or African American	-		
Native Hawaiian/Pacific Islander	2		
White	1,066		
More than one race	12		
Other characteristics			
Hispanic, Latino, Spanish origin	13		
With military service	83		
New and beginning farmers	244		

Forage (hay/haylage), all	53,552
Soybeans for beans	42,173
Corn for grain	14,942
Wheat for grain, all	1,246
Corn for silage/greenchop	450

Livestock Inventory (Dec 31, 2022)	
Broilers and other meat-type chickens	(D)
Cattle and calves	36,999
Goats	99
Hogs and pigs	231,284
Horses and ponies	234
Layers	426
Pullets	(D)
Sheep and lambs	(D)
Turkeys	18

3.3 LAND USE AND DEVELOPMENT

3.3.1 Development Since Previous Plan Update

The population data listed in Table 3.15 below shows a significant and steady loss of population across most communities during the period between 2010 and 2023 estimates. Notably, the unincorporated Sullivan County has seen a significant increase in population.

Table 3.15. County Population Growth, 2010-2023

Jurisdiction	2010 Population	2020 Population	2023 Annual Population Estimate or ACS Population	# Change (2010-2023)	% Change (2010-2023)
Sullivan County	6,714	5,999	5903	-811	-12.1%
Sullivan County Unincorporated	2,432	3,106	2,877	445	18.3%
City of Milan	1,960	1,819	1,883	-77	-3.9%
City of Green City	657	602	560	-97	-14.8%
City of Greencastle	275	224	331	56	-8.5%
City of Newtown	183	113	112	-71	-38.8%
Village of Humphreys	118	89	121	3	2.5%
Village of Pollock	89	46	19	-70	-78.7%

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

Population growth or decline is generally accompanied by increases or decreases in the number of housing units. The following table provides the change in numbers of housing units in the planning area from 2010 to 2023. This table includes the most recent data available, the American Community Survey 5-year Estimates.

Table 3.16. Change in Housing Units, 2010-2023

Jurisdiction	Housing Units 2010	Housing Units 2023	2010-2023 # Change	2010-2023 % Change
Unincorporated Sullivan County	1,534	1,388	-146	-9.5%
City of Milan	845	797	-48	-5.68%
City of Green City	283	307	24	8.48%
City of Greencastle	365	362	-3	-0.82%
City of Newtown	127	42	-85	-66%
Village of Humphreys	164	118	-46	-28.05%
Village of Pollock	46	18	-26	-60.87%
Total:	3,364	3,032	-332	-9.87%

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

Vulnerability to hazards will be affected based on population and where new housing units have been built. Due to lack of expected growth in population, vulnerability is not expected to increase. The lack of city and county building ordinances is appealing to residential builders, however, the county is rural and its location has not been a popular area for development. The rural area is

mostly comprised of farmland, and the value of the farmland exceeds the attraction for new residential development. However, vulnerability is a concern as the population ages in rural Sullivan County, since the farmers in the area are aging and land sales for anything other than agricultural uses is not on an upward trend.

3.3.2 Future Land Use and Development

The population of Sullivan County and participating jurisdiction has been declining steadily for at least the last ten years. Due to a lack of population, there has been little in the way of new developments.

A large reservoir is currently under construction north of Milan in rural Sullivan County, it is unknown at this time, what if any long term growth may stem from this lake development.

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

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. Where available, use maps to indicate the specific locations of the planning area that are vulnerable to the subject hazard. For some hazards, the entire planning area is at risk.
- **Strength/Magnitude/Extent:** This includes information about the strength, magnitude, and extent of a hazard. For some hazards, this is accomplished with description of a value on an established scientific scale or measurement system, such as an EF2 tornado on the Enhanced Fujita Scale. This section should also include information on the typical or expected strength/magnitude/extent of the hazard in the planning area. Strength, magnitude, and extent can also include the speed of onset and the duration of hazard events. Describing the strength/magnitude/extent of a hazard is not the same as describing its potential impacts on a community. Strength/magnitude/extent defines the characteristics of the hazard regardless of the people and property it affects.
- **Previous Occurrences:** This section includes available information on historic incidents and their impacts. Historic event records form a solid basis for probability calculations.
- **Probability of Future Occurrence:** The frequency of recorded past events is used to estimate the likelihood of future occurrences. Probability can be determined by dividing the

number of recorded events by the number of years of available data and multiplying by 100. This gives the percent chance of the event happening in any given year. For events occurring more than once annually, the probability should be reported as 100% in any given year, with a statement of the average number of events annually. For hazards such as drought that may have gradual onset and extended duration, probability can be based on the number of months in drought in a given time-period and expressed as the probability for any given month to be in drought.

- **Changing Future Conditions Considerations:**

In addition to the probability of future occurrence, changing future conditions should also be considered, including the effects of long-term changes in weather patterns and climate on the identified hazards. NOAA has a new tool that can provide useful information for this purpose. NOAA Climate Explorer, <https://toolkit.climate.gov/tools/climate-explorer>

Vulnerability Assessments

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 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.
- **Vulnerability Overview:**
The overall summary of vulnerability identifies structures, systems, populations or other community assets as defined by the community that are susceptible to damage and loss for hazard events.
 - **Potential Losses to Existing Development:**
For each participating jurisdiction, the plan must describe the potential impacts of the hazard. Impact means the consequences of effect of the hazard on the jurisdiction and its assets. Assets are determined by the community and include, for example, people,

structures, facilities, systems, capabilities, and/or activities that have value to the community. For example, impacts could be described by referencing historical disaster impacts and/or an estimate of potential future losses.

- **Previous and Future Development:**

This section will include information on how changes in development have impacted the community's vulnerability to this hazard. Describe how any changes in development that occurred in known hazard prone areas since the previous plan have increased or decreased the community's vulnerability. Describe any anticipated future development in the county, and how that would impact hazard risk in the planning area.

- **Hazard Summary by Jurisdiction:**

For hazard risks that vary by jurisdiction, this section will provide an overview of the variation and the factual basis for that variation.

Problem Statements

Each hazard analysis must conclude with a brief summary of the problems created by the hazard in the planning area, and possible ways to resolve those problems. Include jurisdiction-specific information in those cases where the risk varies across the planning area. The focus of the problem statements sub-section is to synthesize the "problems" revealed through the risk assessment and then through the process of updating the mitigation strategy, develop mitigation actions that are aimed at "solving" the identified problems. Problem statements should be as specific as possible; relating to specific jurisdictions as well as specific assets or areas of the planning area that are problematic. This will in turn prompt development of specific mitigation actions.

3.4.1 Flooding (Riverine and Flash)

Hazard Profile

Hazard Description

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

Flooding caused by dam and levee failure is discussed in other sections of this plan. It will not be addressed in this section.

A flash flood occurs when water levels rise at an extremely fast rate as a result of intense rainfall over a brief period, sometimes combined with rapid snowmelt, ice jam release, frozen ground, saturated soil, or impermeable surfaces. Flash flooding can happen in Special Flood Hazard Areas

(SFHAs) as delineated by the National Flood Insurance Program (NFIP) and can also happen in areas not associated with floodplains.

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

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

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

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

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

Geographic Location

Riverine flooding is most likely to occur in Special Flood Hazard Areas (SFHAs). Flash flooding occurs in SFHAs and those locations in the planning area that are low-lying. They also occur in areas without adequate drainage to carry away the amount of water that falls during intense rainfall events.

Riverine flooding is most likely to occur in SFHAs. The following maps are from the most recent information from FEMA's National Flood Layer of Harrison County. The following key is the flood map key for all jurisdictions flood maps.









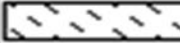

PIN		Approximate location based on user input and does not represent an authoritative property location
MAP PANELS		Selected FloodMap Boundary
		Digital Data Available
		No Digital Data Available
		Unmapped
OTHER AREAS		Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
		Otherwise Protected Area
		Coastal Barrier Resource System Area

Figure 3.5. Green City FIRM Map



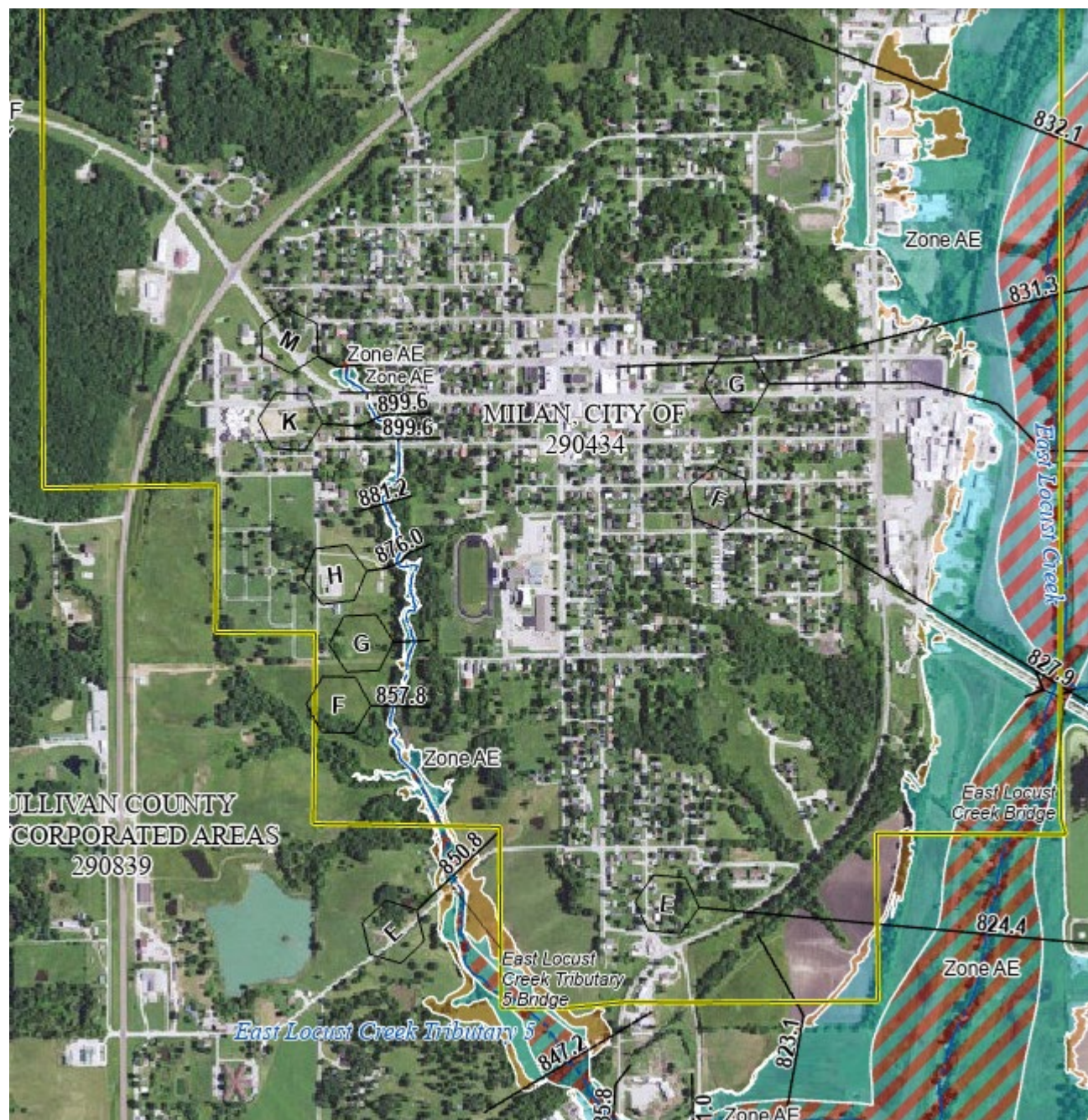
Source: FEMA's national flood hazard layer

Figure 3.6. Greencastle FIRM Map



Source: FEMA's national flood hazard layer

Figure 3.7. Milan FIRM Map



Source: FEMA's national flood hazard layer

Figure 3.8. Newtown FIRM Map

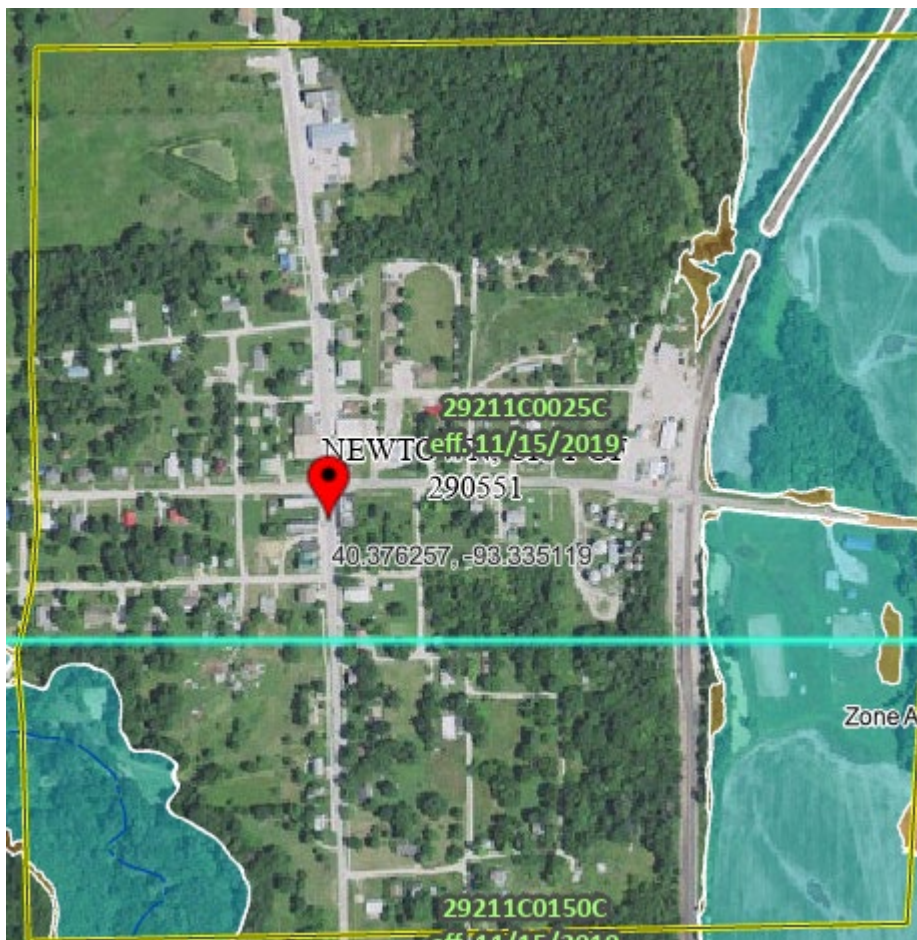


Figure 3.9. Pollock FIRM Map

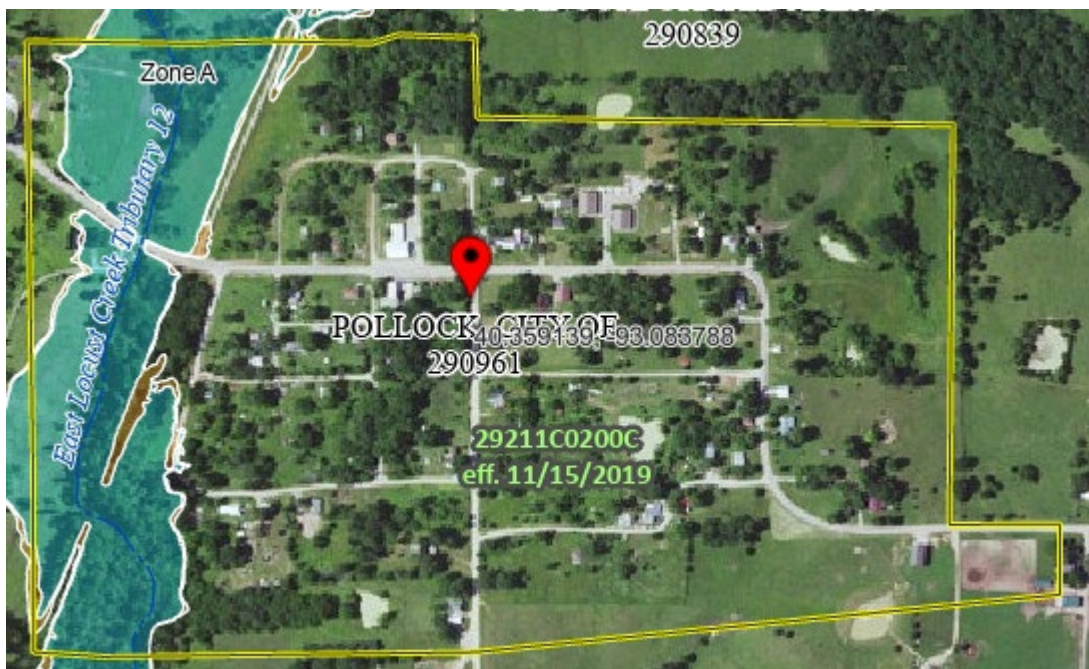


Table 3.17. Sullivan County NCEI Flood Events by Location, 2004-2024

Location	# of Events
Unincorporated Sullivan County	2
- Reger	2
Osgood	1
- Osgood	1

Source: National Centers for Environmental Information, 9-2025

Table 3.18. Sullivan County NCEI Flash Flood Events by Location, 2004-2024

Location	# of Events
Unincorporated Sullivan County	3
- Reger	2
- Wintersville	1
Milan	1
- Milan	2
Humphreys	1
- Humphreys	1

Source: National Centers for Environmental Information, 9-2025

Strength/Magnitude/Extent

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.

According to the U.S. Geological Survey, two critical factors affect flooding due to rainfall: rainfall duration and rainfall intensity – the rate at which it rains. These factors contribute to a flood's height, water velocity and other properties that reveal its magnitude.

National Flood Insurance Program (NFIP) Participation

The following table lists the participants in the NFIP. Participation in the NFIP has the goal of reducing the impact of flooding on private and public structures. The NFIP does so by providing affordable insurance to property owners and by encouraging communities to adopt and enforce floodplain management regulations. These efforts help mitigate the effects of flooding on new and improved structures. The only jurisdiction that participates in the NFIP in Sullivan County is the City of Milan. The Floodplain Administrator is the City Administrator, currently Crystal Bupp, and the number for contacting her is: 660-265-4411.

The only jurisdiction that participates in the NFIP, Milan, has 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. Records and documentation for all floodplain development are kept in adherence to FEMA regulations and the designated floodplain administrator maintains these records.

Substantial improvements/ substantial damage provisions are implemented after an event through the Floodplain Ordinance in Milan. The city of Milan has addressed the specific

requirements of FEMA regarding substantial damage/substantial improvement provisions and development in SFHA.

The following incorporated areas do not participate in the NFIP, the reason for non-participation is also included.

- City of Green City – the City of Green City has elected to not participate in the NFIP due to no part of the incorporated areas being in a SFHA.
- City of Green Castle – the City of Green Castle has elected to not participate in the NFIP due to no part of the incorporated areas being in a SFHA.
- City of Newtown – the City of Newtown does have some incorporated area within the SFHA, however there is no development within said SFHA.
- City of Pollock - the City of Pollock does have some incorporated area within the SFHA, however there is no development within said SFHA.

Of the 4 non-participating jurisdictions in Sullivan County there is also a lack of popularity with participating in the NFIP and a lack of resources available to provide enforcement.

Table 3.19. NFIP Participation in Sullivan 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
290434A	Milan	Yes	3/1/2019	Crystal Bupp City Administrator

Source: NFIP Community Status Book, 9/25; PIVOT (information from STATE) [Community Status Book | FEMA.gov](#); M= No elevation determined – all Zone A, C, and X: NSFHA = No Special Flood Hazard Area; E=Emergency Program

Table 3.20. NFIP Participation in Sullivan County Mapping Information

Community ID #	Community Name	Current Effective Map Date	Regular- Emergency Program Entry Date
290434A	Milan	11/15/2019	Regular- 07/04/88

Source: NFIP Community Status Book 9/25; PIVOT (information from STATE) [Community Status Book | FEMA.gov](#); M= No elevation determined – all Zone A, C, and X: NSFHA = No Special Flood Hazard Area; E=Emergency Program

Table 3.21. NFIP Policy and Claim Statistics as of Date

Community Name	Policies in Force	Insurance in Force	Closed Losses	Total Payments
City of Milan	0	0	2	\$328.76

Source: NFIP Community Status Book, [insert date]; PIVOT (information from STATE), [Community Status Book | FEMA.gov](#)

*Closed Losses are those flood insurance claims that resulted in payment. Loss statistics are for current as of (7/11/2025 from SEMA).

Milan is the only city in Sullivan County that has had any paid losses. According the SEMA the total in paid losses was \$328.76.

Repetitive Loss/Severe Repetitive Loss Properties

Repetitive Loss Properties are those properties with at least two flood insurance payments of \$1,000 or more in a 10-year period. According to the Flood Insurance Administration, jurisdictions included in the planning area have a combined total of 0 repetitive loss properties. As of 7/11/2025, 0 properties have been mitigated, leaving 0 un-mitigated repetitive loss properties.

Table 3.22. Sullivan County Repetitive Loss Properties

Jurisdiction	# of Properties	Type of Property	# Mitigated	Building Payments	Content Payments	Total Payments	Average Payment	# of Losses
None listed								

Source: State of Missouri emergency management agency – 9/2025

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

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

Previous Occurrences

The number of Flood-Related Presidential Declaration by County was obtained from the 2023 Missouri State Hazard Mitigation Plan. The following figure shows the number of such events per county. Sullivan County is indicated by an arrow, and according to the illustration Sullivan County has had 13 such events.

Figure 3.10. Number of Flood-Related Presidential Declarations Per County

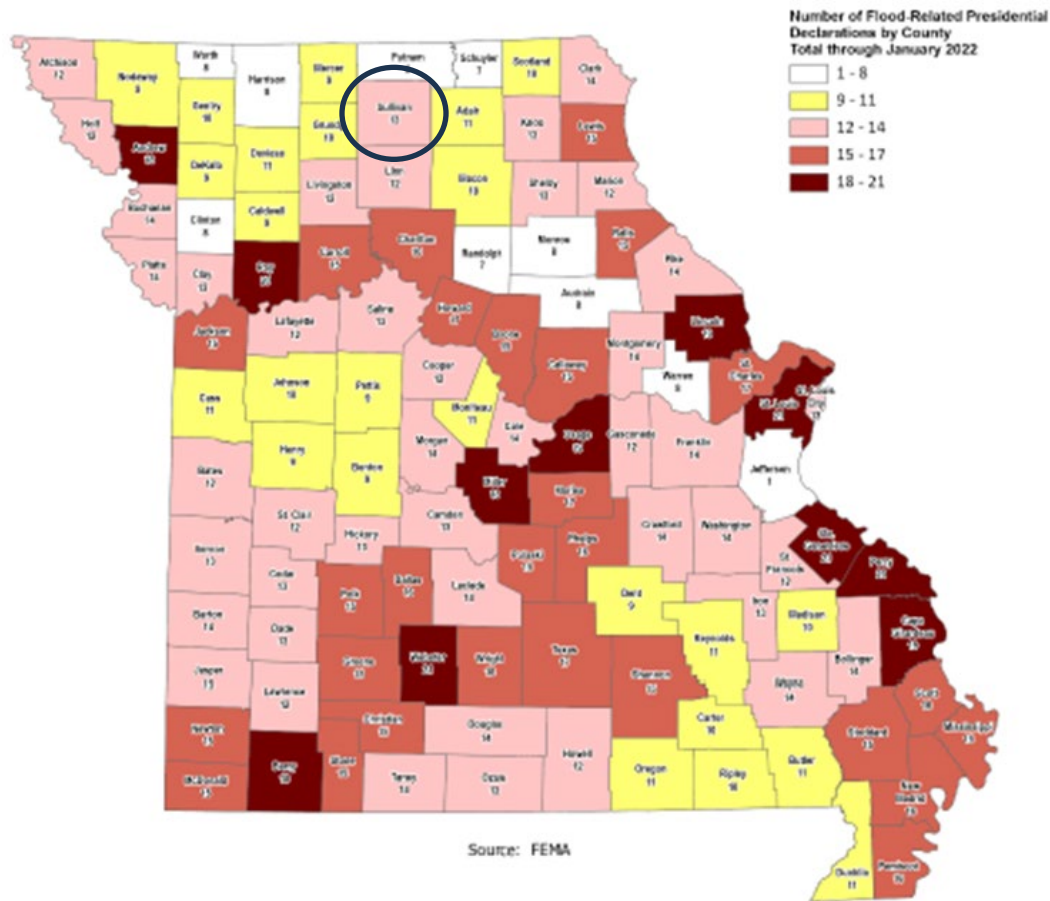


Table 3.23. NCEI Sullivan County Flash Flood Events Summary, 2004-2024

Year	# of Events	# of Deaths	# of Injuries	Property Damages	Crop Damages
2004	2	0	0	100,000	0
2008	2	0	0	1,000	0
2009	2	0	0	0	0
Total:	6	0	0	101,000	0

Source: NCEI, data accessed 11/2025

Table 3.24. NCEI Sullivan County Riverine Flood Events Summary, 2004-2024

Year	# of Events	# of Deaths	# of Injuries	Property Damages	Crop Damages
2017	1	0	0	0	0
2019	1	0	0	0	0
2020	1	0	0	0	0
Total:	3	0	0	0	0

Source: NCEI, 11/2025

Table 3.25. NCEI Event Narratives for Flash Flooding (2004-2025)

Begin Date	Event Narrative
8/27/2004	Bridge washed out along State Route PP. Several area roads under water. Rainfall was from 6 to 9 inches in this area.

8/28/2004	Highway 5 and several other rural roads remain closed due to high water.
7/24/2008	State Highway PP was closed due to high water.
9/13/2008	A vehicle was swept off of Highway 139, due to fast flowing water. The driver was able to swim to safety.
5/15/2009	State Route PP was closed due to flooding.
5/15/2009	State Route ZZ was closed due to flooding.

Source: NCEI, 11/2025

Table 3.26. NCEI Event Narratives for Riverine Flooding (2005-2025)

Begin Date	Event Narrative
4/5/2017	State Route PP was closed due to flooding along West Yellow Creek.
9/29/2019	Route PP was closed in both directions due to high water.
6/9/2020	State Route PP was closed near West Locust Creek west of Milan.

Source: NCEI, 11/2025

Probability of Future Occurrence

The probability of future flood events was calculated by the following formulas:

$$\text{Probability of Flash Flood} = \frac{(6 \text{ flash flood events})}{20 \text{ years}} = 0.30 \text{ occurrences per year}$$

The probability of a flash flood occurring in the planning area is 30% during any given year.

$$\text{Probability of Flood} = \frac{3 \text{ flood events}}{20 \text{ years}} = 0.15 \text{ occurrences per year}$$

The probability of a flood occurring in the planning area is 15% during any given year.

Vulnerability

Vulnerability Overview

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

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

When roads and bridges are inundated by water, damage can occur as the water scours materials around bridge abutments and gravel roads. 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.

Scour critical bridges have been identified in the planning area, and this information can be found on

Potential Losses to Existing Development

The 2023 Missouri Hazard Mitigation Plan used HAZUS data to analyze the county's vulnerability to flooding. A summary of the information is shown in the following table.

Table 3.27. HAZUS Estimates of Potential Losses for Sullivan County

Data from State Plan	Sullivan County
Countywide Building Exposure	\$759,379,851
Structural Damage	\$4,875,278
Loss Ratio	0.64%
Contents Loss	\$8,059,406
Inventory Loss	\$769,589
Total Direct Loss	\$13,704,272
Total Income Loss	\$34,042
Total Direct and Income Loss	\$13,738,314
# HAZUS UDF Damaged Structures	6
# Substantially Damaged	0
# Displaced People	208
# Shelter Needs	11

Source: 2023 Missouri Hazard Mitigation Plan

The 2023 Missouri State Hazard Mitigation Plan also provides a further breakdown of potential losses categorized by type of structure. That information is summarized in the following table.

Table 3.28. Potential Losses in Sullivan County by Type of Structure

Type of Structure	Data from State Plan
Residential	3 Structures
	\$543,354
Agriculture	8 Structures
	\$2,692,173
Commercial	11 Structures
	\$6,648,123
Education	0 Structures
	\$0
Government	0 Structures
	\$0
Industrial	2 Structures
	\$1,640,308
Total # Population Affected	8

Source: 2023 Missouri Hazard Mitigation Plan

As the majority of the assets in the county are agricultural in nature, the following table provides crop losses experienced between 2013 and 2024.

Table 3.29. Crop Insurance Claims Paid in Sullivan County 2014-2024

Crop Year	Crop Name	Cause of Loss	Insurance Paid (\$)
2014	Corn	Flood	\$3,139.50
	Grain Sorghum		\$1,504.00
	Soybeans		\$159,254.00

2015	Soybeans	Flood	\$9,825.00
2016	No Claims		\$0
2017	No Claims		\$0
2018	No Claims		\$0
2019	Corn	Flood	\$20,650.50
	Soybeans		\$159.00
2020	No Claims		\$0
2021	Soybeans	Flood	\$2,715.00
2022	No Claims		\$0
2023	Soybeans	Flood	\$37,954.00
2024	No Claims		\$0
Total			\$235,201.00

Source: USDA Risk Management Agency <http://www.rma.usda.gov/data/cause>

Impact of Previous and Future Development

Future development could impact flash and riverine flooding in Sullivan County. Development in low-lying areas near rivers and streams or where interior drainage systems are not adequate to provide drainage during heavy rainfall events will be at risk to flash flooding. Future development would also increase impervious surfaces causing additional water run-off and drainage problems during heavy rainfall events.

In planning future development, jurisdictions in the planning area should avoid development in low-lying areas near rivers and streams or where interior drainage systems are not adequate to provide drainage during heavy rainfall events. Future development should also take into consideration the impact of additional impervious surfaces to water run-off and drainage capabilities during heavy rainfall events.

Hazard Summary by Jurisdiction

Vulnerability to flooding varies by jurisdiction as each community has a different layout, the floodplain maps in the Geographic Location section depict the flood area in each jurisdiction.

Problem Statement

Flooding can pose an ongoing threat due to erosion during high water. Flooding may also disrupt underground utilities such as water and communications. Flooding can also lead to damage to transportation infrastructure and can disrupt the ability to transport kids to and from school.

3.4.2 Dam Failure

Hazard Profile

Hazard Description

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

Overtopping: Inadequate spillway design, debris blockage of spillways or settlement of the dam crest.

Piping: Internal erosion caused by embankment leakage, foundation leakage and deterioration of pertinent structures appended to the dam.

Erosion: Inadequate spillway capacity causing overtopping of the dam, flow erosion, and inadequate slope protection.

Structural Failure: Caused by an earthquake, slope instability or faulty construction.

Table 3.30. MoDNR Dam Hazard Classification Definitions

Hazard Class	Definition
Class I	The area downstream from the dam that would be affected by inundation contains ten (10) or more permanent dwellings or any public building. Inspection of these dams must every two years.
Class II	The area downstream from the dam that would be affected by inundation contains one (1) to nine (9) permanent dwellings, or one (1) or more campgrounds with permanent water, sewer, and electrical services or one (1) or more industrial buildings. Inspection of these dams must occur once every three years.
Class III	The area downstream from the dam that would be affected by inundation does not contain any of the structures identified for Class 1 or Class 2 dams. Inspection of these dams must occur once every five years.

Source: Missouri Department of Natural Resources,
<https://dnr.mo.gov/document-search/frequently-asked-dam-reservoir-questions-pub1351/pub1351>

Table 3.31. NID Dam Hazard Classification Definitions

Hazard Class	Definition
Low Hazard	Loss of at least one human life is likely if the dam fails.
Significant Hazard	Possible loss of human life and likely significant property or environmental destruction.
High Hazard	Equal or exceed 25 feet in height and exceed 15 acre-feet storage; Equal or exceed 50-acre feet storage and exceed 6 feet in height; Do not meet the criteria for high or significant hazard.

Source: National Inventory of Dams

Geographic Location

Dams Located Within the Planning Area

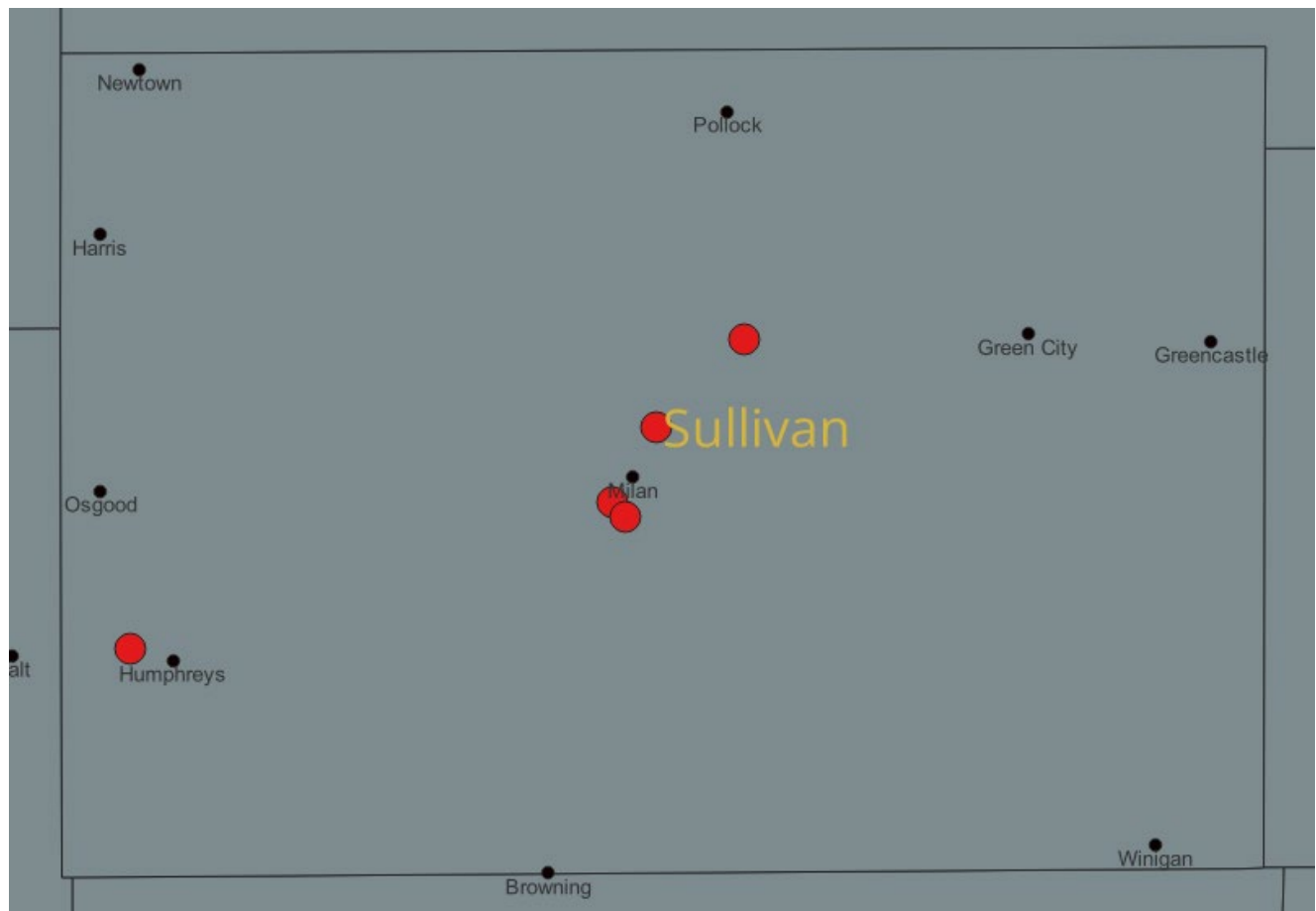
The following tables provide the names, locations, and other pertinent information for high hazard dams within the planning area.

Table 3.32. High Hazard Dams in the Sullivan County Planning Area

Dam Name	Emergency Action Plan (EAP/AP)	Dam Height (Ft)	Normal Storage (Acre-Ft)	Last Inspection Date	River	Nearest Downstream City	Distance To Nearest City (Miles)	Dam Owner
Rusk Lake Dam		25	75	unknown	TR-MEDICINE CREEK	LAREDO	0	STRONG & STEWART FARMS
Elmwood City Lake Dam		47	2445	3/8/22	ELMWOOD BRANCH	MILAN	2	CITY OF MILAN
Sears Community Lake Dam		33	168	unknown	TR-EAST LOCUST CREEK	MILAN	3	MO DEPT OF CONSERVATION
Eddy's Lake Dam		30	70	1/21/81	TR-LOCUST CREEK	MILAN	0	H.Q. EDDY
Lake Lu Juan Dam (Shatto lake dam)		49	630	3/3/22	TR-EAST LOCUST CREEK	MILAN	0.1	FLESHMAN ENTERPRISES, INC

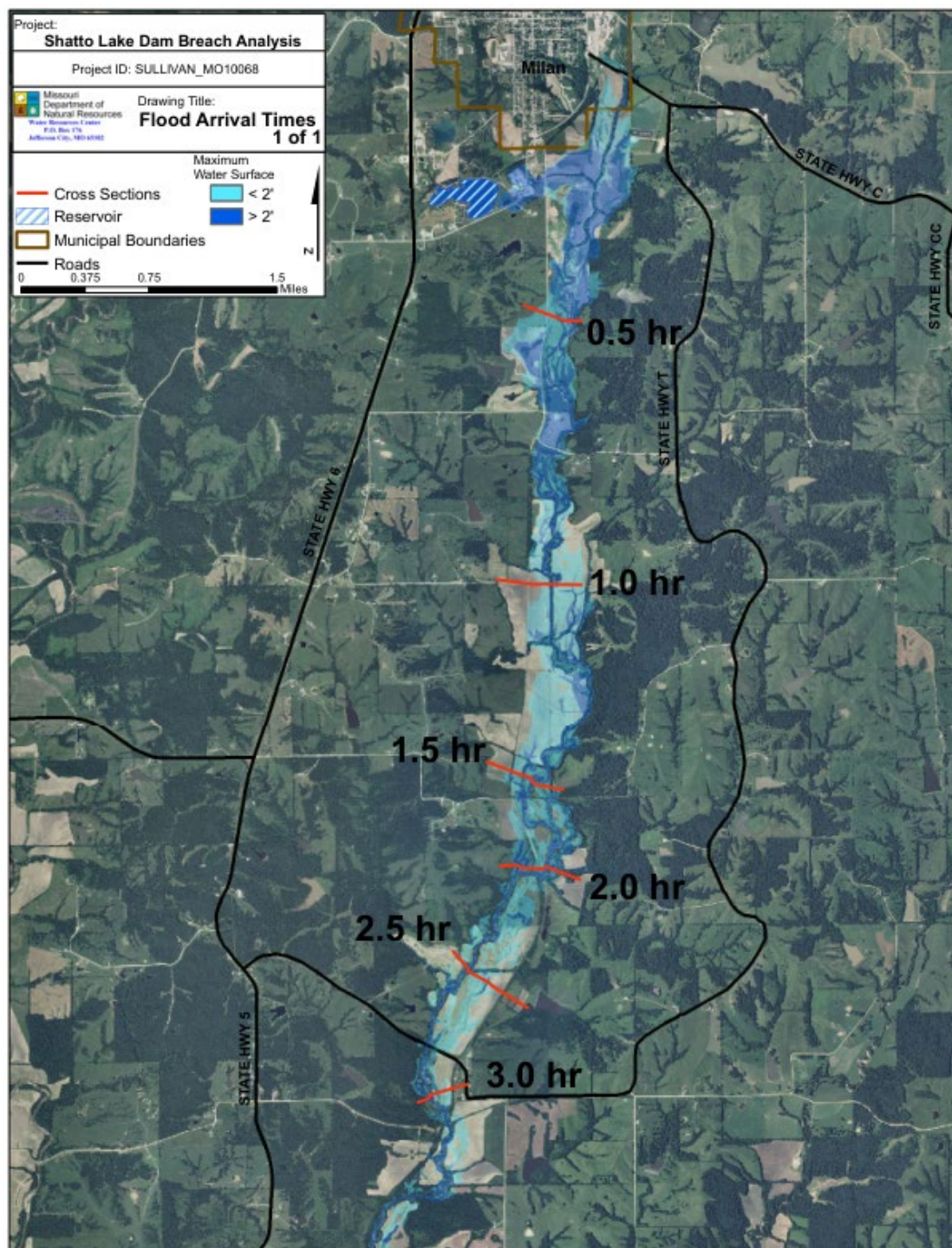
Sources: Missouri Department of Natural Resources GIS, <https://gis-modnr.opendata.arcgis.com/pages/dnr-missouri-geological-survey> and National Inventory of Dams, <https://nid.sec.usace.army.mil/#/>. Contact the MoDNR Dam and Reservoir Safety Program at 800-361-4827 to request the inundation maps for your county to show geographic locations at risk, extent of failure and to perform GIS analysis of those assets at risk to dam failure.

Figure 3.11. High Hazard Dam Locations in Sullivan County



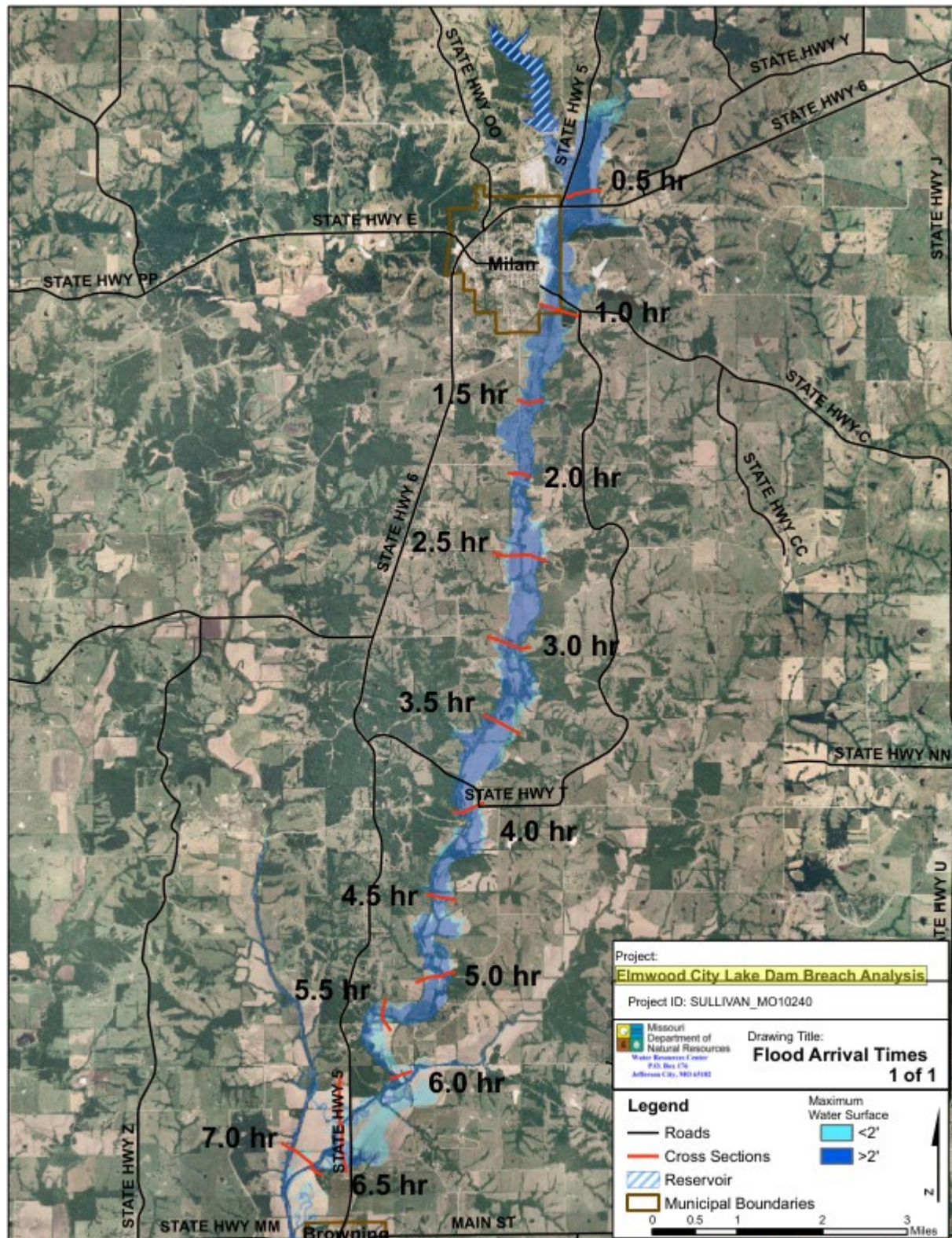
Source: National inventory of dams – June 2025

Figure 3.12. Lake Lu Juan Dam (Shatto Lake Dam) Breach Analysis



Source: Missouri DNR – June 2025 Note : Missouri DNR and the NID have two different names for this dam.

Figure 3.13. Elmwood City Lake Dam Breach Analysis



Source: Missouri DNR – June 2025

Upstream Dams Outside the Planning Area

According to the Missouri Department of natural resources dam safety program, There are no dams upstream from Sullivan county that would pose a threat in the event of a dam incident.

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.

Previous Occurrences

Information from Stanford University's National Performance of Dams Program shows no known instance of dam incidents have been reported in Sullivan County.

Probability of Future Occurrence

There are currently two regulated high hazard dams in Sullivan County. There are no USACE-regulated dams in the planning area. According to the information from Stanford University's National Performance of Dams Program database there are no known incidents.

It should be considered that within Missouri historical dam failures and incidents include events from all hazard classes and all dams; regulated or not. Failures and incidents for regulated dams that have higher inspection frequencies should be less probable. The non-regulated dams do not have a regular inspection schedule nor requirement.

If we base the probability upon past events:

$$Probability\ of\ Dam\ Failure = \frac{0}{20}$$

With no previous occurrences of dam failure, the probability of such an event occurring is unlikely in the planning area.

However, if we consider the instances of dam incidents:

$$Probability\ of\ Dam\ Incident = \frac{0}{20} = 0.00$$

The probability of the planning area experiencing any type of dam incident, if based on past occurrences, would be less than 5% in any given year.

Changing Future Conditions Considerations

According to the 2023 Missouri State hazard mitigation plan “Studies have been conducted to investigate the impact of climate change scenarios on dam safety. Dam failure is already tied to flooding and the increased pressure flooding places on dams. The impacts of changing future conditions on dam failure will most likely be those related to changes in precipitation and flood likelihood. Changing future conditions projections suggest that precipitation may increase and occur in more extreme events, which may increase risk of flooding, putting stress on dams and increasing likelihood of dam failure”

Vulnerability

Vulnerability Overview

According to the US Army Corps of Engineers (USACE) National Inventory of Dams (NID) there are a total of 179 dams located in the planning area. There are 5 high hazard dams, 2 significant hazard dams, and 172 low hazard dams in Sullivan County.

Within Sullivan County, 2 of the 5 high hazard dams are state regulated. Elmwood city Lake Dam, and Lake Lu Juan (Shatto Lake) Dam. Elmwood city lake dam was last inspected in March of 2022 and was rated as satisfactory. The Lake Lu Juan (Shatto Lake) dam was inspected in March of 2022 and is currently listed as Not rated by the national inventory of dams.

There are currently some structures of both agricultural and residential varieties. The 2023 Missouri State Hazard Mitigation Plan contains the following information about the vulnerability of Grundy County to dam failure.

Table 3.33. Number and Types of Dams in Sullivan County

Numbers and Types of Dams in Sullivan County															
Count of NID Dams				Count of State Regulated Dams				Count of Federally Regulated Dams				Count of Un-Regulated Dams			
H	S	L	Total	1	2	3	Total	H	S	L	Total	H	S	L	Total
5	2	172	179	1	1	3	5	0	0	0	0	3	2	169	174

Source: 2023 Missouri hazard mitigation plan

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

Table 3.34. Estimated Number and Values of Structures & Population Vulnerable to Failure of State-Regulated Dams with Available Inundation Areas

Type of Structure	Value of Structures	Number of Structures	Population
Agriculture	\$0	0	0
Residential	\$0	0	0
Total	\$0	0	0

Source: 2023 Missouri State Hazard Mitigation Plan

Impact of Previous and Future Development

Any growth within Sullivan County, downstream from a known dam, would lead to increased risks and potential losses due to an incident. As of June 2025, Sullivan County is in the process of constructing a large reservoir and dam north of Milan, this project will likely have an impact on future planning for dam incidents.

Hazard Summary by Jurisdiction

The largest part of Sullivan County is subject to a low risk for hazards from a dam incident, as found in data from the 2023 Missouri state hazard mitigation plan. As noted above, a large dam is being constructed north of Milan and will result in changes to this analysis upon completion of the project.

Problem Statement

Some entities in Sullivan County that own and control dams do not properly inspect and maintain them to ensure the safety of people and property that lie within the inundation area of a dam breach. Jurisdictions and residents should be informed of the proper way to inspect a dam and look for initial problems.

3.4.3 Earthquakes

Hazard Profile

Hazard Description

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

Missouri holds the record for the most devastating earthquake in the history of post-settlement North America. The New Madrid 1811-1812 earthquake series included five earthquakes of magnitude 8.0 (Modified Mercalli Intensity Scale) or higher occurring in the period December 16, 1811, through February 7, 1812. These earthquakes affected an estimated 600,000 square kilometers. Movement was felt as far away as Quebec, and damage was reported in Charleston, South Carolina, and Washington D.C.

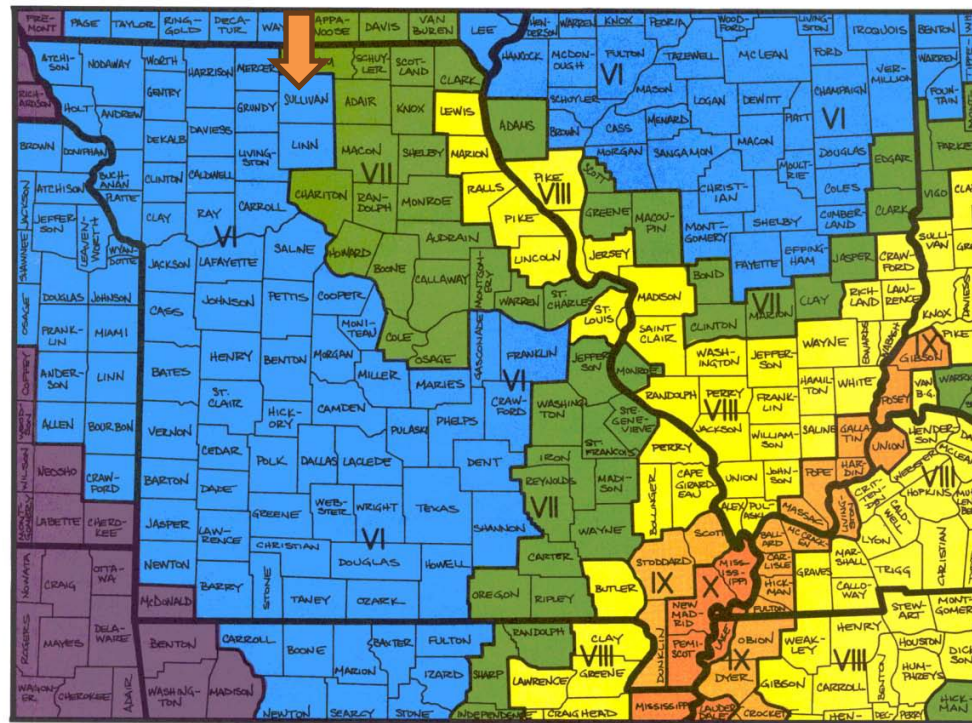
Geographic Location

Seismic activity on the New Madrid Seismic Zone of Southeastern Missouri is very significant both historically and at present. On December 16, 1811, and January 23 and February 7, 1812, three earthquakes struck the central US with magnitudes estimated to be 7.5-8.0. These earthquakes caused violent ground cracking and volcano-like eruptions of sediment over an area of more than 10,500 km², and uplift of a 50 km by 23 km zone (the Lake County uplift). The shaking was felt over a total area of over 10 million km². This is the largest felt area of any historical earthquake. Of all the historical earthquakes that have occurred in the US, an 1811-style event would do the most damage if it occurred today.

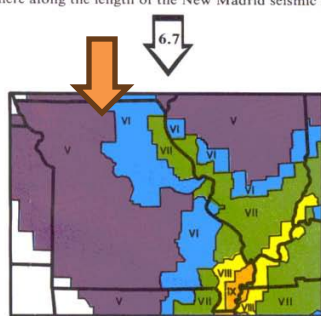
If an 1811 earthquake occurred in Sullivan County the earthquake intensity would not vary across the county. The damages resulting from an earthquake would depend upon the quality of the construction of the buildings. There would be slight to moderate damage in well-built ordinary structures and considerable damage in poorly built or badly designed structures. Some chimneys would be broken.

The following map (Figure 3.32) shows the highest projected Modified Mercalli intensities by county from a potential magnitude 7.6 earthquake whose epicenter could be anywhere along the length of the New Madrid Seismic Zone. The secondary maps in Figure show the same regional intensities for 6.7 and 8.6 earthquake, respectively.

Figure 3.14. Impact Zones for Earthquake Along the New Madrid Fault

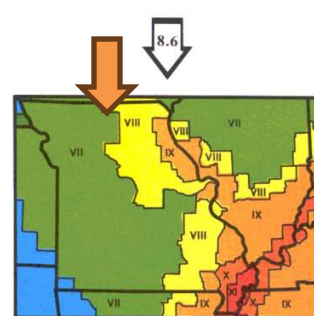


This map shows the highest projected Modified Mercalli intensities by county from a potential magnitude - 7.6 earthquake whose epicenter could be anywhere along the length of the New Madrid seismic zone.



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

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



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

Figure 3.15. Projected Earthquake Intensities

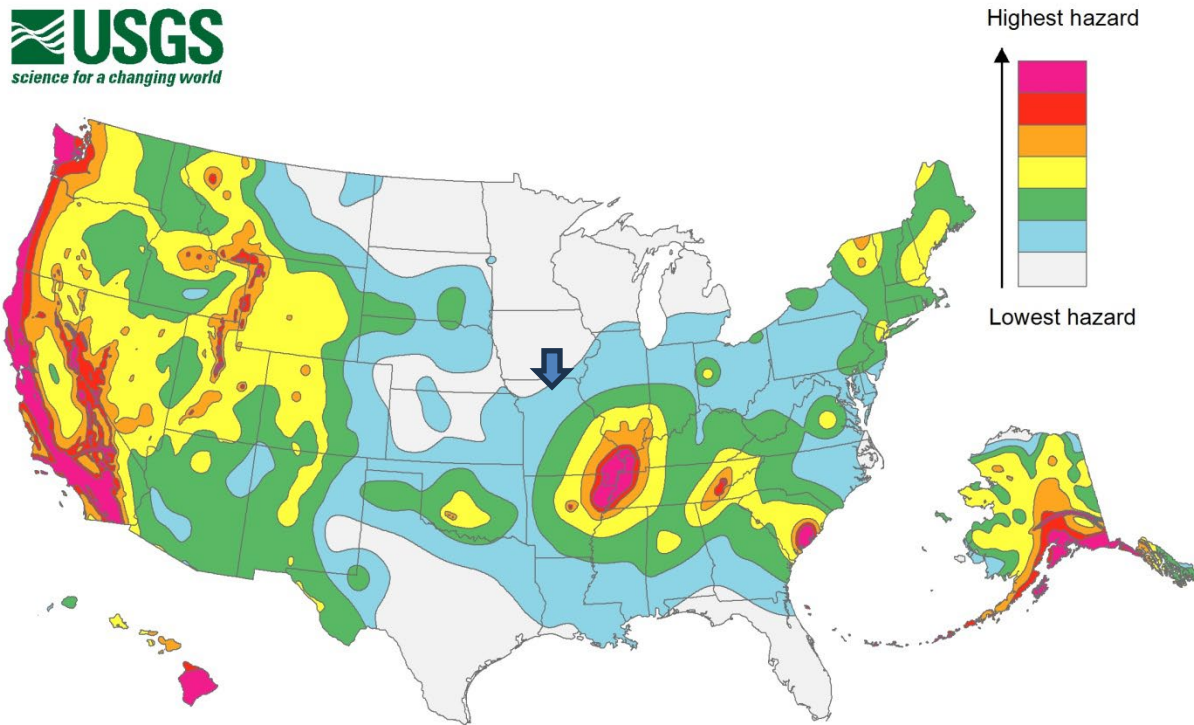
MODIFIED MERCALLI INTENSITY SCALE

I	People do not feel any Earth movement.	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.
II	A few people might notice movement.	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.
III	Many people indoors feel movement. Hanging objects swing.	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.
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.	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.
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.		

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.

Prepared and distributed by
THE MISSOURI STATE
EMERGENCY MANAGEMENT AGENCY
P.O. BOX 116
JEFFERSON CITY, MO 65102
Telephone: 573-526-9100

Figure 3.16. United States Seismic Hazard Map



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

Strength/Magnitude/Extent

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

Richter Magnitude Scale

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

Modified Mercalli Intensity Scale

The intensity of an earthquake is measured by the effect of the earthquake on the earth's surface. The intensity scale is based on the responses to the quake, such as people awakening, movement of

furniture, damage to chimneys, etc. The intensity scale currently used in the United States is the Modified Mercalli (MM) Intensity Scale. 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

There have been 0 earthquakes in Sullivan County since 1931. This information was found at homefacts.com and was also listed in the previous Hazard Mitigation Plan for Sullivan County.

Probability of Future Occurrence

According to homefacts.com there is a “very low” risk level for Sullivan County experiencing an earthquake. The probability of this hazard occurring is 0.13% within the next 50 years.

2% Probability of Exceedance

The State Hazard Mitigation Plan ran a scenario, based on an event with a 2% probability of exceedance in 50 years, to determine the worst-case scenario. This scenario was equivalent to the 2,000-year earthquake scenario in HAZUS-MH. This methodology is based on the probabilistic hazard shaking grids that were developed by the US 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 seconds and 0.1 seconds, respectively, which have a 2% probability of exceedance in the next 50 years. The most severe shaking is around the New Madrid Fault in Missouri. The following figure represents the potential for damage in areas with soil types that are potentially susceptible to liquefaction.

Figure 3.17. HAZUS-MH Earthquake 2% Probability of Exceedance in 50 years – Ground

Shaking and Liquefaction Potential

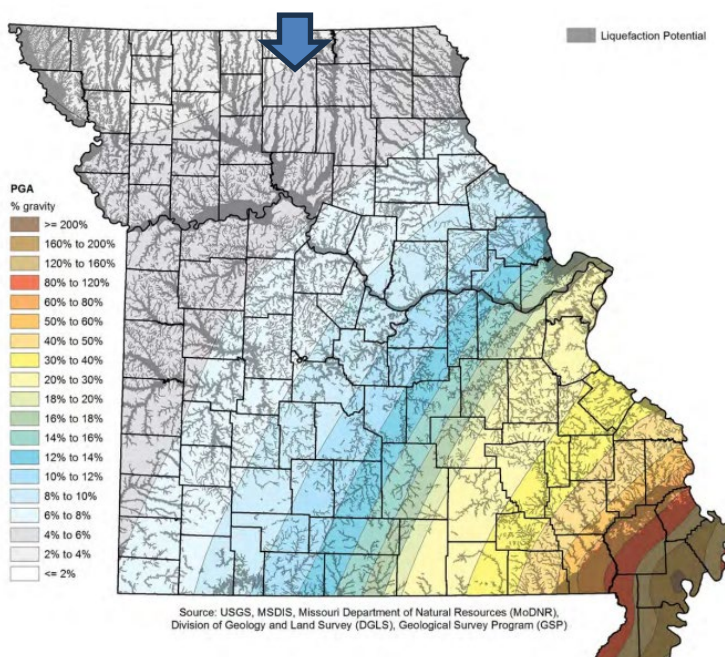


Table 3.35. HAZUS-MH Earthquake Loss Estimation 2% Probability of Exceedance in 50 Years Scenario Direct Economic Losses Results for Sullivan County (in \$ thousands)

Cost Structural Damage	Cost Non-structural Damage	Cost Contents Damage	Inventory Loss	Loss Ratio %	Relocation Loss	Capital Related Loss	Wages Losses	Rental Income Loss	Total Loss
\$613	\$1,168	\$326	\$13	0.29	\$401	\$80	\$139	\$145	\$2,886

Source: 2023 Missouri State Hazard Mitigation Plan

Changing Future Conditions Considerations and the Impact of Climate Change

According to the Missouri Hazard Mitigation Plan 2023, scientists are beginning to believe that there may be a link between earthquakes and changing climate conditions. A change in the size of ice caps and sea-levels, this redistribution of weight over fault lines could potentially have an influence on earthquake occurrences. At this time, this is only conjecture, so recent earthquakes should not be linked with climate change. The Missouri HMP does state that early research indicated that more intense earthquakes and tsunamis may eventually be added to the adverse consequences that are caused by changing future conditions.

Vulnerability

Vulnerability Overview

The 2023 Missouri State Hazard Mitigation Plan provided an earthquake loss estimation for each county. The annualized loss scenario from the 2023 State Hazard Mitigation Plan is provided in the

following table.

Table 3.36. HAZUS Earthquake Loss Estimation: Annualized Loss Scenario for Sullivan County

Total Losses (in \$ Thousands)	Loss Per Capita (in \$ Thousands)	Annualized Loss Ratio (In \$ per Million)
\$3	\$0.0005	\$5

Source: 2023 Missouri State Hazard Mitigation Plan

Table 3.37. Earthquake Coverage in Sullivan County, Missouri

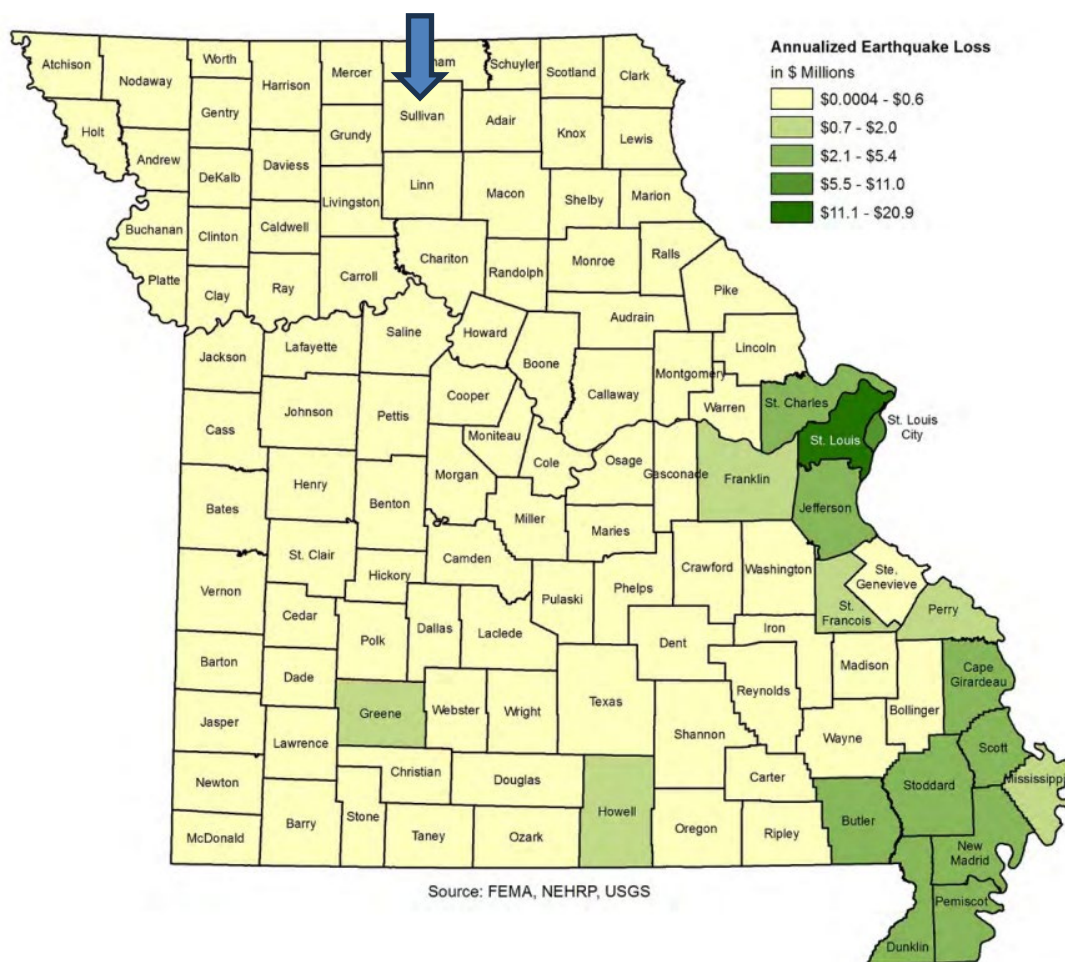
Earthquake Exposures	Homeowners, Farm, Mobile Home Exposures	% With Earthquake Endorsement	Average Premium, All Earthquake	Average Premium, \$110k-\$140k Coverage
67	2,179	3.1%	\$76	\$61

Source: Missouri Department of Commerce & Insurance "Overview of Residential Earthquake Insurance 2022"

Potential Losses to Existing Development

The 2023 Missouri State Hazard Mitigation Plan lists the estimated losses that would be suffered in Sullivan County with an earthquake event. The following figure and table summarize this information.

Figure 3.18. HAZUS-MH Earthquake Loss Estimation: Annualized Loss Scenario – Direct Economic Losses to Buildings



Source: 2023 Missouri State Hazard Mitigation Plan

Table 3.38. FEMA National Risk Index Loss Estimation: Annualized Loss Scenario for Sullivan County

Annualized Frequency	Expected Annual Loss Buildings (in \$ Thousands)	Expected Annual Loss-Fatalities	Expected Annual Loss-Population Equivalence	Expected Annual Loss- Total	Expected Annual Loss Rating
0.00024	\$3	0.00003	\$192	\$3,333	Very Low

Source: 2023 Missouri State Hazard Mitigation Plan

Impact of Previous and Future Development

Any future development in Sullivan County is not expected to increase the risk other than contributing to the overall exposure of what could become damaged in the event of an earthquake event.

Hazard Summary by Jurisdiction

The intensity of an earthquake is not likely to vary greatly throughout the planning area, and the risk will be the same throughout the county. However, damages could differ if there are structural variations in the planning area-built environment. The impact of an earthquake is likely to be higher on homes built before 1939 and on mobile homes. The following table lists the percentage of homes built prior to 1939 in the planning area as well as percentage of mobile homes.

Table 3.39. Percentage of Homes Built Prior to 1939 in Sullivan County

Jurisdiction	Mobile Homes	% Of Mobile Homes	Homes Built Prior to 1939	% Of Homes Built Prior to 1939
Sullivan County	219	10.7%	325	15.9%
City of Milan	94	14.2%	72	10.9%
City of Green City	3	1.3%	21	20.2%
City of Green Castle	20	19.2%	47	21.1%
City of Newtown	1	2.4%	21	50.0%
Village of Harris	3	10.7%	13	46.4%
Village of Humphreys	1	2.8%	5	13.9%
Village of Pollock	0	0.0%	4	57.1%

Source: U.S. Census Bureau, Physical Housing Characteristics for Occupied Housing Units (S2501)

Problem Statement

Although Sullivan County is not located in an area that will likely see catastrophic damage from an earthquake, the county will be impacted by the loss of communications, transportation, the disruption of roads, rail and pipelines, water transportation, and the area will see a significant amount of refugees fleeing from Southern Missouri if a quake hits that area. Education is minimal for earthquakes due to the low likelihood of impact. There is one Emergency Management Director for the county that knows where all the generators and emergency buildings are. Not all citizens utilize social media and texting. An emergency plan for earthquakes should be made available to all residents and state what would happen in the event of an earthquake with details for communication and transportation. Owners of buildings and homes need to be aware of the plan in case damage is sustained to their property. Residents should be made aware of where the generators and emergency buildings are located. Utilization of social media and texting needs to be encouraged.

3.4.4 Drought

Hazard Profile

Hazard Description

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

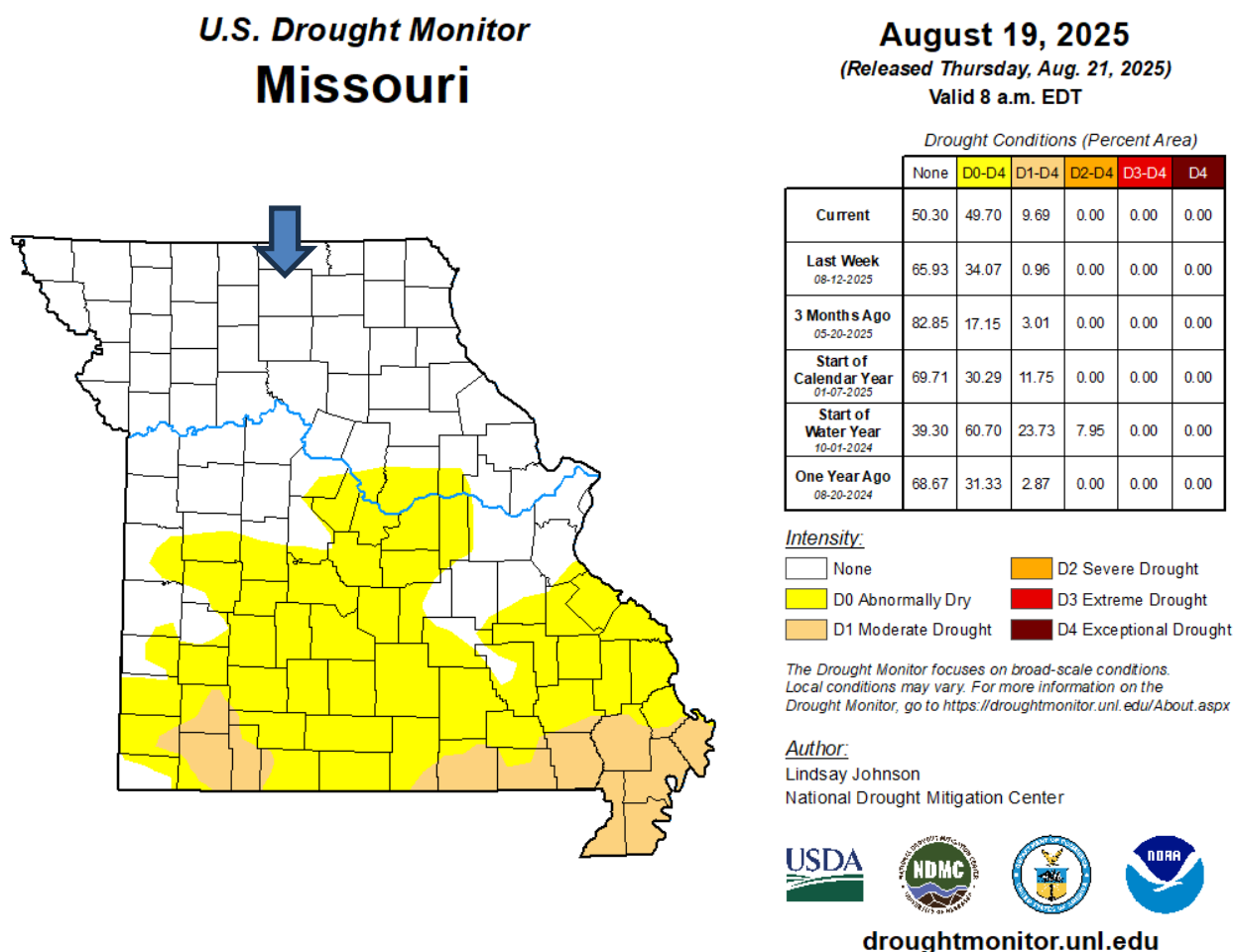
- Meteorological drought is defined in terms of the basis of the degree of dryness (in comparison to some “normal” or average amount) and the duration of the dry period. A meteorological drought must be considered as region-specific since the atmospheric conditions that result in deficiencies of precipitation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

Geographic Location

Because of the broad scope of drought, all of Sullivan County, with the exception of the school districts, is susceptible to this hazard. Agricultural land is extremely vulnerable to drought impacts. The majority of the land in Sullivan County used for agricultural purposes, making the impacts of drought one that is acutely felt by residents of Sullivan County.

The following figure is a recent map from the US Drought Monitor. Sullivan County is indicated by a blue arrow. This map is a snapshot of conditions on April 19, 2025.

Figure 3.19. U.S. Drought Monitor Map of Missouri on Date



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

Strength/Magnitude/Extent

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

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

Palmer also developed a formula for standardizing drought calculations for each individual location based on the variability of precipitation and temperature at that location. The Palmer index can

therefore be applied to any site for which sufficient precipitation and temperature data is available.

The National Drought Mitigation Center uses a scale to show the intensity of drought that goes from D0 to D4. The following figure shows the correlation of this scale to the Palmer Index. Reports from NCEI Storm Database use the D0-D4 Scale in their narratives.

Table 3.40. Drought Severity Classification

Category	Description	Possible Impacts	Palmer Drought Index
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
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
D2	Severe Drought	Crop or pasture losses likely; water shortages common; water restrictions imposed	-3.0 to -3.9
D3	Extreme Drought	Major crop/pasture losses; widespread water shortages or restrictions	-4.0 to -4.9
D4	Exceptional Drought	Exceptional and widespread crop/pasture losses; shortages of water in reservoirs, streams, and wells creating water emergencies	-5.0 or less

Previous Occurrences

Table 3.41. Previous Occurrences of Drought in Sullivan County 2000-2025

Begin Date	End Date	Episode Narrative
4/1/2000	4/30/2000	April 2000 was the driest on record in the state of Missouri, according to the Midwestern Climate Center. The lowest rainfall totals occurred in parts of west-central Missouri, where WFO Pleasant Hill received 0.30 inches of precipitation, and Sweet Springs picked up only 0.47 inches. At Kansas City International Airport, 0.65 inches of rain fell during the month, making it the driest April recorded in Kansas City.
7/1/2012	7/31/2012	Below normal precipitation continued through July, with D3 extreme drought conditions across the county. Milan reported 1.30 inches of rain for the month. Green City reported 1.61 inches of rain.
8/1/2012	8/31/2012	Below normal precipitation continued through August, with D3 extreme drought conditions across the county. Milan reported 1.14 inches of rain for the month.
9/1/2012	9/30/2012	Severe to extreme drought conditions prevailed in the county. Milan measured 1.57 inches of rain.
10/1/2012	10/31/2012	Drought D2 to D3 conditions prevailed across the county. Milan received 2.68 inches of rain.
11/1/2012	11/30/2012	Drought D1 to D2 conditions prevailed across the county. Milan received 1.89 inches of rain.
12/1/2012	12/31/2012	Drought D1 to D2 conditions prevailed across the county. Milan received 1.73 inches of precipitation.
1/1/2013	1/31/2013	Moderate to severe D1 to D2 drought conditions prevailed across the county. Green City reported 1.78 inches of precipitation.

8/27/2013	8/31/2013	Severe D2 drought conditions developed across Sullivan County at the end of August. Milan reported 0.12 inches of rain.
9/1/2013	9/30/2013	Severe drought D2 conditions persisted across the county. Milan reported 3.63 inches of rain.
9/1/2013	9/30/2013	Severe drought D2 conditions persisted across the county. Milan reported 3.63 inches of rain.
10/1/2013	10/31/2013	Severe D2 drought conditions continued across the county. Milan received 2.52 inches of rain.
6/1/2018	6/30/2018	Starting at the very end of May and going into June the US Drought Monitor at the University of Nebraska declared portions of Sullivan County in a D2 or worse drought. While impacts from this drought would be felt through the summer, it's unclear if any drought impacts were felt through the month of June. http://droughtmonitor.unl.edu/data/png/20180626/20180626_wfoeax_trd.png
7/1/2018	7/31/2018	The abnormally dry summer continued into and through July for Sullivan County. The Drought Monitor put the county in D3 and maintained it into August. As of yet, the breadth and magnitude of the impacts are unknown.
8/1/2018	8/31/2018	Sullivan County reached or maintained D4 drought status for the entire month. While rain did move into the area through the month, the ground was dry enough from the below normal precipitation and above normal temperatures through the month to warrant D4 status maintenance. The direct impact to Sullivan County is unclear, but statewide drought impacts are estimated around 2 billion dollars, per The University of Missouri Extension Center. The drought has also hurt pastures, with about three-quarters in poor or very poor conditions, according to the USDA report. Many pastures haven't been able to support grazing cattle, prompting farmers to feed cattle with hay that might normally be saved for winter. It's also hurt the hay crop, which is down about one-third from normal. The 2018 drought is turning out small corn ears. Some farmers are not waiting until harvest, instead trying to get the most out of the crop by baling it or cutting it for silage for cattle. Farmers can now clean out sediment in ponds to increase water-holding capacity. Ponds in the conservation program are built for erosion control. Sources: https://www.stltoday.com/news/local/govt-and-politics/from-drinking-water-to-farms-drought-s-effect-creeping-across/article_35440d14-a1c4-5f86-ac64-b5b63906fe57.html . https://www.foxnews.com/us/drought-takes-toll-on-missouri-farmers-crops-cattle . https://www.missouriruralist.com/weather/cattleman-turns-baling-corn-drought . https://www.missouriruralist.com/conservation/3-conservation-restrictions-lifted-during-drought .
9/1/2018	9/30/2018	The drought of 2018 continued for Sullivan County, however an influx of some moisture brought some minor relief to the county. Conditions improved from D4 to D3 during the month of September, but the impacts and losses of several crops were already felt across the region. The amount of damages is unknown at this point, but numerous farmers were unable to get full return from their crops.
10/1/2018	10/9/2018	Due to widespread dry conditions through the summer and early fall of 2018 most counties experienced extreme to exceptional drought (D3-D4). While some counties saw marked improvement through the late summer and early fall the drought continued into the second week of October. The drought improved area-wide after 6-12 inches of rain fell in a four day stretch in early October. This effectively ended the drought area-wide. While the exact damage costs are unknown, it is estimated that farmer across the entire region suffered millions of dollars of losses due to the extremely dry conditions.

10/11/2022	10/31/2022	Significant precipitation deficits over the summer months and continuing into fall led to severe drought developing across a small portion of southeast Sullivan County by October 11th and continuing through the remainder of the month.
11/1/2022	11/15/2022	Significant precipitation deficits yielded D2 drought conditions continuing into November before improving to D1 or better by November 15th.
6/13/2023	6/30/2023	Due to relatively dry conditions across the area, severe drought was introduced by the US Drought Monitor. At this time there have been minimal to no impact due to this starting and ongoing drought.
7/1/2023	7/31/2023	After another relatively dry month across the area central and northern Missouri saw generally deteriorating drought conditions. By the middle to end of the month almost the entire area was covered in D3 extreme drought conditions.
8/1/2023	8/31/2023	Severe (D2) to Extreme Drought (D3) persisted through the month of August in Sullivan County.

Table 3.42. Weeks and Months of drought conditions 2004-2025

Sullivan County	D0	D1	D2	D3	D4
Weeks at this Designation	343	234	93	30	3
Months at this Designation	78.9	53.1	21.4	6.9	0.7

Table 3.43. Crop Insurance Claims Paid in Sullivan County 2014-2024

Year	Crop Name	Cause of Loss	Insurance Paid (\$)
2014	Corn	Drought	\$2,402.00
	Soybeans		\$11,957.00
	Wheat		\$17,749.00
2015	Soybeans	Drought	\$883.00
2016	Corn	Drought	\$13,875.50
	Soybeans		\$54,368.00
	Wheat		\$26,732.93
2017	Corn	Drought	\$30,471.00
	Soybeans		\$429,889.75
2018	Corn	Drought	\$1,439,320.96
	Soybeans		\$1,773,257.80
	Wheat		\$11,308.00
2019	No Claim		\$0
2020	Corn	Drought	\$172,439.00
	Soybeans		\$852,365.00
2021	Corn	Drought	\$18,797.50
	Soybeans		\$93,660.40
	Wheat		\$24,419.00
2022	Corn	Drought	\$135,483.00
	Soybeans		\$687,034.80
2023	Corn	Drought	\$107,536.00
	Soybeans		\$287,055.00
	Wheat		\$-2767.00
2024	Corn	Drought	\$46,283.38
	Soybeans		\$204,720.50
Total			\$6,439,241.52

Source: USDA Risk Management Agency <http://www.rma.usda.gov/data/cause>

Figure 3.20. Annualized Drought Crop Insurance Claims Paid 2013-2021

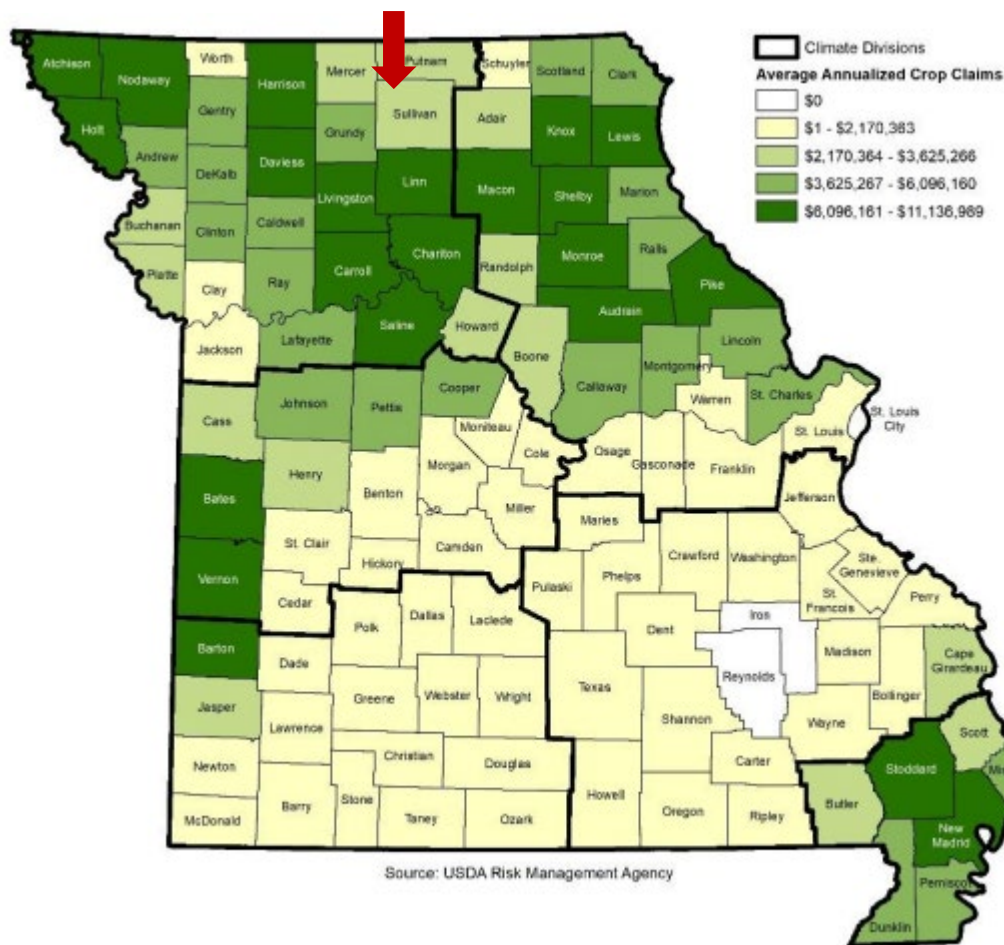
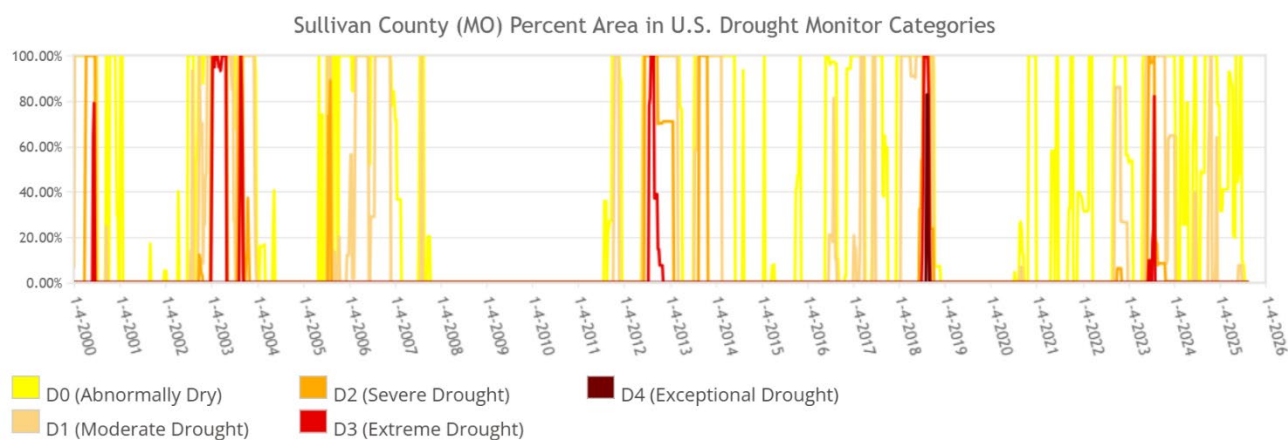


Figure 3.21. Sullivan county drought time-series



From the U.S. Drought Monitor website, <https://droughtmonitor.unl.edu/DmData/TimeSeries.aspx>, 8-25-2025



Probability of Future Occurrence

In the formulas below we have calculated the likelihood of a drought based on data going back to 2004. This is a time period of 94.1 months or 1129 weeks

$$\text{Probability} = \frac{78.9}{94.1} = 83.8\% \text{ Chance of D0}$$

$$\text{Probability} = \frac{53.1}{94.1} = 24.4\% \text{ Chance of D1}$$

$$\text{Probability} = \frac{21.4}{94.1} = 22.7\% \text{ Chance of D2}$$

$$\text{Probability} = \frac{6.9}{94.1} = 7.3\% \text{ Chance of D3}$$

$$\text{Probability} = \frac{0.7}{94.1} = 0.7\% \text{ Chance of D4}$$

The probability of Sullivan County experiencing some type of drought is very likely. Drought conditions have been encountered in at least 83% of the weekly survey's going back to 2004. Over the course of the 26 years surveyed 22 have featured at least D0 drought conditions for one of the weekly reports.

Changing Future Conditions Considerations

Although drought is not predictable, long-range outlooks and predicted impacts of climate change could indicate an increased chance of drought. With an increase in annual temperatures due to a changing climate, droughts are more likely to occur through higher evaporation rates. With the likelihood of wetter springs there is an increased chance of dryer summers. The dryness is likely to reduce the river flow and may lead to a shortage of agricultural water availability. This has a large effect on the farm-dependent community.

A new analysis, performed for the Natural Resources Defense Council, examined the effects of climate change on water supply and demand in the contiguous United States. The study found that more than 1,100 counties will face higher risks of water shortages by mid-century as a result of climate change. Two of the principal reasons for the projected water constraints are shifts in precipitation and potential evapotranspiration (PET). Climate models project decreases in precipitation in many regions of the US, including areas that may currently be described as experiencing water shortages of some degree. This study shows a moderate risk of water shortages in 2050 for Sullivan County with the effects of climate change.

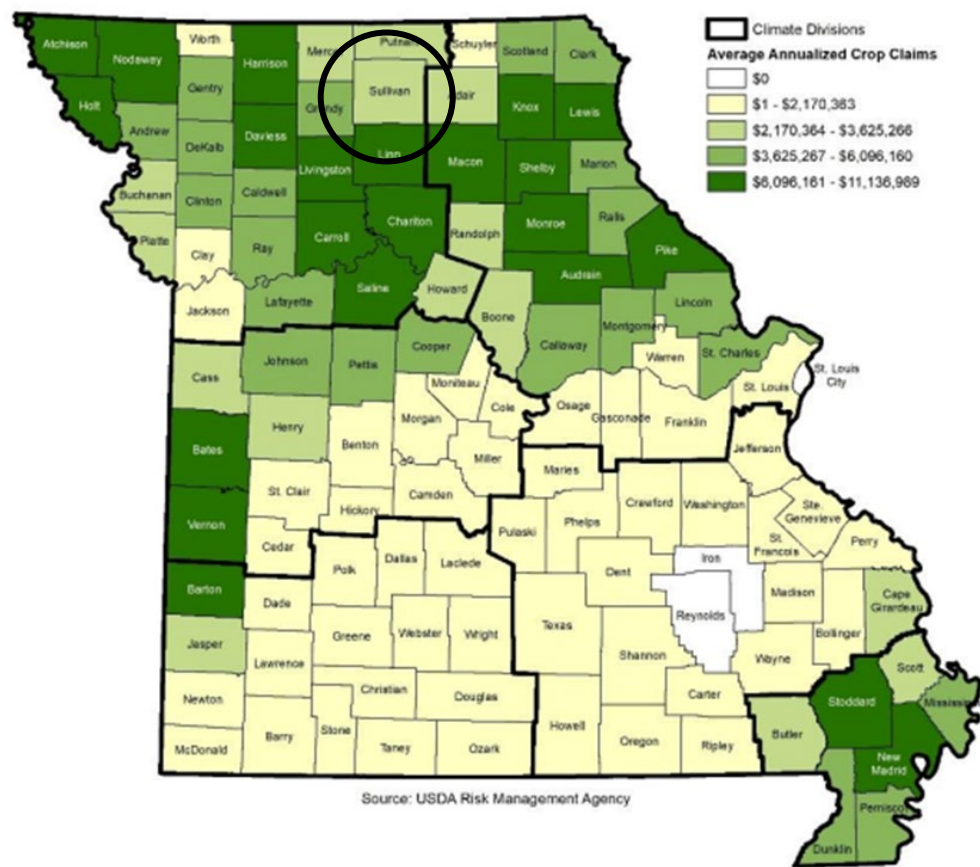
Vulnerability

Vulnerability Overview

Sullivan County, being a largely agriculture dependent county has a significant vulnerability to

drought impacts as shown in the graphs and tables below

Figure 3.22. Annualized Drought Crop Insurance Claims Paid 2013-2021



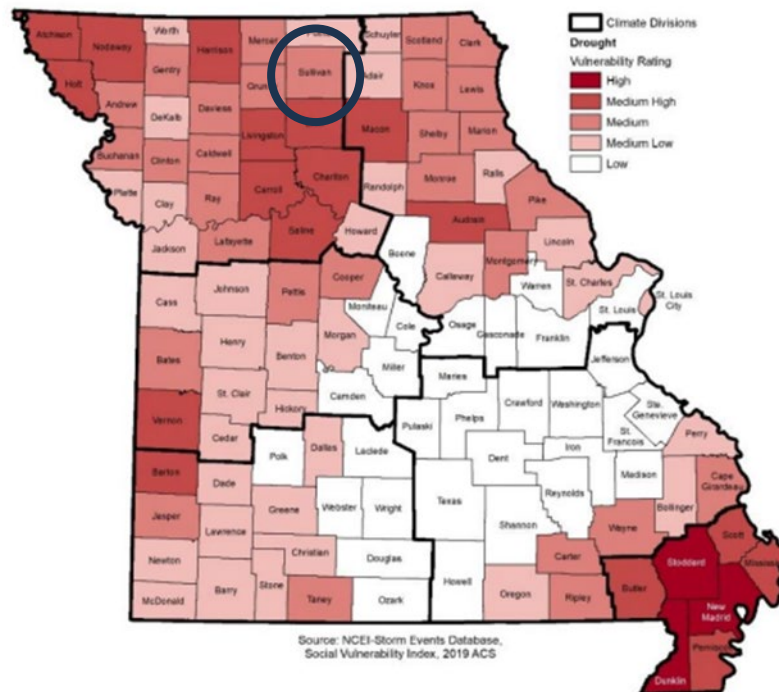
Source: 2023 Missouri state hazard mitigation plan

Table 3.44. Vulnerability of Sullivan County to Drought

Factor Considered to Determine Vulnerability	
SOVI Index Rating	4
USDA RMA Total Drought Crop Claims	\$35,867,493
Average Annualized Crop Claims	\$3,586,749
USDA Claims Rating	3
2017 Crop Exposure	\$28,441,000
Crop Exposure Rating	2
Likelihood of Severe Drought	0.65
Drought Occurrence Rating	2
Total Rating	12
Total Rating (text) to Drought	Medium

Source: 2023 Missouri State Hazard Mitigation Plan

Drought Vulnerability in Sullivan County



Source: 2023 Missouri state hazard mitigation plan

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.

Impact of Previous and Future Development

A new large reservoir is planned for Sullivan County to assist with water supply issues during times of significant drought; However, this could also lead to growth that would place a strain on water supplies in the region.

Changing Future Conditions Considerations

Although drought is not predictable, long-range outlooks and predicted impacts of climate change could indicate an increased chance of drought. With an increase in annual temperatures due to a changing climate, droughts are more likely to occur through higher evaporation rates. With the likelihood of wetter springs there is an increased chance of dryer summers. The dryness is likely to reduce the river flow and may lead to a shortage of agricultural water availability. This has a large effect on the farm-dependent community.

A new analysis, performed for the Natural Resources Defense Council, examined the effects of climate change on water supply and demand in the contiguous United States. The study found that more than 1,100 counties will face higher risks of water shortages by mid-century as a result of climate change. Two of the principal reasons for the projected water constraints are shifts in precipitation and potential evapotranspiration (PET). Climate models project decreases in precipitation in many regions of the US, including areas that may currently be described as experiencing water shortages of some degree. This study shows a moderate risk of water shortages in 2050 for Sullivan County with the effects of climate change.

Hazard Summary by Jurisdiction

Drought has the potential to impact all of Sullivan County, except for the school districts. But the ways in which the impacts will be experienced vary. As discussed in the previous occurrences and vulnerability sections, most of the damage seen historically because of drought in the county affects agriculture. Therefore, the magnitude of the impacts of drought may be greater in rural parts of the county, which have large areas of crops and wildlife. In areas with greater building density, there is more exposure to potential shrinking and expanding soil problems around foundations because of drought. If drought conditions are severe and prolonged, water supplies could also be affected.

Problem Statement

Drought could lead to issues with water supply issues, economic downturn and fire suppression. Drought may also lead to breaks in underground infrastructure as the dry ground shifts.

3.4.5 Extreme Temperatures

Hazard Profile

Hazard Description

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

Location within the county is not a factor when facing an extreme temperature event. Rather, they are area wide events. The entire planning area is subject to extreme temperatures and the risk of this hazard does not vary across jurisdictions.

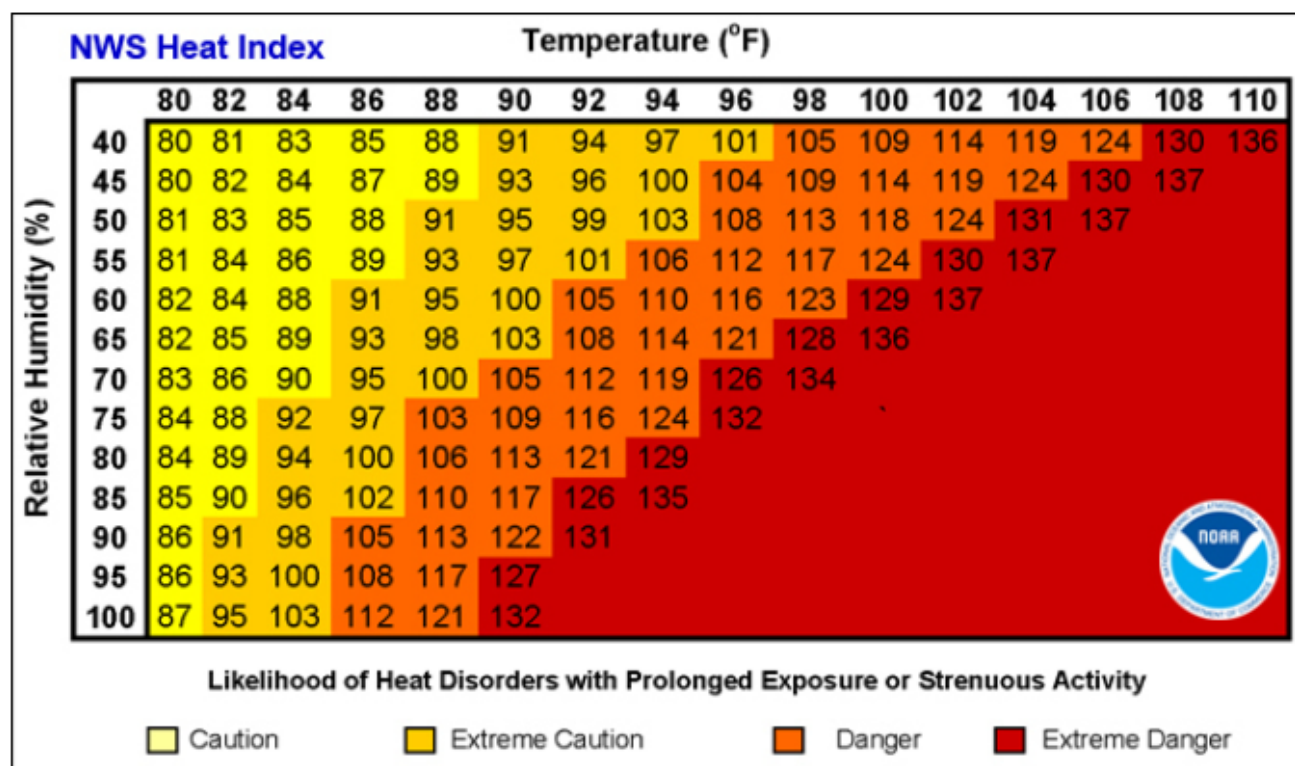
However, there are additional factors to consider when there is an extreme heat event. Specific climatic factors, such as temperature and humidity, along with wind and sun/shade determine the effects of this hazard. An individual's physical condition has a profound effect on their ability to deal with the effects of excessive heat. Illness or heavy exercise adds to the metabolic heat that the body must dissipate. Age is also a contributing factor. The accessibility of air-conditioned shelters is important to those falling into at-risk groups.

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 nighttime minimum Heat Index is 80°F or above. A heat advisory is issued when temperatures reach 105

degrees, and a warning is issued at 115 degrees.

Figure 3.23. 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.

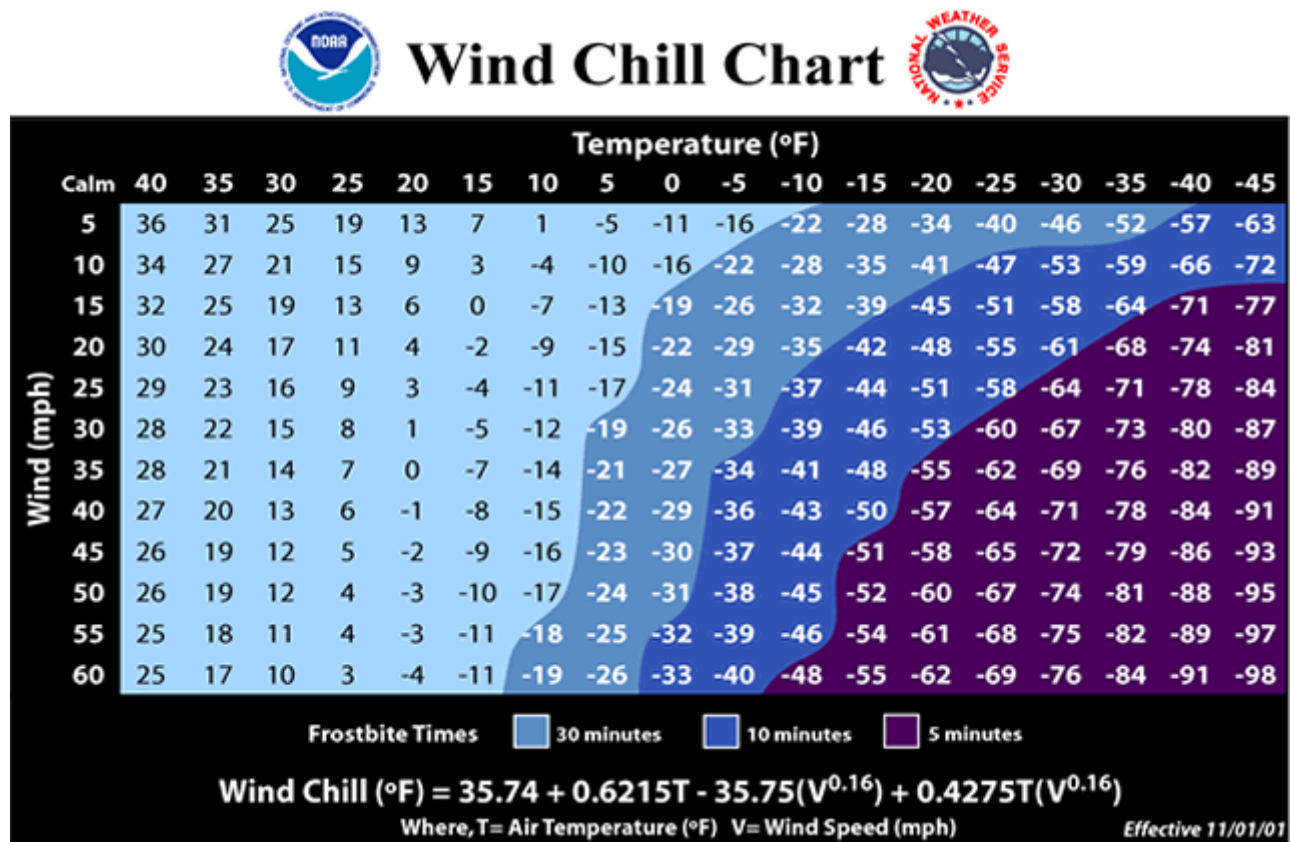
The NWS Wind Chill Temperature (WCT) index uses advances in science, technology, and computer modeling to provide an accurate, understandable, and useful formula for calculating the dangers from winter winds and freezing temperatures. The figure below presents wind chill temperatures which are based 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 National Weather Service issues the following wind chill 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. The planning area is vulnerable to all of these warnings if the temperature drops low enough.

- **Wind Chill Warning:** NWS issues a wind chill warning when dangerously cold wind chill values are expected or occurring. If you are in an area with a wind chill warning, avoid going outside during the coldest parts of the day. If you do go outside, dress in layers, cover exposed skin, and make sure at least one other person knows your whereabouts. Update them when you arrive safely at your destination.
- **Wind Chill Watch:** NWS issues a wind chill watch when dangerously cold wind chill values are possible. As with a warning, adjust your plans to avoid being outside during the coldest parts of the day. Make sure your car has at least a half a tank of gas and update your winter survival kit.
- **Wind Chill Advisory:** NWS issues a wind chill advisory when seasonably cold wind chill values, but not extremely cold values are expected or occurring. Be sure you and your loved

ones dress appropriately and cover exposed skin when venturing outdoors.

Figure 3.24. Wind Chill Chart



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

Previous Occurrences

Extreme Heat

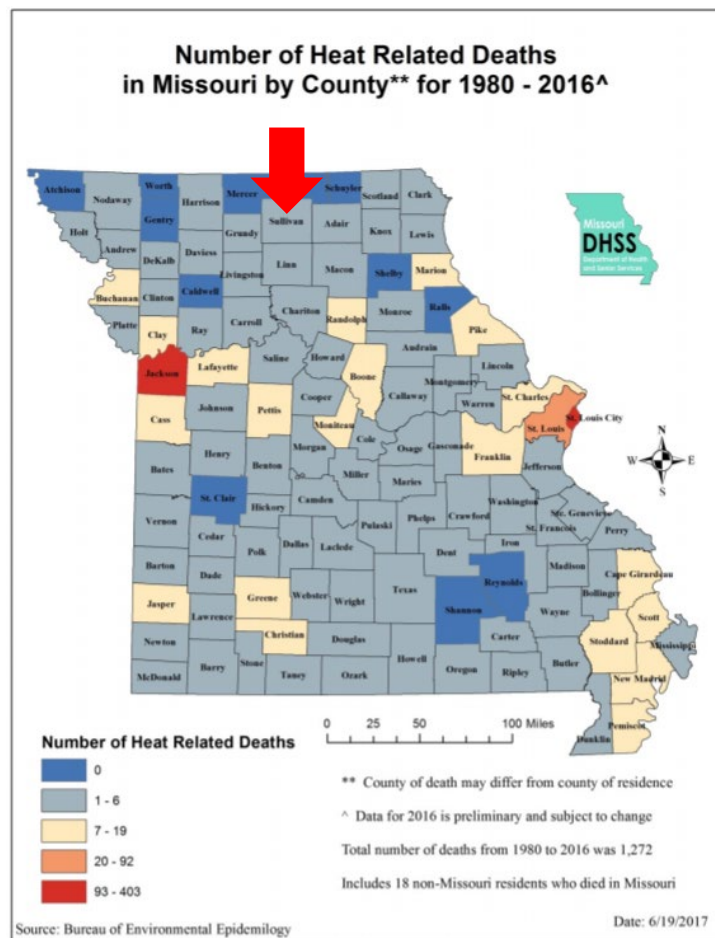
There are 5 reported incidents of extreme heat reported over the last 20 years from the county.

Table 3.45. Extreme heat reports from NCEI 2004-2024

Year	Reports	Deaths	Injuries
2005	1	0	0
2006	3	0	0
2007	1	0	0
2012	1	0	0
2023	1	0	0

Source: NCEI Storm reports data – June 2025

Figure 3.25. Heat Related Deaths in Missouri 2000-2016



Source: <https://health.mo.gov/living/healthcondiseases/hyperthermia/pdf/hyper2b.pdf>

Extreme heat can cause stress to crops and animals. According to USDA Risk Management Agency, losses to insurable crops during the 11-year period from 2013 to 2024 were \$150,982.03. 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.

Table 3.46. Crop Insurance Claims Paid in Sullivan County 2014-2024

Heat			
Year	Crop Name	Cause of Loss	Insurance Paid (\$)
2014	No Claim		\$0
2015	No Claim		\$0
2016	Wheat	Heat	\$4,837.00

2017	No Claim		\$0
2018	No Claim		\$0
2019	No Claim		\$0
2020	Soybeans	Heat	\$3,060.00
2021	No Claim		\$0
2022	Corn	Heat	\$93,578.00
	Soybeans		\$96,765.00
2023	Corn	Heat	\$2,033.00
	Soybeans		\$2,477.00
2024	Corn	Heat	\$409.00
	Soybeans		\$131,759.00
Total			\$334,918

Source: USDA Risk Management Agency <http://www.rma.usda.gov/data/cause>

There is somewhat limited data available for Sullivan County high temperature readings, but the data indicates that from 2000-2024, readings at Green City topped 95 degrees on average 4.1 times per year according to data from the National centers for environmental information

Excessive heat summaries 2000-2024

2005

7-21-2005 Excessive Heat

Oppressive heat and humidity prevailed across the area from July 21st to July 25th. Afternoon heat indices reached from 105 to 110 degrees. Kansas City International heat index reached 114 degrees on July 22nd and St. Joseph topped out at 113 degrees on July 22nd.

2006

Excessive Heat 7-16-2006 through 7-20-2006

Oppressive heat and humidity combined to produce afternoon and early evening heat indices from 105 to 115 degrees, from July 16th through July 20th. The highest computed heat index reached 121 degrees at Amity Missouri. Three males and one female died of heat related causes in Jackson County.

Excessive Heat 7-29-2006 through 8-1-2006

Oppressive heat and humidity combined to produce heat indices from 105 to 115 degrees, from July 29th through July 31st.

2007

Excessive Heat 8-6-2007

An upper level ridge of high pressure, persisted across the area from August 6th through August 17th. The combination of heat and humidity, produced heat index readings in the 105 to 115 degree range.

2012

Excessive Heat 7-18-2012

High temperatures in the 100 to 110 degree range, combined with humidity, produced afternoon and early evening heat indices in the 100 to 110 degree range. Overnight low temperatures were in the 70s to lower 80s.

2023

Excessive Heat 8-19-2023 through 8-25-2023

Max heat indices during the afternoons of August 19th through August 25th, 2023 primarily ranged from the 110 to 120 degree range.

Extreme Cold

There have been 6 reported incidents of extreme cold over the last 20 years.

Table 3.47. Extreme Cold reports from NCEI 2004-2024

Year	Reports	Deaths	Injuries
2014	1	0	0
2021	3	0	0
2022	1	0	0

Source: NCEI Storm reports data – June 2025

Table 3.48. Crop Insurance Claims Paid in Sullivan County 2014-2024

Extreme Cold			
Year	Crop Name	Cause of Loss	Insurance Paid (\$)
2014	Wheat	Cold Winter	\$149,735.00
2015	Wheat	Cold Winter	\$91,924.00
2016	No Claim		\$0
2017	No Claim		\$0
2018	Wheat	Cold Winter	\$22,694.00
2019	No Claim		\$0
2020	No Claim		\$0
2021	No Claim		\$0
2022	No Claim		\$0
2023	Wheat	Cold Winter	\$10,340.00
2024	No Claim		\$0
Total			\$274,693.00

Source: USDA Risk Management Agency <http://www.rma.usda.gov/data/cause>

There is somewhat limited data available for Sullivan County low temperature readings, but the data indicates that from 2000-2024, readings at Green City dropped below 20 degrees on average 53.0 times per year, and dropped below zero on an average of 9 times per year according to data from the National centers for environmental information

Extreme cold summaries

2014

Extreme Cold 1-6-2014

A polar plunge of arctic air slammed into Kansas, bringing wind chill values to around 30 degrees below zero for the morning of January 6.

2021

Extreme Cold 2-14-2021 through 2-16-2021

In the first night of bitter cold across the area, temperatures dropped well below zero and with winds around 10-20 mph wind chills overnight going into Sunday morning dropped to around 20 to 30 below.

2022

Extreme Cold 12-22-2022 & 12-23-2022

An arctic air mass sent temperatures below zero along with strong winds. Minimum wind chills across the region generally ranged from -30 to -40 degrees between roughly 10 am on 12/22 to noon on 12/23.

Extreme temperatures can cause stress to crops and animals. According to USDA Risk Management Agency, losses to insurable crops during the 10-year time period from 2014 to 2024 were \$. 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, __ 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.

Probability of Future Occurrence

NCEI data from 2004-2025 indicates a total of 6 events related to extreme cold and 5 events related to extreme heat. This historical data was used to calculate the probability below. It is worth noting that there can be limitations in the data related to extreme heat, as these events may be underreported.

$$\text{Probability} = \frac{6}{20} = 30\% \text{ Chance of Extreme Cold}$$

$$\text{Probability} = \frac{5}{20} = 25\% \text{ Chance of Extreme Heat}$$

Changing Future Conditions Considerations

By the end of the century, the temperatures are projected to continue to increase. The best-case scenario, with lower greenhouse gas emissions, the temperatures are expected to exceed historic levels by the middle of the 21st century. If greenhouse gas emissions are not curbed, historically unprecedented warming is projected by the end of the century. Due to the change in climate, it is projected that by the middle of the 21st century, record breaking heat is likely to occur on a regular basis. This will lead to a higher frequency of heat waves.

The impacts of extreme temperatures are experienced more acutely by the elderly and other vulnerable populations. High temperatures are often higher in urban areas, of which Chariton County has none. There is a higher demand for electricity as people try and keep cool. This increased demand adds a strain to electricity providers and could potentially lead to an increase in the number of power outages.

Additionally, air quality and water quality can be adversely affected by an increase in temperatures. Chariton County is mostly agricultural, and the strain placed on crops and livestock could increase along with the temperature.

Vulnerability

Vulnerability Overview

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

The following table lists the statistics for the most vulnerable population groups

Table 3.49. Sullivan County Population Under Age 5 and Over Age 65, 2023 Census Data

Jurisdiction	Population Under 5	% Population Under 5	Population 65 and over	% Population 65 and over
Sullivan County	377	6.3%	1204	20.1%
City of Milan	157	8.6%	226	12.4%
City of Green City	35	5.8%	144	23.9%
City of Green Castle	19	8.5%	57	25.4%
City of Newtown	4	3.5%	28	24.8%
Village of Harris	3	4.6%	16	24.6%
Village of Humphreys	4	4.5%	6	6.7%
Village of Pollock	0	0%	13	28.3%

Source: U.S. Census Bureau, Profile of General Population and Housing Characteristics (DP1)

The table below lists typical symptoms and health impacts due to exposure to extreme heat. Exposures to extreme cold can result in frostbite and hypothermia.

Table 3.50. 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

The National Institute on Aging estimates that more than 49 million Americans over the age of 65 are particularly vulnerable to hypothermia, with isolated elders being most at risk. For an older person, a body temperature of 95° or lower can cause many health problems, such as heart attack, kidney problems, liver damage or worse.

Also at risk are those without shelter, those who are stranded, and those 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.

Extreme heat and extreme cold events are common occurrences in Missouri. The method used to determine vulnerability to extreme temperatures across Missouri was statistical analysis of data from several sources: National Centers for Environmental Information (NCEI) storm events data (1996 to December 31, 2021), total population and percentage of population over 65 data from the U.S.

Census (2019), and the calculated Social Vulnerability Index for Missouri counties from the Hazards and Vulnerability Research Institute in the Department of Geography at the University of South Carolina.

From the statistical data collected, four factors were considered in determining overall vulnerability to extreme temperatures as follows: total population, percentage of population over 65, likelihood of occurrence, and social vulnerability. Based on natural breaks in the statistical data, a rating value of 1 through 5 was assigned to each factor. Once the individual ratings were determined for the above factors, a combined vulnerability rating was computed for extreme heat and extreme cold. These rating values correspond to the following descriptive terms:

- 1) Low
- 2) Medium-Low
- 3) Medium
- 4) Medium-High
- 5) High

Table 3.51. Likelihood of Occurrence and Overall Vulnerability Rating for Extreme Temperatures

Heat					Cold				
Total Events	Likelihood of Occurrence	Likelihood Rating	Total Vulnerability	Total Vulnerability Description	Total Events	Likelihood of Occurrence	Likelihood Rating	Total Vulnerability	Total Vulnerability Description
16	0.62	1	9	Medium	7	0.28	2	10	Medium High

Source: 2023 Missouri State Hazard Mitigation Plan

The information from the previous table indicates that Sullivan has a Medium Vulnerability rating for Extreme Heat and a Medium High Vulnerability rating for Extreme Cold.

Potential Losses to Existing Development

During extreme heat events structural, road, and electrical infrastructure are vulnerable to damages. Depending upon temperatures and the duration of extreme temperature losses will vary.

Over the past 10 years extreme temperatures have led to \$609,603 in documented losses, converted to an annualized basis this would yield \$60,960.30 in losses.

Impact of Previous and Future Development

Population growth can result in increases in the age groups that are most vulnerable to extreme temperatures. Population growth also increases the strain on electricity infrastructure, as more electricity is needed to accommodate the growing population.

Hazard Summary by Jurisdiction

There is no variation in vulnerability due to location or jurisdiction within the planning area.

Rather those at greatest risk for heat-related illnesses and deaths include children up to five years of age, people 65 years of age and older, people who are overweight, and people who are ill or on certain medications. To determine jurisdictions within the planning area with populations more vulnerable to extreme heat, demographic data was obtained from the 2010 census on population percentages in each jurisdiction comprised of those under age 5 and over age 65. Data was not available for overweight individuals and those on medications vulnerable to extreme heat. The table below summarizes vulnerable populations in the participating jurisdictions. Note that school and special districts are not included in the table because students and those working for the special districts are not customarily in these age groups.

Table 3.52. Sullivan County Population Under Age 5 and Over Age 65, 2023 Census Data

Jurisdiction	Population Under 5	% Population Under 5	Population 65 and over	% Population 65 and over
Sullivan County	377	6.3%	1204	20.1%
City of Milan	157	8.6%	226	12.4%
City of Green City	35	5.8%	144	23.9%
City of Green Castle	19	8.5%	57	25.4%
City of Newtown	4	3.5%	28	24.8%
Village of Harris	3	4.6%	16	24.6%
Village of Humphreys	4	4.5%	6	6.7%
Village of Pollock	0	0%	13	28.3%

Source: U.S. Census Bureau, Profile of General Population and Housing Characteristics (DP1)

Problem Statement

The county has a growing population of residents over 65 years, who are at a greater risk for extreme-temperature related illnesses, injuries, and death. Possible solutions include organizing outreach to the vulnerable elderly populations, including establishing and promoting accessible heating or cooling centers in the community and creating a database in coordination with the Health Department to track those individuals at high risk.

Extreme heat could lead to increased use of water increasing stress on the public water supply systems, as well as increasing the risk to the health of residents who lack proper cooling systems. Heat will also increase demand for electricity and could lead to possible power outages. Extreme cold will cause schools to alter class times and in some cases suspend classes all together, cold temperatures may also lead to frozen pipes and increases in electric demand.

3.4.6 Severe Thunderstorms Including High Winds, Hail, and Lightning

Hazard Profile

Hazard Description

Thunderstorms

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

High Winds

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

Lightning

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

Hail

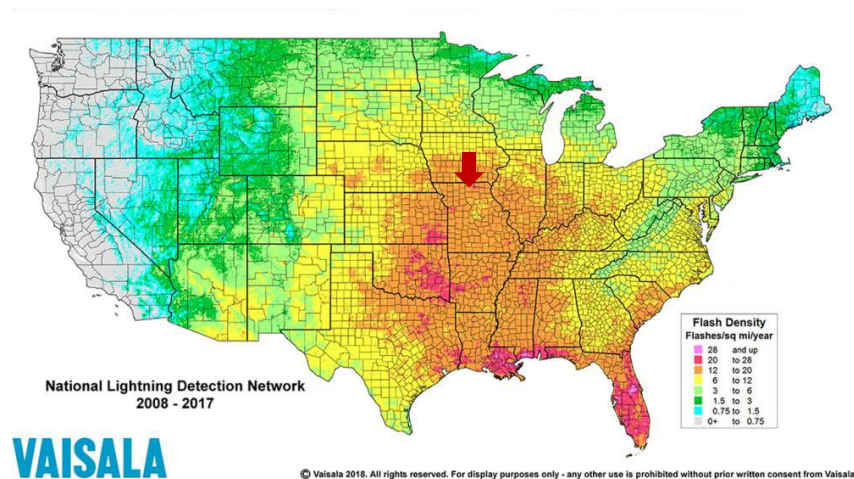
According to the National Oceanic and Atmospheric Administration (NOAA), hail is precipitation that is formed when thunderstorm updrafts carry raindrops upward into extremely cold atmosphere causing them to freeze. The raindrops form into small frozen droplets. They continue to grow as they come into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

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

Geographic Location

Thunderstorms/high winds/hail/lightning events are an area-wide hazard that can happen anywhere in the county. Although these events occur similarly throughout the planning area, they are more frequently reported in more urbanized areas. In addition, damages are more likely to occur in more densely developed urban areas. The majority of Sullivan County is rural. According to the following table, the flash density of lightning in Sullivan County is categorized as 12 to 20 flashes/square mile/year.

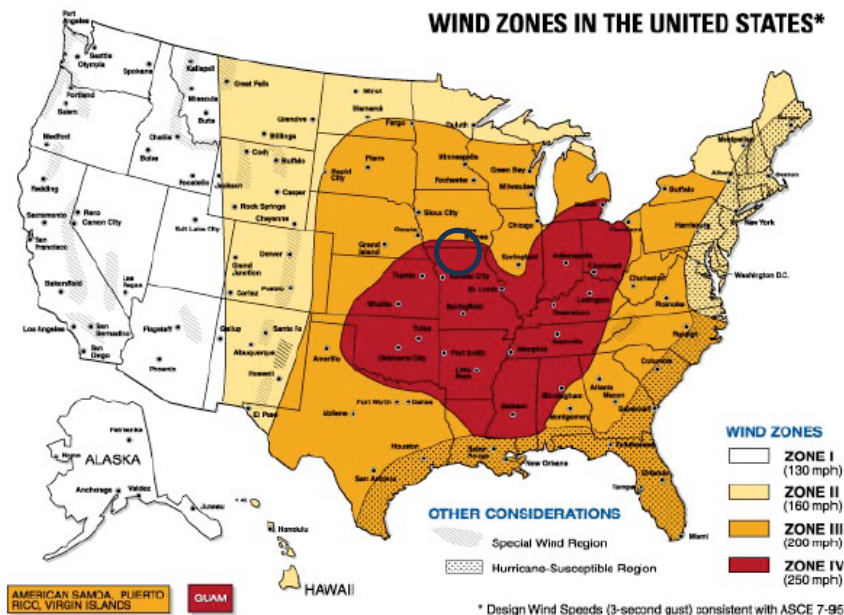
Figure 3.26. Location and Frequency of Lightning in Missouri



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.

Sullivan County, indicated with circle around the location, is entirely within Zone 4. This information indicates that Sullivan County could sustain wind speeds of up to 250 miles per hour.

Figure 3.27. Wind Zones in the United States



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

Strength/Magnitude/Extent

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

Table 3.53. Tornado and Storm Research Organization Hailstorm Intensity Scale

Intensity Category	Diameter (mm)	Diameter (inches)	Size Description	Typical Damage Impacts
Hard Hail	5-9	0.2-0.4	Pea	No damage
Potentially Damaging	10-15	0.4-0.6	Mothball	Slight general damage to plants, crops
Significant	16-20	0.6-0.8	Marble, grape	Significant damage to fruit, crops, vegetation
Severe	21-30	0.8-1.2	Walnut	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
Severe	31-40	1.2-1.6	Pigeon's egg > squash ball	Widespread glass damage, vehicle bodywork damage
Destructive	41-50	1.6-2.0	Golf ball > Pullet's egg	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
Destructive	51-60	2.0-2.4	Hen's egg	Bodywork of grounded aircraft dented, brick walls pitted
Destructive	61-75	2.4-3.0	Tennis ball > cricket ball	Severe roof damage, risk of serious injuries
Destructive	76-90	3.0-3.5	Large orange > Soft ball	Severe damage to aircraft bodywork
Super Hailstorms	91-100	3.6-3.9	Grapefruit	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
Super Hailstorms	>100	4.0+	Melon	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

Source: Tornado and Storm Research Organization (TORRO), Department of Geography, Oxford Brookes University

Notes: In addition to hail diameter, factors including number and density of hailstones, hail fall speed and surface wind speeds affect severity. <http://www.torro.org.uk/site/hscale.php>

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

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

Previous Occurrences

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

The tables below (**Table 3.54 through Table 3.57**) summarize past crop damages as indicated by crop insurance claims. The tables illustrate the magnitude of the impact on the planning area's agricultural economy.

Table 3.54. Crop Insurance Claims Paid in Sullivan County from Thunderstorms, 2014-2024.

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
No Claims listed			

Source: USDA Risk Management Agency, Insurance Claims, <https://www.rma.usda.gov/tools-reports/summary-business/cause-loss>

Table 3.55. Crop Insurance Claims Paid in Sullivan County from High Winds, 2014-2024

Year	Crop Name	Cause of Loss	Insurance Paid (\$)
2014	No Claim		\$0
2015	No Claim		\$0
2016	Corn	Wind	\$193,779.50
2017	Corn	Wind	\$15,427.00
2018	Corn	Wind	\$6,042.00
2019	No Claim		\$0
2020	No Claim		\$0
2021	No Claim		\$0
2022	No Claim		\$0
2023	No Claim		\$0
2024	No Claim		\$0
Total			\$215,248.50

Source: USDA Risk Management Agency, Insurance Claims, <https://www.rma.usda.gov/tools-reports/summary-business/cause-loss>

Table 3.56. Crop Insurance Claims Paid in Sullivan County from Lightning, 2014-2024

Year	Crop Name	Cause of Loss	Insurance Paid (\$)
2014	No Claim		\$0
2015	No Claim		\$0
2016	No Claim		\$0

2017	No Claim		\$0
2018	Soybeans	Lightning	\$832.00
2019	No Claim		\$0
2020	No Claim		\$0
2021	No Claim		\$0
2022	No Claim		\$0
2023	No Claim		\$0
2024	No Claim		\$0
Total			\$832.00

USDA Risk Management Agency, Insurance Claims, <https://www.rma.usda.gov/tools-reports/summary-business/cause-loss>

Table 3.57. Crop Insurance Claims Paid in Sullivan County from Hail, 2014-2024

Year	Crop Name	Cause of Loss	Insurance Paid (\$)
2014	Corn	Hail	\$23,544.00
	Wheat		\$16,686.50
2015	No Claim		\$0
2016	No Claim		\$0
2017	No Claim		\$0
2018	Corn	Hail	\$13,807.00
	Soybeans		\$75,905.00
2019	No Claim		\$0
2020	No Claim		\$0
2021	No Claim		\$0
2022	No Claim		\$0
2023	Soybeans	Hail	\$959.00
2024	No Claim		\$0
Total			\$130,901.50

USDA Risk Management Agency, Insurance Claims, <https://www.rma.usda.gov/tools-reports/summary-business/cause-loss>

Table 3.58. Severe thunderstorm events in Sullivan County, 2004-2024

Begin Date	Event Type	Magnitude	Deaths/Injuries	Property Damage	Crop Damage
8/27/2004	Thunderstorm Wind	52	0	0	0
10/29/2004	Thunderstorm Wind	52	0	1000	0
10/29/2004	Thunderstorm Wind	65	0	40000	0
3/30/2005	Thunderstorm Wind	52	0	0	0
6/7/2005	Hail	0.75	0	0	0
9/19/2005	Hail	0.88	0	0	0
9/19/2005	Hail	1	0	0	0
4/15/2006	Thunderstorm Wind	52	0	0	0
4/18/2006	Hail	1.25	0	0	0
4/18/2006	Hail	1.25	0	0	0
7/13/2006	Hail	0.75	0	0	0
4/3/2007	Hail	1	0	0	0

6/7/2007	Thunderstorm Wind	61	0	0	0
8/12/2007	Thunderstorm Wind	56	0	0	0
8/12/2007	Thunderstorm Wind	52	0	0	0
8/22/2007	Thunderstorm Wind	56	0	5000	0
5/13/2008	Hail	0.75	0	0	0
5/30/2008	Hail	1	0	0	0
6/15/2008	Thunderstorm Wind	52	0	1000	0
7/21/2008	Hail	1	0	0	0
7/25/2008	Heavy Rain		0	0	0
7/27/2008	Hail	4.5	0	3000	0
7/27/2008	Hail	2.75	0	0	0
7/27/2008	Thunderstorm Wind	56	0	0	0
3/7/2009	Hail	1	0	0	0
3/7/2009	Hail	0.88	0	0	0
3/7/2009	Hail	0.75	0	0	0
3/7/2009	Hail	1	0	0	0
6/1/2009	Hail	0.88	0	0	0
6/1/2010	Thunderstorm Wind	70	0	25000	0
6/18/2010	Hail	0.75	0	0	0
7/19/2010	Hail	0.75	0	0	0
7/19/2010	Thunderstorm Wind	52	0	0	0
3/22/2011	Thunderstorm Wind	52	0	500	0
3/22/2011	Hail	0.88	0	0	0
3/22/2011	Hail	0.88	0	0	0
3/22/2011	Hail	1	0	0	0
3/22/2011	Hail	0.88	0	0	0
3/22/2011	Thunderstorm Wind	56	0	0	0
4/3/2011	Hail	1	0	0	0
4/3/2011	Hail	1	0	0	0
4/3/2011	Hail	1.5	0	0	0
5/22/2011	Hail	0.75	0	0	0
6/9/2011	Hail	1.75	0	0	0
6/9/2011	Hail	1.25	0	0	0
6/26/2011	Thunderstorm Wind	52	0	0	0
6/26/2011	Thunderstorm Wind	62	0	0	0
6/26/2011	Thunderstorm Wind	62	0	0	0
6/24/2013	Thunderstorm Wind	52	0	0	0
7/2/2013	Hail	0.75	0	0	0

4/27/2014	Hail	0.75	0	0	0
4/27/2014	Hail	0.75	0	0	0
4/27/2014	Hail	0.75	0	0	0
6/3/2014	Hail	1.5	0	0	0
6/3/2014	Hail	1	0	0	0
6/29/2014	Hail	1	0	0	0
6/30/2014	Hail	1	0	0	0
7/7/2014	Thunderstorm Wind	52	0	0	0
6/7/2015	Hail	0.75	0	0	0
6/7/2015	Hail	0.88	0	0	0
6/7/2015	Hail	1	0	0	0
6/7/2015	Hail	0.75	0	0	0
6/20/2015	Hail	0.75	0	0	0
6/20/2015	Thunderstorm Wind	52	0	0	0
7/13/2015	Hail	1	0	0	0
7/13/2015	Thunderstorm Wind	52	0	0	0
7/13/2015	Thunderstorm Wind	52	0	0	0
7/24/2015	Thunderstorm Wind	52	0	0	0
8/2/2015	Thunderstorm Wind	52	0	0	0
8/2/2015	Thunderstorm Wind	52	0	0	0
8/2/2015	Thunderstorm Wind	52	0	0	0
9/19/2016	Thunderstorm Wind	52	0	0	0
9/19/2016	Thunderstorm Wind	65	0	0	0
5/19/2018	Thunderstorm Wind	70	0	30000	0
5/19/2018	Thunderstorm Wind	61	0	0	0
6/8/2018	Hail	1.5	0	0	0
6/8/2018	Hail	1	0	0	0
6/8/2018	Thunderstorm Wind	52	0	2000	0
6/28/2018	Hail	1	0	0	0
6/28/2018	Hail	1	0	0	0
8/28/2018	Thunderstorm Wind	65	0	0	0
8/28/2018	Thunderstorm Wind	56	0	0	0
5/25/2019	Thunderstorm Wind	50	0	0	0
5/25/2019	Thunderstorm Wind	52	0	0	0
6/5/2019	Hail	1.75	0	0	0
3/10/2021	Hail	0.88	0	0	0
3/5/2022	Hail	1.75	0	0	0

5/17/2022	Hail	1	0	0	0
5/17/2022	Hail	1	0	0	0
3/31/2023	Hail	1	0	0	0
7/29/2023	Thunderstorm Wind	52	0	0	0
4/27/2024	Hail	1	0	0	0
5/26/2024	Hail	1.75	0	0	0
5/26/2024	Hail	2	0	0	0
5/26/2024	Hail	1.75	0	0	0
6/3/2025	Thunderstorm Wind	52	0	0	0
6/3/2025	Thunderstorm Wind	52	0	0	0
Total			0	\$107,500	\$0

Source: NCEI Storm Database (Magnitude if Thunderstorm/Wind reflects MPH, if Hail reflects size in inches)

Table 3.59. NCEI Thunderstorm Event Narratives for Sullivan County (Where Available)

Begin Date	Event Narrative
8/27/2004	Large trees blocking road.
10/29/2004	Power lines down.
10/29/2004	Mobile home destroyed and grain bin knocked down.
3/30/2005	Six to ten inch tree limbs down.
6/7/2007	Large trees and limbs were reported down.
8/22/2007	Thunderstorm wind gusts to 56 knots, caused six to nine power poles and lines to be downed on Highway 6.
6/15/2008	Power pole was knocked down on Highway 6.
7/25/2008	Storm total rainfall was measured at 6.82 inches.
7/27/2008	Car and home windows were shattered by the large hail.
7/27/2008	Numerous tree limbs were blown down by winds estimated to 65 mph.
6/1/2010	A roof was reported to have blown off a house, south of Milan on Highway 5. One wall was partially blown down.
7/19/2010	A large tree was reported down. Thunderstorm wind gusts were estimated to 60 mph.
3/22/2011	An outbuilding was reported destroyed, with thunderstorm wind gusts estimated to 60 mph.
3/22/2011	Thunderstorm wind gusts were estimated up to 65 mph.
6/26/2011	A large tree was reported blown down. Thunderstorm wind gusts were estimated up to 60 mph.
6/26/2011	Thunderstorm wind gust was measured at 71 mph.
6/26/2011	Thunderstorm wind gust was measured at 71 mph.
6/24/2013	Thunderstorm wind gusts were estimated up to 60 mph, with tree limbs reported down, along with a power outage.
7/7/2014	Several large tree limbs were reported snapped in Milan, Missouri.
6/20/2015	A trained spotter reported a 60 mph wind.
7/13/2015	A two inch tree limb was snapped.
7/13/2015	Several 2 tree limbs were knocked down.
7/24/2015	Four inch tree limbs were torn out a tree.
8/2/2015	A trained spotter reported an estimated 60 mph wind.
8/2/2015	A 6 inch tree limb was snapped in strong winds.
8/2/2015	A trained spotter reported a 60 mph wind gust.

9/19/2016	There was a reported 60 mph wind gust west of Milan.
9/19/2016	A porch was blown off of a house as a strong storm went through the area.
5/19/2018	A mobile home was overturned near Newtown.
5/19/2018	Power lines and trees were down across Sullivan County, specifically in this case near Pollock.
6/8/2018	Public reported numerous tree branches down across Milan as well as a swing set toppled over.
8/28/2018	A peak wind of 75.2 mph was recorded by an amateur radio operator. Power was knocked out at their location.
8/28/2018	A tree was down along Highway 5 north of Browning.
5/25/2019	Amateur radio operator reported 58 mph winds.
5/25/2019	Sullivan County Sheriff's office reported 60 mph winds.
7/29/2023	Estimated wind gusts up to 60 mph in Green City.
4/27/2024	Quarter sized hail was reported just north of Osgood.
5/26/2024	Golf ball sized hail was reported about 4 miles northwest of Milan.
5/26/2024	Two inch sized hail was reported in Milan.
5/26/2024	Golf ball sized hail was reported north of Owasco on Route Y.
6/3/2025	Several downed trees, some up to 4 feet in diameter, reported north to northeast of Browning.
6/3/2025	Downed wires near Lincoln Street in Greencastle.

Source: NCEI Storm Database

Probability of Future Occurrence

Probability of Thunderstorm

$$Probability = \frac{\# \text{ of events}}{Years} = \frac{97}{20} = 4.85$$

According to the above calculation, the planning area of Sullivan County should experience an average of 4.85 Thunderstorms annually.

Probability of Thunderstorm with High or Excessive Winds

$$Probability = \frac{\# \text{ of events}}{Years} = \frac{39}{20} = 1.95$$

According to the above calculation, the planning area of Sullivan County should experience a thunderstorm accompanied by high or excessive winds (60 mph or greater) approximately 1.95 times annually.

Probability of Thunderstorm with Hail

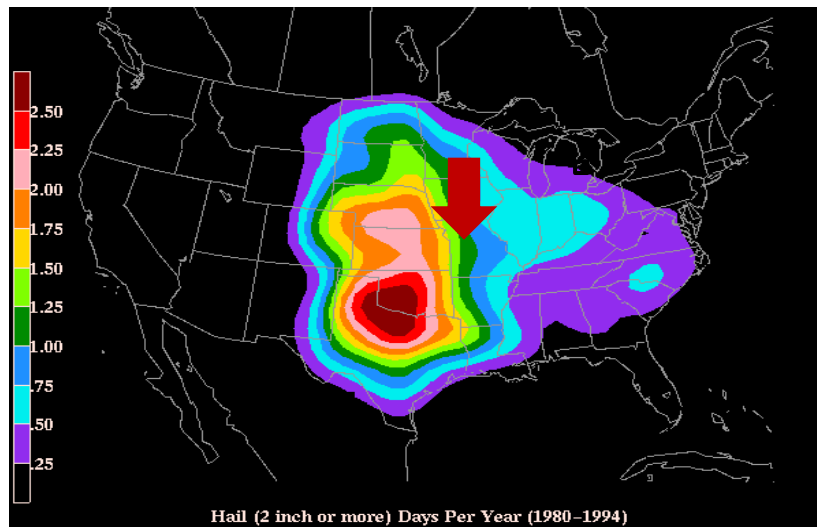
$$Probability = \frac{\# \text{ of events}}{Years} = \frac{57}{20} = 2.85$$

According to the above calculation, the planning area of Sullivan County should experience a thunderstorm accompanied by hail approximately 2.85 times annually.

The figure below shows the annual hailstorm probability in Sullivan County for hail stones larger than 2 inches in diameter from 1980 through 1994. Sullivan County, indicated by an arrow, experiences approximately 1 day per year where the size of the hailstones were 2 inches in

diameter between the period of 1980 through 1994.

Figure 3.28. Annual Hailstorm Probability (2" diameter or larger), U 1980- 1994



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

Changing Future Conditions Considerations

As temperatures increase with changing conditions, the severity of storms is likely to increase, as warm air is the key component of thunderstorms. Due to higher levels of convection, there could be a higher frequency and severity of storm events.

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/>

The method used to determine vulnerability to severe thunderstorms across Missouri was statistical analysis of data from several sources: National Centers for Environmental Information (NCEI) storm events data (1996 to December 31, 2021), HAZUS Building Exposure Value data, housing density and mobile home data from the U.S. Census (2019), and the calculated Social Vulnerability Index for Missouri Counties from the Hazards and Vulnerability Research Institute in the Department of Geography at the University of South Carolina.

From the statistical data collected, six factors were considered in determining overall vulnerability to lightning as follows: housing density, building exposure, percentage of mobile homes, social vulnerability, likelihood of occurrence, and average annual property loss. Based on natural breaks in the statistical data, a rating value of 1 through 5 was assigned to each factor. Once the ranges were determined and applied to all factors considered in the analysis for wind, hail, and lightning, they were rated individually and factored together to determine an overall vulnerability rating for thunderstorms. This vulnerability rating was taken from the 2023 Missouri State Hazard Mitigation Plan.

These rating values correspond to the following descriptive terms:

- 1) Low
- 2) Medium-Low
- 3) Medium
- 4) Medium-High
- 5) High

Table 3.60. Housing Density, Building Exposure, SOVI, and Mobile Home Data for Sullivan County

Total Building Exposure (HAZUS)	Building Exposure Rating	Housing Density	Housing Density Rating	SOVI Rating	SOVI Ranking Rating	Percent Mobile Homes	Percent Mobile Homes Rating
\$648,402,000	1	5.15	1	Medium High	4	10.4%	3

Source: 2023 Missouri State Hazard Mitigation Plan

Table 3.61. High Wind, Hail, and Lightning Events, Likelihood of Occurrence, and Associated Ratings for Sullivan County

High Wind			Hail			Lightning		
Total Number of Events	Likelihood of Occurrence	Likelihood of Occurrence Rating	Total Number of Events	Likelihood of Occurrence	Likelihood of Occurrence Rating	Total Number of Events	Likelihood of Occurrence	Likelihood of Occurrence Rating
53	2.04	1	68	2.62	1	0	0.00	1

Table 3.62. Annualized Property Loss and Associated Ratings for Sullivan County

High Wind		Hail		Lightning	
Total Annualized Property Loss	Total Annualized Property Loss Rating	Total Annualized Property Loss	Total Annualized Property Loss Rating	Total Annualized Property Loss	Total Annualized Property Loss Rating
\$5,173	3	\$115	1	\$0	1

Source: 2023 Missouri State Hazard Mitigation Plan

Potential Losses to Existing Development

According to historical loss data reported for thunderstorm wind, high wind, hail, and lightning by NCEI, from 2014-2025, 97 severe weather events impacted Sullivan County and caused an estimated \$107,500 in property damage with no reported crop damage. Based on this estimate Sullivan County experiences an average annual property loss of approximately \$9,772.73.

The USDA reported crop losses due to high winds, lightning, and hail. According to the USDA there were \$347,982 in crop insurance claims recorded from 2014 to 2024. Based on these figures, Sullivan County can expect to experience an average annual crop loss of \$34,798.

Previous and Future Development

Any additional development that occurs in Sullivan County will result in increased exposure and thus increased vulnerability to severe thunderstorms and their associated wind, hail, and lightning.

Hazard Summary by Jurisdiction

Thunderstorms, high winds, lightning, and hail events are area-wide and expected to occur uniformly across the planning area. However, the magnitude of impacts may vary by jurisdiction based on the physical vulnerability of structures.

The following table details the percentage of housing built before 1939 and the percentage of manufactured housing units in each jurisdiction, as both characteristics may indicate increased vulnerability to severe thunderstorms.

Table 3.63. Housing Vulnerability Indicators for Sullivan County, 2023

Jurisdiction	Mobile Homes	% Of Mobile Homes	Homes Built Prior to 1939	% Of Homes Built Prior to 1939
Sullivan County	219	10.7%	325	15.9%
City of Milan	94	14.2%	72	10.9%
City of Green City	3	1.3%	21	20.2%
City of Green Castle	20	19.2%	47	21.1%
City of Newtown	1	2.4%	21	50.0%
Village of Harris	3	10.7%	13	46.4%
Village of Humphreys	1	2.8%	5	13.9%
Village of Pollock	0	0.0%	4	57.1%

Source: U.S. Census Bureau, Physical Housing Characteristics for Occupied Housing Units (S2501)

Problem Statement

Severe thunderstorms and associated hazards such as lightning can result in power outages and damage to equipment resulting in operational capacity, such as at water treatment plants. Severe storms may also knock out communications system to critical facilities such as schools, strong winds may lead to structural damage and loss of residents and facilities.

3.4.7 Severe Winter Weather

Hazard Profile

Hazard Description

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

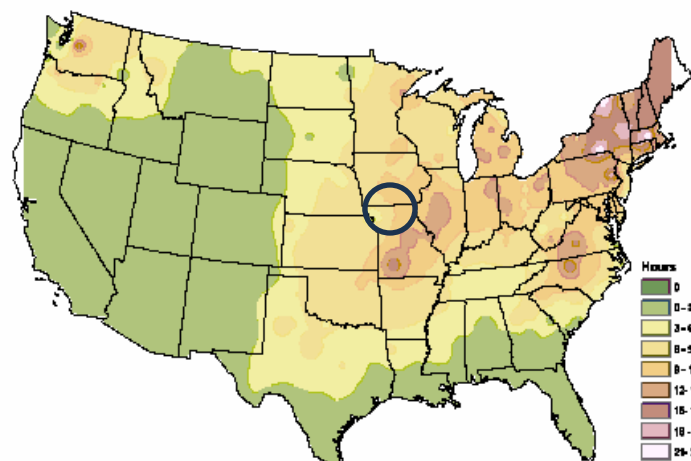
- **Blizzard**—Winds of 35 miles per hour or more with snow and blowing snow reducing visibility to less than $\frac{1}{4}$ mile for at least three hours.
- **Blowing Snow**—Wind-driven snow that reduces visibility. Blowing snow may be falling snow and/or snow on the ground picked up by the wind.
- **Snow 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

A major winter storm usually affects a large area uniformly. While there might be slight variations in impact across a county, the effects are generally consistent throughout the region.

The figure below shows the NWS estimated hours of freezing rain across the United States. Sullivan County can expect between 8 and 12 hours annually.

Figure 3.29. NWS Statewide Average Number of Hours per Year with Freezing Rain



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

Strength/Magnitude/Extent

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

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

- Winter Weather Advisory — Winter weather conditions are expected to cause significant inconveniences and may be hazardous. If caution is exercised, these situations should not become life threatening. Often the greatest hazard is to motorists.
- Winter Storm Watch — Severe winter conditions, such as heavy snow and/or ice are possible within the next day or two.
- Winter Storm Warning — Severe winter conditions have begun or are about to begin.
- Blizzard Warning — falling or blowing snow combined strong winds will produce a blinding snow (near zero visibility), deep drifts, and life-threatening wind chill.
- Ice Storm Warning -- Dangerous accumulations of ice are expected with generally over one quarter inch of ice on exposed surfaces. Travel is impacted, and widespread downed trees and power lines often result.
- Wind Chill Advisory -- Combination of low temperatures and strong winds will result in wind chill readings of -20 degrees F or lower.
- Wind Chill Warning -- Wind chill temperatures of -35 degrees F or lower are expected. This is a life-threatening situation.

Previous Occurrences

Table 3.64. Previous Winter storm events in Sullivan County 1994-2024

Blizzard			
Date	Deaths	Injuries	Damage
12/7/2009	0	0	0
2/1/2011	0	0	0
11/25/2018	0	0	0
Total: 3	0	0	0
Heavy Snow			
4/10/1997	0	0	\$750,000
3/15/2001	0	0	0
1/30/2002	0	0	0
3/1/2002	0	0	0
2/12/2007	0	0	0
12/21/2013	0	0	0
2/4/2014	0	0	0
1/31/2015	0	0	0
2/1/2015	0	0	0
Total: 9	0	0	\$750,000
Ice Storm			
1/4/1998	0	0	0
11/29/2006	0	0	0
12/1/2007	0	0	0
12/10/2007	0	0	\$10,000
12/18/2008	0	0	0
1/15/2017	0	0	0
2/7/2019	0	0	0

Total: 7	0	0	\$10,000
Winter Storm			
12/11/2000	0	0	0
1/28/2001	0	0	0
2/9/2001	0	0	0
2/27/2001	0	0	0
1/16/2003	0	0	0
2/15/2003	0	0	0
3/4/2003	0	0	0
2/5/2004	0	0	0
1/4/2005	0	0	0
1/12/2007	0	0	0
12/22/2007	0	0	0
2/21/2010	0	0	0
2/24/2011	0	0	0
12/20/2012	0	0	0
2/21/2013	0	0	0
2/25/2013	0	0	0
12/27/2015	0	0	0
1/11/2019	0	0	0
1/10/2020	0	0	0
4/16/2020	0	0	0
12/29/2020	0	0	0
1/14/2022	0	0	0
Total: 22	0	0	0
Total: 41	0	0	\$760,000

Source: NWS NCEI Data accessed July 2025

Table 3.66. Winter storm events summaries for Sullivan County Missouri 1994-2024

Year	Date	Event Summary
1994		No reported events
1995		No reported events
1996		No reported events
1997	4/10/1997	No event summary supplied by NCEI
1998	1/4/1998	An icy rain fell during the morning hours of January 4th resulting in an eighth to a quarter inch of ice accumulation and slippery roadways. There were numerous non-injury traffic accidents reported throughout Northwest Missouri and many reports of minor injuries due to pedestrians falling on icy sidewalks. Since the freezing rain occurred on Sunday, traffic was light which prevented widespread problems.
1999		No reported events
2000	12/11/2000	A storm system brought a mixed bag of wintry precipitation to northern Missouri on December 11th. Precipitation began as freezing drizzle late in the evening of December 10th. After midnight precipitation increased in intensity and changed over to snow across the northern tier of Missouri. Snowfall totaled 7 inches in Fairfax Missouri, with 3-5 inches reported north of a St. Joseph to Kirksville line. Ice accumulations of up to 3/8 of an inch were reported from Marshall and Sedalia into the Boonville area. While heavy accumulation of snow and ice were not noted over the remainder of the area, the combination of snow and ice was sufficient to disrupt travel. Numerous traffic accidents were reported, and two airplanes slid off icy taxiways at the Kansas City International Airport, but no serious injuries were reported. Most schools in the area were closed, and many remained closed the next day.
2001	1/28/2001	A storm system brought a mixed bag of wintry precipitation to northern Missouri on January 28th and 29th. The precipitation started as snow but quickly became freezing rain during the morning hours, mainly south of a line from St. Joseph to Fayette. North of this line snowfall totals averaged 1 to 5 inches. Fairfax Missouri reported 6 inches, and 4-to-6-inch amounts were reported around Bethany and Moberly. Ice accumulations ranged from 1/4 to 1/2 inch across the entire area. The combination of snow and ice was sufficient to disrupt travel, especially north of Interstate 70. Numerous traffic accidents were reported, and some schools were closed the following Monday.

	2/9/2001	"A strong storm system moved across Northwest Missouri on February 9th with a variety of winter
	2/27/2001	weather. Heavy snows of 8 to 10 inches fell across Nodaway County, with 6 to 8 inches north of a St. Joseph to Grant City line. The remainder of the area reported 1/4 to 1/2 inch of ice accumulation,
	3/15/2001	No summary provided.
2002	1/30/2002	A long-lived major ice and snowstorm blasted much of northwest, northern and central Missouri from late Tuesday, January 29th, until Thursday, January 31st. Ice accumulations of over an inch were observed from the Kansas City metropolitan area, east and north through Moberly Missouri. At one point 409,504 total customers were without electrical power in the CWA, with some residents without power for up to two weeks. For the Kansas City area, the ice storm was ranked as the worst ever. Further north across northern Missouri, heavy snow fell generally along and north of a line, from St. Joseph to Trenton to Kirksville. Snow accumulations ranged from 8 to 14 inches.
	3/1/2002	A vigorous late winter storm moved across the Midwest. This storm spread two to six inches of snow across northwest Missouri. Strong gusty northwest winds caused considerable blowing and drifting of the snow. Driving was hazardous and numerous accidents were reported.
2003	1/16/2003	A winter storm moved across portions of northwest and north central Missouri on January 16th. The storm produced a swath of 3-to-8-inch snows, from Maryville east to Princeton.
	2/15/2003	A winter storm moved along the Iowa Missouri border from February 15th through February 16th. The storm produced snows from 3 to 8 inches, in an area from Bethany to Kirksville. In addition to the snow...there was up to a quarter inch of ice accumulation. Gusty northwest winds produced snow drifts from 2 to 4 feet deep.
	3/4/2003	A late winter storm moved through extreme northern Missouri on March 4th. Areas from Milan to Livonia received from 5 to 6 inches of snow. A quarter of an inch ice accumulation was reported around Bethany.
2004	2/5/2004	A winter storm on February 5th left a wide area of 6 to 8 inches of snow.
2005	1/4/2005	1/4 to 3/4" of ice was reported across these areas
2006	1/20/2006	A winter weather system brought a wintry mix of sleet, freezing rain, and snow to the area. Snow amounts were from 2 to 4 inches.
	11/29/2006	A strong Arctic cold front swept through the region on November 29th. As the cold air surged south during the day, rain which had been falling through a warm layer in the atmosphere quickly changed to freezing rain and some sleet as it reached the surface. Areas from Sedalia to Macon are received from 1/4 to 1/2 inches of ice. A band of ice up to 1/4 of an inch, fell from Clinton northeast into Kirksville. A large swath from Butler to Plattsburg, and then extending northeast to Princeton and Milan, including the Kansas City metropolitan area, received from 1/4 to 1/2 of an inch of ice accumulation. Lighter amounts of up to 1/4 of an inch of ice were reported from Saint Joseph to Bethany.
2007	1/12/2007	Up to an inch of freezing rain and sleet across the county.
	2/12/2007	Four to six inches of snow fell across the county.
	12/1/2007	One quarter to four tenths of an inch of ice was reported across the county.
	12/10/2007	Three quarters of an inch of ice was reported across the county. Many tree branches and power lines were reported down.
	12/22/2007	Six to nine inches of snow was observed across northern portions of the county. Blowing and drifting of the snow made travel hazardous.
2008	12/18/2008	One quarter of an inch of ice was observed.
2009	12/7/2009	Blizzard conditions were observed across the county. Snowfall amounts reached 8 inches, in the northwestern part of the county.

2010	2/21/2010	Up to 8.5 inches of snow was measured in Green City. Blowing and drifting snow caused hazardous driving conditions.
2011	1/10/2011	Five to six inches of snow was reported across the county.
	2/1/2011	Blizzard conditions were observed across the county, with frequent wind gusts up to 45 mph, visibilities less than 1/4 of a mile, and heavy snow of up to 12 inches, measured in Milan. Travel was nearly impossible, with the blowing and drifting snow, and the very low visibilities. This event currently holds the record for the single greatest snowfall on record in many communities.
	2/24/2011	The combination of up to 5 inches of snow, and blowing and drifting snow, led to hazardous driving conditions across the county.
	12/19/2011	One inch of snow was measured in Green City.
2012	1/27/2012	Three inches of snow was measured in Green City.
	2/13/2012	The observer in Green City measured 2.5 inches of snow.
	2/24/2012	The observer in Green City measured one inch of snow.
	12/20/2012	The combination of high winds and snowfall of one to three inches, caused near blizzard conditions across the county.
2013	2/21/2013	Green City measured 6 inches of snow.
	2/25/2013	Nine inches of snow was measured at Milan.
	5/2/2013	Green City measured 3.0 inches of snow.
	12/21/2013	Light to moderate snow picked up during the afternoon hours on December 21. Preceding the snow freezing rain produced some minor icing in and around the area. Once the snow began it quickly accumulated between 5 and 7 inches across the area. The highest amount received came from Princeton, Missouri where 6 to 7 inches of snow fell. While there were several vehicle spinouts across the area, and despite the ice accumulation the widespread effects were rather minimal.
2014	2/4/2014	A major winter storm trekked through Kansas and Missouri on February 4 and 5. By the time the storm finished it dropped around a foot of snow across the entire area.
2015	1/31/2015	Light snow fell for a long duration across northern Missouri through the evening and overnight hours on January 1 through the early morning hours on February 2. Strong winds moved into the area while the snow was falling and caused visibility problems and drifting on the roads. Generally, 8 to 10 inches fell across the county with the highest reported total from the county coming from Green City, where 9 inches fell. Numerous vehicle accidents occurred due to the poor driving conditions, but no serious injuries were reported.
	12/28/2015	Several areas across northeast Kansas and northwest Missouri saw ice accumulation approaching a quarter inch as well as sleet ranging from a quarter to a half inch in most locations, with some locations reporting over an inch of sleet. Once the sleet ended another 3 to 4 inches of snow fell before the system moved out.
2016		No reported events
2017	1/16/2017	To finish off a prolonged freezing rain event across northeast Kansas and northwest Missouri light rain lifted north into far northern Missouri causing ice to accumulate through the day on Sunday and overnight into Monday morning. Several trained weather spotters from across northern Missouri reported a quarter inch of ice on all surfaces. Several area roads were ice covered through the day on Sunday and into Monday morning before temperatures warmed above freezing Monday morning.
2018	11/25/2018	Blizzard conditions started after a few hours of light to moderately falling snow. Once the heavy snow arrived winds gusted up to 40 mph for nearly 4 hours, creating whiteout conditions, officially measured by the ASOS at nearby KTVK and KIRK as sub-quarter mile for that duration. Despite the heavy impacts from this system affecting Thanksgiving weekend return traffic, no serious injuries occurred from this event.
2019	1/12/2019	Between 8 and 12 inches of snow fell across Sullivan County, with most of it falling over the course of the first 12 hours. Light snow continued into the next day (January

	2/7/2019	12), but was fairly light, and only accounted for 1 to 2 inches. While light freezing drizzle occurred off and on February 5, the bulk of the freezing rain fell during the overnight period on February 6 into February 7. Over the course of the event Sullivan County received approximately a quarter inch of ice accumulation. Numerous vehicle accidents occurred area-wide and minor tree damage occurred.
2020	1/11/2020	Freezing rain occurred through much of the night going into January 11 and caused around a quarter to one-third inch accumulation. This occurred prior to about 2 to 3 inches of snow falling. This resulted in several auto accidents.
	4/17/2020	Light snow fell off and on through the day on Thursday, accumulating about an inch; however, by mid-to-late afternoon the snow picked up intensity. One to two inches per hour snow rates were reported across the area for periods. Numerous reports of very low visibility due to very heavy snow were also received. The heavier snow came to an end on the evening of April 16 and gradually tapered to a stop by early morning on April 17. When all was said and done there was about 6-10 inches of snow reported across portions of the county.
	12/30/2020	During the day on December 29, a potent winter storm moved into the area. The precipitation started as primarily snow during the morning hours producing a couple inches of accumulation but switched to freezing rain just before 1 pm as warm air aloft moved over the area. Moderate, to at times heavy rain ensued through the rest of the morning and early to middle afternoon hours, before eventually moving out by the evening hours. The main impact from this storm was several power outages around the area. Due to the rain rates, not all of the nearly 1 inch of liquid precipitation accreted on surfaces, but a quarter to half inch did accrete, causing a significant disruption to the power, and closing numerous roads.
2021		No reported events
2022	1/15/2022	Several reports from across the area indicated around 6-8 inches of snow in Sullivan County.
2023		No reported events
2024		No reported events

Source: NCEI storm reports database; 1994-2024, accessed July 2925

Table 3.67. Crop Insurance Claims Paid in Sullivan County as a Result of Cold Conditions and Snow 2014 to 2024

Year	Crop Name	Cause of Loss	Insurance Paid (\$)
2014	Wheat	Cold Winter	\$149,735.00
	Wheat	Freeze	\$118.00
	Soybeans	Freeze	\$3,584.00
2015	Wheat	Cold Winter	\$91,924.00
2016	No Claim		\$0
2017	No Claim		\$0
2018	Wheat	Cold Winter	\$22,694.00
2019	No Claim		\$0
2020	No Claim		\$0
2021	No Claim		\$0
2022	No Claim		\$0
2023	Wheat	Cold Winter	\$10,340.00
2024	No Claim		\$0
Total			\$278,395.00

Source: USDA Risk Management Agency <http://www.rma.usda.gov/data/cause>

Probability of Future Occurrence

Over the last 20 years, Sullivan County has experienced 41 winter weather events. Since one storm would generally include more than one type of event the probability of future occurrence was calculated as follows:

$$\text{Probability} = \frac{\text{number of events}}{\text{number of years}} = \frac{41}{20} = 2.25$$

This calculation would indicate that Sullivan County could expect to experience on average, 2.05 winter weather events annually.

Changing Future Conditions Considerations

With higher average temperatures occurring across the globe due to climate change, one might assume that winters would be milder. However, with the increase in the atmosphere's water-holding capacity, there is an increased likelihood of heavy snow events. Changes in the jet stream patterns can also result in allowing pools of very cold air to sink further south than usual. In summation, the changing climate could result in more severe storms, both in duration and amount of precipitation.

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.

From the 2023 Missouri Hazard Mitigation Plan, the method used to determine vulnerability to severe winter weather across Missouri was statistical analysis of data from several sources: National Centers for Environmental Information (NCEI) storm events data (1996 to December 31, 2021), HAZUS Building Exposure Value Data, housing density data from the US Census, and the calculated Social Vulnerability Index for Missouri Counties from the Hazard and Vulnerability Research Institute in the Department of Geography at the University of South Carolina.

From the statistical data collected, five factors were considered in determining overall vulnerability to severe winter weather as follows: housing density, building exposure, social vulnerability, likelihood of

occurrence, and average annual property loss. Based on natural breaks in the statistical data, a rating value of 1 through 5 was assigned to each factor. These rating values correspond to the following descriptive terms:

1. Low
2. Low-medium
3. Medium
4. Medium-high
5. High

Once the individual ratings were determined for the above factors, a combined vulnerability rating was computed for severe winter weather events. The following table provides the calculated ranges applied to determine overall vulnerability of Missouri counties to severe winter weather.

Table 3.68. Ranges for Severe Winter Weather Combined Vulnerability Rating

	Low (1)	Low-Medium (2)	Medium (3)	Medium-High (4)	High (5)
Severe Winter Weather Combined Vulnerability	7-8	8-10	10-12	12-15	15-22

Source: 2023 Missouri State Hazard Mitigation Plan

Table 3.69. Housing Density, Building Exposure, and SOVI Data for Sullivan County

	Total Building Exposure (HAZUS)	Building Exposure Rating	Housing Density	Housing Density Rating	SOVI Ranking	SOVI Rating
Sullivan	\$648,402,000	1	5.15	1	Medium High	4

Source: 2023 Missouri State Hazard Mitigation Plan

The previous table provide the information the Sullivan County has a Medium High SOVI Vulnerability Rating for Severe Winter Weather.

The following tables contain information from the 2023 Missouri State Hazard Mitigation Plan. These tables were included in the plan to provide additional data obtained from the NCEI and utilized to complete the overall vulnerability analysis and the total overall vulnerability rating for severe winter weather in Sullivan County. The total number of winter weather events includes “blizzard”, “heavy snow”, “ice-storm”, “winter-storm”, and “winter weather events.”

Table 3.70. Annualized Severe Winter Weather Damages in Sullivan County

Annualized Blizzard Property Loss (\$)	Annualized Heavy Snow Property Loss (\$)	Annualized Ice Storm Property Loss (\$)	Annualized Winter Storm Property Loss (\$)	Annualized Winter Weather Property Loss (\$)	Total Annualized Winter Weather Property Loss (\$)
\$0	\$28,849	\$385	\$0	\$0	\$29,231

Source: 2023 Missouri State Hazard Mitigation Plan

Table 3.71. Additional Statistical Data for Severe Winter Weather Vulnerability in Sullivan County

Type of Data	Amount
Total # of Winter Weather Events	47
Likelihood of Occurrence	1.81
Likelihood of Occurrence Rating	2
Total Annualized Property Loss	\$29,231
Total Annualized Property Loss Rating	1
Overall Vulnerability Rating	9
Overall Vulnerability Rating Description	Medium Low

Source: 2023 Missouri State Hazard Mitigation Plan

Potential Losses to Existing Development

The next severe winter storm will most likely close schools and businesses for multiple days and make roadways hazardous for travel. Heavy ice accumulation may damage electrical infrastructures causing prolonged power outages for large portions of the region. In addition, freezing temperatures make water lines vulnerable to freezing. Fallen tree limbs also pose a threat to various structures/infrastructures across the county.

Previous and Future Development

Future development could potentially increase vulnerability to this hazard by increasing demand on the utilities and increasing the exposure of infrastructure networks. At this time, there is little expected in the way of new development that would lead to an increased risk to the planning area.

Hazard Summary by Jurisdiction

Although crop loss as a result of severe winter weather occurs more in the unincorporated portions of the planning area, the density of vulnerable populations is higher in the urban areas of the planning areas. It is considered that the magnitude of this hazard is relatively equal. The factors of probability, warning time, and duration are also equal across the planning area. Therefore, the conclusion is that the hazard does not substantially vary by jurisdiction.

Problem Statement

Sullivan County is expected to experience at least one severe winter weather event annually. The county has a low-medium vulnerability rating. Jurisdictions should enhance their weather monitoring to be better prepared for severe weather hazards. If jurisdictions monitor winter weather, they can dispatch road crews to prepare for the hazard.

County and city crews can also trim trees along power lines to minimize the potential for outages due to snow and ice. Citizens should also be educated about the benefits of being proactive to alleviate property damage as well as preparing for power outages. Education needs to occur to ensure all residents are aware of the shelters in the County, residents are educated on emergency supplies to have and the utilization of social media and texting increases.

Extreme temperatures can lead to a disruption in services to the county, such as schools and private commerce. Additional strains on the electric grid could potentially cause interruptions to power. During extreme-cold events water lines could freeze or burst.

3.4.8 Tornado

Hazard Profile

Hazard Description

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

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

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

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

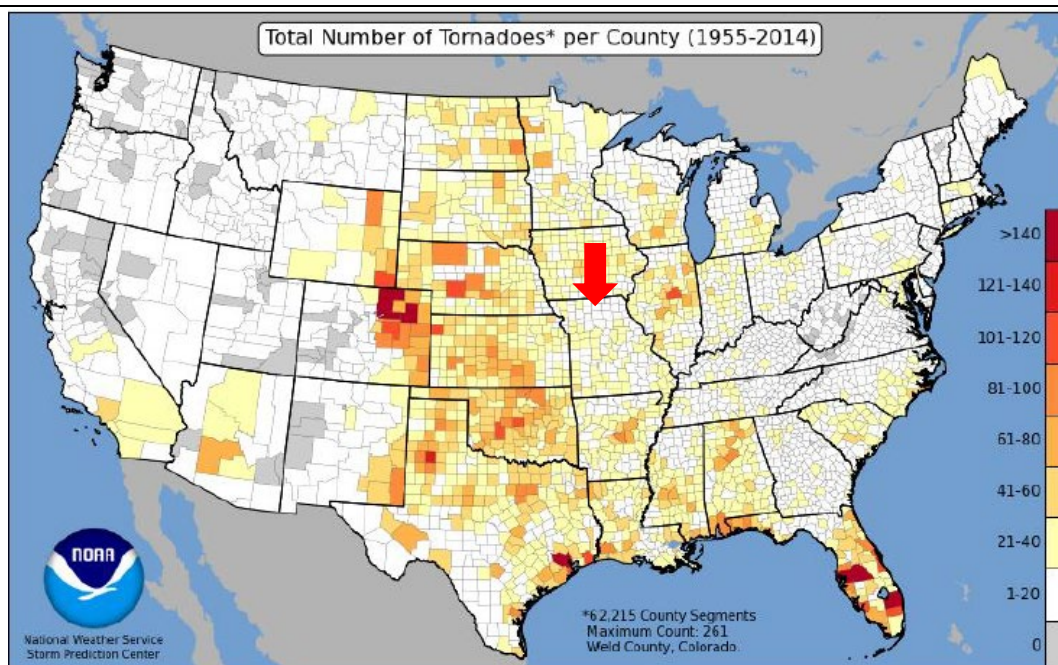
The average forward speed of a tornado is 30 miles per hour but may vary from nearly stationary to 70 miles per hour. The average tornado moves from southwest to northeast, but tornadoes have

been known to move in any direction. Tornadoes are most likely to occur in the afternoon and evening, but have been known to occur at all hours of the day and night.

Geographic Location

Sullivan County, Missouri, has experienced a significant history of tornadoes, with documented events stretching back to at least the late 19th and early 20th centuries. Historically, devastating tornadoes have impacted various parts of the county, including a particularly destructive event in 1899 that destroyed the town of Newtown and claimed 20 lives, and a 1918 tornado that killed six people after cutting a quarter-mile wide, three-mile long swath. While records highlight destructive events in and around towns like Newtown, Milan, Osgood, Pollock, and Humphreys, tornadoes in Sullivan County have generally shown paths across various rural and developed areas, often resulting in structural damage to homes and businesses, downed trees, and sometimes fatalities or injuries.

Figure 3.30. Tornado Activity in the United States 1955-2014



Source: NOAA Tornado Activity in the United States

Strength/Magnitude/Extent

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

Tornado magnitude is classified according to the EF- Scale (or the Enhance Fujita Scale, based on

the original Fujita Scale developed by Dr. Theodore Fujita, a renowned severe storm researcher). The EF- Scale attempts to rank tornadoes according to wind speed based on the damage caused. This update to the original F Scale was implemented in the U.S. on February 1, 2007.

Table 3.72. Enhanced F Scale for Tornado Damage

Fujita Scale			Derived EF Scale		Operational EF Scale	
F Number	Fastest ¼-mile (mph)	3 Second Gust (mph)	EF Number	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

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

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

Table 3.73. 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
EF4	166-200	0.7%	Devastating. Well-constructed houses and whole frame houses completely levelled; cars thrown and small missiles generated.
EF5	>200	<0.1%	Explosive. Strong frame houses levelled off foundations and swept away; automobile-sized missiles fly through the air in excess of 300 ft.; steel reinforced concrete structure badly damaged; high rise buildings have significant structural deformation; incredible phenomena will occur.

Source: NOAA Storm Prediction Center, <http://www.spc.noaa.gov/efscale/ef-scale.html>

Enhanced weather forecasting has provided the ability to predict severe weather likely to produce tornadoes days in advance. Tornado watches can be delivered to those in the path of these storms several hours in advance. Lead time for actual tornado warnings is about 30 minutes. Tornadoes

have been known to change paths very rapidly, thus limiting the time in which to take shelter. Tornadoes may not be visible on the ground if they occur after sundown or due to blowing dust or driving rain and hail.

Previous Occurrences

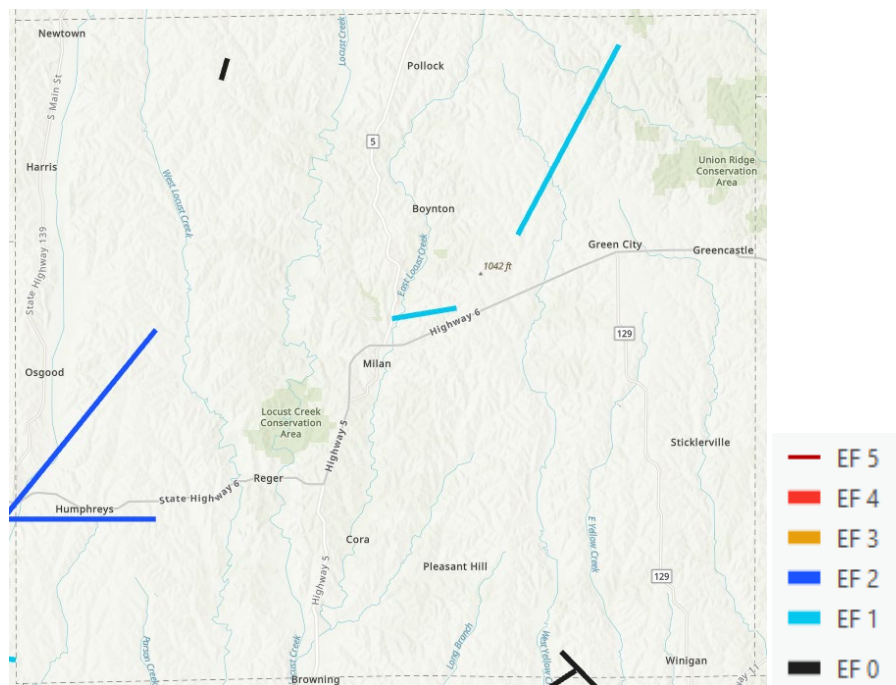
There are limitations to the use of NCEI tornado data that must be noted. For example, one tornado may contain multiple segments as it moves geographically. A tornado that crosses a county line or state line is considered a separate segment for the purpose of reporting to the NCEI. Also, a tornado that 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.

Table 3.74. Recorded Tornadoes in Sullivan County, 1993 – Present

Date	Beginning Location	Ending Location	Length (miles)	Width (yards)	F/EF Rating	Death	Injury	Property Damage	Crop Damages
6-12-08	1NW PENNVILLE	1NNW PENNVILLE	0.21	25	0	0	0	0	0
7-21-08	5W WINIGAN	1SSW WINIGAN	4.44	25	0	0	0	0	0
5-13-09	2NNE MILAN	3SSE BOYNTON	4.35	100	1	1	0	25,000	0
7-19-10	0N HARRIS	0N HARRIS	0.01	25	0	0	0	0	0
7-19-10	3SW MILAN	3SW MLAN	0.10	25	0	0	0	400	0
10-8-18	2N JUDSON	3N JUDSON	0.82	25	0	0	0	0	0
	Total	6				1	0	25,400	0

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

Figure 3.31. Sullivan County Map of Historic Tornado Events



Data from the USDA cause of loss summary indicates no crop losses from tornadoes in the county.

Probability of Future Occurrence

There is a low likelihood of tornadoes in Sullivan County each year. Over the last 32 years, 4 years have featured at least 1 reported tornado. This results in a 12% chance of a tornado during a calendar year.

$$Probability\ of\ Tornado = \frac{4}{32} = 0.12$$

Changing Future Conditions Considerations

According to the Missouri State Hazard Mitigation Plan, scientists do not know how the frequency and severity of tornadoes will change. Research published in 2015 suggests that changes in heat and moisture content in the atmosphere, brought on by a warming world, could be playing a role in making tornado outbreaks more common and severe in the US. The research concluded that the number of days with large outbreaks has been increasing since the 1950's and that densely concentrated tornado outbreaks are on the rise. It is notable that the research shows that the area of tornado activity is not expanding, but rather the areas already subject to tornado activity are seeing more densely packed tornadoes. Because Chariton County experiences approximately one tornado every four years, and based on the research, the frequency of such events could increase in the future.

Vulnerability

Vulnerability Overview

Sullivan County, Missouri, exhibits a significant vulnerability to tornadoes due to its geographical placement within a climatologically active severe weather region. The convergence of warm, moist air from the Gulf of Mexico and cooler, drier air masses creates an unstable atmospheric environment conducive to the formation of powerful supercell thunderstorms, the primary producers of strong tornadoes. This meteorological susceptibility is compounded by a documented history of impactful tornado events.

Figure 3.32. Tornado Alley in the U.S.



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

The 2023 Missouri State Hazard Mitigation Plan provided the following vulnerability analysis of Sullivan County to tornadoes.

The method used to determine vulnerability to tornadoes across Missouri was statistical analysis of data from several sources: HAZUS building exposure value data, population density and mobile home data from the U.S. Census (2019), the calculated Social Vulnerability Index for Missouri Counties from the Hazards and Vulnerability Research Institute in the Department of Geography at the University of South Carolina, and storm events data (1950 to December 31, 2021) from the National Centers for Environmental Information (NCEI). It is important to realize that one limitation to the NCEI data is that many tornadoes that might have occurred in uninhabited areas, as well as some in inhabited areas, may not have been reported. The incompleteness of the data suggests that it is not appropriate for use in parametric modeling. In addition, NOAA data cannot show a realistic frequency distribution of different Fujita scale tornado events, except for recent years. Thus, a parametric model based on a combination of many physical aspects of the tornado to predict future expected losses was not used. The statistical model used for this analysis was probabilistic based purely on tornado frequency and historic losses. It is based on past experience and forecasts the expected results for the immediate or extended future.

From the statistical data collected, six factors were considered in determining overall vulnerability to tornadoes as follows: building exposure, population density, social vulnerability, percentage of mobile homes, likelihood of occurrence, and annual property loss. Based on natural breaks in the statistical data, a rating value of 1 through 5 was assigned to each factor. Once the ranges were determined and applied to all factors considered in the analysis, the ratings were combed to determine an overall vulnerability rating for tornadoes. These rating values correspond to the following descriptive terms:

- 1) Low
- 2) Medium-Low
- 3) Medium
- 4) Medium-High
- 5) High

Table 3.75. Likelihood of Occurrence, Annual Property Loss, and Overall Vulnerability Rating for Daviess County by Tornadoes

Total Number of Tornadoes	9
Likelihood of Occurrence	0.125

Likelihood of Occurrence Rating	1
Total Annualized Property Loss	\$1,221
Total Annualized Property Loss Rating	1
Overall Vulnerability Rating	11
Overall Vulnerability Rating Description	Medium Low

Source: 2023 Missouri State Hazard Mitigation Plan

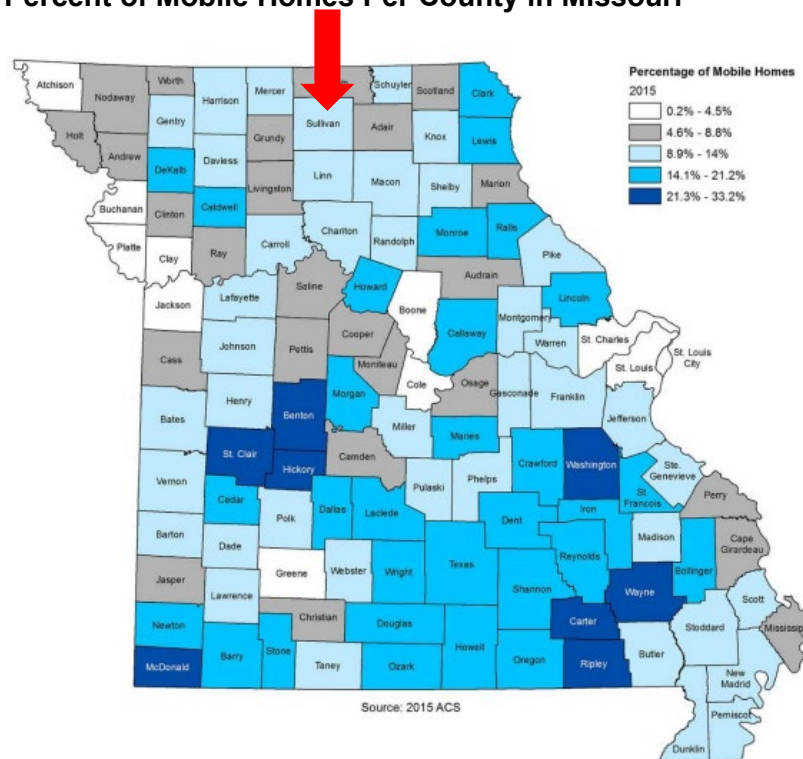
Table 3.76. Tornado Vulnerability Rating for Daviess County

Vulnerability	Data for Sullivan County
Total Building Exposure	\$648,402,000
Exposure Rating	1
Population Density	9.40
Population Density Rating	1
SOVI Index Ranking	Medium High
SOVI Rating	4
Percent of Mobile Homes	10.4
Mobile Home Rating	3

Source: 2023 Missouri State Hazard Mitigation Plan

Another factor to consider when determining vulnerability to tornadoes is the number of mobile homes in a county. Mobile homes are especially vulnerable to this hazard, as they are not built to provide adequate shelter from tornadoes, rather citizens that dwell in mobile homes must typically seek shelter elsewhere. Per the following figure, Sullivan County has between 8.9% and 14%.

Figure 3.33. Percent of Mobile Homes Per County in Missouri



Source: 2023 Missouri Hazard Mitigation Plan

Potential Losses to Existing Development

Tornadoes reported in the county since 1993 have resulted in \$25,400 in damages to property, This yields an annualized loss of \$1,016.

Previous and Future Development

Vulnerability to tornadoes is anticipated to remain the same. Future development for public buildings such as schools, government offices, as well as buildings with high occupancy and campgrounds should consider including a tornado safe room to protect occupants in the event of a tornado.

Hazard Summary by Jurisdiction

A tornado event could occur anywhere in the planning area, but some jurisdictions would suffer heavier damages because of the age of the housing unit, the increased density of buildings and infrastructure, or the high concentration of mobile homes.

It is generally accepted that mobile homes are highly vulnerable to damage or devastation by tornadoes. The following table illustrates the number of mobile homes and homes built prior to 1939.

Table 3.77. Sullivan County Mobile Homes and Homes Constructed Prior to 1939

Jurisdiction	Mobile Homes	% Of Mobile Homes	Homes Built Prior to 1939	% Of Homes Built Prior to 1939
Sullivan County	219	10.7%	325	15.9%
City of Milan	94	14.2%	72	10.9%
City of Green City	3	1.3%	21	20.2%
City of Green Castle	20	19.2%	47	21.1%
City of Newtown	1	2.4%	21	50.0%
Village of Harris	3	10.7%	13	46.4%
Village of Humphreys	1	2.8%	5	13.9%
Village of Pollock	0	0.0%	4	57.1%

Source: U.S. Census Bureau, Physical Housing Characteristics for Occupied Housing Units (S2501)

Problem Statement

A tornado could lead to damage to critical facilities, or disrupt the utility systems to critical facilities. A significant tornado would lead to a loss of life and may overwhelm resources.

3.4.9 Wildfire

Hazard Profile

Hazard Description

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

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

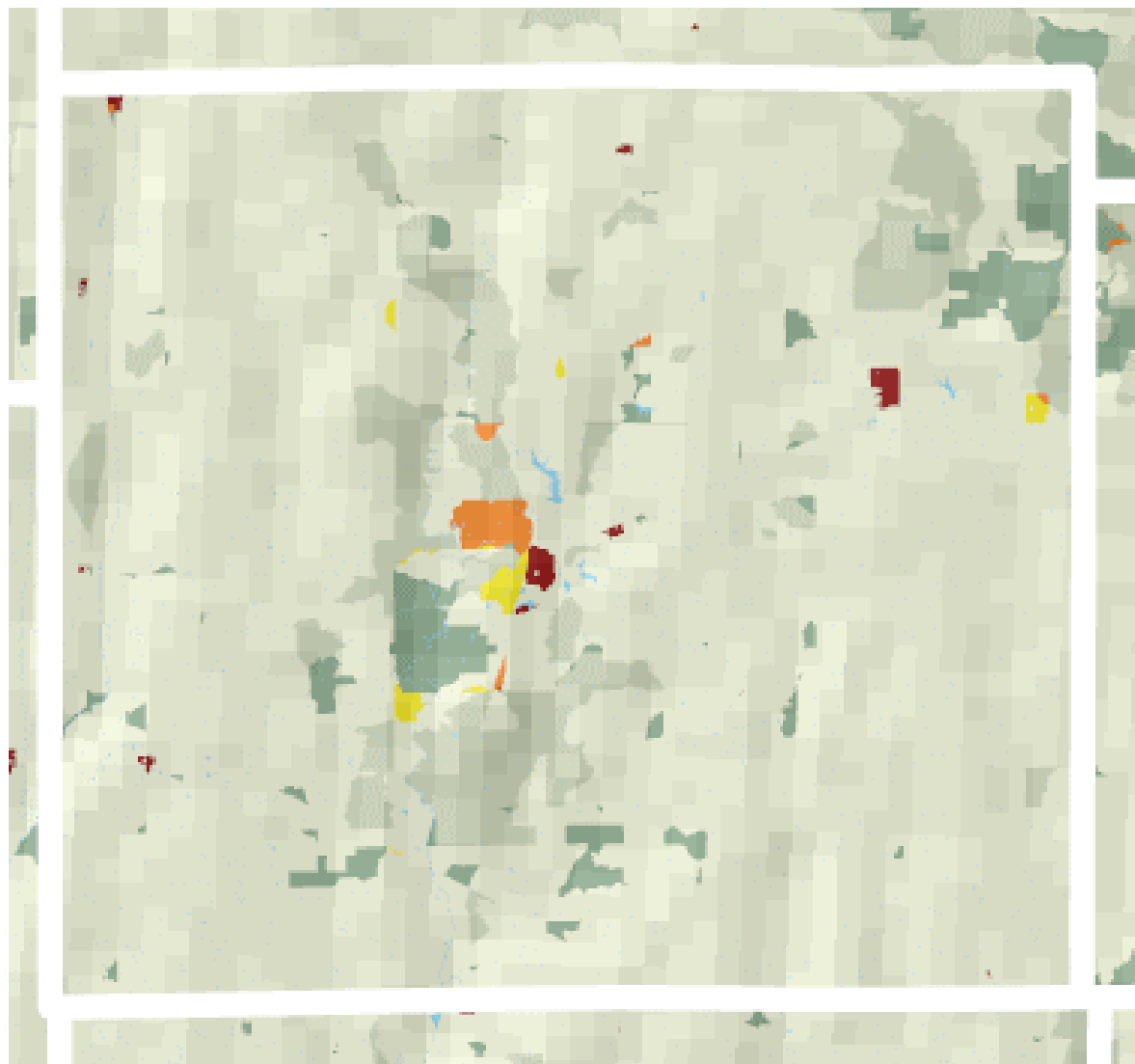
Most Missouri fires occur during the spring season between February and May. The length and severity of wildland fires depend largely on weather conditions. Spring in Missouri is usually characterized by low humidity and high winds. These conditions result in higher fire danger. In addition, due to the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

Geographic Location

While all of Sullivan County is at risk for the possibility of wildfires, areas with a higher Wildland Urban interface (WUI) are more susceptible to losses from a wildfire situation. See the following figures for more detailed information.

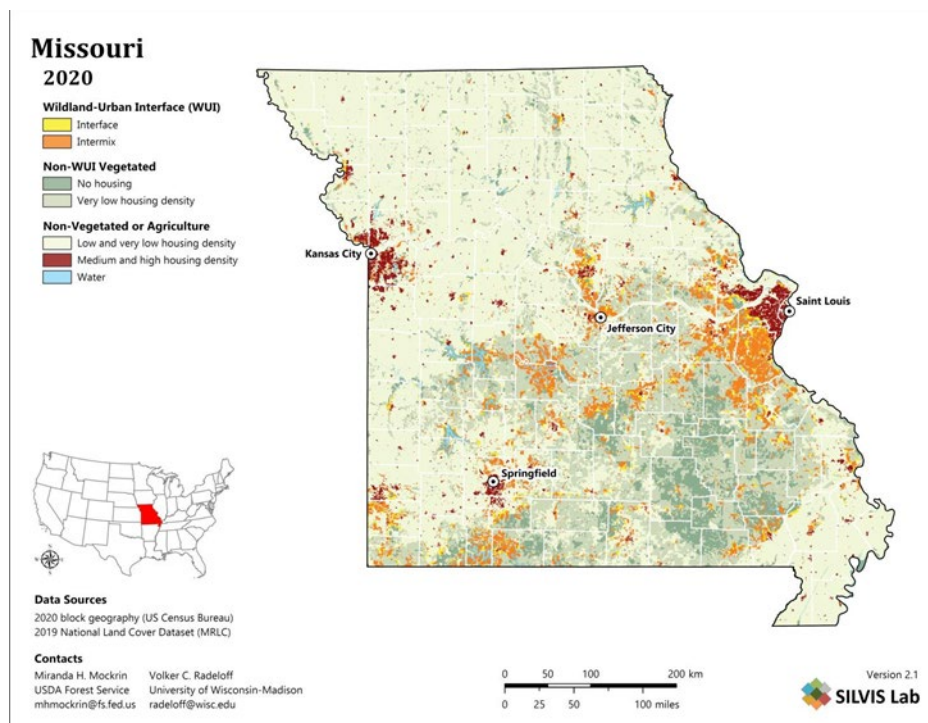
The following figures show a higher concentration of homes and some wildland-urban interface (WUI) around the county seat of Milan.

Figure 3.34. University of Wisconsin Wildland Urban Map showing Sullivan County



Source: University of Wisconsin Global Wildland-Urban Interface (WUI) – 2020 accessed June 2025

Figure 3.35. Wildfire Urban Interface (WUI) Areas, 2020



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.

Previous Occurrences

Table 3.78. Counts of fires reported by year

Year	Number of fires reported	Acres burned
2015	0	0
2016	11	273.1
2017	21	1,113.0
2018	0	0
2019	20	4,829.86
2020	0	0
2021	1	11.85
2022	1	46.335
2023	9	110.388
2024	4	19.431
Total	67	6,403,964
Average	7	640

Source: Missouri department of conservation wildfire reporting system

Figure 3.36. Average Annual Acreage Burned

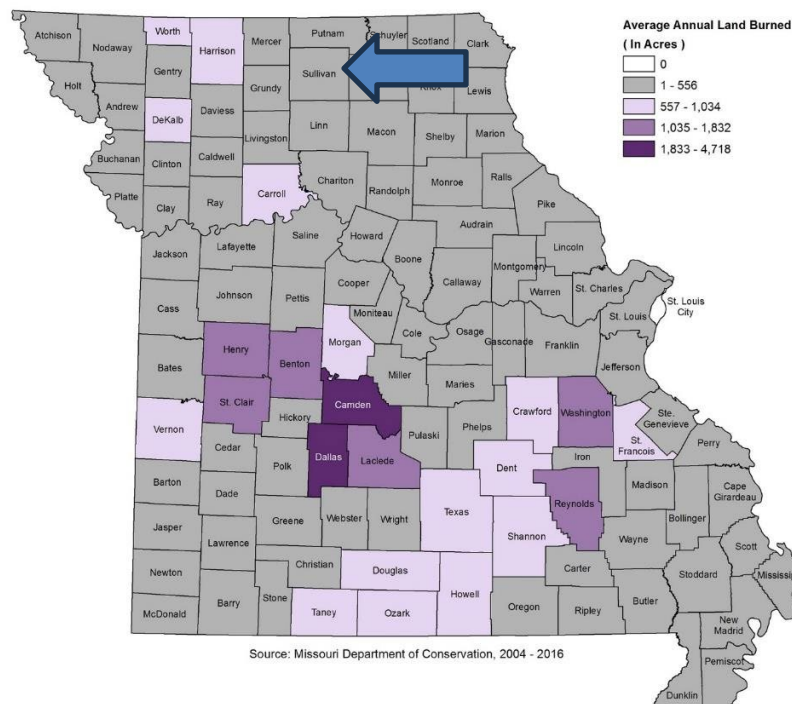


Table 3.79. Causes of Fire by type and count

Cause	Number of fires
Debris	34
Unknown	25
Equipment	8
Miscellaneous	7
Smoking	4
Power line	4
Not Reported	3
Lightning	2
Campfire	1

Probability of Future Occurrence

There is a high likelihood of wildfire in Sullivan County in a given year. Over the last 10 years, 7 years have featured at least 1 reported fire. This results in a 70% chance of a wildfire during a calendar year.

Probability of wildland fire Incident = $\frac{7}{10}$ = 0.70

The number of fires reported each year may vary greatly, but averaging the results yields around 8 wildland fire reports each year.

Average wildland fires each year = $\frac{67}{10}$ = 7

Changing Future Conditions Considerations

Higher temperatures and changes in rainfall are unlikely to substantially reduce forest cover in Missouri, although the composition of trees in the forests may change. More droughts would reduce forest productivity, and changing future conditions are also likely to increase the damage from insects and diseases. But longer growing seasons and increased carbon dioxide concentrations could more than offset the losses from those factors. Forests cover about one-third of the state dominated by oak and hickory trees. As the climate changes, the abundance of pines in Missouri’s forests is likely to increase, while the population of hickory trees is likely to decrease. Higher temperatures will also reduce the number of days prescribed burning can be performed. Reduction of prescribed burning will allow for growth of understory vegetation – providing fuel for destructive wildfires. Drought is also anticipated to increase in frequency and intensity during summer months under projected future scenarios. Drought can lead to dead or dying vegetation and landscaping material close to structures which creates fodder for wildfires within both the urban and rural settings.

Vulnerability

Vulnerability Overview

Potential Losses to Existing Development

Table 3.80. Estimated numbers and Values of Structures and Population Vulnerable to Wildfire in Sullivan County

Type of Property	Number of Structures	Value of Structures	Population
Residential	138	\$25,962,203	391
Agriculture	2	\$4,665	0
Commercial	2	\$893,210	0
Government	1	\$1,405,143	0
Total	143	\$28,265,221.00	391

Source: 2023 Missouri state hazard mitigation plan

Table 3.81. Statistical Data for Wildfire Hazard in Sullivan County

Number of Wildfires 2015-2025	Likelihood of Occurrence (# per year)	Total Acres Burned	Average Annual Acreage Burned
67	7	6,403.964	640

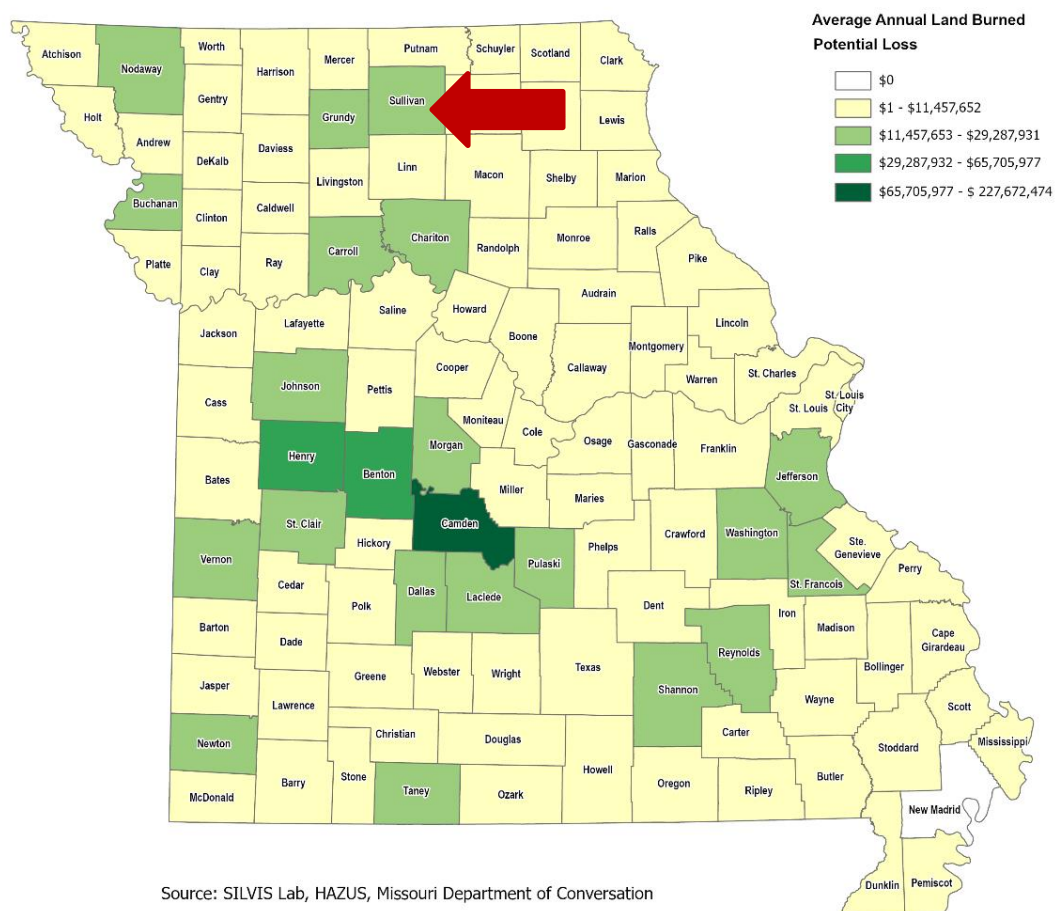
Source: 2023 Missouri State Hazard Mitigation Plan

Table 3.82. Wildfire Potential Loss Estimates in Sullivan County

Total WUI Acreage	Total Structure Value Within WUI	Average Value/Acre within WUI	Average Annual Acreage Burned	Potential Loss
831.1	\$28,265,221	\$34,009	640	\$13,398,990

Source: 2023 Missouri State Hazard Mitigation Plan

Figure 3.37. Wildfire Potential Loss Estimate



Impact of Previous and Future Development

Future and previous development in the wildland-urban interface would increase vulnerability to the

hazard. There are no known developments within the county that would increase the vulnerability to wildfires at this time.

Hazard Summary by Jurisdiction

The rural jurisdictions in the planning area are all surrounded by undeveloped agricultural land and face the possibility of a wildfire event. The school districts are mostly located in a rural area and do not face danger of wildfire due to barriers in place around the schools. Future wildfires in Sullivan County should have a negligible adverse impact on the community, as it would affect a small percentage of the population. Nonetheless, homes and businesses located in unincorporated areas are at higher risk from wildfires due to proximity to wood and distance from fire services. Variations in both structural/urban and wildfires are not able to be determined at this time due to lack of data. However, both fire types are expected to occur on an annual basis across the county.

Problem Statement

Residents do not comply with burn bans, education is not readily available for the levels of burn bans, many residents lack education in fire safety, and not all residents utilize social media and texting. Education should occur on the dangers of not complying with burn bans, more education for fire safety, and utilization of social media and texting for early warning.

Due to the regions high drought risk they may be more susceptible to fires. The plan could address this potential for high crop losses during drought and lessen the risk of wildfires during drought

4 MITIGATION STRATEGY

4	MITIGATION STRATEGY	4.1
4.1	Goals.....	4.1
4.2	Identification and Analysis of Mitigation Actions.....	4.1
4.3	Implementation of Mitigation Actions	4.3

This section presents the mitigation strategy updated by the Mitigation Planning Committee (MPC) based on the [updated] risk assessment. The mitigation strategy was developed through a collaborative group process. The process included review of [updated] general goal statements to guide the jurisdictions in lessening disaster impacts as well as specific mitigation actions to directly reduce vulnerability to hazards and losses. The following definitions are taken from FEMA’s Local Mitigation Planning Policy Guide (2023)

- **Goals** are broad, long-term policy and vision statements that explain what is to be achieved by implementing the mitigation strategy.
- A **mitigation action** is a measure, project, plan or activity proposed to reduce current and future vulnerabilities described in the risk assessment.

4.1 Goals

This planning effort is an update to Sullivan County’s existing hazard mitigation plan approved by FEMA on May 20th, 2021. Therefore, the goals from the 2020 Sullivan County Hazard Mitigation Plan were reviewed to see if they were still valid, feasible, practical, and applicable to the defined hazard impacts. The MPC conducted a discussion session during their second meeting to review and update the plan goals. To ensure that the goals developed for this update were comprehensive and supported State goals, the 2023 State Hazard Mitigation Plan goals were reviewed. The MPC also reviewed the goals from current surrounding county plans.

4.2 Identification and Analysis of Mitigation Actions

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

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

recognize new and innovative strategies for mitigating risks in the planning area.

The focus of Meeting #3 was update of the mitigation strategy. For a comprehensive range of mitigation actions to consider, the MPC reviewed the following information during Meeting #3:

- A list of actions proposed in the previous mitigation plan, the current 2023 State Plan, and approved plans in surrounding counties,
- Key issues from the risk assessments, including the problem statements concluding each hazard profile and vulnerability analysis,
- State priorities established for HMA grants, and
- Public input during meetings, responses to data collection questionnaires, and other efforts to involve the public in the plan development process.

For Meeting #3, individual jurisdictions, including school and special districts, developed final mitigation strategy for submission to the MPC. They were encouraged to review the details of the risk assessment vulnerability analysis specific to their jurisdiction. They were also provided a link to the FEMA's publication, *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*. This document was developed by FEMA as a resource for identification of a range of potential mitigation actions for reducing risk to natural hazards and disasters.

The MPC reviewed the actions from the previously approved plan for progress made since the plan had been adopted, using worksheets included in Appendix C of this plan. Prior to Meeting #3, the list of actions for each jurisdiction was emailed to that jurisdiction's MPC representative along with the worksheets. Each jurisdiction was instructed to provide information regarding the "Action Status" with one of the following status choices:

- Completed, with a description of the progress;
- Ongoing, with a description of the progress made to date; or
- Not Yet Started, with a discussion of the reasons for lack of progress.

Additionally, the future inclusion of each mitigation action in the plan update was identified as either keep, delete, or modify. Based on the status updates, there were 0 completed actions, 40 continuing actions (either ongoing or modified), and 2 deleted actions.

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

Table 4.1. Action Status Summary

Jurisdiction	Completed Actions	Continuing Actions (ongoing or modify)	Deleted Actions
Sullivan County	0	5	1
Greencastle	0	4	0
Green City	0	4	0
Milan	0	5	0
Green City R-1	0	2	0
Milan C-2	0	2	1
Total:	0	40	2

Table 4.2 provides a summary of the completed and deleted actions from the previous plan.

Table 4.2. Summary of Completed and Deleted Actions from the Previous Plan

Completed Actions	Completion Details (date, amount, funding source)
No completed actions	
Deleted Actions	Reason for Deletion
County 2020.5	Deemed not a natural hazard, no longer included in plan
Milan C-2 2020.2	Deemed not a natural hazard, no longer included in plan

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

Table 4.3. Summary of actions from the 2021 plan

Status	Action from Previous Plan
Continued	County 2020.1 Maintain transportation infrastructure
Continued/Modified	County 2020.2 Generators for shelters/critical facilities
Continued	County 2020.3 Debris removal
Continued	County 2020.4 Installation/upgrade siren
Removed	County 2020.5 Pandemic response
Continued	County 2020.6 NOAA Weather radios
Continued	Milan 2020.1 Generator for shelter/critical facilities
Continued	Milan 2020.2 Maintain transportation infrastructure
Continued	Milan 2020.3 Safe rooms and storm shelters
Continued	Milan 2020.4 Installation/upgrade siren
Continued	Milan 2020.5 NFIP participation
Continued	Green City 2020.1 Maintain transportation infrastructure
Continued	Green City 2020.2 Generator for shelter/critical facilities
Continued	Green City 2020.3 Installation/upgrade siren
Continued	Green City 2020.4 Safe rooms/storm shelter
Continued	Greencastle 2020.1 Maintain transportation infrastructure
Continued	Greencastle 2020.2 Generator for shelter/critical facilities
Continued	Greencastle 2020.3 Installation/upgrade siren
Continued	Greencastle 2020.4 Safe rooms/storm shelters
Continued	Milan C-2 2020.1 Safe rooms / Storm Shelters
Removed	Milan C-2 2020.2 Pandemic response
Continued	Milan C-2 2020.3 Generator
Continued	Green City R-I Safe rooms / storm shelters
Continued	Green City R-I Generator

4.3 Implementation of Mitigation Actions

Jurisdictional MPC members were encouraged to meet with others in their community to finalize the actions to be submitted for the updated mitigation strategy. Throughout the MPC consideration and discussion, emphasis was placed on the importance of a benefit-cost analysis in determining project priority. The Disaster Mitigation Act requires benefit-cost review as the primary method by which mitigation projects should be prioritized. The MPC decided to pursue implementation according to when and where damage occurs, available funding, political will, jurisdictional priority, and priorities identified in the 2023 Missouri State Hazard Mitigation Plan. The benefit/cost review at the planning stage primarily consisted of a qualitative analysis and was not the detailed process required grant funding application. For each action, the plan sets forth a narrative describing the types of benefits that could be realized from action implementation. The cost was estimated as closely as possible, with further refinement to be supplied as project development occurs.

FEMA's STAPLEE methodology was used to assess the costs and benefits, overall feasibility of mitigation actions, and other issues impacting project^{7(a)}. During the prioritization process, the

jurisdictions used worksheets to assign scores. The worksheets posed questions based on the STAPLEE elements as well as the potential mitigation effectiveness of each action. Scores were based on the responses to the questions as follows:

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

The following questions were asked for each proposed action.

S: Is the action socially acceptable?
T: Is the action technically feasible and potentially successful?
A: Does the jurisdiction have the administrative capability to successfully implement this action?
P: Is the action politically acceptable?
L: Does the jurisdiction have the legal authority to implement the action?
E: Is the action economically beneficial?
E: Will the project have an environmental impact that is either beneficial or neutral? (score “3” if positive and “2” if neutral)

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

The final scores are listed below in the analysis of each action. The worksheets are attached to this plan as Appendix _____. The STAPLEE final score for each action, absent other considerations, such as a localized need for a project, determined the priority. Low priority action items were those that had a total score of between 0 and 24. Moderate priority actions were those scoring between 25 and 29. High priority actions scored 30 or above. A blank STAPLEE worksheet is shown in **Figure 4.1**

Figure 4.1. Blank STAPLEE Worksheet

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)		
<input type="checkbox"/> High Priority (30+ points)	<input type="checkbox"/> Medium Priority (25 - 29 points)	<input type="checkbox"/> Low Priority (<25 points)

Completed by
(Name, Title, Phone Number)

ACTION WORKSHEET

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

Action Worksheet	
Name of Jurisdiction:	Sullivan County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire
Problem being Mitigated:	Lack of public knowledge about natural disasters.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	County 2025.1
Name of Action or Project:	Public mitigation education
Mitigation Category:	Education and Outreach
Action or Project Description:	Provide education to the citizens of the Sullivan county to reduce risk to life and property due to natural hazards in the region. The information regarding these mitigation measures would be obtained from FEMA's website and posted to the county's social media page and included in utility bills with the cooperation of the jurisdictions and utility companies within the county.
Estimated Cost:	\$500
Benefits:	The general population will increase understanding of natural disasters and how to prepare for natural disasters potentially affecting the County.
Plan for Implementation	
Responsible Organization/Department:	County Emergency Management
Supporting Organization/Department:	FEMA, SEMA, NWS, USGS
Action/Project Priority:	Medium
Timeline for Completion:	1-5 years
Potential Fund Sources:	General revenue
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	New Project

Action Worksheet	
Name of Jurisdiction:	Sullivan County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Earthquakes, Severe thunderstorms, Severe winter weather, Tornado
Problem being Mitigated:	Transportation routes can be disrupted by debris caused by natural disasters.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	County 2025.2
Name of Action or Project:	Improve transportation infrastructure
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Mitigate the risk to life and property and reduce long term expenses due to repeated losses from flooding by evaluating and improving transportation systems to keep up with changing conditions.
Estimated Cost:	\$500,000
Benefits:	Reduce long term costs by improving infrastructure and addressing on-going issues long
Plan for Implementation	
Responsible Organization/Department:	Road and Bridge Department
Supporting Organization/Department:	n/a
Action/Project Priority:	High
Timeline for Completion:	1-5 years
Potential Fund Sources:	Transportation budget, FEMA Recovery funds, Emergency budget
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued
Report of Progress:	On going as needed

Action Worksheet	
Name of Jurisdiction:	Sullivan County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado
Problem being Mitigated:	Loss of power threatening student safety and property during an extreme event.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	County 2025.3
Name of Action or Project:	Generators
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Install backup generators or transfer switch to allow for the safe use of backup power ensuring public safety and property during power outages due to extreme events
Estimated Cost:	\$1,000,000
Benefits:	Critical facilities, such as schools, can continue to operate in the event of a disaster.
Plan for Implementation	
Responsible Organization/Department:	County Commission
Supporting Organization/Department:	
Action/Project Priority:	HIGH
Timeline for Completion:	1 to 5 years
Potential Fund Sources:	General Revenue, Capital projects, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued/Modified
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	Sullivan County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Earthquake, Severe thunderstorm, Sever winter storm, tornado
Problem being Mitigated:	Transportation routes can be disrupted by debris caused by natural disasters.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	County 2025.4
Name of Action or Project:	Debris removal
Mitigation Category:	Structure and Infrastructure, Natural systems protection
Action or Project Description:	Mitigate the risk to life and property and promote continued operation of government and emergency functions by regularly removing debris as needed along transportation routes and drainage systems.
Estimated Cost:	\$500,000
Benefits:	Frequent removal of debris will help clear roadways and drainage systems. Emergency services can respond quicker to emergencies. Stormwater can drain effectively and reduce the risk of flooding with regular removal of debris.
Plan for Implementation	
Responsible Organization/Department:	County Road and Bridge Department
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	1-5 years
Potential Fund Sources:	HMGP, FEMA Recovery, Transportation budget
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued
Report of Progress:	On-going

Action Worksheet	
Name of Jurisdiction:	Sullivan County
Risk / Vulnerability	
Hazard(s) Addressed:	Severe thunderstorm, Tornado
Problem being Mitigated:	Early Warning Sirens
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning.
Action/Project Number:	County 2025.5
Name of Action or Project:	Installation of warning siren
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Installation of early warning sirens
Estimated Cost:	\$100,000
Benefits:	With adequate time for warning of storms, residents are able to seek cover to help minimize the loss of life.
Plan for Implementation	
Responsible Organization/Department:	County Commission
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	1-5 years
Potential Fund Sources:	Hazard Mitigation Grant Funds, Capital projects
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	Sullivan County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire
Problem being Mitigated:	Lack of robust early warning systems
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	County 2025.6
Name of Action or Project:	N.O.A.A. Weather Radio
Mitigation Category:	Education and Outreach
Action or Project Description:	Mitigate the loss of life and property through the expanded use of weather radios giving residents time to react and take action to save lives and property.
Estimated Cost:	\$5,000
Benefits:	The general population will increase understanding of natural disasters and how to prepare for natural disasters potentially affecting the County.
Plan for Implementation	
Responsible Organization/Department:	County Emergency Management
Supporting Organization/Department:	FEMA, SEMA, NWS, USGS
Action/Project Priority:	Medium
Timeline for Completion:	1-5 years
Potential Fund Sources:	NA
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	New Project

Action Worksheet	
Name of Jurisdiction:	City of Greencastle
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire
Problem being Mitigated:	Lack of public knowledge about natural disasters.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	CGCA 2025.1
Name of Action or Project:	Public mitigation education
Mitigation Category:	Education and Outreach
Action or Project Description:	Provide education to the citizens of Green Castle to reduce risk to life and property due to natural hazards in the region. The information regarding these mitigation measures would be obtained from FEMA's website and posted to the city's social media page and included in the city's utility bills.
Estimated Cost:	\$500
Benefits:	The general population will increase understanding of natural disasters and how to prepare for natural disasters potentially affecting the County.
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	FEMA, SEMA, NWS, USGS
Action/Project Priority:	Medium
Timeline for Completion:	1-5 years
Potential Fund Sources:	NA
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	New Project

Action Worksheet	
Name of Jurisdiction:	City of Greencastle
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Earthquakes, Severe thunderstorms, Severe winter weather, Tornado
Problem being Mitigated:	Transportation routes can be disrupted by debris caused by natural disasters.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	CGCA 2025.2
Name of Action or Project:	Improve transportation infrastructure
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Mitigate the risk to life and property and reduce long term expenses due to repeated losses from flooding by evaluating and improving transportation systems to keep up with changing conditions.
Estimated Cost:	\$500,000
Benefits:	Reduce long term costs by improving infrastructure and addressing on-going issues long
Plan for Implementation	
Responsible Organization/Department:	Road and Bridge Department
Supporting Organization/Department:	n/a
Action/Project Priority:	High
Timeline for Completion:	1-5 years
Potential Fund Sources:	Transportation budget, FEMA Recovery funds, Emergency budget
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued
Report of Progress:	On going as needed

Action Worksheet	
Name of Jurisdiction:	City of Greencastle
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado
Problem being Mitigated:	Loss of power threatening student safety and property during an extreme event.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	CGCA 2025.3
Name of Action or Project:	Generators
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Install backup generators or transfer switch to allow for the safe use of backup power ensuring public safety and property during power outages due to extreme events
Estimated Cost:	\$1,000,000
Benefits:	Critical facilities, such as schools, can continue to operate in the event of a disaster.
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	
Action/Project Priority:	HIGH
Timeline for Completion:	1 to 5 years
Potential Fund Sources:	General Revenue, Capital projects, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued/Modified
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	City of Greencastle
Risk / Vulnerability	
Hazard(s) Addressed:	Severe thunderstorm, Tornado
Problem being Mitigated:	Early Warning Sirens
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning.
Action/Project Number:	CGCA 2025.4
Name of Action or Project:	Installation of warning siren
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Installation of early warning sirens
Estimated Cost:	\$100,000
Benefits:	With adequate time for warning of storms, residents are able to seek cover to help minimize the loss of life.
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	1-5 years
Potential Fund Sources:	Hazard Mitigation Grant Funds, Capital projects
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	City of Greencastle
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornado
Problem being Mitigated:	FEMA-approved storm shelters have proven effective in mitigating the loss of property and life during tornados. A community-wide shelter program should be adopted for residents who may not have adequate shelter in their homes to minimize the potential for loss of life. School safe rooms can protect students from injury during a thunderstorm, tornado or natural wind event/disaster.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning.
Action/Project Number:	CGCA 2025.5
Name of Action or Project:	Storm shelter/safe room
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Utilize grant funds and local resources to construct or install storm shelters in locations with insufficient protection including, but not limited to, schools, local recreation areas, and public facilities.
Estimated Cost:	\$2M
Benefits:	Storm shelters can protect the lives of individuals in a thunderstorm, tornado or hazardous wind event who may not have other options for sufficient shelter.
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	County Commissioners, GHRPC, County EMD
Action/Project Priority:	High
Timeline for Completion:	5 years
Potential Fund Sources:	Capital projects budget, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	City of Green City
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire
Problem being Mitigated:	Lack of public knowledge about natural disasters.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	CGC 2025.1
Name of Action or Project:	Public mitigation education
Mitigation Category:	Education and Outreach
Action or Project Description:	Provide education to the citizens of Green City to reduce risk to life and property due to natural hazards in the region. The information regarding these mitigation measures would be obtained from FEMA's website and posted to the city's social media page and included in the city's utility bills.
Estimated Cost:	\$500
Benefits:	The general population will increase understanding of natural disasters and how to prepare for natural disasters potentially affecting the County.
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	FEMA, SEMA, NWS, USGS
Action/Project Priority:	Medium
Timeline for Completion:	1-5 years
Potential Fund Sources:	NA
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	New Project

Action Worksheet	
Name of Jurisdiction:	City of Green City
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Earthquakes, Severe thunderstorms, Severe winter weather, Tornado
Problem being Mitigated:	Transportation routes can be disrupted by debris caused by natural disasters.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	CGC 2025.2
Name of Action or Project:	Improve transportation infrastructure
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Mitigate the risk to life and property and reduce long term expenses due to repeated losses from flooding by evaluating and improving transportation systems to keep up with changing conditions.
Estimated Cost:	\$500,000
Benefits:	Reduce long term costs by improving infrastructure and addressing on-going issues long
Plan for Implementation	
Responsible Organization/Department:	Road and Bridge Department
Supporting Organization/Department:	n/a
Action/Project Priority:	High
Timeline for Completion:	1-5 years
Potential Fund Sources:	Transportation budget, FEMA Recovery funds, Emergency budget
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued
Report of Progress:	On going as needed

Action Worksheet	
Name of Jurisdiction:	City of Green City
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado
Problem being Mitigated:	Loss of power threatening student safety and property during an extreme event.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	CGC 2025.3
Name of Action or Project:	Generators
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Install backup generators or transfer switch to allow for the safe use of backup power ensuring public safety and property during power outages due to extreme events
Estimated Cost:	\$1,000,000
Benefits:	Critical facilities, such as schools, can continue to operate in the event of a disaster.
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	
Action/Project Priority:	HIGH
Timeline for Completion:	1 to 5 years
Potential Fund Sources:	General Revenue, Capital projects, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued/Modified
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	City of Green City
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Drought, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire
Problem being Mitigated:	Early Warning Sirens
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather
Action/Project Number:	CGC 2025.4
Name of Action or Project:	Installation of warning sirens, Weather Radios and other alerting systems
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Installation of early warning sirens, Weather radios, and mass notification systems for the community
Estimated Cost:	\$100,000
Benefits:	With adequate time for warning of storms, residents are able to seek cover to help minimize the loss of life.
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	1-5 years
Potential Fund Sources:	Hazard Mitigation Grant Funds, Capital projects
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	City of Green City
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornado
Problem being Mitigated:	FEMA-approved storm shelters have proven effective in mitigating the loss of property and life during tornados. A community-wide shelter program should be adopted for residents who may not have adequate shelter in their homes to minimize the potential for loss of life. School safe rooms can protect students from injury during a thunderstorm, tornado or natural wind event/disaster.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning.
Action/Project Number:	CGC 2025.5
Name of Action or Project:	Storm shelter/safe room
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Utilize grant funds and local resources to construct or install storm shelters in locations with insufficient protection including, but not limited to, schools, local recreation areas, and public facilities.
Estimated Cost:	\$2M
Benefits:	Storm shelters can protect the lives of individuals in a thunderstorm, tornado or hazardous wind event who may not have other options for sufficient shelter.
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	County Commissioners, GHRPC, County EMD
Action/Project Priority:	High
Timeline for Completion:	5 years
Potential Fund Sources:	Capital projects budget, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	City of Green City
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Areas that flood due to excessive storm water and insufficient drainage
Action or Project	
Applicable Goal Statement:	Goal 2: Minimize property damage due to flooding, levee failure or dam incidents.
Action/Project Number:	CGC 2025.6
Name of Action or Project:	Flood reduction studies and reports
Mitigation Category:	Structure and Infrastructure Projects, Planning and regulation
Action or Project Description:	Conduct data collection and studies to locate areas in the community most prone to flooding and identify the root cause
Estimated Cost:	\$10,000
Benefits:	By locating the most likely areas to flood and underlying causes the city can focus it's resources on projects that will have the greatest long term impacts
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	1-5 years
Potential Fund Sources:	Hazard Mitigation Grant Funds, Capital projects
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	City of Green City
Risk / Vulnerability	
Hazard(s) Addressed:	Dam Failure
Problem being Mitigated:	Early detection of possible issues with dams
Action or Project	
Applicable Goal Statement:	Goal 2: Minimize property damage due to flooding, levee failure or dam incidents.
Action/Project Number:	CGC 2025.7
Name of Action or Project:	Routine review/inspection of dams, training
Mitigation Category:	Structure and Infrastructure Projects, Planning and regulation
Action or Project Description:	City staff will be trained on how to spot potential problems with dam structures and will conduct routine visual reviews and inspections to spot signs of distress.
Estimated Cost:	\$10,000
Benefits:	Identifying hazards before they become serious will allow for repairs to be completed in a more cost effective manor, correcting problems before a failure would lead to reductions in loss of life and property
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	1-5 years
Potential Fund Sources:	Hazard Mitigation Grant Funds, Capital projects
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	City of Milan
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire
Problem being Mitigated:	Lack of public knowledge about natural disasters.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	CM 2025.1
Name of Action or Project:	Public mitigation education
Mitigation Category:	Education and Outreach
Action or Project Description:	Provide education to the citizens of Milan to reduce risk to life and property due to natural hazards in the region. The information regarding these mitigation measures would be obtained from FEMA's website and posted to the city's social media page and included in the city's utility bills.
Estimated Cost:	\$500
Benefits:	The general population will increase understanding of natural disasters and how to prepare for natural disasters potentially affecting the County.
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	FEMA, SEMA, NWS, USGS
Action/Project Priority:	Medium
Timeline for Completion:	1-5 years
Potential Fund Sources:	NA
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	New Project

Action Worksheet	
Name of Jurisdiction:	City of Milan
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado
Problem being Mitigated:	Loss of power threatening student safety and property during an extreme event.
Action or Project	
Applicable Goal Statement:	<p>Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning.</p> <p>Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire</p> <p>Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather</p> <p>Goal 5: Minimize injuries and property damage due to seismic and/or geological events.</p>
Action/Project Number:	CM 2025.2
Name of Action or Project:	Generators
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Install backup generators or transfer switch to allow for the safe use of backup power ensuring public safety and property during power outages due to extreme events
Estimated Cost:	\$1,000,000
Benefits:	Critical facilities, such as schools, can continue to operate in the event of a disaster.
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	
Action/Project Priority:	HIGH
Timeline for Completion:	1 to 5 years
Potential Fund Sources:	General Revenue, Capital projects, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued/Modified
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	City of Milan
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Earthquakes, Severe thunderstorms, Severe winter weather, Tornado
Problem being Mitigated:	Transportation routes can be disrupted by debris caused by natural disasters.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	CM 2025.3
Name of Action or Project:	Maintain & Upgrade transportation infrastructure
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Mitigate the risk to life and property and promote continued operation of government and emergency functions by regularly maintaining and improving infrastructure.
Estimated Cost:	\$5,000,000
Benefits:	Reduce long term costs by improving infrastructure and addressing on-going issues long
Plan for Implementation	
Responsible Organization/Department:	Road and Bridge Department
Supporting Organization/Department:	n/a
Action/Project Priority:	High
Timeline for Completion:	1-5 years
Potential Fund Sources:	Transportation budget, FEMA Recovery funds, Emergency budget
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued/Modified
Report of Progress:	On going as needed

Action Worksheet	
Name of Jurisdiction:	City of Milan
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornado
Problem being Mitigated:	FEMA-approved storm shelters have proven effective in mitigating the loss of property and life during tornados. A community-wide shelter program should be adopted for residents who may not have adequate shelter in their homes to minimize the potential for loss of life. School safe rooms can protect students from injury during a thunderstorm, tornado or natural wind event/disaster.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning.
Action/Project Number:	CM 2025.4
Name of Action or Project:	Storm shelter/safe room
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Utilize grant funds and local resources to construct or install storm shelters in locations with insufficient protection including, but not limited to, schools, local recreation areas, and public facilities.
Estimated Cost:	\$2M
Benefits:	Storm shelters can protect the lives of individuals in a thunderstorm, tornado or hazardous wind event who may not have other options for sufficient shelter.
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	County Commissioners, GHRPC, County EMD
Action/Project Priority:	High
Timeline for Completion:	5 years
Potential Fund Sources:	Capital projects budget, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	City of Milan
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Drought, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire
Problem being Mitigated:	Early Warning Sirens
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather
Action/Project Number:	CM 2025.5
Name of Action or Project:	Installation of warning sirens, Weather Radios and other alerting systems
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Installation of early warning sirens, Weather radios, and mass notification systems for the community
Estimated Cost:	\$100,000
Benefits:	With adequate time for warning of storms, residents are able to seek cover to help minimize the loss of life.
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	1-5 years
Potential Fund Sources:	Hazard Mitigation Grant Funds, Capital projects
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	City of Milan
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Unregulated development in the floodplains
Action or Project	
Applicable Goal Statement:	Goal 2: Minimize property damage due to flooding, levee failure or dam incidents.
Action/Project Number:	CM 2025.6
Name of Action or Project:	PARTICIPATION IN NFIP (National Floodplain Insurance Program)
Mitigation Category:	Planning and Regulation
Action or Project Description:	City will continue participation in NFIP, re-evaluate and continue enforcement of ordinances and regulations, and continue to work with the floodplain manager.
Estimated Cost:	\$100/Yearly
Benefits:	Protection of structures insured through NFIP.
Plan for Implementation	
Responsible Organization/Department:	Floodplain Administrator
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	1-5 years
Potential Fund Sources:	General revenue
Local Planning Mechanisms to be Used in Implementation, if any:	Floodplain Ordinance
Progress Report	
Action Status:	Continued
Report of Progress:	Continue, in progress

Action Worksheet	
Name of Jurisdiction:	Village of Pollock
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire
Problem being Mitigated:	Lack of public knowledge about natural disasters.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	VP 2025.1
Name of Action or Project:	Public mitigation education
Mitigation Category:	Education and Outreach
Action or Project Description:	Provide education to the citizens of Pollock to reduce risk to life and property due to natural hazards in the region. The information regarding these mitigation measures would be obtained from FEMA's website and included in the city's utility bills.
Estimated Cost:	\$500
Benefits:	The general population will increase understanding of natural disasters and how to prepare for natural disasters potentially affecting the County.
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	FEMA, SEMA, NWS, USGS
Action/Project Priority:	Medium
Timeline for Completion:	1-5 years
Potential Fund Sources:	NA
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	New Project

Action Worksheet	
Name of Jurisdiction:	Village of Pollock
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornado
Problem being Mitigated:	FEMA-approved storm shelters have proven effective in mitigating the loss of property and life during tornados. A community-wide shelter program should be adopted for residents who may not have adequate shelter in their homes to minimize the potential for loss of life. School safe rooms can protect students from injury during a thunderstorm, tornado or natural wind event/disaster.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning.
Action/Project Number:	VP 2025.2
Name of Action or Project:	Storm shelter/safe room
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Utilize grant funds and local resources to construct or install storm shelters in locations with insufficient protection including, but not limited to, schools, local recreation areas, and public facilities.
Estimated Cost:	\$2M
Benefits:	Storm shelters can protect the lives of individuals in a thunderstorm, tornado or hazardous wind event who may not have other options for sufficient shelter.
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	County Commissioners, GHRPC, County EMD
Action/Project Priority:	High
Timeline for Completion:	5 years
Potential Fund Sources:	Capital projects budget, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	Village of Pollock
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Drought, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire
Problem being Mitigated:	Early Warning Sirens
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather
Action/Project Number:	VP 2025.3
Name of Action or Project:	Installation of warning sirens, Weather Radios and other alerting systems
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Installation of early warning sirens, Weather radios, and mass notification systems for the community
Estimated Cost:	\$100,000
Benefits:	With adequate time for warning of storms, residents are able to seek cover to help minimize the loss of life.
Plan for Implementation	
Responsible Organization/Department:	City Council
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	1-5 years
Potential Fund Sources:	Hazard Mitigation Grant Funds, Capital projects
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	Green City R-I
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire
Problem being Mitigated:	Lack of public knowledge about natural disasters.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	GCSD 2025.1
Name of Action or Project:	Public mitigation education
Mitigation Category:	Education and Outreach
Action or Project Description:	Provide education to the students' families to reduce risk to life and property due to natural hazards in the region. The information regarding these mitigation measures would be obtained from FEMA's website and posted to the school's social media page.
Estimated Cost:	\$500
Benefits:	The general population will increase understanding of natural disasters and how to prepare for natural disasters potentially affecting the County.
Plan for Implementation	
Responsible Organization/Department:	School board
Supporting Organization/Department:	FEMA, SEMA, NWS, USGS
Action/Project Priority:	High
Timeline for Completion:	1-5 years
Potential Fund Sources:	NA
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	New Project

Action Worksheet	
Name of Jurisdiction:	Green City R-I
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornado
Problem being Mitigated:	FEMA-approved storm shelters have proven effective in mitigating the loss of property and life during tornados. A community-wide shelter program should be adopted for residents who may not have adequate shelter in their homes to minimize the potential for loss of life. School safe rooms can protect students from injury during a thunderstorm, tornado or natural wind event/disaster.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning.
Action/Project Number:	GCSD 2025.2
Name of Action or Project:	Storm shelter/safe room
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Utilize grant funds and local resources to construct or install storm shelters in locations with insufficient protection including, but not limited to, schools, local recreation areas, and public facilities.
Estimated Cost:	\$2M
Benefits:	Storm shelters can protect the lives of individuals in a thunderstorm, tornado or hazardous wind event who may not have other options for sufficient shelter.
Plan for Implementation	
Responsible Organization/Department:	School Board
Supporting Organization/Department:	County Commissioners, GHRPC, County EMD
Action/Project Priority:	High
Timeline for Completion:	5 years
Potential Fund Sources:	Capital projects budget, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	Green City R-I
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado
Problem being Mitigated:	Loss of power threatening student safety and property during an extreme event.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	GCSD 2025.3
Name of Action or Project:	Generators
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Install backup generators or transfer switch to allow for the safe use of backup power ensuring public safety and property during power outages due to extreme events
Estimated Cost:	\$1,000,000
Benefits:	Critical facilities, such as schools, can continue to operate in the event of a disaster.
Plan for Implementation	
Responsible Organization/Department:	School Board
Supporting Organization/Department:	
Action/Project Priority:	HIGH
Timeline for Completion:	1 to 5 years
Potential Fund Sources:	General Revenue, Capital projects, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued/Modified
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	Milan C-2
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire
Problem being Mitigated:	Lack of public knowledge about natural disasters.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	MSD 2025.1
Name of Action or Project:	Public mitigation education
Mitigation Category:	Education and Outreach
Action or Project Description:	Provide education to the students' families to reduce risk to life and property due to natural hazards in the region. The information regarding these mitigation measures would be obtained from FEMA's website and posted to the district social media page.
Estimated Cost:	\$500
Benefits:	The general population will increase understanding of natural disasters and how to prepare for natural disasters potentially affecting the County.
Plan for Implementation	
Responsible Organization/Department:	School board
Supporting Organization/Department:	FEMA, SEMA, NWS, USGS
Action/Project Priority:	High
Timeline for Completion:	1-5 years
Potential Fund Sources:	NA
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	New Project

Action Worksheet	
Name of Jurisdiction:	Milan C-2
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornado
Problem being Mitigated:	FEMA-approved storm shelters have proven effective in mitigating the loss of property and life during tornados. A community-wide shelter program should be adopted for residents who may not have adequate shelter in their homes to minimize the potential for loss of life. School safe rooms can protect students from injury during a thunderstorm, tornado or natural wind event/disaster.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning.
Action/Project Number:	MSD 2025.2
Name of Action or Project:	Storm shelter/safe room
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Utilize grant funds and local resources to construct or install storm shelters in locations with insufficient protection including, but not limited to, schools, local recreation areas, and public facilities.
Estimated Cost:	\$2M
Benefits:	Storm shelters can protect the lives of individuals in a thunderstorm, tornado or hazardous wind event who may not have other options for sufficient shelter.
Plan for Implementation	
Responsible Organization/Department:	School Board
Supporting Organization/Department:	County Commissioners, GHRPC, County EMD
Action/Project Priority:	High
Timeline for Completion:	5 years
Potential Fund Sources:	Capital projects budget, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	Milan C-2
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado
Problem being Mitigated:	Loss of power threatening student safety and property during an extreme event.
Action or Project	
Applicable Goal Statement:	<p>Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning.</p> <p>Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire</p> <p>Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather</p> <p>Goal 5: Minimize injuries and property damage due to seismic and/or geological events.</p>
Action/Project Number:	MSD 2025.3
Name of Action or Project:	Generators
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Install backup generators or transfer switch to allow for the safe use of backup power ensuring public safety and property during power outages due to extreme events
Estimated Cost:	\$1,000,000
Benefits:	Critical facilities, such as schools, can continue to operate in the event of a disaster.
Plan for Implementation	
Responsible Organization/Department:	School Board
Supporting Organization/Department:	
Action/Project Priority:	HIGH
Timeline for Completion:	1 to 5 years
Potential Fund Sources:	General Revenue, Capital projects, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued/Modified
Report of Progress:	Awaiting funding

Action Worksheet	
Name of Jurisdiction:	Newtown-Harris R-II
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire
Problem being Mitigated:	Lack of public knowledge about natural disasters.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning. Goal 2: Minimize property damage due to flooding, levee failure or dam incidents. Goal 3: Minimize the impact to natural and human resources caused by drought, extreme temperatures and wildfire Goal 4: Maintain public services, protect life, and minimize the risk of property damage caused by severe winter weather Goal 5: Minimize injuries and property damage due to seismic and/or geological events.
Action/Project Number:	NHSD 2025.1
Name of Action or Project:	Public mitigation education
Mitigation Category:	Education and Outreach
Action or Project Description:	Provide education to the students' families to reduce risk to life and property due to natural hazards in the region. The information regarding these mitigation measures would be obtained from FEMA's website and posted to the county's social media page.
Estimated Cost:	\$500
Benefits:	The general population will increase understanding of natural disasters and how to prepare for natural disasters potentially affecting the County.
Plan for Implementation	
Responsible Organization/Department:	School board
Supporting Organization/Department:	FEMA, SEMA, NWS, USGS
Action/Project Priority:	High
Timeline for Completion:	1-5 years
Potential Fund Sources:	NA
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	New Project

Action Worksheet	
Name of Jurisdiction:	Newtown-Harris R-II
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornado
Problem being Mitigated:	FEMA-approved storm shelters have proven effective in mitigating the loss of property and life during tornados. A community-wide shelter program should be adopted for residents who may not have adequate shelter in their homes to minimize the potential for loss of life. School safe rooms can protect students from injury during a thunderstorm, tornado or natural wind event/disaster.
Action or Project	
Applicable Goal Statement:	Goal 1: Eliminate loss of life, minimize injuries, and reduce property damage caused by tornadoes, severe thunderstorm high winds, hail and lightning.
Action/Project Number:	NHSD 2025.2
Name of Action or Project:	Storm shelter/safe room
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Utilize grant funds and local resources to construct or install storm shelters in locations with insufficient protection including, but not limited to, schools, local recreation areas, and public facilities.
Estimated Cost:	\$2M
Benefits:	Storm shelters can protect the lives of individuals in a thunderstorm, tornado or hazardous wind event who may not have other options for sufficient shelter.
Plan for Implementation	
Responsible Organization/Department:	School Board
Supporting Organization/Department:	County Commissioners, GHRPC, County EMD
Action/Project Priority:	High
Timeline for Completion:	5 years
Potential Fund Sources:	Capital projects budget, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Continued
Report of Progress:	Awaiting funding

Table 4.4. Mitigation Action Matrix

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
Structure and Infrastructure Projects								
County 2025.2	Maintain transportation infrastructure	Sullivan Co	High	2	Flooding	x		
County 2025.3	Generators	Sullivan Co	Low	1,3,4,5	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
County 2025.4	Debris Removal	Sullivan Co	Low	1,4,5	Earthquakes, Severe thunderstorms, Severe winter weather, Tornado	x		
County 2025.5	Outdoor warning siren	Sullivan Co	High	1,2,3,4	Flooding, Dam Failure, Severe thunderstorms, Tornado, Wildfire	x	x	
CGCA 2025.2	Maintain transportation infrastructure	Greencastle	High	2	Flooding	x		
CGCA 2025.3	Generators	Greencastle	Low	1,3,4,5	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
CGCA 2025.4	Outdoor warning siren	Greencastle	High	1,2,3,4	Flooding, Dam Failure, Severe thunderstorms, Tornado, Wildfire	x	x	
CGCA 2025.5	Storm shelters and safe rooms	Greencastle	High	1,3,4,5	Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
CGC 2025.2	Maintain transportation infrastructure	Green City	Medium	2	Flooding	x		
CGC 2025.3	Generators	Green City	High	1,3,4,5	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
CGC 2025.4	Install/upgrade warning siren, Weather radios, emergency alert systems	Green City	High	1,2,3,4	Flooding, Dam Failure, Severe thunderstorms, Tornado, Wildfire	x	x	
CGC 2025.5	Storm shelters and safe rooms	Green City	High	1,3,4,5	Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
CGC 2025.6	Flood studies and flood reduction projects	Green City	High	2	Flooding	x	x	
CGC 2025.7	Routine dam inspections	Green City	High	2	Dam failure	x	x	
CM 2025.3	Generators	Milan	High	1,3,4,5	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
CM 2025.3	Maintain & Upgrade transportation infrastructure	Milan	Medium	2	Flooding	x	x	
CM 2025.4	Storm shelters and safe rooms	Milan	High	1,3,4,5	Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
CM 2025.5	Install/upgrade warning siren, Weather radios, emergency alert systems	Milan	High	1,2,3,4	Flooding, Dam Failure, Severe thunderstorms, Tornado, Wildfire	x	x	
VP 2025.2	Storm shelters and safe rooms	Pollock	High	1,3,4,5	Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
VP 2025.3	Install/upgrade warning siren, Weather radios, emergency alert systems	Pollock	High	1,2,3,4	Flooding, Dam Failure, Severe thunderstorms, Tornado, Wildfire	x	x	
GCSD 2025.2	Storm shelters and safe rooms	Green City R-I	High	1,3,4,5	Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
GCSD 2025.3	Generators	Green City R-I	High	1,3,4,5	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
MSD 2025.2	Storm shelters and safe rooms	Milan C-2	High	1,3,4,5	Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
MSD 2025.3	Generators	Milan C-2	High	1,3,4,5	Earthquakes, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
NHSD 2025.2	Storm shelters and safe rooms	Newtown-Harris R-II	High	1,3,4,5	Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado	x	x	
Natural Systems Protection								
County 2025.4	Debris Removal	Sullivan Co	Low	1,4,5	Earthquakes, Severe thunderstorms, Severe winter weather, Tornado	x		
CGC 2025.7	Routine dam inspections	Green City	High	2	Dam failure	x	x	
CM 2025.6	Participation in the NFIP	Milan	High	2	Flooding	x	x	x
Planning and Regulation								
CGC 2025.6	Flood studies and flood reduction projects	Green City	High	2	Flooding	x	x	
CGC 2025.7	Routine dam inspections	Green City	High	2	Dam failure	x	x	
CM 2025.7	Participation in the NFIP	Milan	High	2	Flooding	x	x	x
Education and Outreach								
County 2025.1	Mitigation education	Sullivan Co	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	x
County 2025.6	N.O.A.A. Weather Radios	Sullivan Co.	High	1,2,3,4	Flooding, Dam Failure, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
CGCA 2025.1	Mitigation education	Greencastle	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	x
CGC 2025.1	Mitigation education	Green City	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	x
CM 2025.1	Mitigation education	Milan	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	X
VP 2025.1	Mitigation education	Pollock	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	X
GCSD 2025.1	Mitigation education	Green City R-1	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	x
MSD 2025.1	Mitigation education	Milan C-2	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	x
NHSD 2025.1	Mitigation education	Newtown-Harris RII	High	1,2,3,4,5	Flooding, Dam failure, Drought, Earthquakes, Levee Failure, Extreme Temperatures, Severe thunderstorms, Severe winter weather, Tornado, Wildfire	x	x	x

5 PLAN MAINTENANCE PROCESS

5 PLAN MAINTENANCE PROCESS	5.1
5.1 Monitoring, Evaluating, and Updating the Plan.....	5.1
5.1.1 Responsibility for Plan Maintenance	5.1
5.1.2 Plan Maintenance Schedule	5.2
5.1.3 Plan Maintenance Process.....	5.2
5.2 Incorporation into Existing Planning Mechanisms.....	5.3
5.3 Continued Public Involvement.....	5.5

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 State Emergency Management Agency (SEMA) requires that Hazard Mitigation Plans be reviewed periodically, at least annually, to ensure that goals and objectives are being considered. Revisions to the actions or strategies may be required, as well as acknowledging completed successful mitigations. This section of the Sullivan County Multi-jurisdictional Hazard Mitigation Plan provides the process to review, revise, and update the plan.

The maintenance of the plan shall be delegated to the County Emergency Management Committee. They meet quarterly and following any disaster declarations, and will invite members of the MPC to attend these meetings to discuss the plan progress and determine if any updates or amendments need to be considered.

Maintenance shall 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 Commissioners and governing bodies of participating jurisdictions; and
- Inform and solicit input from the public.

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

5.1.2 Plan Maintenance Schedule

The MPC agrees to meet annually and after a state or federally declared hazard event as appropriate to monitor progress and update the mitigation strategy. The Sullivan County Emergency Management Director will be responsible for initiating the plan reviews and will invite members of the MPC and other interested parties 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

There were no changes made in the plan due to changes in priorities of any jurisdiction that participated in the development of the plan.

The MPC and the Emergency Management Director, in cooperation with GHRPC, will assess annually the plan for effectiveness at achieving its stated purpose and goals. The evaluation of the effectiveness of the plan will include any progress on proposed actions, development of new actions if necessary or desired, and by evaluating changes in vulnerabilities identified in the plan. Progress on the proposed actions will be monitored by evaluating changes in vulnerabilities identified in the plan. The MPC and the Emergency Management Director shall, during the annual meeting review changes in vulnerability identified below.

- 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.
- If new actions are identified to implement mitigation activities, the jurisdictional MPC member will take necessary actions to amend the plan. GHRPC staff currently handles such requests.

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 in cooperation with the Sullivan County Emergency Committee deems appropriate and necessary. Changes will be approved by the Sullivan County Commissioners 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. Based on the capability assessments of the participating jurisdictions, communities in Sullivan 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;
- Sullivan 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 (or designated responsible entity) 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 (or designated responsible entity) 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 Sullivan County Emergency Management Director will provide the updated Mitigation Strategy with current status of each mitigation action to the County Commissioners as well as all Mayors, City Clerks, and School District Superintendents. The Emergency Management Director will request that the mitigation strategy be incorporated, where appropriate, in other planning mechanisms.

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

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

Jurisdiction	Planning Mechanisms	Integration Process for Previous Plan	Integration Process for Current Plan
Sullivan County	Transportation Advisory Committee (TAC)	Member of TAC attended all planning meetings and identified actions relating to transportation infrastructure were included in annual update to Unfunded Needs List and the State Transportation Improvement Plan, and the Regional Transportation Plan	Member of TAC attended all planning meetings and identified actions relating to transportation infrastructure were included in annual update to unfunded needs list, the State Transportation Improvement Plan, and the Regional Transportation Plan
	Sullivan County Emergency Plan	The Commissioners attended all planning meetings and identified actions relating to infrastructure were included in annual update to Comprehensive Plan	The Commissioners and EMD attended all planning meetings. Identified new actions or ongoing actions relating to infrastructure will be included in annual update to Comprehensive Plan
	CEDS, LEPC, Council Budgeting Session	Annual review, county emergency plan review	Annual CEDS review, County Emergency Plan Review
City of Milan	Local Budget, CEDS, Emergency Plan, City Ordinances	Annual review	Annual CEDS review, Emergency Plan Review, Regional Transportation Plan
City of Green City	Local Budget, CEDS, Emergency Plan, City Ordinances, Floodplain Ordinance	Annual Review	Annual CEDS review, Emergency Plan Review, Regional Transportation Plan
City of Green Castle	Local Budget, CEDS, Emergency Plan, City Ordinances	Annual Review	Annual CEDS review, Emergency Plan Review, Regional Transportation Plan
Village of Pollock	Local Budget, CEDS, Emergency Plan, City Ordinances	Annual Review	Annual CEDS review, Emergency Plan Review, Regional Transportation Plan
Green City R-I	Master Plan,	Annual Review	Review of Master Plan,

	Emergency Plan, Weapons Policy		Emergency Plan, and Weapons Policy
Milan C-II	Master Plan, Capital Improvement Plan, Emergency Plan, Weapons Policy	Annual Review	Review of Master Plan, Capital Improvement Plan, Emergency Plan, and Weapons Policy
Newtown Harris R-III	Capital Improvement Plan, Emergency Plan, Weapons Policy	Annual Review	Review of Capital Improvement Plan, Emergency Plan, and Weapons Policy

5.3 Continued Public Involvement

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

The hazard mitigation plan update process provides an opportunity to publicize success stories resulting from the plan's implementation and seek additional public comment. Information about the annual reviews will be posted in the local newspaper, as well as on the Sullivan County website following each annual review of the mitigation plan and will solicit comments from the public based on the annual review.

The Sullivan County emergency management director and the MPC will be responsible for publicizing success stories if mitigation activities are completed by issuing press releases and publicizing information on the Sullivan County and/or Jurisdiction's website.

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: Sources

- 2020 Block Geography (US Census Bureau) & National Land Cover Dataset (MRLC)
- American Meteorological Society
- BC Ministry of Forests, Lands, and Natural Resource Operations
- County and local Comprehensive Plans to the extent available
- County Emergency Management
- County Flood Insurance Rate Map, FEMA
- Data Collection Questionnaires completed by each jurisdiction.
- Decennial Census
- DESE
- Department of Geography
- Encyclopedia Britannica, Inc.
- Environmental Protection Agency
- Federal Emergency Management Agency (FEMA)
- Flood Insurance Administration
- Flood Insurance Study, FEMA
- Hazards US (HAZUS)
- Iowa Department of Natural Resources
- Carroll County LEPC
- Missouri Department of Commerce & Insurance
- Missouri Department of Conservation
- Missouri Department of Health and Human Services; health.mo.gov
- Missouri Department of Natural Resources
- Missouri Department of Transportation
- Missouri Division of Fire Marshal Safety
- Missouri Hazard Mitigation Plans (2013, 2018, and 2023)
- Missouri Public Service Commission
- National Agricultural Statistics Service (Agriculture production/losses)
- National Centers for Environmental Information
- National Drought Mitigation Center Drought Reporter
- National Fire Incident Reporting System (NFIRS)
- National Inventory of Dams
- National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information (NCEI);
- National Weather Service
- NFIP Community Status Book
- Oxford Brooks University
- Previously approved Sullivan County Hazard Mitigation Plan (2021)
- Purdue University
- SEMA
- SILVIS Lab, Department of Forest Ecology and Management, University of Wisconsin
- State of Missouri GIS data
- Tornado and Storm Research Organization (TORRO)
- United States Geological Survey (USGS)
- US Army Corps of Engineers
- US Bureau of the Census and Annual population estimates

- US Community Survey, 2023
- US Department of Agriculture's (USDA) Risk Management Agency Crop Insurance Statistics
- US Department of Transportation
- US Drought Monitor
- US Fish and Wildlife Service
- www.tornadochaser.net
- www.weather.gov

Appendix B: Planning Documentation & Invitations

(15)

County: Sullivan

Date&Time:

Aug. 14, 2025 3:00 - 3:45

Printed Name	Jurisdiction	Commute Time	Email or Mobile number (text)
Glen B. 1995	911 PC		—
Miranda George	CTHPC		
King blood	ARES Ham Radio	30 min	
Lindy Allen	911		
Joshua Bennett	SCMH Sullivan Co. Mem. Hosp.		
Lester DeJong	Green castle fire		
Mindy Chapman	Newtown, MO		
Sharon Goodfield	911		
Tony A. Gentry	Medicine Creek Fire	45 45 min	
Zachary Moore	milan fire department	2 mins	—
Robert Trent	Smithfield Seals	16 min	
Mick Hill	Smithfield	30 min	
WANDA MARGARET	Sullivan Co. Health Dept	20 min	
Debra Jones	Sullivan Co. Senior Center City of Braconing - Clerk		
Timmy Peterson	Newtown.	1 hr	
Colby Leslie	Green city	15 min	city@newtown.net

(to and from)

HMP Meeting # 2 for Sullivan County 9 / 2 / 2025

[illegible]

Virtual

10AM - 10:30AM

HMP Meeting # 1 for Sullivan County 8/15/2025

[illegible]

County: Sullivan

Date&Time: 9/5/2025

9:30am - 10:45am

[illegible]

00:48-00:50

HMP Meeting # 2 for Sullivan County 9/2/2025

[illegible]

County: Sullivan Date&Time: October 15, 2025 3pm-4pm

Meeting #3

[illegible]

Page 1

County: Sullivan

Date&Time: 10/21/25

10:00 - 10:30 AM

Page 1

Agenda – Sullivan County Meeting #1

August 14, 2025

- Start Meeting
- Introductions (complete sign-in sheet)
- What is Hazard Mitigation Planning?
 - Existing Plan
 - Update every 5 years
 - Requirement for HMGP grants
- Planning process
 - 3 meetings
 - Outreach and Hazard Identification (This meeting)
 - Risk Assessment & Mitigation Strategies – What are the vulnerabilities within our jurisdiction and Mitigation Strategies that could reduce risk from these hazards
 - Action Prioritization; Reviewing and Adopting the Plan; and Plan Upkeep
- To be a participating jurisdiction, you must do the following:
 - Complete jurisdictional questionnaire (County, School Districts, Cities & Villages, and Special Districts)
 - Attend at least one meeting
 - Review and Adopt the plan
- Outreach
 - We (GHRPC) have sent letters, emails, and made phone calls to potential stakeholders county wide
 - Public Survey – Please complete and Share on social media
 - Share with Members of the public
 - Share with Employees of the school, city, village, etc.
- Identify Hazards
 - Email – “Hazard Identification for Sullivan County”
 - Go through this worksheet
- Questions?

Agenda – Sullivan County Meeting #1

August 15, 2025

- Start Meeting
- Introductions (complete sign-in sheet)
- What is Hazard Mitigation Planning?
 - Existing Plan
 - Update every 5 years
 - Requirement for HMGP grants
- Planning process
 - 3 meetings
 - Outreach and Hazard Identification (This meeting)
 - Risk Assessment & Mitigation Strategies – What are the vulnerabilities within our jurisdiction and Mitigation Strategies that could reduce risk from these hazards
 - Action Prioritization; Reviewing and Adopting the Plan; and Plan Upkeep
- To be a participating jurisdiction, you must do the following:
 - Complete jurisdictional questionnaire (County, School Districts, Cities & Villages, and Special Districts)
 - Attend at least one meeting
 - Review and Adopt the plan
- Outreach
 - We (GHRPC) have sent letters, emails, and made phone calls to potential stakeholders county wide
 - Public Survey – Please complete and Share on social media
 - Share with Members of the public
 - Share with Employees of the school, city, village, etc.
- Identify Hazards
 - Email – “Hazard Identification for Sullivan County”
 - Go through this worksheet
- Questions?

Agenda – Sullivan County Meeting #1

August 14, 2025

- Start Meeting
- Introductions (complete sign-in sheet)
- What is Hazard Mitigation Planning?
 - Existing Plan
 - Update every 5 years
 - Requirement for HMGP grants
- Planning process
 - 3 meetings
 - Outreach and Hazard Identification (This meeting)
 - Risk Assessment & Mitigation Strategies – What are the vulnerabilities within our jurisdiction and Mitigation Strategies that could reduce risk from these hazards
 - Action Prioritization; Reviewing and Adopting the Plan; and Plan Upkeep
- To be a participating jurisdiction, you must do the following:
 - Complete jurisdictional questionnaire (County, School Districts, Cities & Villages, and Special Districts)
 - Attend at least one meeting
 - Review and Adopt the plan
- Outreach
 - We (GHRPC) have sent letters, emails, and made phone calls to potential stakeholders county wide
 - Public Survey – Please complete and Share on social media
 - Share with Members of the public
 - Share with Employees of the school, city, village, etc.
- Identify Hazards
 - Email – “Hazard Identification for Sullivan County”
 - Go through this worksheet
- Questions?

Agenda – Sullivan County

Meeting #2

- Start Meeting
- Introductions and Sign-In Sheet
- Brief Description of Hazard Mitigation Process
 - Mitigation – actions taken to reduce or eliminate long-term risks to life and property due to natural disasters
 - Involves identifying risks and vulnerabilities
 - Developing strategies to minimize the impact of disasters
 - Mitigation is important, as it is essential for breaking the cycle of damage and repair (which can be costly)
- The Hazard Mitigation Planning Process
- Risk Assessment (4 components)
 - Hazard Identification (Meeting #1)
 - Profiling of Hazard Events (Meeting #1)
 - Inventory of Assets
 - Estimation of potential human and economic losses based on exposure and vulnerability of people, buildings, and infrastructure
- Develop a Mitigation Strategy for each potential hazard
 - This will be based on the risk assessment and hazard identification
- Adopt and Implement the Plan

HAZARD

MITIGATION PLANNING EVENT

IS YOUR COMMUNITY
PREPARED FOR DISASTER?

WE WANT TO HEAR FROM YOU!

THE SULLIVAN COUNTY HAZARD MITIGATION PLAN IS BEING UPDATED. PLEASE
ATTEND ONE OF THE FOLLOWING MEETINGS IF YOU WOULD LIKE TO PARTICIPATE!

MEETING #1	MEETING #2	MEETING #3
AUGUST 14, 2025 3-4:30 109 N. MAIN ST. MILAN, MO	SEPT. 2, 2025 3-4:30 109 N. MAIN ST. MILAN, MO	OCTOBER 15, 2025 3-4:30 109 N. MAIN ST. MILAN, MO

ZOOM LINK AVAILABLE ON GHRPC.ORG WEBSITE FOR THE FOLLOWING MEETINGS

VIRTUAL MEETING #1: AUGUST 15 10AM-12PM
VIRTUAL MEETING #2: SEPTEMBER 3 10AM-12PM
VIRTUAL MEETING #3: OCTOBER 16 10AM-12PM



Link to Public Survey

Contact Green Hills Regional Planning Commission for more information. (660) 359-5636 ext 11
or amanda@ghrpc.org for more information.

Green Hills Regional Planning Commission

Published by Brandy Stretch Jones
October 7 at 11:28 AM

It's not too late to participate in Sullivan County Missouri's Hazard Mitigation Planning. The final meeting is taking place next week!!
Wednesday, October 15th, at Sullivan County Courthouse, 109 N. Main Street, Milan. If you have any questions, call Green Hills Regional Planning for more information or a one-on-one meeting.

#SullivanCountyMO #milanmissouri
#greencitymo #greencastlemo
#newtownmissouri #pollockmo #milanc2

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1

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Comment as Green Hills Regional Plan...



Hazard mitigation is defined as “any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards”. While natural hazards will continue to occur and at their worst will result in death and destruction of both property and infrastructure, this plan was undertaken to minimize the impact that these hazards will have on the people and property of Sullivan County.

Identifying Vulnerable Assets for Sullivan County

Jurisdiction: Sullivan Co. Multipurpose Senior Center

Refer to the Hazard Identification Worksheet where you described issues that you have had with the identified hazards. We are now going to look at specific community assets that can be affected by the identified hazards.

Instructions: For the hazards that affect your community, identify two to three examples of assets that can be affected by the identified hazards.

People (Residents, workers, visiting populations, and socially vulnerable populations like seniors, individuals with disabilities, lower-income individuals, etc.)	
Seniors	- Unable to get to center, unable to communicate with others via phone if phones are down
- Employees unable to get to work	- Unable to cook for themselves and complete A.D.L's
	- Volunteers unable to deliver meals
Structures (Community centers, historic places, planned capital improvement)	
Seniors	- Unable to utilize center to get meals or in activities
	- Unable to cook safely
	-
Economic Assets (Major employers, primary economic sectors, key infrastructure like telecommunications networks)	
Seniors	- huge economic impact on all businesses
families	- Structure breakdown in communication
volunteers	- interrupted water supply
	- interrupted food supply

Natural, Historic, and Cultural Resources (Areas of conservation, beaches, parks, critical habitats)

- parks not accessible, unable to travel to facilities

Critical Facilities and Infrastructure (Hospitals, law enforcement, water, power)

all people including seniors

- loss of power
- loss of water supply
- hospitals maybe inaccessible
- seniors may not have medicines needed or become ill may not be able to get to health care
- damage to physical center - not unsafe

Community Activities (Major local events such as festivals or economic events like farming or fishing)

Seniors & all

- we are a farming area - hazards may interfere with ability to grow crops or check livestock which negatively affect economy.

Are there other assets that you can think to include?

- Transporting food deliveries
- Interruption of gas - not able to cook



Green Hills

Regional Planning Commission

810 Washington Street, Trenton, Missouri 64683

Sullivan County HMP Meeting #1 (Virtual)

Zoom

Meeting Minutes

August 15th, 2025

1. **Call to Order:** The meeting was called to order at 3pm by Amanda George.

2. **Attendance:** Attendance and introductions.

Laurie Stafford

Rachel Hale

Stephanie Hubbard

Shannon Bain

Kelly Bicknell

Village of Humphreys

City of Green City

Newtown Harris R-III

Newtown Harris R-III

City of Green City

RPC Staff

Amanda George

Dana DeVore

Glen Briggs

Brandy Jones

3. **What is Hazard Mitigation Planning?**

- Existing Plan
- Updates every 5 years
- Requirements for HMGP Grants

4. **Planning Process**

- 3 in-person meetings and 3 corresponding virtual meetings.
 - **Meeting 1** Outreach and Hazard Identification (this Meeting)
 - **Meeting 2** Risk Assessment & Mitigation Strategies – What are the vulnerabilities within our jurisdiction and Mitigation Strategies that could reduce risk from these hazards.
 - **Meeting 3** Action Prioritization: Reviewing and Adopting the Plan: and Plan Upkeep.

5. **To be a participating jurisdiction, you must do the following:**

- Complete jurisdictional questionnaire (County, School District, Cities & Villages, and Special Districts)
- Attend at least one meeting
- Provide suggestions about the plan, develop actions that address every hazard your jurisdiction faces, and participate in the planning process
- Review and adopt the plan

6. Outreach

- We (GHRPC) have sent letters, emails, and made phone calls to potential stakeholder's county wide
- Public Survey – Please complete and share on social media
 - Share with members of the public
 - Share with Employees of the school, city, village, etc.

7. Identify Hazards

- Emailed/handed out to all attendees a copy of "Hazard Identification for Sullivan County"
- Detailed each hazard outlined on "Hazard Identification for Sullivan County" worksheet with examples.

Opened the floor for questions?

Meeting Adjourned at 10:30am.



Green Hills

Regional Planning Commission

810 Washington Street, Trenton, Missouri 64683

Sullivan County HMP Meeting #1 (In-person)
109 N. Main St, Milan
Courthouse
Meeting Minutes
August 12th, 2025

1. **Call to Order:** The meeting was called to order at 3pm by Amanda George.
2. **Attendance:** Attendance and introductions.

Kris Good	ARGS Ham Radio	RPC Staff
Cindy Allen	Sullivan 911	Amanda George
Josh Bennett	Sullivan Community Hospital	Glen Briggs
Landon DeJONES	Green Castle Fire	
Mindy Chapman	City of Newtown	
Phyllis Blandefield	City of Pollock	
Terry Purdy	Medican Creek Fire	
Zackary Hoover	Milan Fire	
Robert Trenton	Smithfield	
Mike Ktitl	Smithfield	
Wanda Malesuser	Sullivan Health Department	
Deeha Jones	Sullivan Senior center	
Amy Peterson	City of Newtown	
Colby Leslie	Green City	
Bobby Williams	Public Works	

3. **What is Hazard Mitigation Planning?**
 - Existing Plan
 - Updates every 5 years
 - Requirements for HMGP Grants
4. **Planning Process**
 - 3 in-person meetings and 3 corresponding virtual meetings.
 - **Meeting 1** Outreach and Hazard Identification (this Meeting)
 - **Meeting 2** Risk Assessment & Mitigation Strategies – What are the vulnerabilities within our jurisdiction and Mitigation Strategies that could reduce risk from these hazards.

- **Meeting 3** Action Prioritization: Reviewing and Adopting the Plan: and Plan Upkeep.

5. To be a participating jurisdiction, you must do the following:

- Complete jurisdictional questionnaire (County, School District, Cities & Villages, and Special Districts)
- Attend at least one meeting
- Provide suggestions about the plan, develop actions that address every hazard your jurisdiction faces, and participate in the planning process
- Review and adopt the plan

6. Outreach

- We (GHRPC) have sent letters, emails, and made phone calls to potential stakeholder's county wide
- Public Survey – Please complete and share on social media
 - Share with members of the public
 - Share with Employees of the school, city, village, etc.

7. Identify Hazards

- Emailed/handed out to all attendees a copy of "Hazard Identification for Harrison County"
- Detailed each hazard outlined on "Hazard Identification for Harrison County" worksheet with examples.

Opened the floor for questions?

Meeting Adjourned at 3:45pm.

* Sullivan County HMP - in-person

Flooding

- Housing

Drought

- Water supply
- Plan

Dam Failure

- continuity of services
- dam inspections
- Green City Lake * city property
lg. dam /
propane tanks floated
Reservoir S. of West St.

Green City
Banner

Ext. Temps

- cooling center
- have generator
- Transfer Switch

Tornadoes

- early warning
- weather radio

Sev. Thunderstorms

- lost power
- debris removal
- tree trimming ordinance

Wildfire

- education

email action

Hazard Identification for Sullivan County

Jurisdiction: Newtown

Use this worksheet to identify which hazards can affect your community. Not all hazards apply to the planning area. For the ones that do, describe how they have been an issue in the past, or if they are a future concern.

Instructions: Describe where there may be recurring problems that you would like to see addressed.

Hazard		Is this a hazard for your community? Yes/No	If yes, briefly describe how. Think about specific locations or recurring issues that you know of in your community.
Dam Failure		No Yes.	Water comes from Co Reservoir
Drought		yes.	Water supply - lack of Drinking + Water supply for Fires
Earthquake		yes.	Water supply - lack of workers - Repairs
Extreme Temperatures (Hot and Cold)		yes	Frozen water supply from Co. Reservoir
Flood (Riverine & Flash)		yes.	Medicine Creek Flood East Side of town + City Lagoon.
Severe Thunderstorms	Hail	yes.	loss of power - Damage to the infrastructure. - Sewage Sewage pump system runs off of Power.
	Lightning		
	Severe Wind		
Severe Winter Weather		yes	Lack of Road Workers to clear Roads - Co Road District
Tornado		yes.	Power outage - Tornado Warning system would go Down
Wildfire		Not likely	
If there are additional hazards that you would like to include, please add them here.			

Hazard Identification for Sullivan County

Jurisdiction: _____

Use this worksheet to identify which hazards can affect your community. Not all hazards apply to the planning area. For the ones that do, describe how they have been an issue in the past, or if they are a future concern.

Instructions: Describe where there may be recurring problems that you would like to see addressed.

Hazard		Is this a hazard for your community? Yes/No	If yes, briefly describe how. Think about specific locations or recurring issues that you know of in your community.
Dam Failure		NO YES	We was have no white water.
Drought		YES	Drying trib water.
Earthquake		YES	
Extreme Temperatures (Hot and Cold)		YES.	
Flood (Riverine & Flash)		YES.	
Severe Thunderstorms	Hail	YES	NO power for fire
	Lightning	YES	NO power
	Severe Wind	YES	NO power
Severe Winter Weather		YES	
Tornado		YES	
Wildfire		YES	we have cash taken.
If there are additional hazards that you would like to include, please add them here.			

Hazard Identification for Sullivan County

Jurisdiction: Sullivan Co 911

Use this worksheet to identify which hazards can affect your community. Not all hazards apply to the planning area. For the ones that do, describe how they have been an issue in the past, or if they are a future concern.

Instructions: Describe where there may be recurring problems that you would like to see addressed.

Hazard		Is this a hazard for your community? Yes/No	If yes, briefly describe how. Think about specific locations or recurring issues that you know of in your community.
Dam Failure		Elmwood Not @ this time	Lake dam fails - no water for water towers
Drought		Yes	Drinking water - fires - crops
Earthquake		?	People coming here from impacted areas
Extreme Temperatures (Hot and Cold)			
Flood (Riverine & Flash)		Yes	Some Hwy's - PP & E flood frequently
Severe Thunderstorms	Hail	Yes	
	Lightning	Yes	
	Severe Wind	Yes	Electrical outages -
Severe Winter Weather		Yes	Power outages Road conditions hazardous
Tornado		Yes	
Wildfire			
If there are additional hazards that you would like to include, please add them here.			

Hazard Identification for Sullivan County

Jurisdiction: Medison Creek Fire Proc.

Use this worksheet to identify which hazards can affect your community. Not all hazards apply to the planning area. For the ones that do, describe how they have been an issue in the past, or if they are a future concern.

Instructions: Describe where there may be recurring problems that you would like to see addressed.

Hazard		Is this a hazard for your community? Yes/No	If yes, briefly describe how. Think about specific locations or recurring issues that you know of in your community.
Dam Failure		no yes	Water supply to our distric
Drought		yes	Can't draw out of ponds or lakes if needed
Earthquake		yes	Low personal is sent somewhere for helping.
Extreme Temperatures (Hot and Cold)		yes	extreme heat / strokes if working in heat. Cold - Freeze waterlines.
Flood (Riverine & Flash)		yes	Travel can affect Rescuers.
Severe Thunderstorms	Hail	yes	Structure
	Lightning	yes	Electricity needed
	Severe Wind	yes	Structure
Severe Winter Weather		yes	Roads not clear to respond
Tornado		yes	Power Structure damage, Safety.
Wildfire		yes	
If there are additional hazards that you would like to include, please add them here.			
Sinkholes			

Hazard Identification for Sullivan/Linn County

Jurisdiction: Sullivan Co. Senior Center; City of Brearling

Use this worksheet to identify which hazards can affect your community. Not all hazards apply to the planning area. For the ones that do, describe how they have been an issue in the past, or if they are a future concern.

Instructions: Describe where there may be recurring problems that you would like to see addressed.

Hazard		Is this a hazard for your community? Yes/No	If yes, briefly describe how. Think about specific locations or recurring issues that you know of in your community.
Dam Failure		No Yes	dam failure would disrupt water service
Drought		Yes	would interrupt water service drinking water - dry up ponds, lakes, age econ
Earthquake		Yes	
Extreme Temperatures (Hot and Cold)		Yes - Senior Center Yes - city	inability to get in & out to center frozen water, no water
Flood (Riverine & Flash)		yes - city	economic impact; part of town in flood zone flooding park, bridges
Severe Thunderstorms	Hail		
	Lightning	Yes - center city	no electricity; unable to cook; unable to serve no electricity - economic impact
	Severe Wind		loss of electricity loss water to town & facility
Severe Winter Weather		Yes - senior Yes - city	inability to serve population lack of mobility - economic
Tornado		yes - senior center Yes - city	inability to take care of individuals only for radio shelter @ church w/out house all community
Wildfire		Yes - city	limited fire fighters & equipment
If there are additional hazards that you would like to include, please add them here.			

Hazard Identification for Sullivan County

Jurisdiction: Village of Pollock

Use this worksheet to identify which hazards can affect your community. Not all hazards apply to the planning area. For the ones that do, describe how they have been an issue in the past, or if they are a future concern.

Instructions: Describe where there may be recurring problems that you would like to see addressed.

Hazard		Is this a hazard for your community? Yes/No	If yes, briefly describe how. Think about specific locations or recurring issues that you know of in your community.
Dam Failure		No	—
Drought		Yes	Lack of water for cattle, etc. + Smithfield
Earthquake		Maybe	This applies to any place
Extreme Temperatures (Hot and Cold)		Yes	Health hazard; hard on livestock — electricity demand
Flood (Riverine & Flash)		No	— property + natural gas demand
Severe Thunderstorms	Hail	Yes	} damage to property + people electronic outage
	Lightning	Yes	
	Severe Wind	Yes	
Severe Winter Weather		Yes	Effects livestock + travel, school: problem for farmers
Tornado		Yes	Danger to people, buildings, livestock, crops, ambulance service
Wildfire		Yes	Possible destruction to crops, people, building
If there are additional hazards that you would like to include, please add them here.			

Hazard Identification for Sullivan County

Jurisdiction: Sullivan County Health Department
"Natural"

Use this worksheet to identify which hazards can affect your community. Not all hazards apply to the planning area. For the ones that do, describe how they have been an issue in the past, or if they are a future concern.

Instructions: Describe where there may be recurring problems that you would like to see addressed.

Hazard		Is this a hazard for your community? Yes/No	If yes, briefly describe how. Think about specific locations or recurring issues that you know of in your community.
Dam Failure		Yes	we would be without water source.
Drought		Yes	with severe drought our Farmers/Ag. would be effected, would have to bring in our water supply.
Earthquake		Yes	Impact from people relocating, stranded emergency personnel etc. . .
Extreme Temperatures (Hot and Cold)		Yes.	Caution @ extreme excess water floods, pipes break ground
Flood (Riverine & Flash)		Yes →	
Severe Thunderstorms	Hail	Yes	Damage to infrastructure buildings schools. power outages etc. . .
	Lightning	Yes	" "
	Severe Wind	Yes	" "
Severe Winter Weather		Yes	" "
Tornado		Yes	"shelter, generator, relocation sick & injured. accomodate the handicapped
Wildfire			
If there are additional hazards that you would like to include, please add them here.			
			sunken holes

Natural Hazard.

Hazard Identification for Sullivan County

Jurisdiction: SCMH Sullivan County Memorial Hospital

Use this worksheet to identify which hazards can affect your community. Not all hazards apply to the planning area. For the ones that do, describe how they have been an issue in the past, or if they are a future concern.

Instructions: Describe where there may be recurring problems that you would like to see addressed.

Hazard		Is this a hazard for your community? Yes/No	If yes, briefly describe how. Think about specific locations or recurring issues that you know of in your community.
Dam Failure		No	—
Drought		Yes	Summers - Dry, Crops.
Earthquake		No	—
Extreme Temperatures (Hot and Cold)		Yes	100°F / -20°F freezing
Flood (Riverine & Flash)		Yes	Crops, Bridges,
Severe Thunderstorms	Hail	Yes	Damage to Houses / cars / Money
	Lightning	Yes	Electrical Equipment
	Severe Wind	Yes	Damage to Houses
Severe Winter Weather		Yes	Houses freezing, power outages
Tornado		Yes	Damage to Houses.
Wildfire		Yes	IF Dry out / land, Hay fields.
If there are additional hazards that you would like to include, please add them here.			
			Power Outages,
			Severe winter - Nat. gas usage.

Hazard Identification for Sullivan County

Jurisdiction: City of Green City

Use this worksheet to identify which hazards can affect your community. Not all hazards apply to the planning area. For the ones that do, describe how they have been an issue in the past, or if they are a future concern.

Instructions: Describe where there may be recurring problems that you would like to see addressed.

Hazard		Is this a hazard for your community? Yes/No	If yes, briefly describe how. Think about specific locations or recurring issues that you know of in your community.
Dam Failure		yes	loss of drinking water
Drought		yes	ag and drinking water Related
Earthquake		yes	water/gas line and supply
Extreme Temperatures (Hot and Cold)		yes	Frozen lines
Flood (Riverine & Flash)		yes	bad drains / Flooding
Severe Thunderstorms	Hail		
	Lightning	yes	loss of power
	Severe Wind	yes	loss of power
Severe Winter Weather		yes	Freezing & transportation
Tornado		yes	power loss & damages
Wildfire		yes	if near the city
If there are additional hazards that you would like to include, please add them here.			

Identifying Vulnerable Assets for Sullivan County

Jurisdiction: B

Refer to the Hazard Identification Worksheet where you described issues that you have had with the identified hazards. We are now going to look at specific community assets that can be affected by the identified hazards.

Instructions: For the hazards that affect your community, identify two to three examples of assets that can be affected by the identified hazards.

Vulnerable Assets	What makes this group/asset vulnerable during hazards? Have there ever been issues with recovery after an event?
People (Residents, workers, visiting populations, and socially vulnerable populations like seniors, individuals with disabilities, lower-income individuals, etc.)	
	Non English Speakers.
	Oxygen users.
Structures (Community centers, historic places, planned capital improvement)	
	Museum
	Cultural Tubes for Roads -
Economic Assets (Major employers, primary economic sectors, key infrastructure like telecommunications networks)	
	Cell towers
	Sheriff tower at Court House
	Weather Alerts

Natural, Historic, and Cultural Resources (Areas of conservation, beaches, parks, critical habitats)

	Oakwood Cemetery the Catholic
	Cemetery - Elm Wood Lake
	Locust Creek Conservation Area
	Forsyth State Park

Critical Facilities and Infrastructure (Hospitals, law enforcement, water, power)

	Hospital Fire Department water

Community Activities (Major local events such as festivals or economic events like farming or fishing)

	Home Coming parade - Christmas
	Parade - Memorial Day Festival
	Soft ball at Legion Field

Are there other assets that you can think to include?

	Museums Courthouse Church

Natural, Historic, and Cultural Resources (Areas of conservation, beaches, parks, critical habitats)

	Oakwood Cemetery the Catholic
	Cemetery - Elm Wood Lake
	Locust Creek Conservation Area
	Forrest Green Park

Critical Facilities and Infrastructure (Hospitals, law enforcement, water, power)

	Hospital Fire Department water

Community Activities (Major local events such as festivals or economic events like farming or fishing)

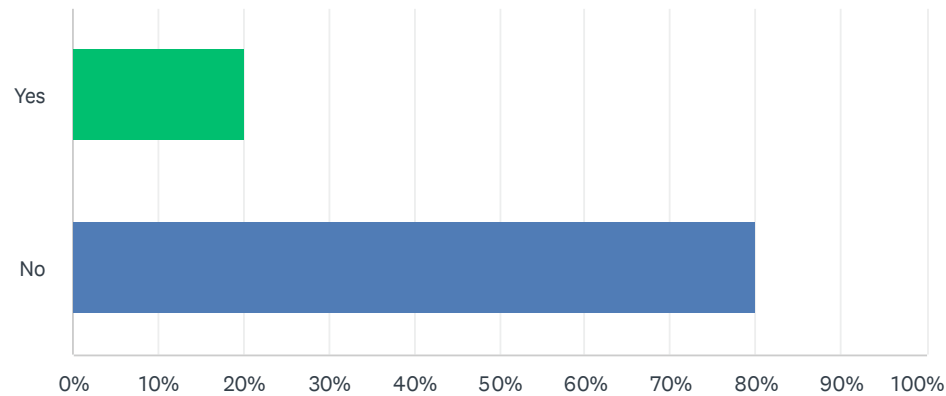
	Home Coming parade - Christmas
	Parade - Memorial Day Festival
	Soft ball at Legion Field

Are there other assets that you can think to include?

	Museums Courthouse Church

Q1 During the past five years have you experienced a natural disaster?

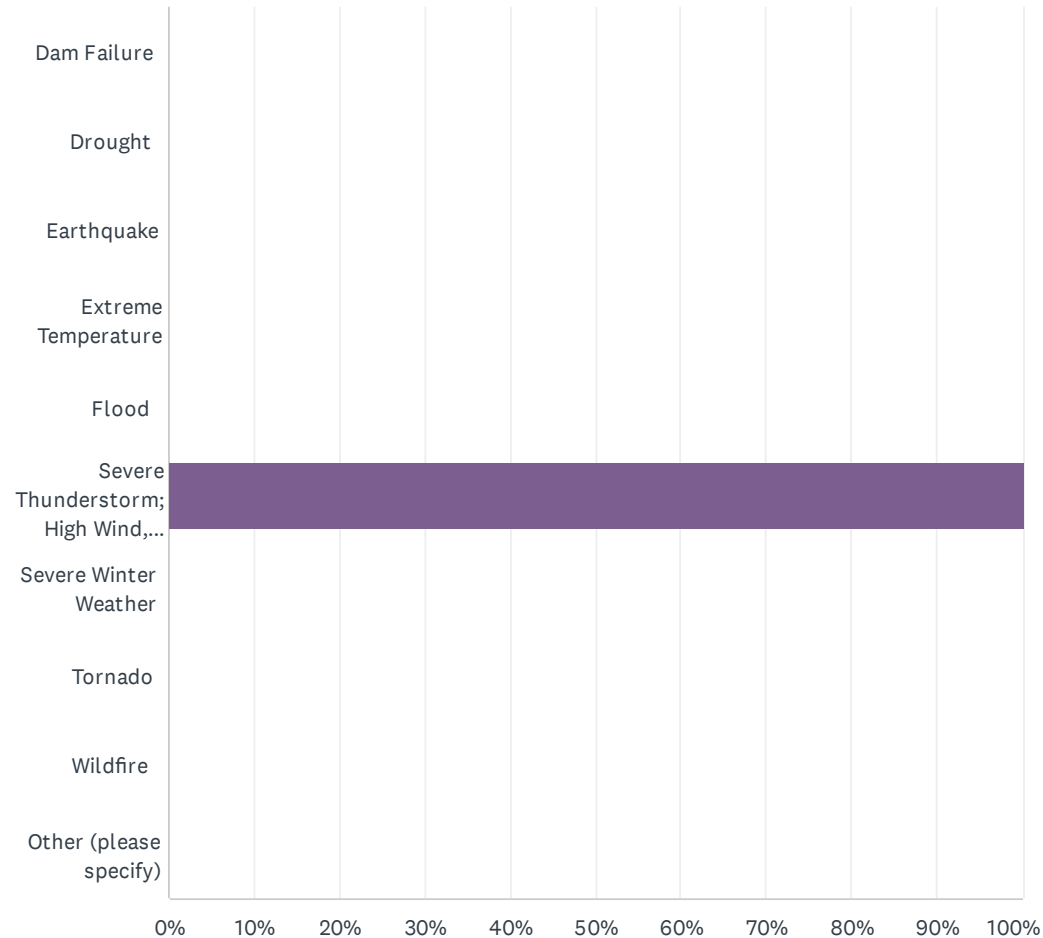
Answered: 5 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	20.00%	1
No	80.00%	4
TOTAL		5

Q2 If "YES" which of the following natural disasters have you experienced?

Answered: 1 Skipped: 4

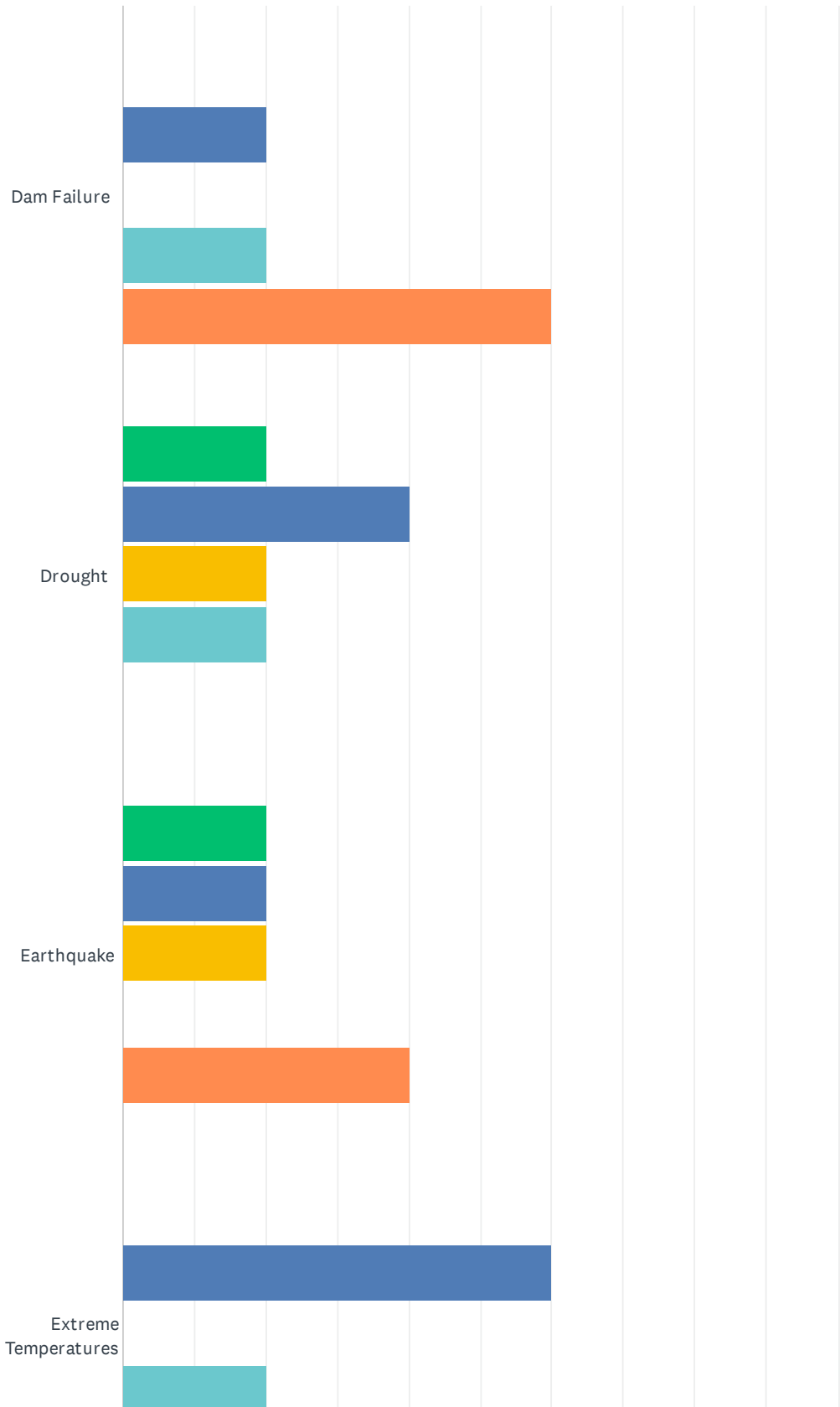


Sullivan County Natural Hazard Questionnaire

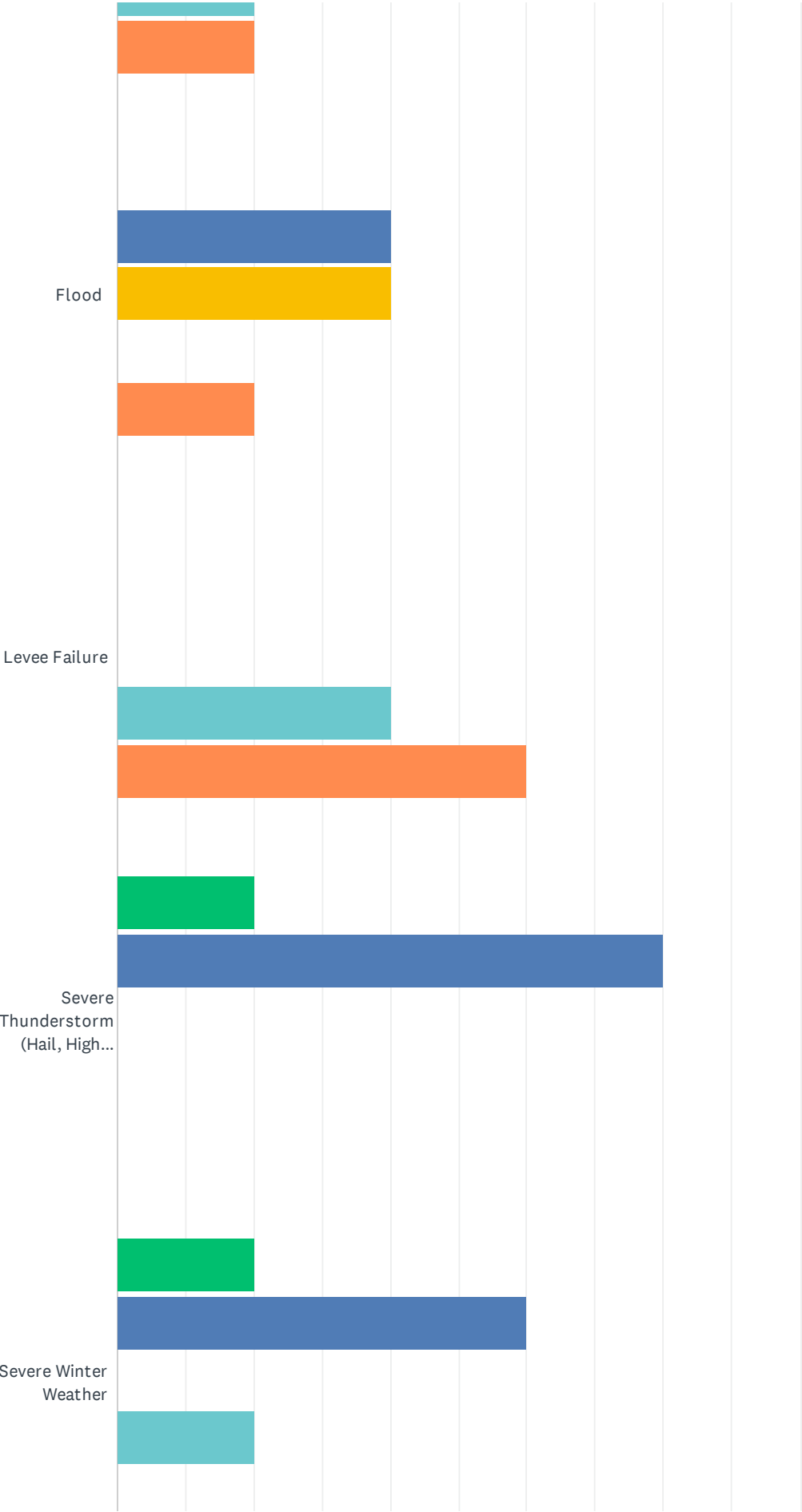
ANSWER CHOICES	RESPONSES	
Dam Failure	0.00%	0
Drought	0.00%	0
Earthquake	0.00%	0
Extreme Temperature	0.00%	0
Flood	0.00%	0
Severe Thunderstorm; High Wind, Lightning, and/or Hail	100.00%	1
Severe Winter Weather	0.00%	0
Tornado	0.00%	0
Wildfire	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 1		

Q3 How concerned are you about the following natural disasters?

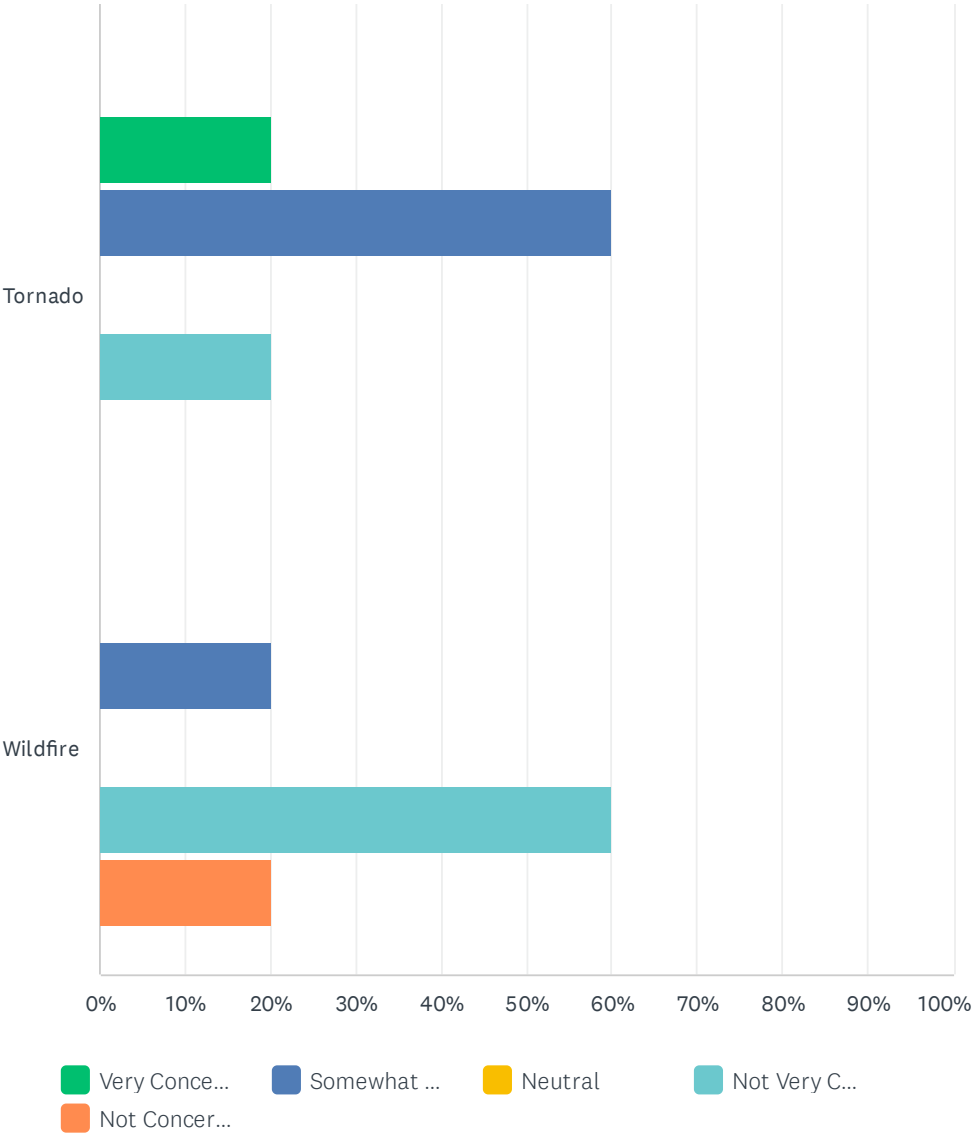
Answered: 5 Skipped: 0



Sullivan County Natural Hazard Questionnaire



Sullivan County Natural Hazard Questionnaire

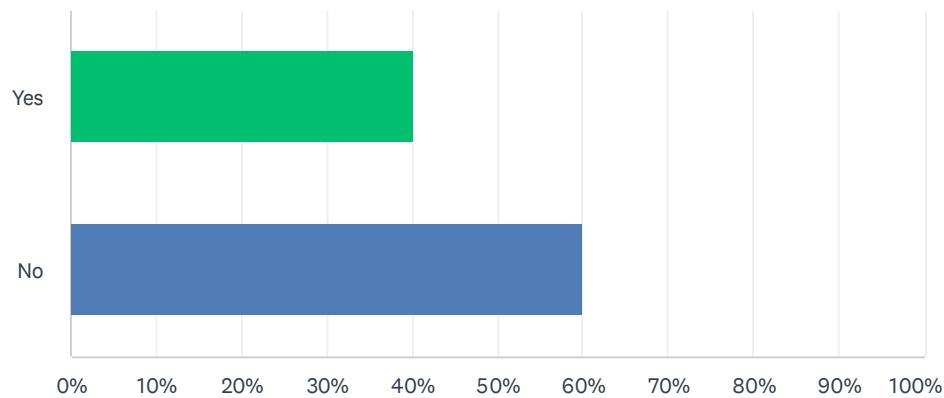


Sullivan County Natural Hazard Questionnaire

	VERY CONCERNED	SOMEWHAT CONCERNED	NEUTRAL	NOT VERY CONCERNED	NOT CONCERNED	TOTAL
Dam Failure	0.00% 0	20.00% 1	0.00% 0	20.00% 1	60.00% 3	5
Drought	20.00% 1	40.00% 2	20.00% 1	20.00% 1	0.00% 0	5
Earthquake	20.00% 1	20.00% 1	20.00% 1	0.00% 0	40.00% 2	5
Extreme Temperatures	0.00% 0	60.00% 3	0.00% 0	20.00% 1	20.00% 1	5
Flood	0.00% 0	40.00% 2	40.00% 2	0.00% 0	20.00% 1	5
Levee Failure	0.00% 0	0.00% 0	0.00% 0	40.00% 2	60.00% 3	5
Severe Thunderstorm (Hail, High Winds, & Lightning)	20.00% 1	80.00% 4	0.00% 0	0.00% 0	0.00% 0	5
Severe Winter Weather	20.00% 1	60.00% 3	0.00% 0	20.00% 1	0.00% 0	5
Tornado	20.00% 1	60.00% 3	0.00% 0	20.00% 1	0.00% 0	5
Wildfire	0.00% 0	20.00% 1	0.00% 0	60.00% 3	20.00% 1	5

Q4 Have you ever received information about how to make members of your household and your home safer from natural disasters?

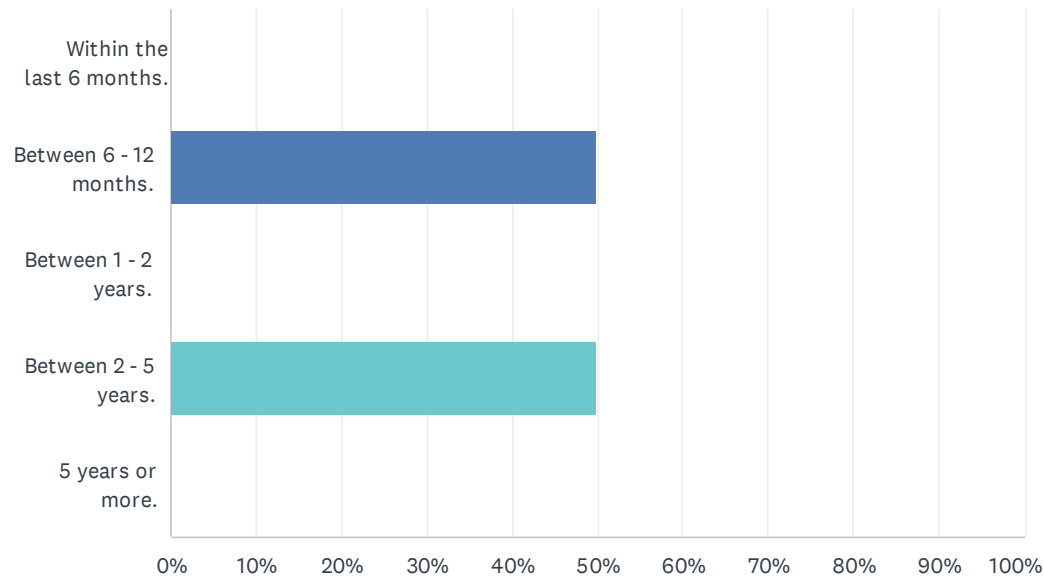
Answered: 5 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	40.00%	2
No	60.00%	3
TOTAL		5

Q5 If "Yes", how recently?

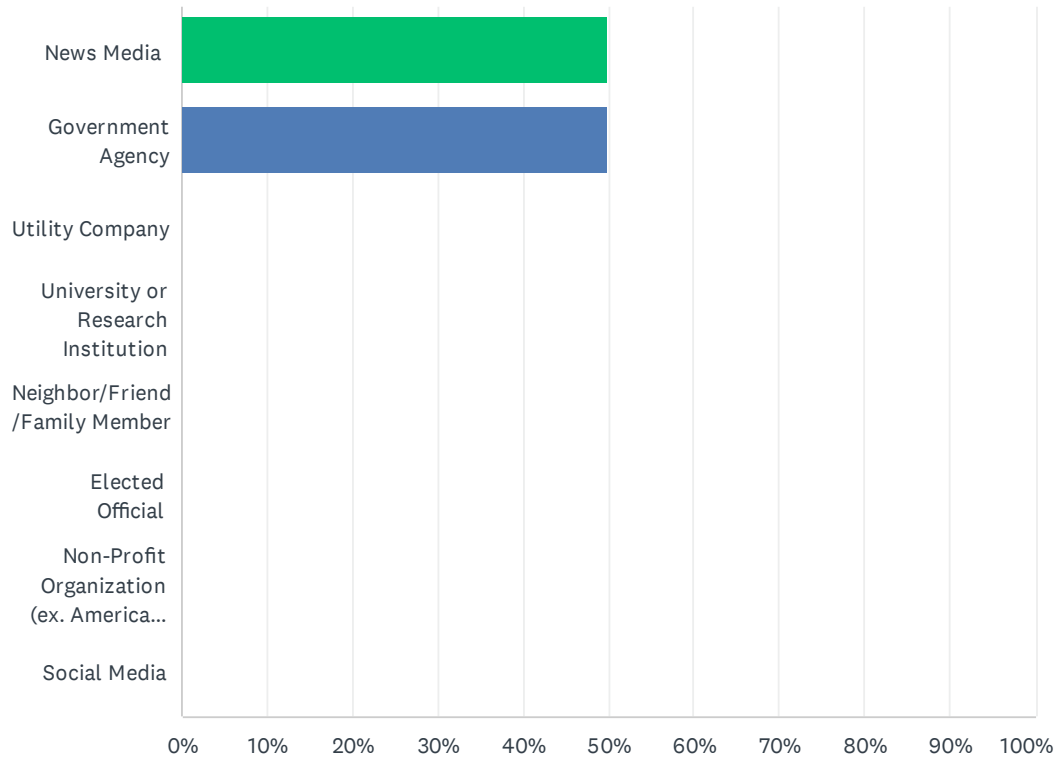
Answered: 2 Skipped: 3



ANSWER CHOICES	RESPONSES	
Within the last 6 months.	0.00%	0
Between 6 - 12 months.	50.00%	1
Between 1 - 2 years.	0.00%	0
Between 2 - 5 years.	50.00%	1
5 years or more.	0.00%	0
TOTAL		2

Q6 From whom did you last receive information about how to make members of your household and your home safer from natural disasters?

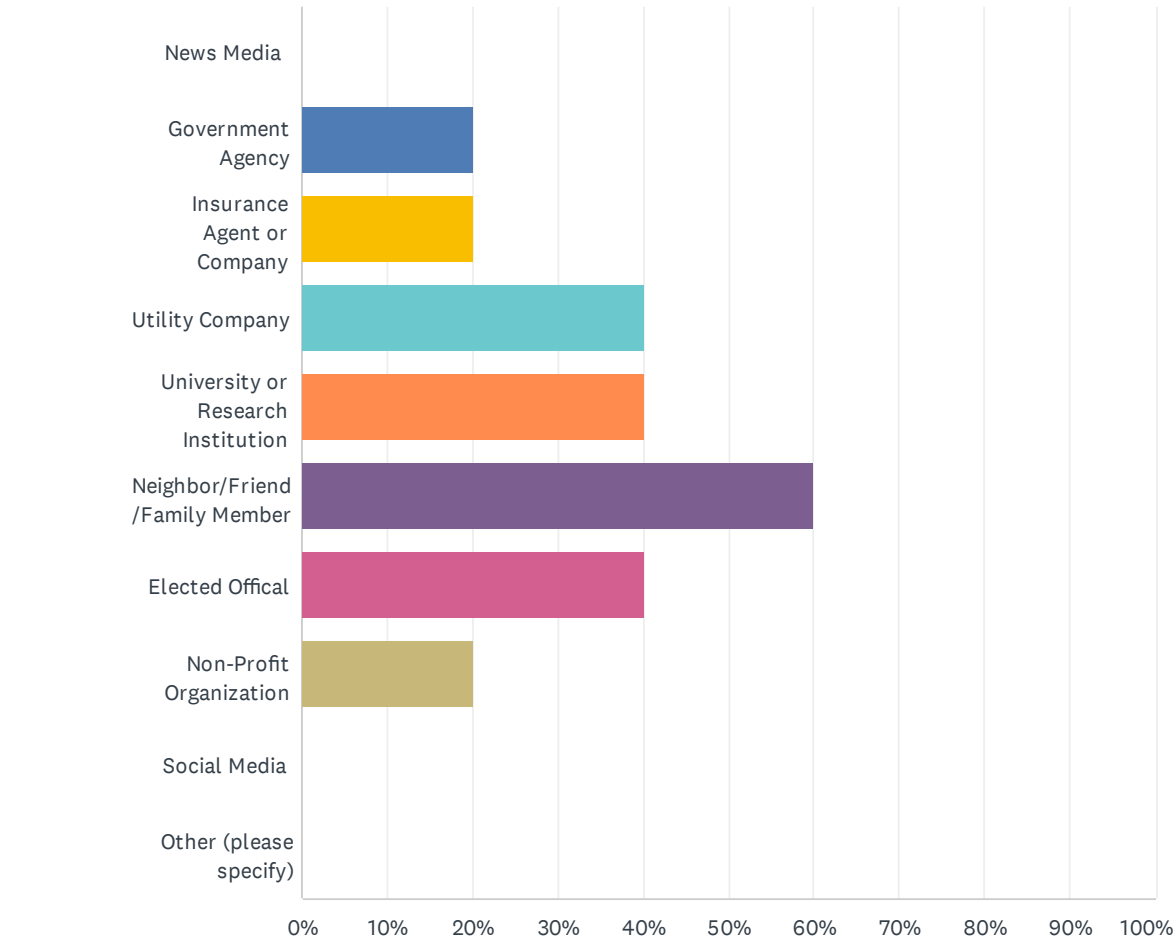
Answered: 2 Skipped: 3



ANSWER CHOICES	RESPONSES	
News Media	50.00%	1
Government Agency	50.00%	1
Utility Company	0.00%	0
University or Research Institution	0.00%	0
Neighbor/Friend/Family Member	0.00%	0
Elected Official	0.00%	0
Non-Profit Organization (ex. American Red Cross)	0.00%	0
Social Media	0.00%	0
TOTAL		2

Q7 Whom would you most trust to provide you with information about how to make your household and home safer from natural disasters?

Answered: 5 Skipped: 0

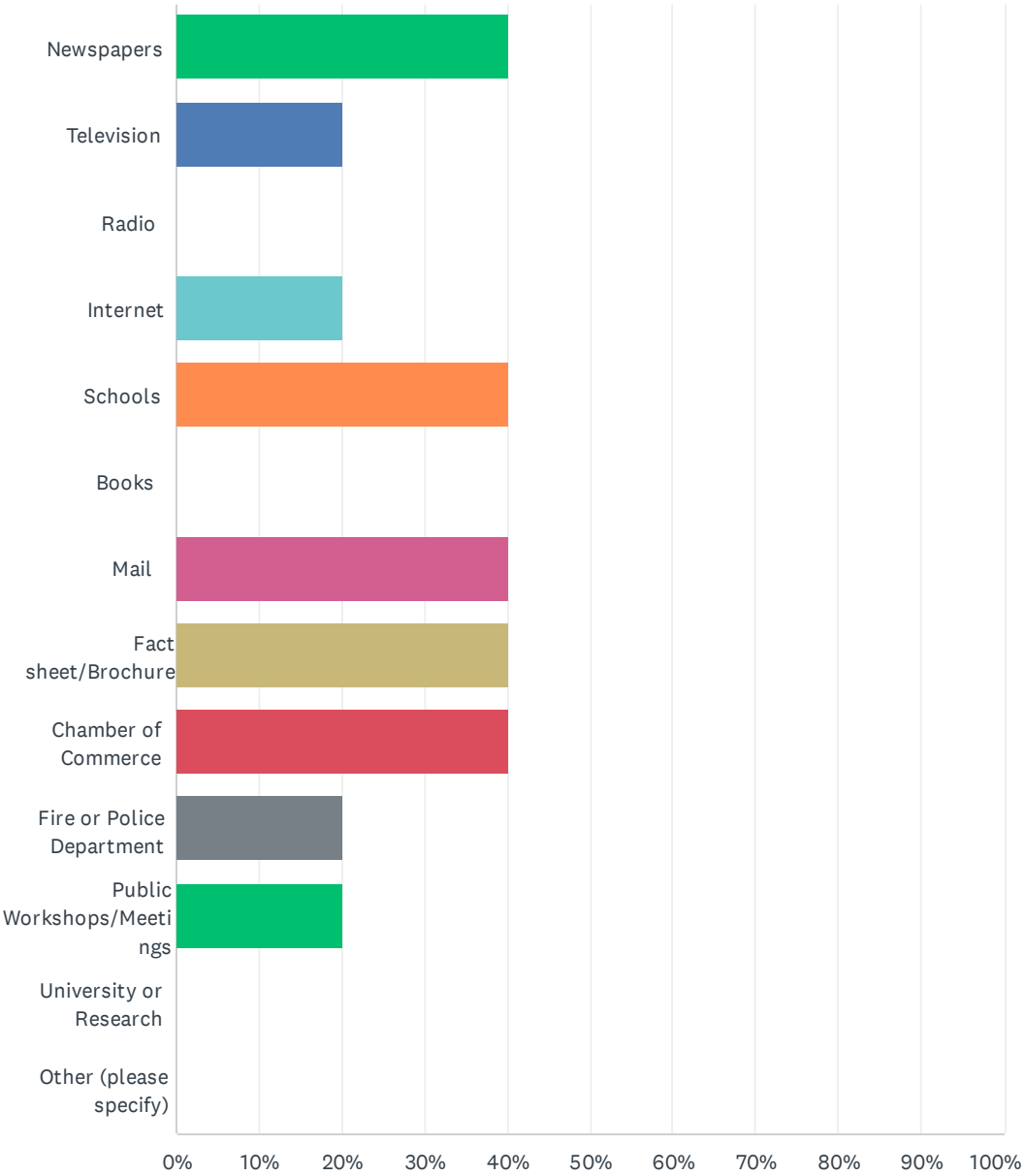


Sullivan County Natural Hazard Questionnaire

ANSWER CHOICES	RESPONSES	
News Media	0.00%	0
Government Agency	20.00%	1
Insurance Agent or Company	20.00%	1
Utility Company	40.00%	2
University or Research Institution	40.00%	2
Neighbor/Friend/Family Member	60.00%	3
Elected Official	40.00%	2
Non-Profit Organization	20.00%	1
Social Media	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 5		

Q8 What is the most effective way for you to receive information about how to make your household and home safer from natural disasters?

Answered: 5 Skipped: 0

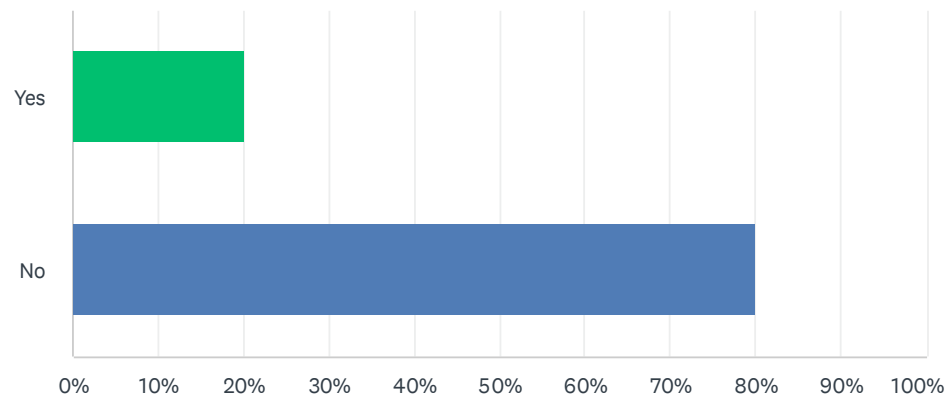


Sullivan County Natural Hazard Questionnaire

ANSWER CHOICES	RESPONSES	
Newspapers	40.00%	2
Television	20.00%	1
Radio	0.00%	0
Internet	20.00%	1
Schools	40.00%	2
Books	0.00%	0
Mail	40.00%	2
Fact sheet/Brochure	40.00%	2
Chamber of Commerce	40.00%	2
Fire or Police Department	20.00%	1
Public Workshops/Meetings	20.00%	1
University or Research	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 5		

Q9 Prior to completing this survey, were you aware of your county's Hazard Mitigation Plan?

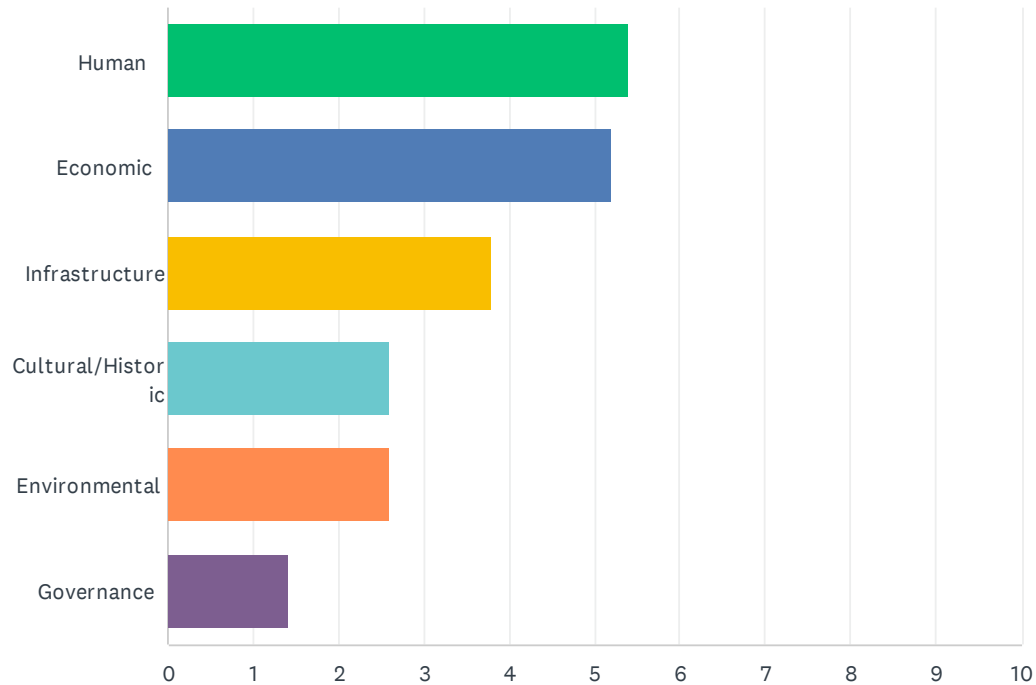
Answered: 5 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	20.00%	1
No	80.00%	4
TOTAL		5

Q10 Community assets are features, characteristics, or resources that either make a community unique or allow the community to function. Which of the following categories are most susceptible to the impacts caused by natural hazards in your community?

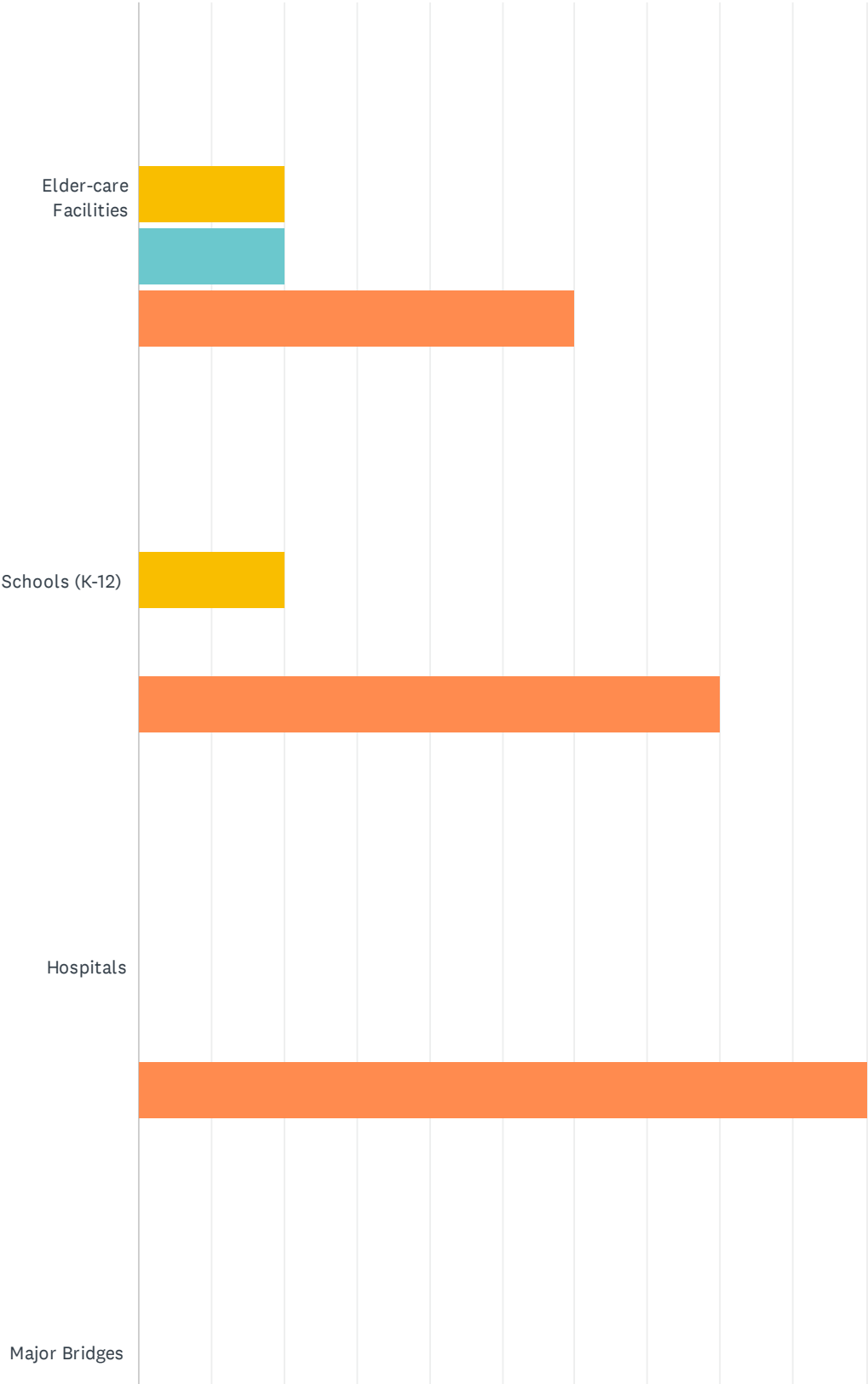
Answered: 5 Skipped: 0



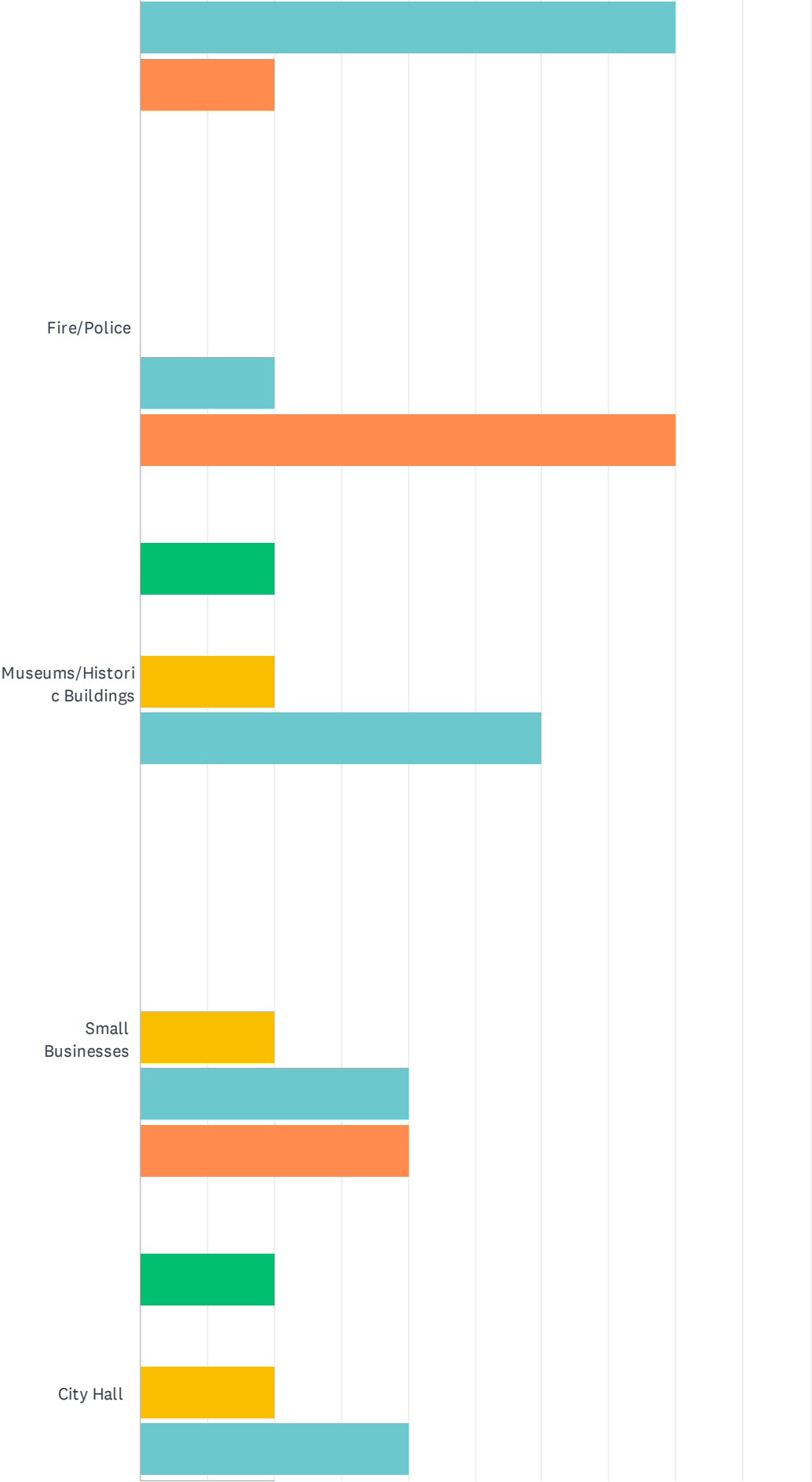
	1	2	3	4	5	6	TOTAL	SCORE
Human	60.00% 3	20.00% 1	20.00% 1	0.00% 0	0.00% 0	0.00% 0	5	5.40
Economic	40.00% 2	40.00% 2	20.00% 1	0.00% 0	0.00% 0	0.00% 0	5	5.20
Infrastructure	0.00% 0	40.00% 2	20.00% 1	20.00% 1	20.00% 1	0.00% 0	5	3.80
Cultural/Historic	0.00% 0	0.00% 0	40.00% 2	0.00% 0	40.00% 2	20.00% 1	5	2.60
Environmental	0.00% 0	0.00% 0	0.00% 0	60.00% 3	40.00% 2	0.00% 0	5	2.60
Governance	0.00% 0	0.00% 0	0.00% 0	20.00% 1	0.00% 0	80.00% 4	5	1.40

Q11 Next, we would like to know what specific types of community assets are most important to you.

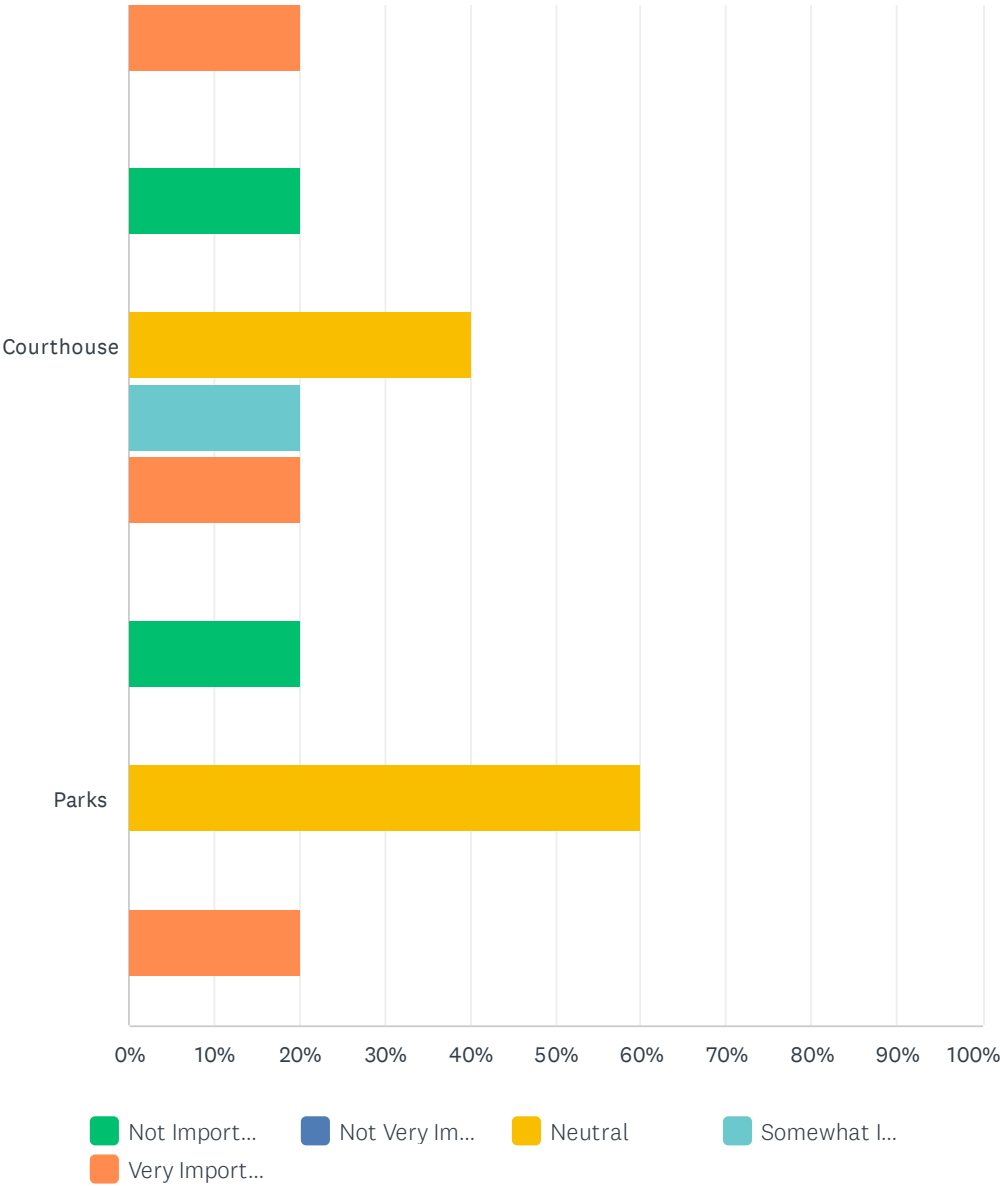
Answered: 5 Skipped: 0



Sullivan County Natural Hazard Questionnaire



Sullivan County Natural Hazard Questionnaire

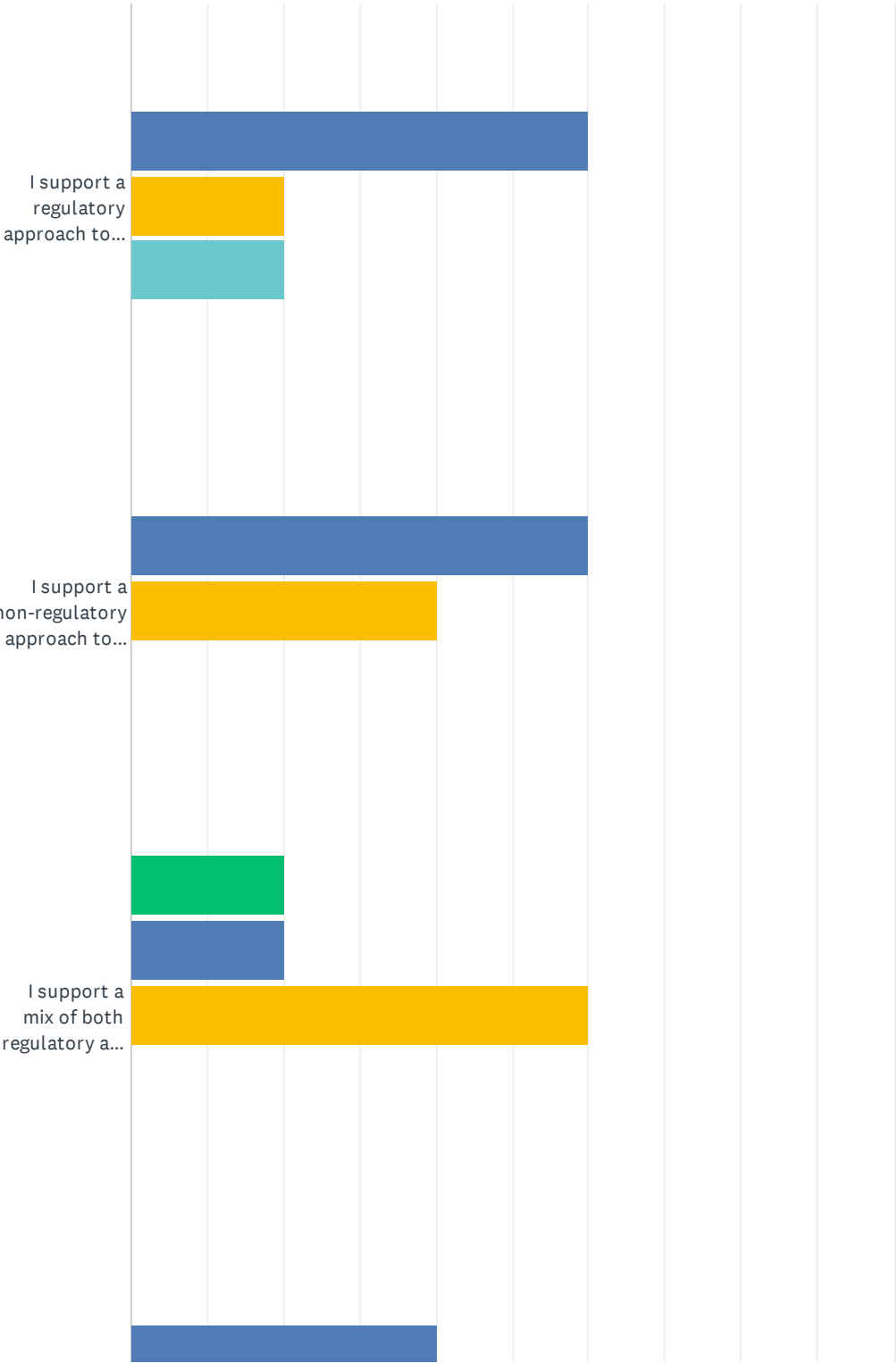


Sullivan County Natural Hazard Questionnaire

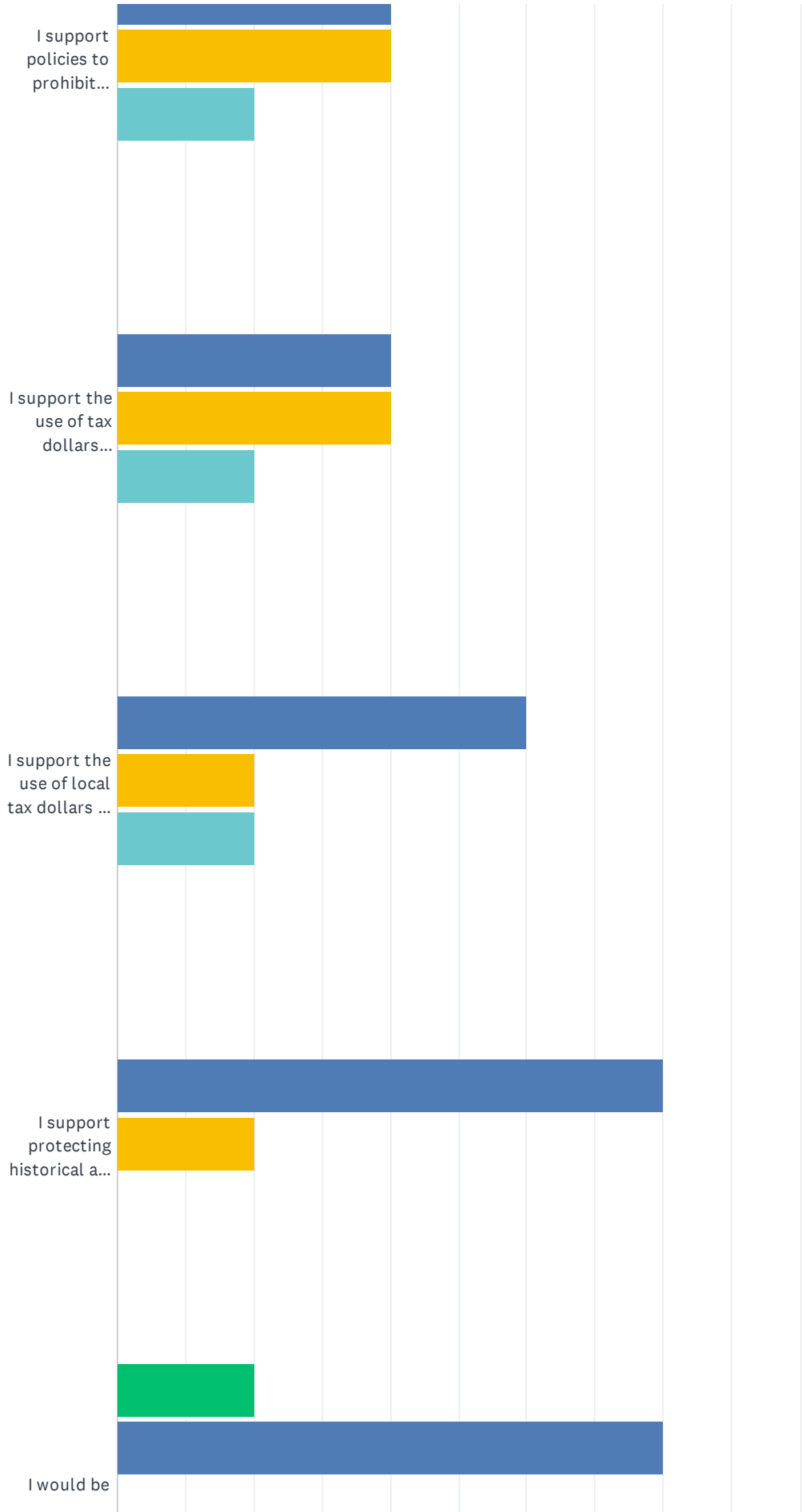
	NOT IMPORTANT	NOT VERY IMPORTANT	NEUTRAL	SOMEWHAT IMPORTANT	VERY IMPORTANT	TOTAL	WEIGHTED AVERAGE
Elder-care Facilities	0.00% 0	0.00% 0	20.00% 1	20.00% 1	60.00% 3	5	4.40
Schools (K-12)	0.00% 0	0.00% 0	20.00% 1	0.00% 0	80.00% 4	5	4.60
Hospitals	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 5	5	5.00
Major Bridges	0.00% 0	0.00% 0	0.00% 0	80.00% 4	20.00% 1	5	4.20
Fire/Police	0.00% 0	0.00% 0	0.00% 0	20.00% 1	80.00% 4	5	4.80
Museums/Historic Buildings	20.00% 1	0.00% 0	20.00% 1	60.00% 3	0.00% 0	5	3.20
Small Businesses	0.00% 0	0.00% 0	20.00% 1	40.00% 2	40.00% 2	5	4.20
City Hall	20.00% 1	0.00% 0	20.00% 1	40.00% 2	20.00% 1	5	3.40
Courthouse	20.00% 1	0.00% 0	40.00% 2	20.00% 1	20.00% 1	5	3.20
Parks	20.00% 1	0.00% 0	60.00% 3	0.00% 0	20.00% 1	5	3.00

Q12 A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory. Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters.

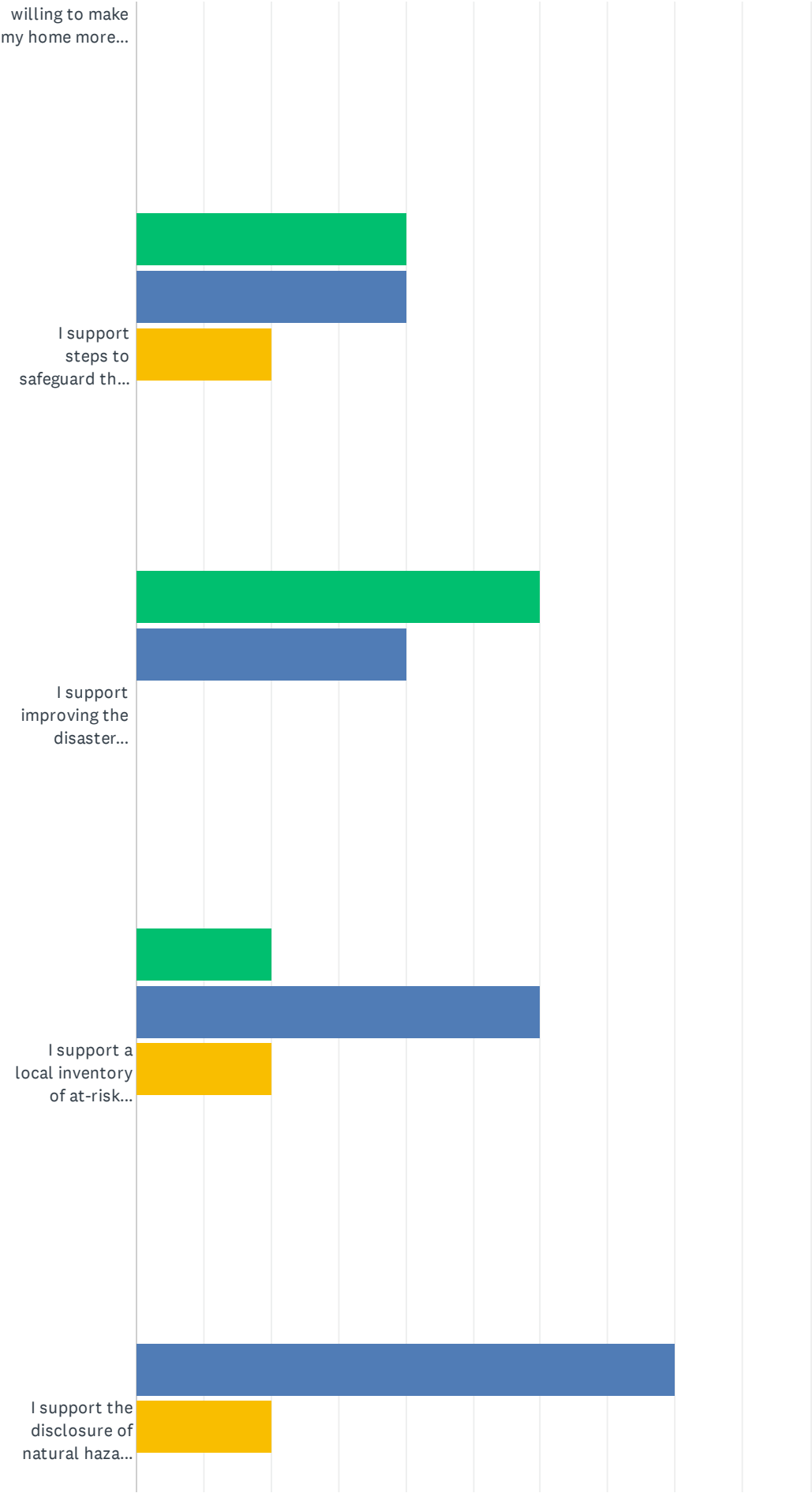
Answered: 5 Skipped: 0



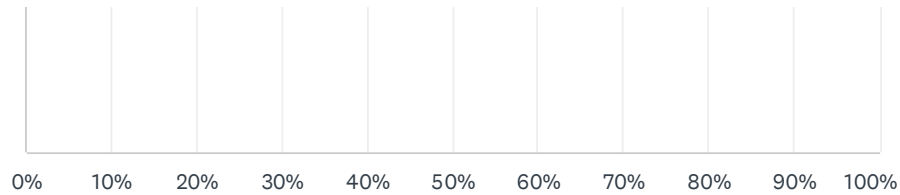
Sullivan County Natural Hazard Questionnaire



Sullivan County Natural Hazard Questionnaire



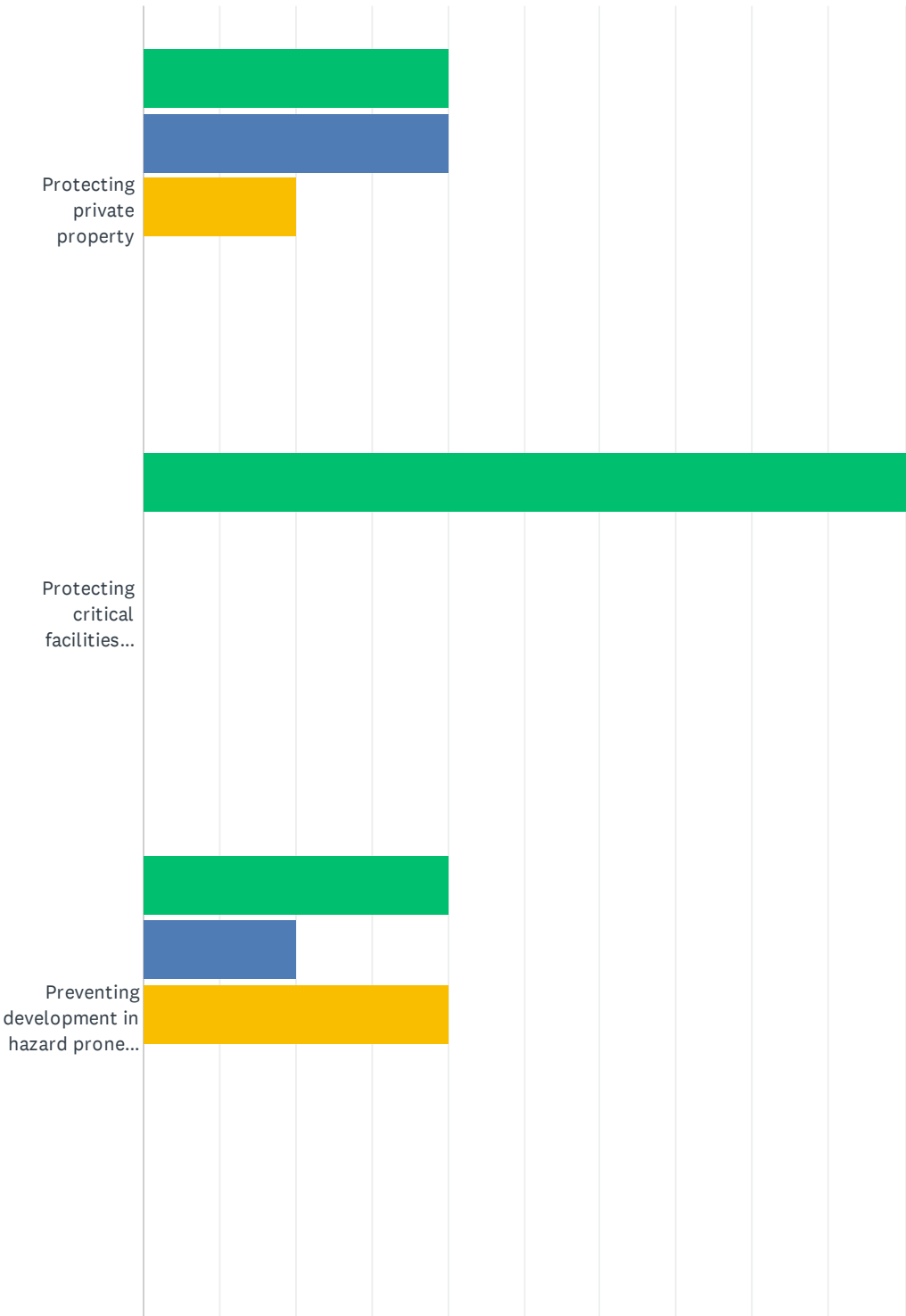
Sullivan County Natural Hazard Questionnaire



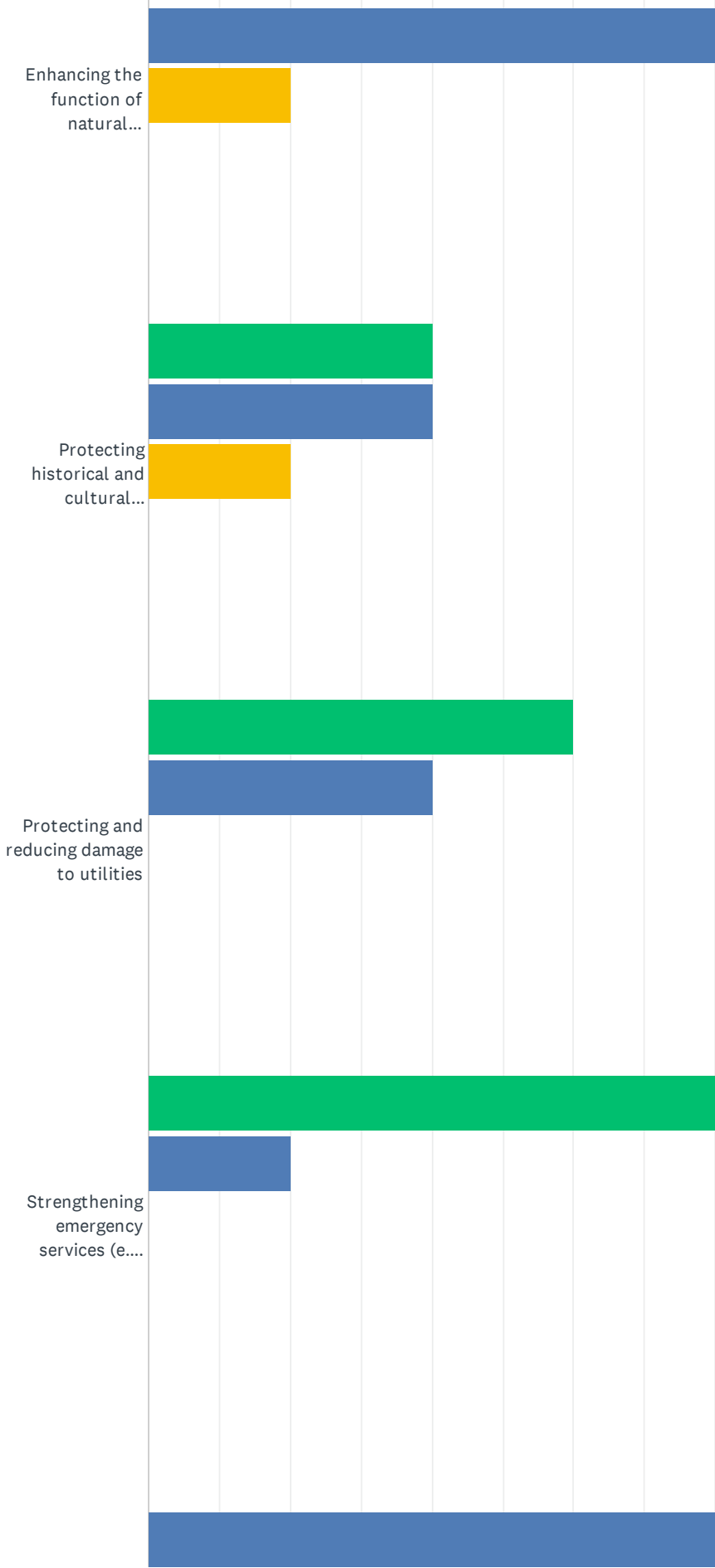
	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE	TOTAL	WEIGHTED AVERAGE
I support a regulatory approach to reducing risk	0.00% 0	60.00% 3	20.00% 1	20.00% 1	0.00% 0	5	2.60
I support a non-regulatory approach to reducing risk	0.00% 0	60.00% 3	40.00% 2	0.00% 0	0.00% 0	5	2.40
I support a mix of both regulatory and non-regulatory approaches to reducing risk	20.00% 1	20.00% 1	60.00% 3	0.00% 0	0.00% 0	5	2.40
I support policies to prohibit development in areas subject to natural hazards	0.00% 0	40.00% 2	40.00% 2	20.00% 1	0.00% 0	5	2.80
I support the use of tax dollars (federal and/or local) to compensate landowners for not developing in areas subject to natural hazards	0.00% 0	40.00% 2	40.00% 2	20.00% 1	0.00% 0	5	2.80
I support the use of local tax dollars to reduce risks and losses from natural disasters	0.00% 0	60.00% 3	20.00% 1	20.00% 1	0.00% 0	5	2.60
I support protecting historical and cultural structures	0.00% 0	80.00% 4	20.00% 1	0.00% 0	0.00% 0	5	2.20
I would be willing to make my home more disaster resilient	20.00% 1	80.00% 4	0.00% 0	0.00% 0	0.00% 0	5	1.80
I support steps to safeguard the local economy following a disaster event	40.00% 2	40.00% 2	20.00% 1	0.00% 0	0.00% 0	5	1.80
I support improving the disaster preparedness of local schools	60.00% 3	40.00% 2	0.00% 0	0.00% 0	0.00% 0	5	1.40
I support a local inventory of at-risk buildings and infrastructure	20.00% 1	60.00% 3	20.00% 1	0.00% 0	0.00% 0	5	2.00
I support the disclosure of natural hazard risks during real estate transactions	0.00% 0	80.00% 4	20.00% 1	0.00% 0	0.00% 0	5	2.20

Q13 Natural Hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help determine citizen priorities regarding planning for natural hazards in your county. Please tell us how important each one is to you.

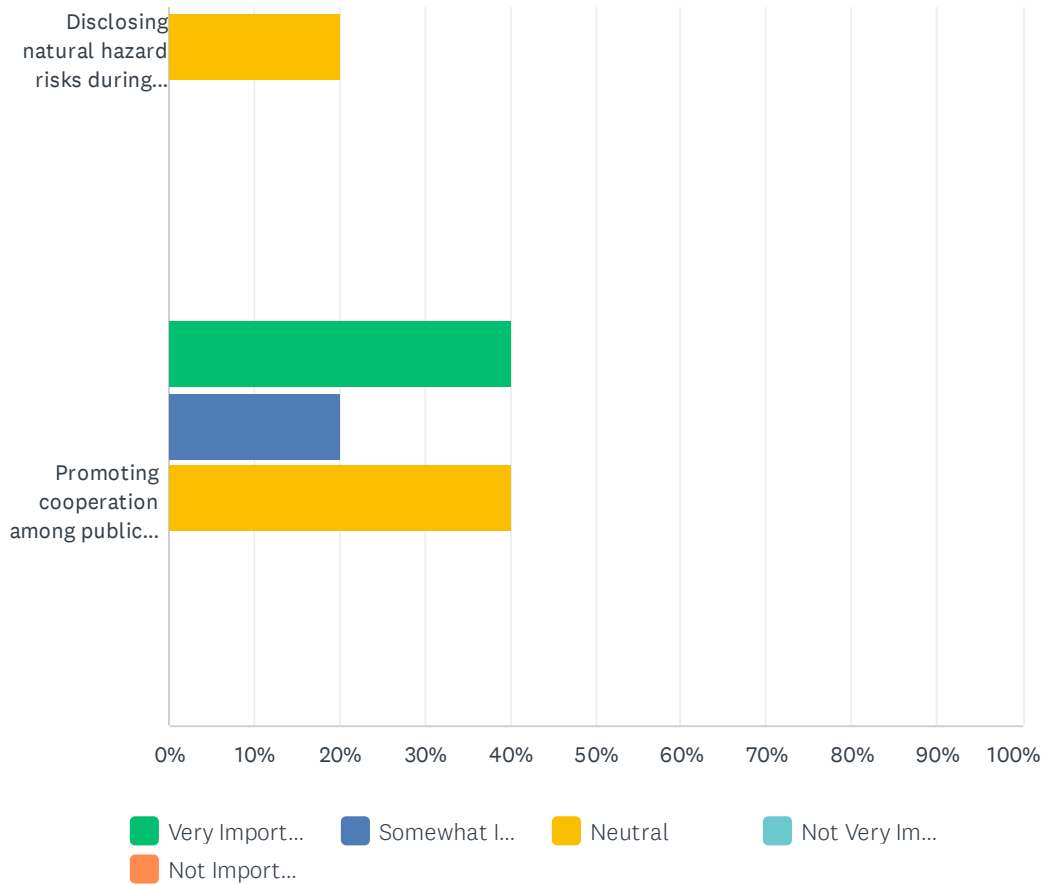
Answered: 5 Skipped: 0



Sullivan County Natural Hazard Questionnaire



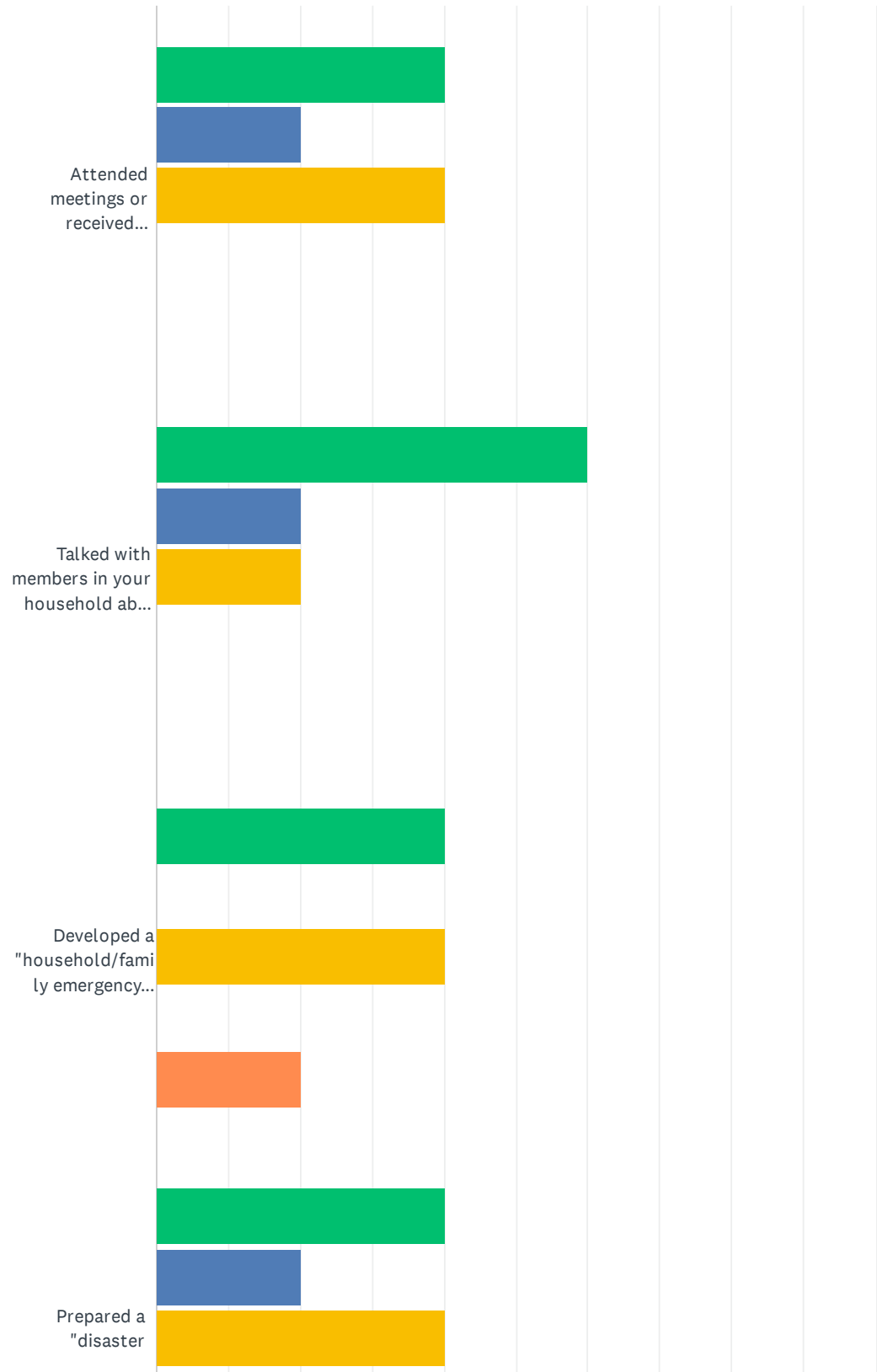
Sullivan County Natural Hazard Questionnaire



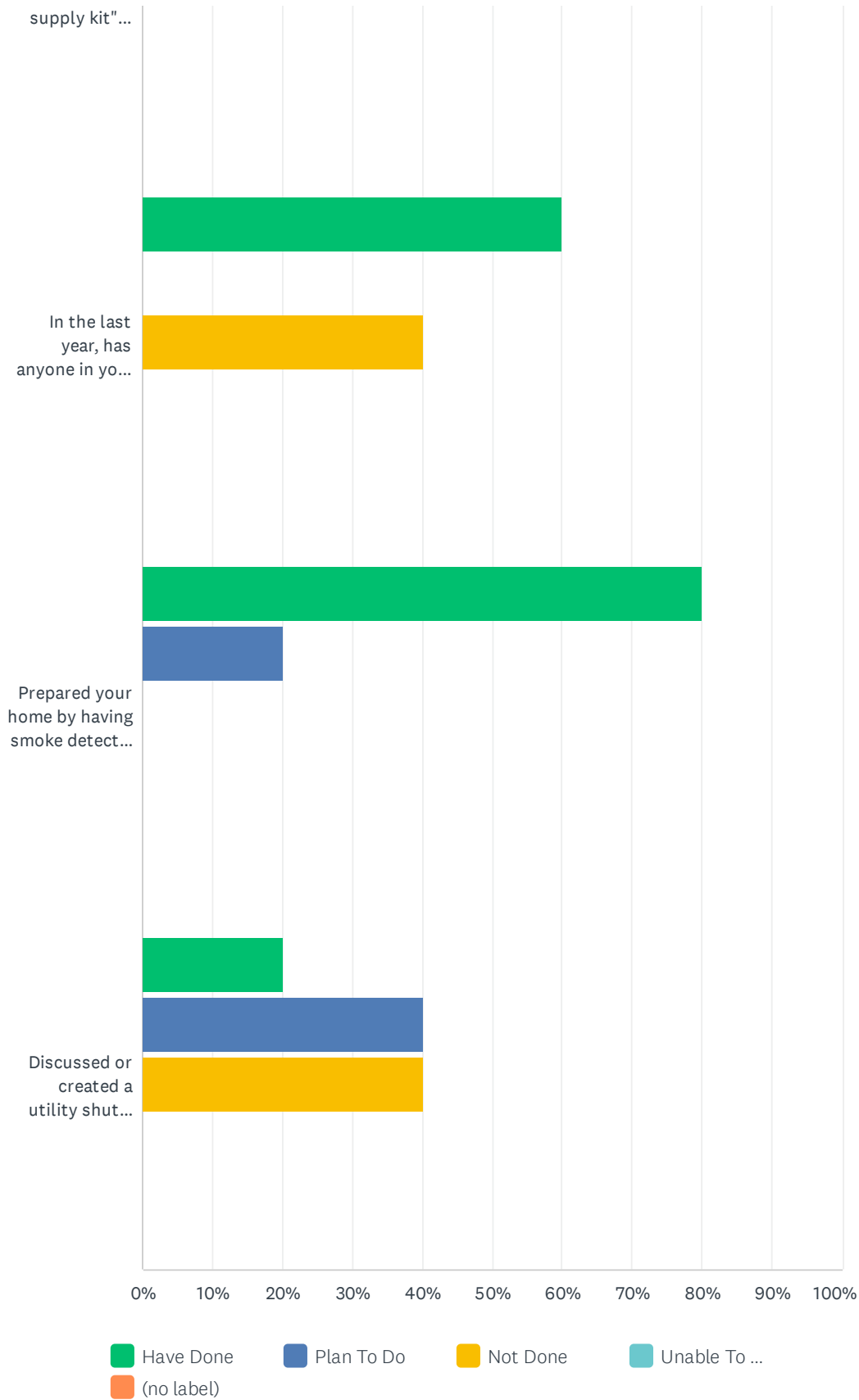
	VERY IMPORTANT	SOMEWHAT IMPORTANT	NEUTRAL	NOT VERY IMPORTANT	NOT IMPORTANT	TOTAL
Protecting private property	40.00% 2	40.00% 2	20.00% 1	0.00% 0	0.00% 0	5
Protecting critical facilities (transportation networks, hospitals, fire stations)	100.00% 5	0.00% 0	0.00% 0	0.00% 0	0.00% 0	5
Preventing development in hazard prone areas	40.00% 2	20.00% 1	40.00% 2	0.00% 0	0.00% 0	5
Enhancing the function of natural features (e.g. streams, wetlands)	0.00% 0	80.00% 4	20.00% 1	0.00% 0	0.00% 0	5
Protecting historical and cultural landmarks	40.00% 2	40.00% 2	20.00% 1	0.00% 0	0.00% 0	5
Protecting and reducing damage to utilities	60.00% 3	40.00% 2	0.00% 0	0.00% 0	0.00% 0	5
Strengthening emergency services (e.g. police, fire, ambulance)	80.00% 4	20.00% 1	0.00% 0	0.00% 0	0.00% 0	5
Disclosing natural hazard risks during real estate transactions	0.00% 0	80.00% 4	20.00% 1	0.00% 0	0.00% 0	5
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses	40.00% 2	20.00% 1	40.00% 2	0.00% 0	0.00% 0	5

Q14 In the following, please check those activities that you have done in your household, plan to do in the near future, or are unable to do.

Answered: 5 Skipped: 0



Sullivan County Natural Hazard Questionnaire

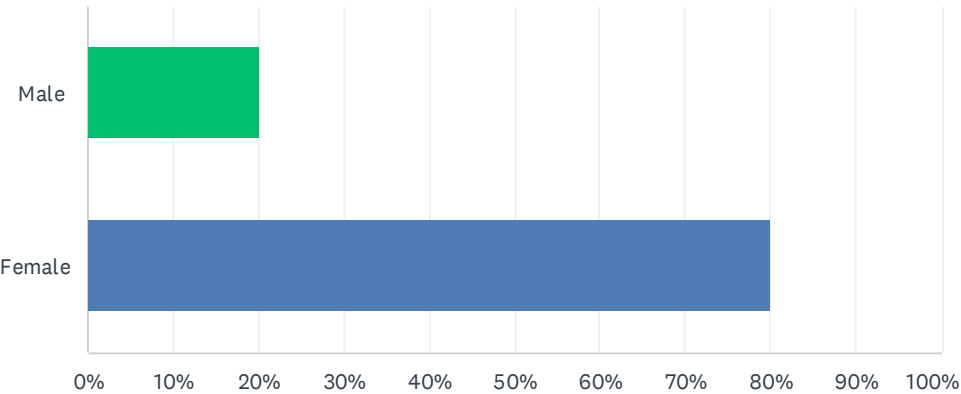


Sullivan County Natural Hazard Questionnaire

	HAVE DONE	PLAN TO DO	NOT DONE	UNABLE TO DO	(NO LABEL)	TOTAL
Attended meetings or received written information on natural disasters or emergency preparedness	40.00% 2	20.00% 1	40.00% 2	0.00% 0	0.00% 0	5
Talked with members in your household about what to do in case of a natural disaster or emergency	60.00% 3	20.00% 1	20.00% 1	0.00% 0	0.00% 0	5
Developed a "household/family emergency plan" in order to decide what everyone would do in the event of a disaster	40.00% 2	0.00% 0	40.00% 2	0.00% 0	20.00% 1	5
Prepared a "disaster supply kit" (stored extra food, water, batteries, or other emergency supplies)	40.00% 2	20.00% 1	40.00% 2	0.00% 0	0.00% 0	5
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)	60.00% 3	0.00% 0	40.00% 2	0.00% 0	0.00% 0	5
Prepared your home by having smoke detectors on each level of the house	80.00% 4	20.00% 1	0.00% 0	0.00% 0	0.00% 0	5
Discussed or created a utility shutoff procedure in the event of a natural disaster	20.00% 1	40.00% 2	40.00% 2	0.00% 0	0.00% 0	5

Q15 Gender?

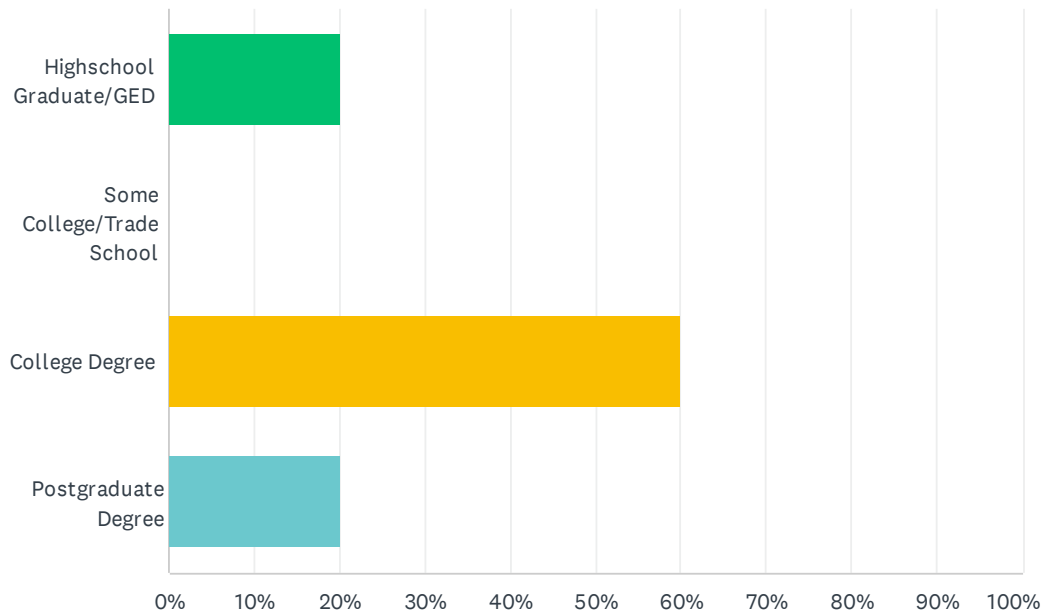
Answered: 5 Skipped: 0



ANSWER CHOICES	RESPONSES	
Male	20.00%	1
Female	80.00%	4
TOTAL		5

Q16 Please indicate your level of education.

Answered: 5 Skipped: 0



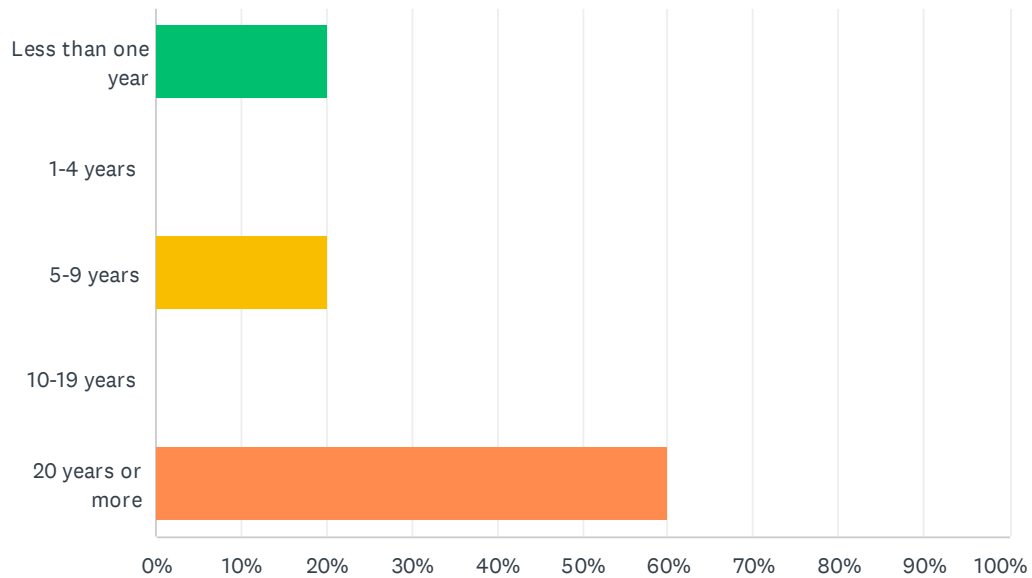
ANSWER CHOICES	RESPONSES	
Highschool Graduate/GED	20.00%	1
Some College/Trade School	0.00%	0
College Degree	60.00%	3
Postgraduate Degree	20.00%	1
TOTAL		5

Q17 Zip Code

Answered: 5 Skipped: 0

Q18 How long have you lived in Sullivan County?

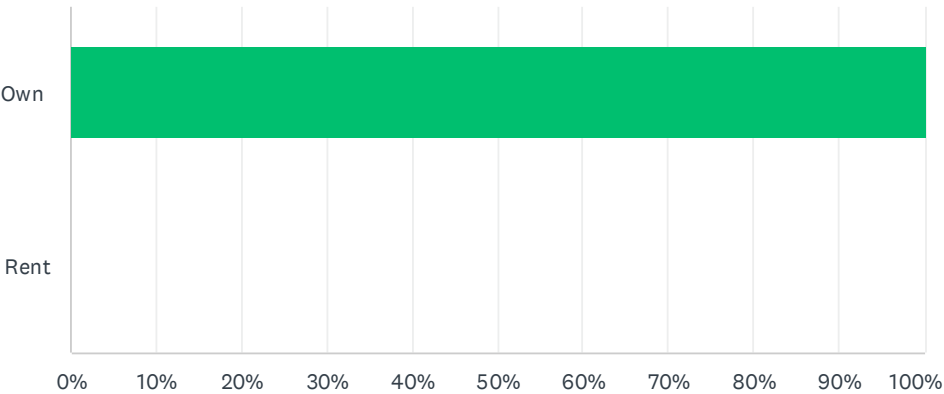
Answered: 5 Skipped: 0



ANSWER CHOICES	RESPONSES	
Less than one year	20.00%	1
1-4 years	0.00%	0
5-9 years	20.00%	1
10-19 years	0.00%	0
20 years or more	60.00%	3
TOTAL		5

Q19 Do you own or rent your home?

Answered: 5 Skipped: 0



ANSWER CHOICES	RESPONSES	
Own	100.00%	5
Rent	0.00%	0
TOTAL		5

Q20 Please feel free to provide any additional comments in the space provided.

Answered: 2 Skipped: 3

Appendix C: Questionnaires, Surveys, & STAPLEE Worksheets

Multi-Jurisdictional Hazard Mitigation Plan Data Collection Questionnaire for Local Governments

COUNTY: SULLIVAN COUNTY

JURISDICTION: SULLIVAN COUNTY

RETURN BY: DECEMBER 5, 2025

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: RACHAEL HALL_____

PHONE: _____

EMAIL: _____ DATE: 12/16/2025_____

Please return questionnaires by mail, email, or fax to:

Name: Amanda George – Transportation Planner & Hazard Mitigation Specialist

Address: Green Hills Regional Planning Commission, 810 Washington St., Trenton, MO 64683

Email: amanda@ghrpc.org

Phone: (660) 359-5636 ext. 11

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 bold** elements, ***please provide a copy of the document*** to the contact listed on the front.

CAPABILITIES	Status, Including Date of Document or Policy
PLANNING CAPABILITIES	
<u>Comprehensive Plan</u>	
Builder's Plan	
Capital Improvement Plan	
City Emergency Operations Plan	NA
County Emergency Operations Plan	Yes
Local Recovery Plan	No
County Recovery Plan	No
City Mitigation Plan	NA
County Mitigation Plan	Yes
Debris Management Plan	No
<u>Economic Development Plan</u>	No
Transportation Plan	No
Land-use Plan	

Flood Mitigation Assistance (FMA) Plan	
<i>Watershed Plan</i>	No
Firewise or other fire mitigation plan	No
School Mitigation Plan	No
Critical Facilities Plan	
POLICIES/ORDINANCE	
Zoning Ordinance	
Building Code	
Floodplain Ordinance	No
Subdivision Ordinance	
Tree Trimming Ordinance	Yes
Nuisance Ordinance	
Stormwater Ordinance	
Drainage Ordinance	
Site Plan Review Requirements	
Historic Preservation Ordinance	
Landscape Ordinance	
Seismic Construction Ordinance	
PROGRAM	
Zoning/Land Use Restrictions	No
Codes Building Site/Design	
Hazard Awareness Program	
National Flood Insurance Program (NFIP)	No
NFIP Community Rating System (CRS) program If so, what is your current level rating?	No
National Weather Service (NWS) Storm Ready	No

Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	NA
Economic Development Program	No
Land Use Program	No
Public Education/Awareness	No
Property Acquisition	No
Planning/Zoning Boards	No
Stream Maintenance Program	No
Tree Trimming Program	Yes
<i>Engineering Studies for Streams (Local/County/Regional)</i>	No
Mutual Aid Agreements	Yes
STUDIES/REPORTS/MAPS	
<i>Hazard Analysis/Risk Assessment (Local)</i>	No
<i>Hazard Analysis/Risk Assessment (County)</i>	Yes
Flood Insurance Maps	No
FEMA Flood Insurance Study (Detailed)	No
Evacuation Route Map	No
<i>Critical Facilities Inventory</i>	No
<i>Vulnerable Population Inventory</i>	No
<i>Land Use Map</i>	No
STAFF/DEPARTMENT	
<i>Full Time or Part Time, if applicable?</i>	
Building Code Official	No
Building Inspector	No
Mapping Specialist (GIS)	No

Engineer	No
Development Planner	No
Public Works Official	Yes
Emergency Management Director	Yes
NFIP Floodplain Administrator	No
Emergency Response Team	No
Hazardous Materials Expert	No
Local Emergency Planning Committee	Yes
County Emergency Management Commission	No
Sanitation Department	No
Transportation Department	No
Economic Development Department	No
Housing Department	No
Historic Preservation	No
NON-GOVERNMENTAL ORGANIZATIONS (NGOS)	
<i>Is there a local chapter? Yes or No</i>	
American Red Cross	No
Salvation Army	No
Veterans Groups	Yes
Local Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.)	Yes
LOCAL FUNDING AVAILABILITY	
<i>Answer Yes or No</i>	

Apply for Community Development Block Grants	Yes
Fund projects through Capital Improvements funding	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	No
Impact fees for new development	No
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	unknown
Ability to incur debt through private activities	Yes
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 into 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	
Builder's Plan	
Capital Improvement Plan	

Local Recovery Plan	
County Recovery Plan	
Debris Management Plan	
Economic Development Plan	
Transportation Plan	
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)
Commission, 2 Associate, 1 presiding
2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or 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.

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?

How are they activated (indicate responsible department/personnel)?

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe.

No

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.

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 construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

New lake being built north of milan

11. Please list major employers in your jurisdiction with an estimated number of employees.
sminthfield

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?

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.
None

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 which of the following hazards the asset is vulnerable to. Use the following abbreviations.

Natural Hazards	
Flooding (Major & Flash) – RF	Drought – D
Levee Failure – LF	Extreme Temperature – ET
Dam Failure – DF	Severe Thunderstorm (incl. wind, hail, lightning) – ST
Earthquake – EQ	Severe Winter Weather (incl. snow, ice, severe cold) – SWW
Land Subsidence /Sinkholes – LSS	Tornadoes – T
Wildfire - W	

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 Police stations Fire station Emergency Operations Centers	Power plants Dams/levees Military installations Hazardous material sites Schools Shelters Day care centers Nursing homes Main government buildings	Highways, bridges, and tunnels Railroads and facilities Bus facilities Airports 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 to the contact listed on the first page.

Critical Facilities

Name of Asset	Address	Natural Hazards
Essential Facilities such as hospitals and other medical facilities, police and fire stations, Emergency Operations Centers		

<i>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)</i>			
<i>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 and pipelines, communications facilities</i>			

Economic Assets (Major Employers, etc.)

Asset	Address	Product/Service	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 them 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	

Assessment of Previously Proposed Actions

Jurisdiction: _____

Green Hills RPC has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- **Completed Actions:** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- **Ongoing Actions:** indicate what activity has occurred during the previous five years and indicate if this program is still viable enough that it should be carried on into the future.
- **No Progress:** if no progress has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*.

Putnam County						
#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – Y Delete – X Modify – M
		Complete	Ongoing	No Progress		
County 2020.1	Maintain Transportation Infrastructure		x		As Needed	Y
County 2020.2	Generator for Shelters/critical facilities		x	x	No money	Y
County 2020.3	Debris Removal		x			Y
County 2020.4	Installation/Upgrade Siren		x	x	No money to buy sirens	Y
County 2020.5	Response to Pandemic				Not a natural hazard	X
County 2020.6	NOAA Weather Radios		x	x	No funding	Y

Multi-Jurisdictional Hazard Mitigation Plan Data Collection Questionnaire for Local Governments

COUNTY: Sullivan
JURISDICTION: City of Green City
RETURN BY: _____

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: Rachel Hale, City Clerk
PHONE: 660-874-9102
EMAIL: clerk@nemr.net DATE: 8/20/2025

Please return questionnaires by mail, email, or fax to:

Name: Amanda George – Transportation Planner & Hazard Mitigation Specialist

Address: Green Hills Regional Planning Commission, 810 Washington St., Trenton, MO 64683

Email: amanda@ghrpc.org

Phone: (660) 359-5636 ext. 11

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 bold** elements, ***please provide a copy of the document*** to the contact listed on the front.

CAPABILITIES	<i>Status, Including Date of Document or Policy</i>
PLANNING CAPABILITIES	
<u>Comprehensive Plan</u>	
Builder's Plan	
Capital Improvement Plan	
City Emergency Operations Plan	
County Emergency Operations Plan	
Local Recovery Plan	
County Recovery Plan	
City Mitigation Plan	
County Mitigation Plan	
Debris Management Plan	
<u>Economic Development Plan</u>	
Transportation Plan	
Land-use Plan	

Flood Mitigation Assistance (FMA) Plan	
<u>Watershed Plan</u>	
Firewise or other fire mitigation plan	
School Mitigation Plan	
Critical Facilities Plan	
POLICIES/ORDINANCE	
Zoning Ordinance	P+2 Ordinance - 723
Building Code	P+2 Ordinance - 723
Floodplain Ordinance	
Subdivision Ordinance	P+2 Ordinance - 723
Tree Trimming Ordinance	P+2 Ordinance - 723
Nuisance Ordinance	
Stormwater Ordinance	
Drainage Ordinance	
Site Plan Review Requirements	
Historic Preservation Ordinance	
Landscape Ordinance	P+2 Ordinance - 723
Seismic Construction Ordinance	
PROGRAM	
Zoning/Land Use Restrictions	
Codes Building Site/Design	
Hazard Awareness Program	
National Flood Insurance Program (NFIP)	
NFIP Community Rating System (CRS) program If so, what is your current level rating?	
National Weather Service (NWS) Storm Ready	

Firewise Community Certification	
Building Code Effectiveness Grading (BCEGs)	
ISO Fire Rating	
Economic Development Program	
Land Use Program	
Public Education/Awareness	
Property Acquisition	
Planning/Zoning Boards	
Stream Maintenance Program	
Tree Trimming Program	
<i>Engineering Studies for Streams (Local/County/Regional)</i>	
Mutual Aid Agreements	
STUDIES/REPORTS/MAPS	
<i>Hazard Analysis/Risk Assessment (Local)</i>	
<i>Hazard Analysis/Risk Assessment (County)</i>	
Flood Insurance Maps	
FEMA Flood Insurance Study (Detailed)	
Evacuation Route Map	
<i>Critical Facilities Inventory</i>	
<i>Vulnerable Population Inventory</i>	
<i>Land Use Map</i>	
STAFF/DEPARTMENT	
<i>Full Time or Part Time, if applicable?</i>	
Building Code Official	
Building Inspector	
Mapping Specialist (GIS)	

Engineer	
Development Planner	
Public Works Official	
Emergency Management Director	
NFIP Floodplain Administrator	
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)	
<i>Is there a local chapter? Yes or No</i>	
American Red Cross	
Salvation Army	
Veterans Groups	
Local Environmental Organization	
Homeowner Associations	
Neighborhood Associations	
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, etc.)	Yes
LOCAL FUNDING AVAILABILITY	
<i>Answer Yes or No</i>	

Apply for Community Development Block Grants	Yes
Fund projects through Capital Improvements funding	Unknown
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Unknown
Ability to incur debt through general obligation bonds	Unknown
Ability to incur debt through special tax bonds	Unknown
Ability to 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 into 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	I don't know if anyone has worked on or participated in this previously
Builder's Plan	↓
Capital Improvement Plan	

Local Recovery Plan	
County Recovery Plan	
Debris Management Plan	
Economic Development Plan	
Transportation Plan	
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/City 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.
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.

Elderly, low-income, general organization/planning.

5. How many outdoor warning sirens are in your community? *1*

How are they activated (indicate responsible department/personnel)?

Sullivan Co. Emergency Response or call in.

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe.

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.

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 construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

11. Please list major employers in your jurisdiction with an estimated number of employees.

Dollar General - 4 or 5
School - Unknown

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?

Unknown

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

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 which of the following hazards the asset is vulnerable to. Use the following abbreviations.

Natural Hazards	
Flooding (Major & Flash) – RF	Drought – D
Levee Failure – LF	Extreme Temperature – ET
Dam Failure – DF	Severe Thunderstorm (incl. wind, hail, lightning) – ST
Earthquake – EQ	Severe Winter Weather (incl. snow, ice, severe cold) – SWW
Land Subsidence /Sinkholes – LSS	Tornadoes – T
Wildfire – W	

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 Police stations Fire station Emergency Operations Centers	Power plants Dams/levees Military installations Hazardous material sites Schools Shelters Day care centers Nursing homes Main government buildings	Highways, bridges, and tunnels Railroads and facilities Bus facilities Airports 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 to the contact listed on the first page.

Critical Facilities

Name of Asset	Address	Natural Hazards
<i>Essential Facilities such as hospitals and other medical facilities, police and fire stations, Emergency Operations Centers</i>		

<i>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)</i>		
<i>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 and pipelines, communications facilities</i>		

Economic Assets (Major Employers, etc.)

Asset	Address	Product/Service	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 them 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	

Multi-Jurisdictional Hazard Mitigation Plan Data Collection Questionnaire for Local Governments

COUNTY: SULLIVAN

JURISDICTION: CITY OF GREEN CASTLE

RETURN BY: _____

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: LANIE LEWIS

PHONE: 660-874-4717

EMAIL: GRCACH@NEMR.NET DATE: 9/19/2025

Please return questionnaires by mail, email, or fax to:

Name: Amanda George – Transportation Planner & Hazard Mitigation Specialist

Address: Green Hills Regional Planning Commission, 810 Washington St., Trenton, MO 64683

Email: amanda@ghrpc.org

Phone: (660) 359-5636 ext. 11

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 bold** elements, ***please provide a copy of the document*** to the contact listed on the front.

CAPABILITIES	Status, Including Date of Document or Policy
PLANNING CAPABILITIES	
<u>Comprehensive Plan</u>	Fall under county plan
Builder's Plan	no
Capital Improvement Plan	no
City Emergency Operations Plan	yes
County Emergency Operations Plan	Contact Sullivan county
Local Recovery Plan	no
County Recovery Plan	County-contact
City Mitigation Plan	We fall under county plan
County Mitigation Plan	County-contact
Debris Management Plan	no
<u>Economic Development Plan</u>	County plan
Transportation Plan	no
Land-use Plan	n/a

Flood Mitigation Assistance (FMA) Plan	Under county plan
<i>Watershed Plan</i>	Under county plan
Firewise or other fire mitigation plan	MDC forestry plan
School Mitigation Plan	n/a
Critical Facilities Plan	n/a
POLICIES/ORDINANCE	
Zoning Ordinance	no
Building Code	no
Floodplain Ordinance	no
Subdivision Ordinance	yes
Tree Trimming Ordinance	no
Nuisance Ordinance	yes
Stormwater Ordinance	no
Drainage Ordinance	no
Site Plan Review Requirements	no
Historic Preservation Ordinance	no
Landscape Ordinance	yes
Seismic Construction Ordinance	no
PROGRAM	
Zoning/Land Use Restrictions	no
Codes Building Site/Design	yes
Hazard Awareness Program	Under county plan
National Flood Insurance Program (NFIP)	Under county plan
NFIP Community Rating System (CRS) program If so, what is your current level rating?	no
National Weather Service (NWS) Storm Ready	yes

Firewise Community Certification	no
Building Code Effectiveness Grading (BCEGs)	n/a
ISO Fire Rating	6
Economic Development Program	Green hills programs as available
Land Use Program	n/a
Public Education/Awareness	yes
Property Acquisition	no
Planning/Zoning Boards	no
Stream Maintenance Program	no
Tree Trimming Program	no
<i>Engineering Studies for Streams (Local/County/Regional)</i>	County
Mutual Aid Agreements	Yes, water/sewer
STUDIES/REPORTS/MAPS	
<i>Hazard Analysis/Risk Assessment (Local)</i>	no
<i>Hazard Analysis/Risk Assessment (County)</i>	Yes- county plan
Flood Insurance Maps	County plan
FEMA Flood Insurance Study (Detailed)	County plan
Evacuation Route Map	County plan
<i>Critical Facilities Inventory</i>	no
<i>Vulnerable Population Inventory</i>	no
<i>Land Use Map</i>	no
STAFF/DEPARTMENT	
<i>Full Time or Part Time, if applicable?</i>	
Building Code Official	n/a
Building Inspector	n/a
Mapping Specialist (GIS)	n/a

Engineer	no
Development Planner	no
Public Works Official	Yes- water/sewer part time
Emergency Management Director	Yes- fire chief- part time
NFIP Floodplain Administrator	no
Emergency Response Team	no
Hazardous Materials Expert	no
Local Emergency Planning Committee	County organization
County Emergency Management Commission	county
Sanitation Department	no
Transportation Department	no
Economic Development Department	no
Housing Department	no
Historic Preservation	no
NON-GOVERNMENTAL ORGANIZATIONS (NGOS)	
<i>Is there a local chapter? Yes or No</i>	
American Red Cross	yes
Salvation Army	yes
Veterans Groups	no
Local Environmental Organization	no
Homeowner Associations	no
Neighborhood Associations	no
Chamber of Commerce	no
Community Organizations (Lions, Kiwanis, etc.)	Lions Club
LOCAL FUNDING AVAILABILITY	
<i>Answer Yes or No</i>	

Apply for Community Development Block Grants	yes
Fund projects through Capital Improvements funding	yes
Authority to levy taxes for a specific purpose	yes
Fees for water, sewer, gas, or electric services	yes
Impact fees for new development	no
Ability to incur debt through general obligation bonds	yes
Ability to incur debt through special tax bonds	yes
Ability to incur debt through private activities	no
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 into 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	
Builder's Plan	
Capital Improvement Plan	

Local Recovery Plan	no
County Recovery Plan	no
Debris Management Plan	no
Economic Development Plan	no
Transportation Plan	no
Land-use Plan	no
Watershed Plan	no
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	Yes- MDC plan in place forestry division

Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members) Mayor/City Council, 1-4
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

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. Weather related hazards

5. How many outdoor warning sirens are in your community? 1

How are they activated (indicate responsible department/personnel)? Activated locally in city hall and county E-911 center remotley

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe. County Texting Program

7. Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards? City Hall- FEMA standards not to

Please provide address locations: 24 Front St

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. Expected to remain the same

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. No, none we are aware of at this time.

11. Please list major employers in your jurisdiction with an estimated number of employees.
Smithfield Hog Farms 50-75

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? County members- not sure who they were.

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally. We fall under county plan included as part of county

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 which of the following hazards the asset is vulnerable to. Use the following abbreviations.

Natural Hazards	
Flooding (Major & Flash) – RF	Drought – D
Levee Failure – LF	Extreme Temperature – ET
Dam Failure – DF	Severe Thunderstorm (incl. wind, hail, lightning) – ST
Earthquake – EQ	Severe Winter Weather (incl. snow, ice, severe cold) – SWW
Land Subsidence /Sinkholes – LSS	Tornadoes – T
Wildfire –	

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 Police stations Fire station Emergency Operations Centers	Power plants Dams/levees Military installations Hazardous material sites Schools Shelters Day care centers Nursing homes Main government buildings	Highways, bridges, and tunnels Railroads and facilities Bus facilities Airports 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 to the contact listed on the first page.

Critical Facilities

Name of Asset	Address	Natural Hazards
Essential Facilities such as hospitals and other medical facilities, police and fire stations, Emergency Operations Centers		
Green Castle Fire Dept	132 Front St	RF, EQ, W, ET, ST, SWW, T
Emergency Operations, 3,000 square feet	24 Front St	RF, EQW, ET, ST, SWW, T

<i>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)</i>		
City Hall Shelter- 3,000 square feet	24 Front St	RF, EQ, W, ET, ST, SWW, T
Green Castle Rural Housing Complex	251 McKinley St	RF, EQ, W, ET, ST, SWW, T
Community Building- 1,500 square ft	281 Lincoln St	RF, EQ, W, ET, ST, SWW, T
City Maintenance Facility- 1,500 square ft	421 W. Front St	RF, EQ, W, ET, ST, SWW, T
<i>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 and pipelines, communications facilities</i>		

Economic Assets (Major Employers, etc.)

Asset	Address	Product/Service	Number of Employees	Hazards
Smithfield Hog Farms	Ivan Drive	Hog Production	50-75	RF, EQ, W, ET, ST, SWW, T

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 them 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	

Assessment of Previously Proposed Actions

Jurisdiction: _____

Green Hills RPC has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- **Completed Actions:** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- **Ongoing Actions:** indicate what activity has occurred during the previous five years and indicate if this program is still viable enough that it should be carried on into the future.
- **No Progress:** if no progress has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*.

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		

Assessment of Previously Proposed Actions

Jurisdiction: _____

Green Hills RPC has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- **Completed Actions:** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- **Ongoing Actions:** indicate what activity has occurred during the previous five years and indicate if this program is still viable enough that it should be carried on into the future.
- **No Progress:** if no progress has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*.

Multi-Jurisdictional Hazard Mitigation Plan Data Collection Questionnaire for Local Governments

COUNTY: SULLIVAN COUNTY

JURISDICTION: CITY OF MILAN

RETURN BY: DECEMBER 5, 2025

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: CRYSTAL BUPP_____

PHONE: _____

EMAIL: _____ DATE: 12/16/2025_____

Please return questionnaires by mail, email, or fax to:

Name: Amanda George – Transportation Planner & Hazard Mitigation Specialist

Address: Green Hills Regional Planning Commission, 810 Washington St., Trenton, MO 64683

Email: amanda@ghrpc.org

Phone: (660) 359-5636 ext. 11

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 bold** elements, *please provide a copy of the document* to the contact listed on the front.

CAPABILITIES	Status, Including Date of Document or Policy
PLANNING CAPABILITIES	
<u>Comprehensive Plan</u>	
Builder's Plan	
Capital Improvement Plan	
City Emergency Operations Plan	No
County Emergency Operations Plan	
Local Recovery Plan	No
County Recovery Plan	
City Mitigation Plan	No
County Mitigation Plan	Yes
Debris Management Plan	No
<u>Economic Development Plan</u>	No
Transportation Plan	No
Land-use Plan	

Flood Mitigation Assistance (FMA) Plan	
<i>Watershed Plan</i>	No
Firewise or other fire mitigation plan	No
School Mitigation Plan	No
Critical Facilities Plan	
POLICIES/ORDINANCE	
Zoning Ordinance	
Building Code	
Floodplain Ordinance	No
Subdivision Ordinance	
Tree Trimming Ordinance	No
Nuisance Ordinance	
Stormwater Ordinance	
Drainage Ordinance	
Site Plan Review Requirements	
Historic Preservation Ordinance	
Landscape Ordinance	
Seismic Construction Ordinance	
PROGRAM	
Zoning/Land Use Restrictions	
Codes Building Site/Design	
Hazard Awareness Program	
National Flood Insurance Program (NFIP)	Yes
NFIP Community Rating System (CRS) program If so, what is your current level rating?	
National Weather Service (NWS) Storm Ready	No

Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	
Economic Development Program	
Land Use Program	
Public Education/Awareness	No
Property Acquisition	No
Planning/Zoning Boards	
Stream Maintenance Program	No
Tree Trimming Program	
<i>Engineering Studies for Streams (Local/County/Regional)</i>	No
Mutual Aid Agreements	Yes
STUDIES/REPORTS/MAPS	
<i>Hazard Analysis/Risk Assessment (Local)</i>	No
<i>Hazard Analysis/Risk Assessment (County)</i>	Yes
Flood Insurance Maps	Yes
FEMA Flood Insurance Study (Detailed)	No
Evacuation Route Map	No
<i>Critical Facilities Inventory</i>	No
<i>Vulnerable Population Inventory</i>	No
<i>Land Use Map</i>	
STAFF/DEPARTMENT	
<i>Full Time or Part Time, if applicable?</i>	
Building Code Official	No
Building Inspector	No
Mapping Specialist (GIS)	No

Engineer	No
Development Planner	No
Public Works Official	Yes
Emergency Management Director	
NFIP Floodplain Administrator	No
Emergency Response Team	No
Hazardous Materials Expert	No
Local Emergency Planning Committee	Yes
County Emergency Management Commission	No
Sanitation Department	No
Transportation Department	No
Economic Development Department	No
Housing Department	No
Historic Preservation	No
NON-GOVERNMENTAL ORGANIZATIONS (NGOS)	
<i>Is there a local chapter? Yes or No</i>	
American Red Cross	No
Salvation Army	No
Veterans Groups	Yes
Local Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.)	Yes
LOCAL FUNDING AVAILABILITY	
<i>Answer Yes or No</i>	

Apply for Community Development Block Grants	Yes
Fund projects through Capital Improvements funding	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	No
Impact fees for new development	No
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	unknown
Ability to incur debt through private activities	Yes
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 into 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	
Builder's Plan	
Capital Improvement Plan	

Local Recovery Plan	
County Recovery Plan	
Debris Management Plan	
Economic Development Plan	
Transportation Plan	
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)
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.
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.

5. How many outdoor warning sirens are in your community?

How are they activated (indicate responsible department/personnel)?

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe.

No

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.

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 construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

New lake being built north of Milan

11. Please list major employers in your jurisdiction with an estimated number of employees.
sminthfield

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?

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.
Active since 1979, issue development permits where and when required.

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 which of the following hazards the asset is vulnerable to. Use the following abbreviations.

Natural Hazards	
Flooding (Major & Flash) – RF	Drought – D
Levee Failure – LF	Extreme Temperature – ET
Dam Failure – DF	Severe Thunderstorm (incl. wind, hail, lightning) – ST
Earthquake – EQ	Severe Winter Weather (incl. snow, ice, severe cold) – SWW
Land Subsidence /Sinkholes – LSS	Tornadoes – T
Wildfire – W	

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 Police stations Fire station Emergency Operations Centers	Power plants Dams/levees Military installations Hazardous material sites Schools Shelters Day care centers Nursing homes Main government buildings	Highways, bridges, and tunnels Railroads and facilities Bus facilities Airports 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 to the contact listed on the first page.

Critical Facilities

Name of Asset	Address	Natural Hazards
<i>Essential Facilities such as hospitals and other medical facilities, police and fire stations, Emergency Operations Centers</i>		

<i>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)</i>			
<i>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 and pipelines, communications facilities</i>			

Economic Assets (Major Employers, etc.)

Asset	Address	Product/Service	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 them 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	

Assessment of Previously Proposed Actions

Jurisdiction: _____

Green Hills RPC has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- **Completed Actions:** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- **Ongoing Actions:** indicate what activity has occurred during the previous five years and indicate if this program is still viable enough that it should be carried on into the future.
- **No Progress:** if no progress has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*.

Sullivan County						
#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – Y Delete – X Modify – M
		Complete	Ongoing	No Progress		
Milan 2020.1	Generator for Shelters/critical facilities		x	x	Awaiting funding	Y
Milan 2020.2	Maintain Transportation Infrastructure		x		Performed as needed yearly	Y
Milan 2020.3	Safe Room and Storm Shelters		x	x	Limited funding	Y
Milan 2020.4	Installation/Upgrade Siren		x	x	Limited funding	Y
Milan 2020.5	NFIP Participation		x			Y

Multi-Jurisdictional Hazard Mitigation Plan Data Collection Questionnaire for Local Governments

COUNTY: Sullivan

JURISDICTION: Village of Pollock

RETURN BY: Phyllis Blondefield

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: Phyllis Blondefield

PHONE: 660-216-8026

EMAIL: pbfield@nemr.net DATE: _____

Please return questionnaires by mail, email, or fax to:

Name: Amanda George – Transportation Planner & Hazard Mitigation Specialist

Address: Green Hills Regional Planning Commission, 810 Washington St., Trenton, MO 64683

Email: amanda@ghrpc.org

Phone: (660) 359-5636 ext. 11

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 bold** elements, **please provide a copy of the document** to the contact listed on the front.

CAPABILITIES	Status, Including Date of Document or Policy
PLANNING CAPABILITIES	
<u>Comprehensive Plan</u>	no
Builder's Plan	no
Capital Improvement Plan	no
City Emergency Operations Plan	no
County Emergency Operations Plan	no
Local Recovery Plan	no
County Recovery Plan	no
City Mitigation Plan	no
County Mitigation Plan	yes - Sullivan County
Debris Management Plan	no
<u>Economic Development Plan</u>	no
Transportation Plan	no
Land-use Plan	no

Flood Mitigation Assistance (FMA) Plan	NO
<i>Watershed Plan</i>	NO
Firewise or other fire mitigation plan	NO
School Mitigation Plan	NA
Critical Facilities Plan	NO
POLICIES/ORDINANCE	
Zoning Ordinance	NO
Building Code	NO
Floodplain Ordinance	NO
Subdivision Ordinance	NO
Tree Trimming Ordinance	NO
Nuisance Ordinance	2014
Stormwater Ordinance	NO
Drainage Ordinance	NO
Site Plan Review Requirements	NO
Historic Preservation Ordinance	NO
Landscape Ordinance	NO
Seismic Construction Ordinance	NO
PROGRAM	
Zoning/Land Use Restrictions	NO
Codes Building Site/Design	2025
Hazard Awareness Program	NO
National Flood Insurance Program (NFIP)	NO
NFIP Community Rating System (CRS) program If so, what is your current level rating?	NO
National Weather Service (NWS) Storm Ready	NO

Firewise Community Certification	no
Building Code Effectiveness Grading (BCEGs)	no
ISO Fire Rating	no
Economic Development Program	no
Land Use Program	no
Public Education/Awareness	no
Property Acquisition	no
Planning/Zoning Boards	no
Stream Maintenance Program	no
Tree Trimming Program	no
<i>Engineering Studies for Streams (Local/County/Regional)</i>	no
Mutual Aid Agreements	no
STUDIES/REPORTS/MAPS	
<i>Hazard Analysis/Risk Assessment (Local)</i>	no
<i>Hazard Analysis/Risk Assessment (County)</i>	no
Flood Insurance Maps	no
FEMA Flood Insurance Study (Detailed)	no
Evacuation Route Map	no
<i>Critical Facilities Inventory</i>	no
<i>Vulnerable Population Inventory</i>	no
<i>Land Use Map</i>	no
STAFF/DEPARTMENT	
<i>Full Time or Part Time, if applicable?</i>	
Building Code Official	Ordinance Enforcement Officer
Building Inspector	no
Mapping Specialist (GIS)	no

Engineer	no
Development Planner	no
Public Works Official	no
Emergency Management Director	no (Sullivan County)
NFIP Floodplain Administrator	no
Emergency Response Team	no
Hazardous Materials Expert	no
Local Emergency Planning Committee	no County Committee Participant
County Emergency Management Commission	NA
Sanitation Department	no
Transportation Department	no
Economic Development Department	no
Housing Department	no
Historic Preservation	no
NON-GOVERNMENTAL ORGANIZATIONS (NGOS)	
<i>Is there a local chapter? Yes or No</i>	
American Red Cross	no
Salvation Army	no
Veterans Groups	no
Local Environmental Organization	no
Homeowner Associations	no
Neighborhood Associations	no
Chamber of Commerce	no
Community Organizations (Lions, Kiwanis, etc.)	no
LOCAL FUNDING AVAILABILITY	
<i>Answer Yes or No</i>	

Apply for Community Development Block Grants	yes
Fund projects through Capital Improvements funding	no
Authority to levy taxes for a specific purpose	yes
Fees for water, sewer, gas, or electric services	no
Impact fees for new development	no
Ability to incur debt through general obligation bonds	yes - not sure
Ability to incur debt through special tax bonds	yes - not sure
Ability to 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 into 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	For all of these, we do not have sufficient resources to complete.
Builder's Plan	
Capital Improvement Plan	

Local Recovery Plan	
County Recovery Plan	
Debris Management Plan	
Economic Development Plan	
Transportation Plan	
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) *City council, 5 members*
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*

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? *1*

How are they activated (indicate responsible department/personnel)?

911 or a council member

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe. *NO*

7. Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards? *None*

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?

Phyllis Blondefield participated in the county one na for local -

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

no

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 which of the following hazards the asset is vulnerable to. Use the following abbreviations.

Natural Hazards	
Flooding (Major & Flash) – RF	Drought – D
Levee Failure – LF	Extreme Temperature – ET
Dam Failure – DF	Severe Thunderstorm (incl. wind, hail, lightning) – ST
Earthquake – EQ	Severe Winter Weather (incl. snow, ice, severe cold) – SWW
Land Subsidence /Sinkholes – LSS	Tornadoes – T
Wildfire – W	

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 Police stations Fire station Emergency Operations Centers	Power plants Dams/levees Military installations Hazardous material sites Schools Shelters Day care centers Nursing homes Main government buildings	Highways, bridges, and tunnels Railroads and facilities Bus facilities Airports 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 to the contact listed on the first page.

Critical Facilities

Name of Asset	Address	Natural Hazards
Essential Facilities such as hospitals and other medical facilities, police and fire stations, Emergency Operations Centers		
None		

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)	
Pallock Area Comm. Center	506 C Street, Pallock, MD 3,548 sq. ft.
200 capacity – EQ, ST, T, SWW	
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 and pipelines, communications facilities	

Economic Assets (Major Employers, etc.)

[illegible]

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 them 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	Village of Pollock
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	none to report

Assessment of Previously Proposed Actions

Jurisdiction: Village of Pallock

Green Hills RPC has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- **Completed Actions:** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- **Ongoing Actions:** indicate what activity has occurred during the previous five years and indicate if this program is still viable enough that it should be carried on into the future.
- **No Progress:** if no progress has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication **Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)**.

I'm not sure how the damage to rock roads fits in to specific plans. Excess rain caused significant potholes and loss of rock in our village. This is something we need to work on.

Multi-Jurisdictional Hazard Mitigation Plan Data Collection Questionnaire for Schools Districts and Educational Institutions

COUNTY: Sullivan County

JURISDICTION: Green City R-I

RETURN BY: _____

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: TENNILLE BANNER

PHONE: 660-874-4128

EMAIL: TBANNER@GREENCITY.K12.MO.US DATE: DECEMBER, 18, 2025

Please return questionnaires by mail, email, or fax to:

Name: Amanda George – Transportation Planner & Hazard Mitigation Specialist

Address: Green Hills Regional Planning Commission, 810 Washington St., Trenton, MO 64683

Email: amanda@ghrpc.org

Phone: (660) 359-5636 ext. 11

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 bold** elements, ***please provide a copy of the document to the contact indicated on the front*** to the contact listed on page 1.

PLANNING ELEMENTS	YES/NO	DATE OF LATEST VERSION	COMMENTS
Master Plan	YES		
Capital Improvement Plan	NO		
<u>School Emergency Plan</u> <ul style="list-style-type: none">• Shelter in Place Protocols• Evacuation Protocols	YES	2020	
Weapons Policy	YES	2020	
PERSONNEL RESOURCES	YES/NO	DEPARTMENT/ POSITION	COMMENTS
Full-Time Building Official	YES	SUPERINTENDENT/ PRINCIPAL	
Emergency Manager	YES	SUPERINTENDENT	
Grant Writer	NO		

Public Information Officer	YES	SUPERINTENDENT	
FINANCIAL RESOURCES	YES/NO	COMMENTS	
Capital Improvements Project Funding	YES		
Local Funds	YES		
General Obligation Bonds	YES	REQ. VOTER APPROVAL	
Special Tax Bonds	YES	REQ. VOTER APPROVAL	
Private Activities/Donations	YES		
State and Federal Funds	YES		

Additional Capabilities Questions

- Are your buildings equipped with a public address (PA) system or other emergency alert system? Please describe.
Each building has a PA system
- Does your school 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 hazards that could occur.
Nothing is planned currently.
- List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities.
Nothing is planned currently.

5. Do any of your buildings have designated tornado shelters or “saferooms”? If so, are they constructed in accordance with FEMA standards?

There are designated shelter areas in each building, not constructed in accordance with FEMA standards.

6. Did your school district / institution make any additions to buildings or construction new buildings since the last plan update? Please list the buildings and the improvement.

No construction within the last 5 years.

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 construction planned currently.

8. What percentage is your projected enrollment expected to increase or decrease in the next five years?

Remain the same.

9. Do you have your own campus police? Please explain your police department or who you rely on for security needs.

We rely on Sullivan County Sheriff.

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 which of the following hazards the asset is vulnerable to. Use the following abbreviations.

Natural Hazards			
Flooding (Major & Flash) – RF			Drought – D
Levee Failure – LF			Extreme Temperature – ET
Dam Failure – DF		Severe Thunderstorm (incl. wind, hail, lightning) – ST	
Earthquake – EQ		Severe Winter Weather (incl. snow, ice, severe cold) – SWW	
Land Subsidence /Sinkholes – LSS		Tornadoes – T	
Wildfire - W			

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	Natural 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 them 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	

Assessment of Previously Proposed Actions

Jurisdiction:

Green Hills RPC has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- **Completed Actions:** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- **Ongoing Actions:** indicate what activity has occurred during the previous five years and indicate if this program is still viable enough that it should be carried on into the future.
- **No Progress:** if no progress has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*.

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		

Multi-Jurisdictional Hazard Mitigation Plan Data Collection Questionnaire for Schools Districts and Educational Institutions

COUNTY: Sullivan County

JURISDICTION: Milan C-2

RETURN BY: _____

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: ASHLEY PAULEY

PHONE: 660-265-4414

EMAIL: APAULEY@MILAN.K12.MO.US DATE: DECEMBER, 18, 2025

Please return questionnaires by mail, email, or fax to:

Name: Amanda George – Transportation Planner & Hazard Mitigation Specialist

Address: Green Hills Regional Planning Commission, 810 Washington St., Trenton, MO 64683

Email: amanda@ghrpc.org

Phone: (660) 359-5636 ext. 11

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 bold*** elements, ***please provide a copy of the document to the contact indicated on the front*** to the contact listed on page 1.

PLANNING ELEMENTS	YES/NO	DATE OF LATEST VERSION	COMMENTS
Master Plan	YES		
Capital Improvement Plan	YES		
<i>School Emergency Plan</i> <ul style="list-style-type: none"> • Shelter in Place Protocols • Evacuation Protocols 	YES	JANUARY 2020	
Weapons Policy	YES	JULY 2014	
PERSONNEL RESOURCES	YES/NO	DEPARTMENT/ POSITION	COMMENTS
Full-Time Building Official	YES	SUPERINTENDENT/ PRINCIPAL	
Emergency Manager	YES	PRINCIPAL	
Grant Writer	NO		

Public Information Officer	YES	SUPERINTENDENT	
FINANCIAL RESOURCES	YES/NO	COMMENTS	
Capital Improvements Project Funding	YES		
Local Funds	NO		
General Obligation Bonds	NO		
Special Tax Bonds	NO		
Private Activities/Donations	NO		
State and Federal Funds	YES		

Additional Capabilities Questions

1. Are your buildings equipped with a public address (PA) system or other emergency alert system? Please describe.

Yes, pa system in each building

2. Does your school 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 hazards that could occur.

Nothing at this time

4. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities. Nothing at this time

5. Do any of your buildings have designated tornado shelters or “saferooms”? If so, are they constructed in accordance with FEMA standards?

Designated shelter areas in each building, not built to FEMA standards

6. Did your school district / institution make any additions to buildings or construction new buildings since the last plan update? Please list the buildings and the improvement.

no

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

8. What percentage is your projected enrollment expected to increase or decrease in the next five years?

Increase 5%

9. Do you have your own campus police? Please explain your police department or who you rely on for security needs.

No, we rely on Milan police department and Sullivan County Sheriff's office

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 which of the following hazards the asset is vulnerable to. Use the following abbreviations.

Natural Hazards			
Flooding (Major & Flash) – RF			Drought – D
Levee Failure – LF			Extreme Temperature – ET
Dam Failure – DF			Severe Thunderstorm (incl. wind, hail, lightning) – ST
Earthquake – EQ			Severe Winter Weather (incl. snow, ice, severe cold) – SWWW
Land Subsidence /Sinkholes – LSS			Tornadoes – T
Wildfire - W			

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	Natural 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 them 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	

Assessment of Previously Proposed Actions

Jurisdiction:

Green Hills RPC has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- **Completed Actions:** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- **Ongoing Actions:** indicate what activity has occurred during the previous five years and indicate if this program is still viable enough that it should be carried on into the future.
- **No Progress:** if no progress has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*.

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		

Multi-Jurisdictional Hazard Mitigation Plan Data Collection Questionnaire for Schools Districts and Educational Institutions

COUNTY: SULLIVAN, GRUNDY, PUTNAM, MERCER

JURISDICTION: NEWTOWN HARRIS R-III SCHOOL DISTRICT

RETURN BY: Stephanie Hubbard

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: ___STEPHANIE HUBBARD

PHONE: ___660-794-2245

EMAIL: SHUBBARD@NHTIGERS.K12.MO.US DATE: _____

Please return questionnaires by mail, email, or fax to:

Name: Amanda George – Transportation Planner & Hazard Mitigation Specialist

Address: Green Hills Regional Planning Commission, 810 Washington St., Trenton, MO 64683

Email: amanda@ghrpc.org

Phone: (660) 359-5636 ext. 11

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 bold*** elements, ***please provide a copy of the document to the contact indicated on the front*** to the contact listed on page 1.

PLANNING ELEMENTS	YES/NO	DATE OF LATEST VERSION	COMMENTS
Master Plan	N/A		I DON'T KNOW WHAT THIS MEANS.
Capital Improvement Plan	YES	9/8/25	THIS IS A WORK IN PROGRESS.
<i>School Emergency Plan</i> <ul style="list-style-type: none">• Shelter in Place Protocols• Evacuation Protocols	YES	9/8/25	
Weapons Policy	YES	MARCH 2010	POLICY 2620 FIREARMS AND

			WEAPONS IN SCHOOL
Personnel Resources	YES/NO	DEPARTMENT/ POSITION	COMMENTS
Full-Time Building Official	YES	MAINTENANCE DIRECTOR	BO HAMILTON
Emergency Manager	YES	SUPERINTENDENT	STEPHANIE HUBBARD
Grant Writer	YES	SUPERINTENDENT	STEPHANIE HUBBARD
Public Information Officer	YES	SUPERINTENDENT	STEPHANIE HUBBARD
Financial Resources	YES/NO	COMMENTS	
Capital Improvements Project Funding	YES		
Local Funds	YES		
General Obligation Bonds	NO		
Special Tax Bonds	NO		
Private Activities/Donations	YES	SOMETIMES PEOPLE/GROUPS HELP US OUT.	
State and Federal Funds	YES		

Additional Capabilities Questions

1. Are your buildings equipped with a public address (PA) system or other emergency alert system? Please describe. Yes. We can use our phone system to do an all call. We also have manuel alarms.
2. Does your school buildings' have NOAA Weather Radios? No

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 hazards that could occur. **We got a security grant just over a year ago. We replaced 9 windows at HS, replaced the elementary front doors, and added an access control system- with fobs and ability to open doors from the office.**
4. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities. **We replaced some windows on the north side of the building with local funds.**
5. Do any of your buildings have designated tornado shelters or “saferooms”? If so, are they constructed in accordance with FEMA standards? **We have places to go during a tornado. I am not sure if they are in accordance with FEMA standards.**
6. Did your school district / institution make any additions to buildings or construction new buildings since the last plan update? Please list the buildings and the improvement. **I don't know when the last plan was. It has been a while since any additions, so probably no new buildings but we did replace the roof on the high school the summer of 2025.**
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? **We are trying to get water away from our buildings so that no longer ruining our structure, but again no new construction.**
8. What percentage is your projected enrollment expected to increase or decrease in the next five years? **Probably remain pretty stagnant unless open enrollment passes in the state; in who knows.**
9. Do you have your own campus police? Please explain your police department or who you rely on for security needs. **NO. Police from Sullivan County respond to our needs.**

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 which of the following hazards the asset is vulnerable to. Use the following abbreviations.

Natural Hazards			
Flooding (Major & Flash) – RF			Drought – D
Levee Failure – LF			Extreme Temperature – ET
Dam Failure – DF			Severe Thunderstorm (incl. wind, hail, lightning) – ST
Earthquake – EQ			Severe Winter Weather (incl. snow, ice, severe cold) – SWW
Land Subsidence /Sinkholes – LSS			Tornadoes – T
Wildfire - W			

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	Natural Hazards
Newtown Harris School Buildings	306 N, Main St., Newtown, MO 64667	Earthquake – EQ
Newtown Harris School Buildings	306 N, Main St., Newtown, MO 64667	Flooding (Major & Flash) – RF
Newtown Harris School Buildings	306 N, Main St., Newtown, MO 64667	Drought – D
Newtown Harris School Buildings	306 N, Main St., Newtown, MO 64667	Extreme Temperature – ET

Newtown Harris School Buildings	306 N, Main St., Newtown, MO 64667	Severe Thunderstorm (incl. wind, hail, lightning) – ST
Newtown Harris School Buildings	306 N, Main St., Newtown, MO 64667	Severe Winter Weather (incl. snow, ice, severe cold) – SWW
Newtown Harris School Buildings	306 N, Main St., Newtown, MO 64667	Tornadoes – T

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 them 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	Newtown-Harris R-III School District
Type of event	Flooding
Nature and magnitude of event	
Location	Newtown-Harris R-III School District
Date of event	2009ish
Injuries	NA
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	Roads were closed /school closed
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

Jurisdiction	Newtown-Harris R-III School District
Type of event	High Winds/Tornado
Nature and magnitude of event	
Location	Newtown-Harris R-III School District,
Date of event	Unsure
Injuries	
Deaths	
Property damage	Greenhouse blew away.
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

Jurisdiction	Newtown-Harris R-III School District
Type of event	Hail
Nature and magnitude of event	

Location	Newtown-Harris R-III School District,
Date of event	May 2024
Injuries	
Deaths	
Property damage	Damage to buildings and school vehicles
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

Assessment of Previously Proposed Actions

Jurisdiction:

Green Hills RPC has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- **Completed Actions:** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- **Ongoing Actions:** indicate what activity has occurred during the previous five years and indicate if this program is still viable enough that it should be carried on into the future.
- **No Progress:** if no progress has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*.

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: <u>Public mitigation education</u>		Jurisdiction: <u>Sullivan County</u>	
Action ID: <u>County 2025.1</u>			
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score	
S: Is it Socially acceptable?		2	
T: Is it Technically feasible and potentially successful?		2	
A: Does the jurisdiction have the administrative capacity to execute this action?		2	
P: Is it Politically acceptable?		2	
L: Is there Legal authority to implement?		2	
E: Is it Economically beneficial?		2	
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		2	
Will historic structures be saved or protected?		1	
Could it be implemented quickly?		1	
STAPLEE Score		16	

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	5
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
Mitigation Effectiveness Score		10

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 26

Priority Level: ☐ High (30+ points) ☒ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Maureen Hall

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: Maintain transportation infrastructure		Jurisdiction: Sullivan County
Action ID: County 2025.2		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		3
T: Is it Technically feasible and potentially successful?		2
A: Does the jurisdiction have the administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		3
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3
Will historic structures be saved or protected?		2
Could it be implemented quickly?		2
STAPLEE Score		24

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	5
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
Mitigation Effectiveness Score		10

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 34

Priority Level: ☒ High (30+ points)

☐ Medium (25-29 points)

☐ Low (less than 25 points)

Completed by (name/title/phone #):

Michael Hall

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: <u>Generators</u>		Jurisdiction: <u>Sullivan County</u>	
Action ID: <u>County 2025.3</u>			
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score	
S: Is it Socially acceptable?		3	
T: Is it Technically feasible and potentially successful?		3	
A: Does the jurisdiction have the administrative capacity to execute this action?		3	
P: Is it Politically acceptable?		3	
L: Is there Legal authority to implement?		3	
E: Is it Economically beneficial?		2	
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3	
Will historic structures be saved or protected?		2	
Could it be implemented quickly?		3	
STAPLEE Score		25	

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	7
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
Mitigation Effectiveness Score		12

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 37

Priority Level: ☒ High (30+ points)

☐ Medium (25-29 points)

☐ Low (less than 25 points)

Completed by (name/title/phone #):

Rachael Hall

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: <u>Debris removal</u>		Jurisdiction: <u>Sullivan County</u>
Action ID: <u>County 2025.4</u>		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		<u>3</u>
T: Is it Technically feasible and potentially successful?		<u>3</u>
A: Does the jurisdiction have the administrative capacity to execute this action?		<u>3</u>
P: Is it Politically acceptable?		<u>3</u>
L: Is there Legal authority to implement?		<u>3</u>
E: Is it Economically beneficial?		<u>3</u>
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		<u>3</u>
Will historic structures be saved or protected?		<u>3</u>
Could it be implemented quickly?		<u>3</u>
STAPLEE Score		<u>27</u>

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	<u>8</u>
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	<u>7</u>
Mitigation Effectiveness Score		<u>15</u>

Total Score (STAPLEE Score + Mitigation Effectiveness Score):

42

Priority Level: ☒ High (30+ points)

☐ Medium (25-29 points)

☐ Low (less than 25 points)

Completed by (name/title/phone #):

Nathaniel Hall

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: <u>Installation of warning siren</u>		Jurisdiction: <u>Sullivan County</u>
Action ID: <u>County 2025.5</u>		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		<u>2</u>
T: Is it Technically feasible and potentially successful?		<u>2</u>
A: Does the jurisdiction have the administrative capacity to execute this action?		<u>2</u>
P: Is it Politically acceptable?		<u>1</u>
L: Is there Legal authority to implement?		<u>2</u>
E: Is it Economically beneficial?		<u>2</u>
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		<u>2</u>
Will historic structures be saved or protected?		<u>1</u>
Could it be implemented quickly?		<u>1</u>
STAPLEE Score		<u>15</u>

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	<u>8</u>
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	<u>5</u>
Mitigation Effectiveness Score		<u>13</u>

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 28

Priority Level: ☐ High (30+ points) ☒ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Rachael Hall

**SHOW-ME COUNTY
MULTI-JURISDICTIONAL
LOCAL HAZARD MITIGATION PLAN**

Action Title: <u>N.O.A.A. Weather Radio</u>		Jurisdiction: <u>Sullivan County</u>
Action ID: <u>County 2015.6</u>		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		1
T: Is it Technically feasible and potentially successful?		2
A: Does the jurisdiction have the administrative capacity to execute this action?		2
P: Is it Politically acceptable?		1
L: Is there Legal authority to implement?		2
E: Is it Economically beneficial?		1
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		2
Will historic structures be saved or protected?		2
Could it be implemented quickly?		2
STAPLEE Score		16

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	6
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
Mitigation Effectiveness Score		11

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 27

Priority Level: ☐ High (30+ points) ☒ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Rachael Hall

**SHOW-ME COUNTY
MULTI-JURISDICTIONAL
LOCAL HAZARD MITIGATION PLAN**

Action Title: <u>Public mitigation education</u>		Jurisdiction: <u>City of Greencastle</u> <u>Sullivan County</u>
Action ID: <u>CGCA 2025.1</u>		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		1
T: Is it Technically feasible and potentially successful?		1
A: Does the jurisdiction have the administrative capacity to execute this action?		2
P: Is it Politically acceptable?		1
L: Is there Legal authority to implement?		2
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		2
Will historic structures be saved or protected?		1
Could it be implemented quickly?		2
STAPLEE Score		14

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	5
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	6
Mitigation Effectiveness Score		11

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 25

Priority Level: ☐ High (30+ points) ☒ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Lanie Lewis

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: <u>Maintain transportation infrastructure</u>		Jurisdiction: <u>City of Greencastle</u> <u>Sullivan County</u>
Action ID: <u>CGCA 2025.2</u>		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		3
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3
Will historic structures be saved or protected?		3
Could it be implemented quickly?		3
STAPLEE Score		27

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	5
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
Mitigation Effectiveness Score		10

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 37

Priority Level: ☒ High (30+ points) ☐ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Lanie Lewis

**SHOW-ME COUNTY
MULTI-JURISDICTIONAL
LOCAL HAZARD MITIGATION PLAN**

Action Title: <u>Generators</u>		Jurisdiction: <u>City of Greencastle</u> <u>Sullivan County</u>
Action ID: <u>CBCA 2025.3</u>		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		3
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3
Will historic structures be saved or protected?		3
Could it be implemented quickly?		3
STAPLEE Score		27

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	7
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	6
Mitigation Effectiveness Score		13

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 40

Priority Level: ☒ High (30+ points) ☐ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Lanie Lewis

**SHOW-ME COUNTY
MULTI-JURISDICTIONAL
LOCAL HAZARD MITIGATION PLAN**

Action Title: <u>Installation of Warning Siren</u>		Jurisdiction: <u>City of Greencastle</u> <u>Sullivan county</u>
Action ID: <u>CGCA 2025, 4</u>		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		2
T: Is it Technically feasible and potentially successful?		2
A: Does the jurisdiction have the administrative capacity to execute this action?		2
P: Is it Politically acceptable?		2
L: Is there Legal authority to implement?		2
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		2
Will historic structures be saved or protected?		2
Could it be implemented quickly?		2
STAPLEE Score		18

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	5
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
Mitigation Effectiveness Score		10

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 28

Priority Level: ☐ High (30+ points) ☒ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Lanie Lewis

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: Storm shelter/safe room		Jurisdiction: City of Greencastle Sullivan County
Action ID: C6CA 2025.5		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		3
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3
Will historic structures be saved or protected?		3
Could it be implemented quickly?		3
STAPLEE Score		27

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	8
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
Mitigation Effectiveness Score		13

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 40

Priority Level: ☒ High (30+ points) ☐ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Lanie Lewis

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: <u>Public mitigation education</u>		Jurisdiction: <u>City of Green City</u> <u>Sullivan County</u>
Action ID: <u>CGC 2025.1</u>		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		1
T: Is it Technically feasible and potentially successful?		1
A: Does the jurisdiction have the administrative capacity to execute this action?		2
P: Is it Politically acceptable?		2
L: Is there Legal authority to implement?		2
E: Is it Economically beneficial?		3
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		2
Will historic structures be saved or protected?		1
Could it be implemented quickly?		1
STAPLEE Score		<u>15</u>

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	5
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
Mitigation Effectiveness Score		<u>10</u>

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 25

Priority Level: ☐ High (30+ points) ☒ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Brachel Hulse

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: maintain transportation infrastructure		Jurisdiction: City of Green City Sullivan County
Action ID: CBC 2025.2		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		3
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3
Will historic structures be saved or protected?		3
Could it be implemented quickly?		3
STAPLEE Score		27

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	5
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
Mitigation Effectiveness Score		10

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 37

Priority Level: ☒ High (30+ points)

☐ Medium (25-29 points)

☐ Low (less than 25 points)

Completed by (name/title/phone #):

Rachel Hale

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: <u>Generators</u>		Jurisdiction: <u>City of Green City</u> <u>Sullivan County</u>	
Action ID: <u>C6C 2025.3</u>			
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score	
S: Is it Socially acceptable?		3	
T: Is it Technically feasible and potentially successful?		3	
A: Does the jurisdiction have the administrative capacity to execute this action?		3	
P: Is it Politically acceptable?		3	
L: Is there Legal authority to implement?		3	
E: Is it Economically beneficial?		3	
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3	
Will historic structures be saved or protected?		3	
Could it be implemented quickly?		3	
STAPLEE Score		27	

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	8
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
Mitigation Effectiveness Score		13

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 40

Priority Level: ☒ High (30+ points) ☐ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Rachel Hale

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: Installation of warning sirens		Jurisdiction: City of Green City Sullivan County	
Action ID: CGC 2022.4			
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score	
S: Is it Socially acceptable?		2	
T: Is it Technically feasible and potentially successful?		2	
A: Does the jurisdiction have the administrative capacity to execute this action?		1	
P: Is it Politically acceptable?		2	
L: Is there Legal authority to implement?		2	
E: Is it Economically beneficial?		1	
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		2	
Will historic structures be saved or protected?		2	
Could it be implemented quickly?		2	
STAPLEE Score		16	

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	6
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
Mitigation Effectiveness Score		11

Total Score (STAPLEE Score + Mitigation Effectiveness Score):

27

Priority Level: ☐ High (30+ points)

☒ Medium (25-29 points)

☐ Low (less than 25 points)

Completed by (name/title/phone #):

Rachel Hale

**SHOW-ME COUNTY
MULTI-JURISDICTIONAL
LOCAL HAZARD MITIGATION PLAN**

Action Title: <u>Storm shelter/safe room</u>		Jurisdiction: <u>City of Green City</u> <u>Sullivan county</u>	
Action ID: <u>CGC 2025.5</u>			
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score	
S: Is it Socially acceptable?		3	
T: Is it Technically feasible and potentially successful?		3	
A: Does the jurisdiction have the administrative capacity to execute this action?		3	
P: Is it Politically acceptable?		3	
L: Is there Legal authority to implement?		3	
E: Is it Economically beneficial?		3	
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3	
Will historic structures be saved or protected?		3	
Could it be implemented quickly?		3	
STAPLEE Score		27	

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	9
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
Mitigation Effectiveness Score		14

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 41

Priority Level: ☒ High (30+ points)

☐ Medium (25-29 points)

☐ Low (less than 25 points)

Completed by (name/title/phone #):

Bachelor Hale

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: Flood reduction studies & reports		Jurisdiction: City of Green City Sullivan County	
Action ID: CGC 2025.6			
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score	
S: Is it Socially acceptable?		2	
T: Is it Technically feasible and potentially successful?		2	
A: Does the jurisdiction have the administrative capacity to execute this action?		2	
P: Is it Politically acceptable?		2	
L: Is there Legal authority to implement?		2	
E: Is it Economically beneficial?		2	
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		2	
Will historic structures be saved or protected?		2	
Could it be implemented quickly?		2	
STAPLEE Score		18	

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	5
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
Mitigation Effectiveness Score		10

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 28

Priority Level: ☐ High (30+ points) ☒ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Rachel Hale

**SHOW-ME COUNTY
MULTI-JURISDICTIONAL
LOCAL HAZARD MITIGATION PLAN**

Action Title: Routine review/inspection of dams, training		Jurisdiction: City of Green City Sullivan County	
Action ID: C6C 2025.7			
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score	
S: Is it Socially acceptable?		3	
T: Is it Technically feasible and potentially successful?		3	
A: Does the jurisdiction have the administrative capacity to execute this action?		3	
P: Is it Politically acceptable?		3	
L: Is there Legal authority to implement?		3	
E: Is it Economically beneficial?		3	
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3	
Will historic structures be saved or protected?		3	
Could it be implemented quickly?		3	
STAPLEE Score		27	

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	5
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
Mitigation Effectiveness Score		10

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 37

Priority Level: ☒ High (30+ points) ☐ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Rachel Hale

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: EDUCATION		Jurisdiction: NEWTOWN-HARRIS RT	
Action ID: N HSD 2025.1			
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score	
S: Is it Socially acceptable?		3	
T: Is it Technically feasible and potentially successful?		3	
A: Does the jurisdiction have the administrative capacity to execute this action?		3	
P: Is it Politically acceptable?		3	
L: Is there Legal authority to implement?		3	
E: Is it Economically beneficial?		3	
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3	
Will historic structures be saved or protected?		3	
Could it be implemented quickly?		3	
STAPLEE Score		27	

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	10
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	10
Mitigation Effectiveness Score		20

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 47

Priority Level: ☒ High (30+ points) ☐ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): STEPHANIE HUBBARD

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: Shelters		Jurisdiction: Newtown-Harris R-II	
Action ID: NHSN 2025.2			
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score	
S: Is it Socially acceptable?		3	
T: Is it Technically feasible and potentially successful?		3	
A: Does the jurisdiction have the administrative capacity to execute this action?		3	
P: Is it Politically acceptable?		3	
L: Is there Legal authority to implement?		3	
E: Is it Economically beneficial?		2	
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3	
Will historic structures be saved or protected?		0	
Could it be implemented quickly?		0	
STAPLEE Score		21	

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	10
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	10
Mitigation Effectiveness Score		20

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 41

Priority Level: ☒ High (30+ points) ☐ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #):

Stephanie Hubbs

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: <u>NEIP</u>		Jurisdiction: <u>MILAN</u>
Action ID: <u>CM 2025.6</u>		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		2
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the administrative capacity to execute this action?		3
P: Is it Politically acceptable?		1
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		3
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3
Will historic structures be saved or protected?		3
Could it be implemented quickly?		3
STAPLEE Score		24

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	10
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
Mitigation Effectiveness Score		15

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 39

Priority Level: ☒ High (30+ points)

☐ Medium (25-29 points)

☐ Low (less than 25 points)

Completed by (name/title/phone #):

CRYSTAL BURT

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: <u>Sirens + weather radio</u>		Jurisdiction: <u>milan</u>
Action ID: <u>CM 2025, 5</u>		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		<u>3</u>
T: Is it Technically feasible and potentially successful?		<u>3</u>
A: Does the jurisdiction have the administrative capacity to execute this action?		<u>3</u>
P: Is it Politically acceptable?		<u>3</u>
L: Is there Legal authority to implement?		<u>3</u>
E: Is it Economically beneficial?		<u>3</u>
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		<u>3</u>
Will historic structures be saved or protected?		<u>3</u>
Could it be implemented quickly?		<u>3</u>
STAPLEE Score		<u>27</u>

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	<u>10</u>
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	<u>10</u>
Mitigation Effectiveness Score		<u>20</u>

Total Score (STAPLEE Score + Mitigation Effectiveness Score):

47

Priority Level: ☒ High (30+ points)

☐ Medium (25-29 points)

☐ Low (less than 25 points)

Completed by (name/title/phone #):

Crystal Buyp

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: <u>Shelters</u>		Jurisdiction: <u>milan</u>
Action ID: <u>CM 2025, 4</u>		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3
Will historic structures be saved or protected?		3
Could it be implemented quickly?		2
STAPLEE Score		23

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	10
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	10
Mitigation Effectiveness Score		20

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 43

Priority Level: ☒ High (30+ points) ☐ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Crystal Burpp

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: <u>Tremor Station 1/8m</u>		Jurisdiction: <u>milan</u>
Action ID: <u>CM 2025.3</u>		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		<u>3</u>
T: Is it Technically feasible and potentially successful?		<u>3</u>
A: Does the jurisdiction have the administrative capacity to execute this action?		<u>3</u>
P: Is it Politically acceptable?		<u>3</u>
L: Is there Legal authority to implement?		<u>3</u>
E: Is it Economically beneficial?		<u>2</u>
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		<u>3</u>
Will historic structures be saved or protected?		<u>0</u>
Could it be implemented quickly?		<u>2</u>
STAPLEE Score		<u>22</u>

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	<u>5</u>
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	<u>5</u>
Mitigation Effectiveness Score		<u>10</u>

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 32

Priority Level: ☒ High (30+ points) ☐ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): CRYSTAL Buyp

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: <u>generators</u>		Jurisdiction: <u>milam</u>
Action ID: <u>CM 20252</u>		

STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		<u>3</u>
T: Is it Technically feasible and potentially successful?		<u>3</u>
A: Does the jurisdiction have the administrative capacity to execute this action?		<u>3</u>
P: Is it Politically acceptable?		<u>3</u>
L: Is there Legal authority to implement?		<u>3</u>
E: Is it Economically beneficial?		<u>2</u>
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		<u>2</u>
Will historic structures be saved or protected?		<u>0</u>
Could it be implemented quickly?		<u>2</u>
STAPLEE Score		<u>21</u>

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	<u>10</u>
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	<u>10</u>
Mitigation Effectiveness Score		<u>20</u>

Total Score (STAPLEE Score + Mitigation Effectiveness Score):

41

Priority Level: ☒ High (30+ points)

☐ Medium (25-29 points)

☐ Low (less than 25 points)

Completed by (name/title/phone #):

Crystal Buyp

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: <u>Reduction</u>		Jurisdiction: <u>milan</u>
Action ID: <u>cm 2025. 1</u>		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		3
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3
Will historic structures be saved or protected?		3
Could it be implemented quickly?		3
STAPLEE Score		21

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	10
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	10
Mitigation Effectiveness Score		20

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 47

Priority Level: ☒ High (30+ points) ☐ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #):

Crystal Burr

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: <u>Education</u>		Jurisdiction: <u>POLLOCK</u>
Action ID: <u>VP 2025.1</u>		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		3
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3
Will historic structures be saved or protected?		3
Could it be implemented quickly?		3
STAPLEE Score		27

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	10
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	10
Mitigation Effectiveness Score		20

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 47

Priority Level: ☒ High (30+ points) ☐ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Phyllis Bonnett Clerk

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: Shelters		Jurisdiction: Pollock
Action ID: UP 2025.2		
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		3
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3
Will historic structures be saved or protected?		3
Could it be implemented quickly?		3
STAPLEE Score		21

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	10
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	10
Mitigation Effectiveness Score		20

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 47

Priority Level: ☒ High (30+ points) ☐ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Phyllis Blonde Fiap Clerk

SHOW-ME COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

Action Title: Sirens		Jurisdiction: Pollock	
Action ID: 1P 2025.3			
STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score	
S: Is it Socially acceptable?		3	
T: Is it Technically feasible and potentially successful?		3	
A: Does the jurisdiction have the administrative capacity to execute this action?		3	
P: Is it Politically acceptable?		3	
L: Is there Legal authority to implement?		3	
E: Is it Economically beneficial?		3	
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		3	
Will historic structures be saved or protected?		3	
Could it be implemented quickly?		3	
STAPLEE Score		27	

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	10
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	10
Mitigation Effectiveness Score		20

Total Score (STAPLEE Score + Mitigation Effectiveness Score): 47

Priority Level: ☒ High (30+ points) ☐ Medium (25-29 points) ☐ Low (less than 25 points)

Completed by (name/title/phone #): Phyllis Blondefield

Appendix D: Critical Facilities (Redacted from Public View)

Appendix E: Resolutions of Adoption

ORDER OF THE COUNTY COMMISSION OF SULLIVAN COUNTY, MISSOURI

NOW, THEREFORE, BE IT RESOLVED AND ORDERED BY THE COUNTY COMMISSION OF SULLIVAN COUNTY, MISSOURI, AS FOLLOWS:

WHEREAS Sullivan County recognizes the threat that natural hazards pose to people and property within the County; and

WHEREAS Sullivan County has participated in the preparation of a multi-jurisdictional local Hazard Mitigation Plan, hereby known as the Sullivan 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 Sullivan County from the impacts of future hazards and disasters; and

WHEREAS Sullivan County recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, Sullivan County will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by Sullivan County demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

By order of the County Commission of Sullivan County, Missouri, by a vote of 3 in favor, 0 against, and 0 abstaining, to adopt the final FEMA approved Sullivan County Multi-jurisdictional Hazard Mitigation Plan this 16th day of December, 2025.



ATTEST:

Rachael Hall
Rachael Hall, County Clerk

COUNTY COMMISSION OF
SULLIVAN COUNTY, MISSOURI

Chris May
Chris May, Presiding Commissioner

Rye Page
Rye Page, First District Commissioner

Michael Williams
Michael Williams, Second District
Commissioner

Newtown-Harris R-III School District, Missouri
RESOLUTION

A RESOLUTION OF THE NEWTOWN-HARRIS R-III SCHOOL DISTRICT ADOPTING THE
Sullivan County Multijurisdictional Hazard Mitigation Plan

WHEREAS the Newtown-Harris R-III School District recognizes the threat that natural hazards pose to people and property within the Newtown-Harris R-III School District; and

WHEREAS the Newtown-Harris R-III School District has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the Sullivan County Multijurisdictional 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 *Newtown-Harris R-III School District* from the impacts of future hazards and disasters; and

WHEREAS the Newtown-Harris R-III School District recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Newtown-Harris R-III School District will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the Newtown-Harris R-III School District demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY THE Newtown-Harris R-III School District, in the State of Missouri, THAT:

In accordance with Newtown-Harris R-III School District policy for adopting resolutions, the Newtown-Harris R-III School District adopts the final *FEMA-approved Plan*.

ADOPTED by a vote of 12 in favor and 0 against, and 0 abstaining, this 10th day of December, 2025.

By (Sig): Holly Fairley
Print name: Holly Fairley

ATTEST:

By (Sig.): Justin Oaks
Print name: Justin Oaks

APPROVED AS TO FORM:

By (Sig.): Stephanie Hubbard
Print name: Stephanie Hubbard

(MILAN C-2 SCHOOL DISTRICT), Missouri RESOLUTION NO. __

A RESOLUTION OF THE (MILAN C-2 SCHOOL DISTRICT) ADOPTING THE (Sullivan County) Multijurisdictional Hazard Mitigation Plan

WHEREAS the (Milan C-2 School District) recognizes the threat that natural hazards pose to people and property within the (local governing body/school district); and

WHEREAS the (Milan C-2 School District) has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the Linn County Multijurisdictional 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 (Milan C-2 School District) from the impacts of future hazards and disasters; and

WHEREAS the (local governing body) recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the (Milan C-2 School District) will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the (Milan C-2 School District) demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY THE (MILAN C-2 SCHOOL DISTRICT), in the State of Missouri, THAT:

In accordance with (local rule for adopting resolutions), the (Milan C-2 School District) adopts the final FEMA-approved *Plan*.

ADOPTED by a vote of 7-0 in favor and 0 against, and 0 abstaining, this 17th day of December, 2025

By (Sig.):

Print name:

ATTEST:

By (Sig.):

Print name:

APPROVED AS TO FORM:

By (Sig.):

Print name:

Green City R-1 School District, Missouri RESOLUTION NO. 2025-01

A RESOLUTION OF THE GREEN CITY R-1 SCHOOL DISTRICT ADOPTING THE Sullivan County Multijurisdictional Hazard Mitigation Plan

WHEREAS the Green City R-1 School District recognizes the threat that natural hazards pose to people and property within the (local governing body/school district); and

WHEREAS the Green City R-1 School District has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the Sullivan County Multijurisdictional 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 *Green City R-1 School District* from the impacts of future hazards and disasters; and

WHEREAS the Green City R-1 School District recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Green City R-1 School District endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the Green City R-1 School District demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY THE Green City R-1 School District, in the State of Missouri, THAT:

In accordance with local rule for adopting resolutions, the Green City R-1 School District adopts the final *FEMA-approved Plan*.

ADOPTED by a vote of six (6) in favor and zero (0) against, and zero (0) abstaining, this 16th day of December, 2025.

By (Sig.): Tennille C Banner
Print name: Tennille C. Banner, Superintendent

ATTEST:

By (Sig.): Lindsay Moore
Print name: Lindsay Moore

APPROVED AS TO FORM:

By (Sig.): _____
Print name: _____

Model Resolution

City of Milan, Missouri RESOLUTION NO 2026-1

A RESOLUTION OF THE City of Milan ADOPTING THE Sullivan County Multi-Jurisdictional Hazard Mitigation Plan

WHEREAS the City of Milan recognizes the threat that natural hazards pose to people and property within the City of Milan; and

WHEREAS the City of Milan has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the Sullivan 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 Milan* from the impacts of future hazards and disasters; and

WHEREAS the City of Milan recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the City of Milan will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the City of Milan demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY THE City of Milan, in the State of Missouri, THAT:

In accordance with (*local rule for adopting resolutions*), the City of Milan adopts the final *FEMA-approved Plan*.

ADOPTED by a vote of 5 in favor and 0 against, and 0 abstaining, this 5th day of Jan. 2026

By (Sig): [Signature]
Print name: Andy Herington

ATTEST:
By (Sig.): [Signature]
Print name: Lisa Sharp

APPROVED AS TO FORM:

By (Sig.): _____
Print name: _____

City of Green Castle, Missouri RESOLUTION NO. _ 431

A RESOLUTION OF THE City of Green Castle ADOPTING THE Sullivan Multijurisdictional Hazard Mitigation Plan

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

WHEREAS the City of Green Castle has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the Linn County Multijurisdictional 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 Green Castle from the impacts of future hazards and disasters; and

WHEREAS the City of Green Castle recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the City of Green Castle will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the City of Green Castle demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY THE City of Green Castle, in the State of Missouri, THAT:

In accordance with rules for adoption, the City of Green Castle adopts the final *FEMA-approved Plan*.

ADOPTED by a vote of 4 in favor and 0 against, and 0 abstaining, this 7 day of

January 2026

By (Sig.): [Signature]
Print name:

GREG DOBRINSKE

ATTEST:

By (Sig.): [Signature]
Print name:

JAMES C. SNYDER

APPROVED AS TO FORM:

By (Sig.): [Signature]
Print name:

April Lee

Date: January 7, 2026

A RESOLUTION OF THE VILLAGE OF POLLOCK, MISSOURI, ADOPTING THE SULLIVAN COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS the VILLAGE OF POLLOCK COUNCIL recognizes the threat that natural hazards pose to people and property within the VILLAGE OF POLLOCK; and

WHEREAS SULLIVAN COUNTY has prepared a multi-hazard mitigation plan, hereby known as the Sullivan County Multi-jurisdictional Hazard 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 the Sullivan County Multi-jurisdictional Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Village of Pollock from the impacts of future hazards and disasters; and

WHEREAS adoption by the VILLAGE OF POLLOCK demonstrates its commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY THE VILLAGE OF POLLOCK in the State of Missouri, THAT:

Section 1. In accordance with the Village Council of the VILLAGE OF POLLOCK adopts the Sullivan County Multi-jurisdictional Hazard Mitigation Plan 2025. While content related to VILLAGE OF POLLOCK may require revisions to meet the plan approval requirements, changes occurring after adoption will not require VILLAGE OF POLLOCK 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 4 in favor and 0 against, and 0 abstaining, this 7th day of January, 2026.

By Chylin Blondefield

Print name: Chylin Blondefield

ATTEST:
By Kathy Versluis

Print name: Kathy Versluis

APPROVED AS TO FORM:

By Chylin Blondefield

Resolution

R-2026-02

A RESOLUTION OF THE CITY OF GREEN CITY, MISSOURI, ADOPTING THE SULLIVAN COUNTY MULTIJURISTICTIONAL HAZARD MITIGATION PLAN

WHEREAS the City of Green City recognizes the threat that natural hazards pose to people and property within the City of Green City; and

WHEREAS the City of Green City has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the Sullivan County Multijurisdictional 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 Green City from the impacts of future hazards and disasters; and

WHEREAS the City of Green City recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the City of Green City will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the City of Green City demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE BE IT RESOLVED BY THE City of Green City, in the State of Missouri, THAT:

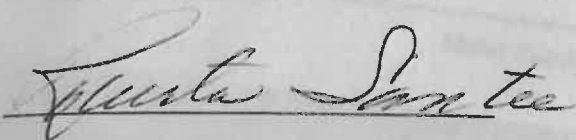
In accordance with The City of Green City's policy for adopting resolutions, the City of Green City adopts the final *FEMA-approved Plan*.

PASSED AND APPROVED BY THE BOARD OF ALDERMAN AND THE MAYOR OF THE CITY OF GREEN CITY, MISSOURI, THIS 6TH DAY OF JANUARY 2026.

(SEAL)



Ernest Conner, Mayor



Roberta Santee, City Clerk