

**RESOLUTION NO. 1765**

**A RESOLUTION OF THE CITY OF NEVADA, MISSOURI, ADOPTING THE VERNON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN**

**WHEREAS** the City of Nevada recognizes the threat that natural hazards pose to people and property within the City of Nevada; and

**WHEREAS** the City of Nevada has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Vernon 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 Nevada from the impacts of future hazards and disasters; and

**WHEREAS** the City of Nevada recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the City of Nevada will endeavor to integrate the *Plan* into the comprehensive planning process; and

**WHEREAS** adoption by the City of Nevada demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

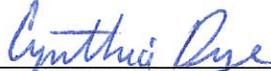
**NOW, THEREFORE, BE IT RESOLVED BY THE** City of Nevada, in the State of Missouri, THAT:

In accordance with the City Council of the City of Nevada, Missouri, the City of Nevada adopts the final *FEMA-approved plan*.

**PASSED, APPROVED AND ADOPTED** by the City Council of the City of Nevada, Missouri this 20th day of February 2024.



ATTEST:

  
CYNTHIA DYE, CITY CLERK

  
KENDALL VICKERS, MAYOR

**AGENDA ITEM**  
**February 20, 2024**

**Subject: Hazard Mitigation Plan**

**Department: Emergency Management**

**Every five years, Vernon County must review and update the Hazard Mitigation Plan for the county. To be considered or apply for State or Federal grants available to address our needs, the City of Nevada must agree to adopt the plan after being approved by State Emergency Management Agency (SEMA). This resolution will allow the City of Nevada the opportunity to do so once the plan has been approved.**



## **2024 Vernon County Multijurisdictional Natural Hazard Mitigation Plan**

**Prepared by:**



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# CONTRIBUTORS

## Vernon County Hazard Mitigation Planning Committee

### Jurisdictional Representatives

Name	Title	Department	Jurisdiction/Agency/Organization
Beth Sandness	Superintendent	Education	Bronaugh R-VII School District
Lauren Meier	Mayor	Local Government	City of Bronaugh
Troy Denney	Fire Chief	Emergency Services	City of Nevada
Erin Lee	City Clerk	Local Government	City of Schell City
Becky Morgan	Mayor	Local Government	City of Sheldon
Todd Hefner	Plant Director	Higher Education	Cotley College
Monte Padgett	Director	Higher Education	Crowder College – Nevada Campus
Jerad Hembree	Vice President	Education	Missouri Welding Institute
Natasha Carney	Director's Assistant	Education	Missouri Welding Institute
Tyson Beshore	Superintendent	Education	Nevada R-V School District
Chris Holcomb	Superintendent	Education	Northeast Vernon County R-I School District
Jason Irwin	Superintendent	Education	Sheldon R-VIII School District
Joe Wilson	Presiding Commissioner	County Government	Vernon County Board of Commissioners
Cindy Thompson	Northern Commissioner	County Government	Vernon County Board of Commissioners
Everett Wolfe	Southern Commissioner	County Government	Vernon County Board of Commissioners
Derik White	Emergency Manager	Emergency Services	Vernon County Office of Emergency Management

### Stakeholder Representatives

Name	Title	Department	Agency/Organization
Jennifer Whiteside	EHS Manager	Local Business	3M
Jessica Slomker	Executive Director	Community Services	Nevada/Vernon County Chamber of Commerce
Casey Crain	Police Chief	Emergency Services	Nevada Police Department
Jon Paul	Maintenance Director	Education	Crowder College
Mark Mitchell	City Administrator	Local Government	City of Nevada

**Additional Stakeholders May Be Identified During Comment Period**

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## EXECUTIVE SUMMARY

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The purpose of hazard mitigation is to reduce or eliminate long-term risk to people and property from hazards. Vernon County and participating jurisdictions and school/special districts developed this multi-jurisdictional local hazard mitigation plan update to reduce future losses from hazard events to the County and its communities and school/special districts. The plan is an update of a plan that was approved on 12 September 2019. 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 Vernon County Multi-Hazard Mitigation Plan is a multi-jurisdictional plan that covers the following jurisdictions that participated in the planning process:

- Unincorporated Vernon County
- City of Bronaugh
- City of Nevada
- City of Schell City
- City of Sheldon
- Bronaugh R-VII School District
- Cottey College
- Crowder College – Nevada Campus
- Missouri Welding Institute
- Nevada R-V School District
- Northeast Vernon County R-I School District
- Sheldon R-VIII School District

Several entities, including the villages of: Deerfield, Harwood, Milo, Metz, Moundville, Stotesbury, Richards and City of Walker, were all invited to be participants in the planning process; however, no one from these communities came to any meetings, provided data, or participated in any way. In some cases, Harwood and Stotesbury respectively, these communities are likely heading for unincorporated status due to low populations and lack of leadership, per the Vernon County Commission.

Vernon County and the entities listed above developed a Multi-Jurisdictional Hazard Mitigation Plan that was approved by FEMA on 12 September 2019 (hereafter referred to as the *2019 Hazard Mitigation Plan*). This current planning effort serves to update that previously approved plan.

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

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

- 1. Preserve human life, health, and safety from the adverse effects of disasters.**
- 2. Defend the continuity of government and essential services and processes from the adverse effects of disasters.**
- 3. Protect public and private property from the adverse effects of disasters.**
- 4. Safeguard community tranquility from the adverse effects of disasters.**

**Table I. Mitigation Action Matrix**

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
<b>Local Planning and Regulations</b>								
3.2	NFIP Compliance	Vernon County	High	Goal 3	Flooding	Yes	Yes	Yes
1.1	Drought Monitoring	Bronaugh	Medium	Goal 1	Drought	Yes	Yes	No
1.2	Temperature Centers	Bronaugh	High	Goal 1	Extreme Temperatures	No	No	No
1.5	Zoning and Guidelines	Bronaugh	High	Goal 1	Wildfires	Yes	Yes	No
3.2	NFIP Compliance	Bronaugh	High	Goal 3	Flooding	Yes	Yes	Yes
1.8	Pandemic Response Plan	Cottey College	Low	Goal 1	Pandemic	No	Yes	No
2.1	Drought Planning	Cottey College	Low	Goal 2	Drought	Yes	Yes	No
3.5	Vulnerability Assessment	Cottey College	Low	Goal 3	Wildfires	Yes	Yes	No
2.1	Drainage Issues	Sheldon	Low	Goal 2	Flooding	Yes	Yes	No
2.2	Water Supply Monitoring	Sheldon	Medium	Goal 2	Drought	Yes	Yes	No
3.2	NFIP Compliance	Nevada	High	Goal 3	Flooding	Yes	Yes	Yes
3.2	Wildfire Maintenance Program	Sheldon	High	Goal 3	Wildfires	Yes	Yes	No
<b>Structure and Infrastructure Projects</b>								
1.1	Drainage Improvements	Vernon County	High	Goal 1	Flooding	Yes	Yes	No
4.1	Courthouse Generator	Vernon County	High	Goal 4	Severe Winter Weather, Severe Weather, Extreme Temperatures	Yes	Yes	No
1.3	Winter Street Preparation	Bronaugh	High	Goal 1	Severe Winter Weather	Yes	Yes	No
1.4	Tornado Warning System	Bronaugh	High	Goal 1	Tornadoes	Yes	Yes	No
1.7	Safe Room	Cottey College	Medium	Goal 1	Tornadoes	Yes	Yes	No
3.2	Building Assessment	Cottey College	Low	Goal 3	Earthquakes	Yes	Yes	No
3.3	Roof Replacement	Cottey College	Medium	Goal 3	Severe Weather	Yes	Yes	No
1.1	Campus Safe Room	Crowder College	High	Goal 1	Tornadoes	No	Yes	No
1.1	Storm Siren Replacement and Additions	Nevada	High	Goal 1	Tornadoes	Yes	Yes	No

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
1.2	Storm Shelter	Bronaugh R-VII	High	Goal 1	Extreme Temperatures, Severe Winter Weather, Tornadoes	No	Yes	No
1.2	Storm Shelter	Nevada R-V	High	Goal 1	Extreme Temperatures, Severe Winter Weather, Tornadoes	No	Yes	No
1.2	Storm Shelter	Northeast Vernon County R-I	High	Goal 1	Extreme Temperatures, Severe Winter Weather, Tornadoes	No	Yes	No
1.2	Storm Shelter	Sheldon R-VIII	High	Goal 1	Extreme Temperatures, Severe Winter Weather, Tornadoes	No	Yes	No
2.4	Communication Upgrades	Bronaugh	High	Goal 2	Severe Weather	Yes	Yes	No
2.4	Lightning Damage Protection	Sheldon	Medium	Goal 2	Severe Weather	Yes	Yes	No
3.1	Drainage Improvements	Bronaugh	High	Goal 3	Flooding	Yes	Yes	No

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
3.1	Emergency Operations Center	Nevada	High	Goal 3	Flooding (Riverine and Flash) Dam Failure Earthquakes Drought Extreme Temperatures Severe Thunderstorms Severe Winter Weather Tornadoes Wildfires Pandemic	Yes	Yes	No
3.1	Storm and Flood Drainage	Schell City	High	Goal 3	Flooding	Yes	Yes	No
4.3	Deep Water Well Monitoring	Nevada	High	Goal 4	Drought	Yes	Yes	No
<b>Natural Systems Protection</b>								
3.1	Clearing of Roadway ROWs	Vernon County	High	Goal 3	Severe Weather	Yes	Yes	No
3.4	Tree Trimming	Cottey College	Low	Goal 3	Severe Weather	Yes	Yes	No
2.1	Tree Trimming	Nevada	High	Goal 2	Severe Winter Weather	Yes	Yes	No
4.2	Walton Lake Project	Nevada	High	Goal 4	Flooding	Yes	Yes	No

Emergency Services								
2.1	Vernon County EOC	Vernon County	High	Goal 2	Flooding (Riverine and Flash) Dam Failure Earthquakes Drought Extreme Temperatures Severe Thunderstorms Severe Winter Weather Tornadoes Wildfires Pandemic	Yes	Yes	No
1.5	Snow/Ice Removal Equipment	Cottey College	Medium	Goal 1	Severe Winter Weather	Yes	Yes	No
1.6	Emergency Notification System	Cottey College	Medium	Goal 1	Tornadoes	Yes	Yes	No
2.1	Communications Upgrades	Crowder College	High	Goal 2	Flooding (Riverine and Flash) Dam Failure Earthquakes Drought Extreme Temperatures Severe Thunderstorms Severe Winter Weather Tornadoes Wildfires Pandemic	Yes	Yes	No
1.1	Heating and Cooling Shelter	Sheldon	High	Goal 1	Extreme Temperatures	Yes	Yes	No

1.1	Local Emergency Alert System	Schell City	High	Goal 1	Earthquakes, Extreme Temperatures, Severe Weather, Severe Winter Weather, Tornadoes, Dam Failure, Pandemics, Drought	Yes	Yes	No
2.1	Communication Equipment Upgrades	Schell City	High	Goal 2	Wildfires	Yes	Yes	No
4.1	911 Addressing	Nevada	High	Goal 4	Severe Winter Weather	Yes	Yes	No
<b>Education and Awareness Programs</b>								
1.6	Contagious Disease Education	Bronaugh	Medium	Goal 1	Pandemics	No	No	No
1.1	Transportation Updates	Bronaugh R-VII	Low	Goal 1	Flooding	No	No	No
1.3	Education and School Plan	Bronaugh R-VII	Low	Goal 1	Pandemics	No	No	No
1.1	Travel Safety Program	Cottey College	Medium	Goal 1	Flooding	Yes	Yes	No
1.2	Travel Safety Program	Cottey College	Medium	Goal 1	Dam Failure	Yes	Yes	No
1.3	Earthquake Awareness and Safety	Cottey College	Medium	Goal 1	Earthquakes	Yes	Yes	No
1.4	Extreme Temperature Safety	Cottey College	Low	Goal 1	Extreme Temperatures	Yes	Yes	No
3.1	Flooding Safety Program	Cottey College	Medium	Goal 3	Flooding	Yes	Yes	No
4.1	Disaster Drills	Crowder College	High	Goal 4	Severe Weather. Earthquakes. Tornadoes	Yes	Yes	No
1.1	Earthquake Education	Missouri Welding Institute	Medium	Goal 1	Earthquakes	Yes	Yes	No
1.2	Tornado Education	Missouri Welding Institute	High	Goal 1	Tornadoes	Yes	Yes	No
1.3	Severe Winter Weather Education	Missouri Welding Institute	Medium	Goal 1	Severe Winter Weather	Yes	Yes	No
1.4	Extreme Temperature Education	Missouri Welding Institute	High	Goal 1	Extreme Temperatures	No	No	No

1.5	Pandemic Education	Missouri Welding Institute	High	Goal 1	Pandemics	No	No	No
1.1	Transportation Updates	Nevada R-V	Low	Goal 1	Flooding	No	No	No
1.3	Education and School Plan	Nevada R-V	Low	Goal 1	Pandemics	No	No	No
1.1	Transportation Updates	Northeast Vernon County R-I	Low	Goal 1	Flooding	No	No	No
1.3	Education and School Plan	Northeast Vernon County R-I	Low	Goal 1	Pandemics	No	No	No
1.2	Earthquake Education Program	Sheldon	Low	Goal 1	Earthquakes	Yes	Yes	No
1.3	Tornado Awareness Program	Sheldon	High	Goal 1	Tornadoes	Yes	Yes	No
1.4	Household Disaster Mitigation Program	Sheldon	Medium	Goal 1	Severe Winter Weather	Yes	Yes	No
1.1	Transportation Updates	Sheldon R-VIII	Low	Goal 1	Flooding	No	No	No
1.3	Education and School Plan	Sheldon R-VIII	Low	Goal 1	Pandemics	No	No	No
2.1	Earthquake Informational Meetings	Bronaugh	Medium	Goal 2	Earthquakes	Yes	Yes	No
2.2	Dam Failure Education	Bronaugh	Medium	Goal 2	Dam Failure	Yes	Yes	No
2.3	Lightning Damage Education	Bronaugh	High	Goal 2	Severe Weather	Yes	Yes	No
2.3	Employee Pandemic Education Program	Sheldon	Low	Goal 2	Pandemics	No	No	No
3.1	Earthquake Education	Bronaugh R-VII	Low	Goal 3	Earthquakes	Yes	Yes	No
3.2	Dam Failure Education	Bronaugh R-VII	Low	Goal 3	Dam Failure	Yes	Yes	No
3.3	Wildfire Education	Bronaugh R-VII	Medium	Goal 3	Wildfires	Yes	Yes	No
3.1	Wildfire Education	Missouri Welding Institute	Medium	Goal 3	Wildfires	Yes	Yes	No
3.2	Dam Failure Education	Missouri Welding Institute	Medium	Goal 3	Dam Failure	Yes	Yes	No
3.3	Flooding Education and Transportation Plans	Missouri Welding Institute	Medium	Goal 3	Flooding	Yes	Yes	No
3.4	Severe Thunderstorm Education	Missouri Welding Institute	Medium	Goal 3	Severe Weather	Yes	Yes	No
3.1	Earthquake Education	Nevada R-V	High	Goal 3	Earthquake	Yes	Yes	No
3.2	Dam Failure Education	Nevada R-V	Medium	Goal 3	Dam Failure	Yes	Yes	No
3.3	Wildfire Education	Nevada R-V	Low	Goal 3	Wildfires	Yes	Yes	No

3.1	Earthquake Education	Northeast Vernon County R-I	Medium	Goal 3	Earthquakes	Yes	Yes	No
3.2	Dam Failure Education	Northeast Vernon County R-I	Medium	Goal 3	Dam Failure	Yes	Yes	No
3.3	Wildfire Education	Northeast Vernon County R-I	High	Goal 3	Wildfires	Yes	Yes	No
3.1	Severe Thunderstorm Awareness Program	Sheldon	Low	Goal 3	Severe Weather	Yes	Yes	No
3.3	Dam Failure Education	Sheldon	Low	Goal 3	Dam Failure	Yes	Yes	No
3.1	Earthquake Education	Sheldon R-VIII	Medium	Goal 3	Earthquakes	Yes	Yes	No
3.2	Dam Failure Education	Sheldon R-VIII	Medium	Goal 3	Dam Failure	Yes	Yes	No
3.3	Wildfire Education	Sheldon R-VIII	High	Goal 3	Wildfires	Yes	Yes	No
4.3	Wildland Fire Reduction	Nevada	High	Goal 4	Wildfires	Yes	Yes	No
4.4	Pandemic Education	Nevada	High	Goal 4	Pandemics	No	No	No
4.5	Dam Failure Education	Nevada	High	Goal 4	Dam Failure	Yes	Yes	No
4.1	Disaster Drills	Schell City	High	Goal 4	Severe Weather. Earthquakes. Tornadoes	Yes	Yes	No
4.1	Drought Education	Bronaugh R-VII	Medium	Goal 4	Drought	Yes	Yes	No
4.1	Drought Education	Missouri Welding Institute	Medium	Goal 4	Drought	Yes	Yes	No
4.1	Drought Education	Nevada R-V	Medium	Goal 4	Drought	Yes	Yes	No
4.1	Drought Education	Northeast Vernon County R-I	Medium	Goal 4	Drought	Yes	Yes	No
4.1	Drought Education	Sheldon R-VIII	Medium	Goal 4	Drought	Yes	Yes	No

## PREREQUISITES

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

This plan has been reviewed by and adopted with resolutions or other documentation of adoption by all participating jurisdictions and schools/special districts. The documentation of each adoption is included in Appendix 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.

- Unincorporated Vernon County
- City of Bronaugh
- City of Nevada
- City of Schell City
- City of Sheldon
- Bronaugh R-VII School District
- Cottey College
- Crowder College – Nevada Campus
- Missouri Welding Institute
- Nevada R-V School District
- Northeast Vernon County R-I School District
- Sheldon R-VIII School District

**Model Resolution**

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

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

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

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

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

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

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

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

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

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

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

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

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

# 1 INTRODUCTION AND PLANNING PROCESS

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## 1.1 PURPOSE

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By definition, mitigation is any sustained action taken to reduce long-term risk to human life and property. Hazard mitigation planning, similarly, is the proactive means of formulating partnerships to reduce risk and vulnerability to natural hazards, promote resilience within communities, and reduce costs associated with disaster response and recovery. There are several key principles that guide hazard mitigation planning efforts and many that discuss how these plans better serve the communities and other entities for which they are written. These principles are outlined by FEMA. The first guiding principle is: *Planning and investing for the future*. The second guiding principle is: *Collaborate and engage early*. The third and final guiding principle is: *Integrate community planning*. There are also a number of responsibilities assigned to each entity who participates in the planning process.

The Vernon County Natural Hazard Mitigation Plan is intended to be a vital resource for the County, local governments, residents, planners, political figures, or anyone that has an acute interest in mitigating the risk associated with natural hazards throughout Vernon County. Participation by these stakeholders to include school districts is mandatory to secure all-important funding resources either before or after a disaster event occurs. By choosing not to participate, a community can lose out on the opportunity to reinforce critical infrastructure that may be essential during a disaster, or a school district will not be eligible to pursue a FEMA-compliant saferoom. Through participation, communities can apply for grants such as the Building Resilient Infrastructure and Communities, or BRIC, the Hazard Mitigation Grant Program (HMGP), and Flood Mitigation Assistance (FMA) grants among the many possibilities to fund mitigation projects a community or school district can apply for. The guideline for participation is outlined by the Disaster Mitigation Act of 2000 (DMA2K) but then is backed up by the Interim Final Rule published in the *Federal Register* on 26 February 2002 (44 CFR §201.6) and was finalized on 31 October 2007. The Robert T. Stafford Disaster Relief and Emergency Act provides more detailed requirements for hazard mitigation planning efforts.

## 1.2 BACKGROUND AND SCOPE

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Under initiatives set forth by the Missouri State Emergency Management Agency (SEMA) and the Missouri Association of Councils of Government (MACOG), each of the 19 Regional Planning Commissions and or Councils of Governments agreed to meet the challenge of county and municipal plans through the state of Missouri. Each of the 19 RPCs provides the most effective means of providing technical staff and addressing common problems faced by municipalities and other entities. The RPC also effectively delivers that go beyond the resources and capabilities of an individual county or municipal government.

The role of the Regional Planning Commission in Missouri is to be of service to their member communities and counties and address a wide-range of area-wide issues that may arise within the communities, private sector needs, or other public-facing entities such as school districts.

When it comes to hazard mitigation planning, it is common practice that plans only include natural hazards (tornadoes, wildfires, etc.) and SEMA suggests that due to time and funding limitations, other hazards like special events such not be included in local plans, but so often cascading disasters (disasters caused by another disaster already in-progress) may result in the need for expanded hazard coverage and additional narratives. In the case of Cedar County, additional narratives and events are added to the plan but are not subject to extensive review during the review process at the State and Federal levels.

Pursuant to **44 CFR §201.6(d)(3)**, local jurisdictions are required to review and revise their hazard mitigation plans to reflect changes in development, population loss/gain, changes in priorities for mitigation projects and local mitigation efforts undertaken by communities and school districts. Plans must also be revised and submitted on a 5-year basis in order to pursue mitigation funding opportunities, as is common practice.

The 2024 Vernon County Natural Hazard Mitigation Plan, referred to hereafter as the Vernon County Mitigation Plan, is an update to the previously approved mitigation plan approved on 12 September 2019 and a previously approved plan on 19 February 2013, the second such plan written for Vernon County after the first plan was composed in 2005.

As outlined in the Memorandum of Agreement between Vernon County and SEMA, Kaysinger Basin Regional Planning Commission is the main agency tagged with updating the hazard mitigation plan for the county and coordinates participation from all stakeholders in Cedar County including schools and private industry where applicable.

Kaysinger Basin Regional Planning Commission is a member of MACOG, in which KBRPC was created through executive action of then-Governor Warren E. Hearnes on 14 October 1968. KBRPC serves six additional counties in addition to Vernon. They serve Bates, Benton, Cedar, Henry, Hickory, and St. Clair Counties as well.

The Vernon County Hazard Mitigation Plan is a major rewrite of the previously approved 2019 NHMP for Vernon County. Commitment to this plan by local governments assists in mitigating the effects of natural hazards. Additionally, those listed below are those who did or did not participate in the planning process.

- Vernon County Commission
- City of Bronaugh
- City of Nevada
- City of Schell City
- City of Sheldon
- Bronaugh R-VII School District
- Missouri Welding Institute
- Nevada R-V School District
- Northeast Vernon County R-I School District
- Sheldon R-VIII School District
- Cottey College
- Crowder College – Nevada Campus

2013 Vernon County NHMP	2019 Vernon County NHMP	2024 Vernon County NHMP
Vernon County Commission	Vernon County Commission	Vernon County Commission
City of Bronaugh	City of Bronaugh	City of Bronaugh
Village of Deerfield	Village of Deerfield	<b>Village of Deerfield</b> <b>*DID NOT PARTICIPATE*</b>
Village of Harwood	<b>Village of Harwood</b> <b>*DID NOT PARTICIPATE*</b>	<b>Village of Harwood</b> <b>*DID NOT PARTICIPATE*</b>
<b>Village of Metz</b> <b>*DID NOT PARTICIPATE*</b>	Village of Metz	<b>Village of Metz</b> <b>*DID NOT PARTICIPATE*</b>
Village of Milo	<b>Village of Milo</b> <b>*DID NOT PARTICIPATE*</b>	<b>Village of Milo</b> <b>*DID NOT PARTICIPATE*</b>
Village of Moundville	<b>Village of Moundville</b> <b>*DID NOT PARTICIPATE*</b>	<b>Village of Moundville</b> <b>*DID NOT PARTICIPATE*</b>
City of Nevada	City of Nevada	City of Nevada
City of Richards	City of Richards	<b>Village of Richards</b> <b>*DID NOT PARTICIPATE*</b>
City of Schell City	City of Schell City	City of Schell City
City of Sheldon	City of Sheldon	City of Sheldon
<b>Village of Stotesbury</b> <b>*DID NOT PARTICIPATE*</b>	Village of Stotesbury	<b>Village of Stotesbury</b> <b>*DID NOT PARTICIPATE*</b>
<b>City of Walker</b> <b>*DID NOT PARTICIPATE*</b>	City of Walker	<b>City of Walker</b> <b>*DID NOT PARTICIPATE*</b>
Bronaugh R-VII School District	Bronaugh R-VII School District	Bronaugh R-VII School District
Nevada R-V School District	Nevada R-V School District	Nevada R-V School District
Northeast Vernon County R-I School District	<b>Northeast Vernon County R-I School District</b> <b>*DID NOT PARTICIPATE*</b>	Northeast Vernon County R-I School District
<b>Sheldon R-VIII School District</b> <b>*DID NOT PARTICIPATE*</b>	Sheldon R-VIII School District	Sheldon R-VIII School District

**Table 1.1. Summary of Participation in Vernon County Since 2013**

# 1.3 PLAN ORGANIZATION

The following is an outline of the plan, this follows standard protocol for updating hazard mitigation plans, it describes what each chapter includes and does not normally deviate from best practice.

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

Table 1.2 shows each chapter and summarizes the changes made in the update.

**Table 1.2. Changes Made in Plan Update**

Plan Section	Summary of Updates
<b>Chapter 1 - Introduction and Planning Process</b>	Includes participating and non-participating jurisdictions and includes reference to new FEMA hazard mitigation guidance, the Local Mitigation Planning Handbook and Local Mitigation Planning Policy Guide
<b>Chapter 2 - Planning Area Profile and Capabilities</b>	Adds the capabilities of Cottey and Crowder Colleges, as well as the Missouri Welding Institute, all three are first time plan participating educational institutions.
<b>Chapter 3 - Risk Assessment</b>	Includes 2020 Census and updated data from participating entities, including school districts and addresses how each hazard may impact Vernon County, to also include maps where necessary.
<b>Chapter 4 - Mitigation Strategy</b>	Includes at least one mitigation action per hazard as required by FEMA, some hazards address more than one hazard simultaneously, but this is noted where applicable.
<b>Chapter 5 - Plan Implementation and Maintenance</b>	Updated the frequency of meetings of Mitigation Planning Committee members to quarterly or ad hoc basis.

# 1.4 PLANNING PROCESS

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

Kaysinger Basin Regional Planning Commission in Clinton, Missouri was tasked with developing this all-inclusive, comprehensive hazard mitigation plan update for the constituents of Vernon County. They facilitated all meetings as part of the plan development process for Vernon County. A series of three main planning meetings, as well as smaller level community meetings wherever necessary, were held. These meetings were open to the public, but the amount of public participation varied from very little to none at all. All meetings were held at the Vernon County Fairgrounds Expo Hall, a large exposition center that holds many events throughout the calendar year, in Nevada, which was an ideal central location for meetings. As previously mentioned, if a stakeholder could not attend a meeting for any reason,

Stakeholders from all over the county were provided with a copy of the plan to review and provide their expertise wherever possible. Neighboring communities were contacted during the public comment period at the beginning of February 2024 for opportunities to comment on the plan and give any feedback they wished to. On that note, the public comment period started with the beginning of the plan update process beginning in November 2022 then a more formalized public comment period starting in February 2024 and lasting into the early part of March 2024. The public could comment on the plan through Kaysinger’s website, or the plan was placed on the Kaysinger Facebook page to try and expand feedback opportunities through social media. For more information about public involvement, see Step 2 of this chapter, or Appendix \_\_\_ for the social media posting and the posting of the plan on Kaysinger’s website.

This comprehensive planning process consisted of three larger Mitigation Planning Committee meetings, a kickoff meeting, a plan to update the mitigation goals, and a final meeting to update the mitigation actions. KBRPC produced a draft plan and final draft for SEMA and FEMA to review and provide feedback of their own. The table on the following 2 pages, **Table 1.3**, showcases membership of the Mitigation Planning Committee, which is an unofficial group, it has to be approved by the respective members of the committee. Each member of the committee has their respective entities that they belong to. In some cases, they wear multiple hats, this is common throughout not only Vernon County, but this region.

**Table 1.3. Jurisdictional Representatives of Vernon County Mitigation Planning Committee**

<b>Name</b>	<b>Title</b>	<b>Department</b>	<b>Jurisdiction/Agency/Organization</b>
Joe Wilson	Presiding Commissioner	County Government	Vernon County Board of Commissioners
Cindy Thompson	Northern Commissioner	County Government	Vernon County Board of Commissioners
Everett Wolfe	Southern Commissioner	County Government	Vernon County Board of Commissioners
Derik White	Emergency Management Director	Emergency Services	Vernon County Office of Emergency Management
Lauren Meier	Mayor	Local Government	City of Bronaugh
Sherry Brown	Floodplain Administrator	Planning and Zoning	City of Bronaugh
Troy Denney	Fire Chief	Emergency Services	City of Nevada
Casey Crain	Police Chief	Emergency Services	City of Nevada
Erin Lee	City Clerk	Local Government	City of Schell City
Becky Morgan	Mayor	Local Government	City of Sheldon
Beth Sandness	Superintendent	Education	Bronaugh R-VII School District
Dr. Tyson Beshore	Superintendent	Education	Nevada R-V School District
Chris Holcomb	Superintendent	Education	Northeast Vernon County R-I School District

Jason Irwin	Superintendent	Education	Sheldon R-VIII School District
Todd Hefner	Plant Director	Higher Education	Cotley College
Monte Padgett	Director	Higher Education	Crowder College – Nevada
Jerad Hembree	Vice President	Education Administration	Missouri Welding Institute

Each member of the Vernon County Mitigation Planning Committee has a specialty skillset that they can offer the committee based on experience or expertise. In some cases, there are multiple specialties based on personnel or access to resources that would enhance the capability of MPC members. Schools may only be able to fit within a few categories and usually do not fall within the emergency services capability.

**Table 1.4. MPC Capability with Six Mitigation Categories<sup>1(b)</sup>**

Community Department/Office	Preventive Measures	Structure and Infrastructure Projects		Natural Resource Protection	Public Information	Emergency Services
		Property Protection	Structural Flood Control Projects			
Vernon County	✓	✓	✓	✓	✓	✓
Bronaugh	✓	✓	✓	✓	✓	✓
Nevada	✓	✓	✓	✓	✓	✓
Schell City	✓	✓	✓	✓	✓	✓
Sheldon	✓	✓	✓	✓	✓	✓
Bronaugh R-VII	✓	✓	✗	✓	✓	✗
Nevada R-V	✓	✓	✗	✓	✓	✗
Northeast Vernon County R-I	✓	✓	✗	✓	✓	✗
Sheldon R-VIII	✓	✓	✗	✓	✓	✗
Cotley College	✓	✓	✗	✓	✓	✗
Crowder College	✓	✓	✗	✓	✓	✗
Missouri Welding Institute	✓	✓	✗	✓	✓	✗

## 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 2024 Vernon County Hazard Mitigation Plan serves as a key piece of written documentation of the overall planning and implementation process. Active participation in this plan is governed by a series of requirements in FEMA's *Local Mitigation Planning Handbook effective May 2023*. It is paramount to each of the communities and school districts to be actively involved in the planning process in order to give the plan value and ensure the planning process is not only equal to all, but also equitable and fair. Equity in mitigation planning, as it relates to participation, is outlined in the previously mentioned guidance and takes on three distinct forms. The first is procedural equity, which makes the planning process clear, fair and inclusive from the onset. Next is structural equity, and this promotes accountability and forms and equitable organizational structure among planning participants. Lastly, distributional equity is sharing of benefits among planning participants, which means that as an example, Nevada does not get preferential treatment just because they are bigger than every community in Vernon County. It also ensures that all participants have an equitable opportunity to develop a mitigation strategy that works for them. What does all this mean for participants in the Vernon County Hazard Mitigation Plan? It basically removes any barriers to act that may exist. By removing barriers to act and promotion of equity, each plan participant, whether it's one with many resources, or one with fewer resources, there will be a more cohesive planning process throughout Vernon County.

As far as how a community and or school district could meet the participation requirements that FEMA requires, there was a multitude of ways, any one of which is fair game. These requirements established in this plan include the following:

- 1) Development of this plan update utilizes best practices in mitigation planning and enlists these criteria for being considered participating:
  - Completion of a data collection questionnaire highlighting community capabilities.
  - Attendance in at least two main planning meetings, *OR*
  - Reviewing previous mitigation actions from the 2019 HMP and provide a description of progress to date,
  - Developing new mitigation actions in accordance with FEMA Policy Element C-4.
  - Discussions with KBRPC with any and all questions, comments and or concerns about planning matters.
  - Adoption of the plan via a resolution at County Commission, City Council, or School Board Meetings.

**Table 1.5** breaks down how this participation process was followed for each entity within Vernon County.

**Table 1.5. Jurisdictional Participation in Planning Process**

Jurisdiction	Kick-off Meeting	Meeting #2	Meeting #3	Data Collection Questionnaire Response	Update/Develop Mitigation Actions	Formal Adoption of Plan Update
Vernon County	✓	✓	✓	✓	✓	IP
Bronaugh	X	✓	✓	✓	✓	IP
Deerfield	X	X	X	X	X	No
Harwood	X	X	X	X	X	No
Metz	X	X	X	X	X	No
Milo	X	X	X	X	X	No
Moundville	X	X	X	X	X	No
Nevada	✓	✓	✓	✓	✓	IP
Richards	X	X	X	X	X	No
Schell City	X	✓	✓	✓	✓	Yes
Sheldon	X	✓	✓	✓	✓	IP
Walker	X	X	X	X	X	No
Bronaugh R-VII	✓	✓	✓	✓	✓	IP
Nevada R-V	✓	✓	✓	✓	✓	IP
Northeast Vernon County R-I	✓	✓	✓	✓	✓	IP
Sheldon R-VIII	✓	✓	✓	✓	✓	Yes
Cottey College	✓	✓	✓	✓	✓	IP
Crowder College	✓	✓	✓	✓	✓	IP
Missouri Welding Institute	✓	✓	✓	✓	✓	IP

IP – In-Progress

## 1.4.2 The Planning Steps

Several key pieces of FEMA guidance were utilized to develop this plan update for Henry County. The main one of these being the newly minted *Local Mitigation Planning Handbook*, which was introduced in May 2023. This new guidance gives updates on previously existing statutes and provides new requirements to ensure that mitigation planning is as comprehensive as possible and as inclusive as possible to guarantee best practices within mitigation planning efforts. The guidance from 2013 is no longer considered valid for planning updates.

In addition, however, there was the Local Mitigation Planning Policy Guide, which came into effect in April 2023. The table on the next page, **Table 1.6**, outlines the steps in the Community Rating System, which coincides with the Local Mitigation Planning Handbook tasks, only difference is the CRS system follows a ten-step process and the Local Mitigation Planning Handbook follows a nine-step process.

**Table 1.6. Vernon County Mitigation Plan Update Process**

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

The planning process for Vernon County traditionally follows the same tasks outlined in the Local Mitigation Planning Handbook, a nine-step process beginning with the development of the planning team and ending with the creation of safe and resilient communities.

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

Utilizing attendees and subsequent community meetings was how members of the Mitigation Planning Committee were formed. This included individuals who were considered the local experts because they knew their areas of expertise better than anyone. This is often the case for city clerks, city administrators, superintendents, and first responders. Data collection questionnaires for this plan were distributed digitally directly to members of the MPC. The only exception to this was if a member of the MPC opted to handwrite answers to the document. School Districts who are participating in this planning process were also required to provide a copy of the district’s insurance policy, which highlights the school district’s assets, their insured values and replacement values. This information is included in the risk assessment. **Table 1.7** gives a rundown of meetings held throughout the planning process, starting with the acquisition of the Memorandum of Agreement, culminating in a community meeting to better explain the objective of the mitigation strategy. Sign-in sheets for each of these meetings is found in the appendices of this plan, **Appendix B, pages 4-16**

**Table 1.7. Schedule of MPC Meetings**

Meeting	Topic	Date
Informational Meeting	Visited with Vernon County Commission to get Memorandum of Agreement (MOA) signed to begin planning process.	25-October-2022
Township Meeting	Met with stakeholders from each of Vernon County’s 20 townships to introduce plan and help gain an interest from each township. This meeting ended up being considered a learning opportunity for all townships as no further actions were taken after this meeting.	13-March-2023
Kick-off Meeting	Held the official kick off meeting with stakeholders from around Vernon County to officially start planning process.	6-September-2023
Community Meeting	Met with the Mayor of Bronaugh to gain the city’s interest and participation in the new planning process.	27-September-2023
Planning Meeting #2	The second meeting of MPC and general public members was called to begin the work of updating the mitigation strategy, reviewing past mitigation goals from 2019 and developing new ones for the 2024 update. Also discussed was previously proposed mitigation actions.	11-October-2023
Planning Meeting #3	Final planning meeting with stakeholders to discuss final steps in the planning process, provide a timeline for when specific paperwork should be done and answered any last-minute questions.	8-November-2023

## **Step 2: Plan for Public Involvement** *2(a), (b), (c) and (d)* (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.**

When FEMA updated their *Local Mitigation Planning Handbook* in 2023, the process by which getting the public involved in the planning process changed dramatically as opposed to the last guidance, which was released in 2013. For the case of public involvement in Vernon County, there were **2** opportunities for public comment, one during the drafting stage, and the other prior to plan approval. The first opportunity for public feedback began as soon as the plan update started, in August 2023. The second opportunity for public feedback lasted from February 2<sup>nd</sup> to March 1<sup>st</sup>.

- Invitations to comment were extended to those in floodplain management, emergency management, and mapping services. In addition, invitations were provided to communities, schools and adjacent communities. Some of Vernon County's special districts, such as road districts, were also given a chance to voice their opinion. Further, an opportunity was given to nonprofit organizations, and those in healthcare, such as the Vernon County Health Department.
- The second opportunity to comment ran throughout the month of January and early February before the plan was to be sent off for SEMA and FEMA review.
- The public was provided with a link to view the plan on Kaysinger's website via an announcement on the morning of February 2<sup>nd</sup>, 2024, please **Appendix C**, which contains all meeting related emails.

### **Step 3: Coordinate with Other Departments and Agencies and Incorporate Existing Information<sup>3(b)</sup>** (Handbook Task 3)

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

During the planning process, stakeholders were given the opportunity to be involved<sup>3(b)</sup>. Stakeholders include the following:

- Neighboring communities
- Local and regional agencies involved in hazard mitigation activities
- Agencies with the authority to regulate development
- Businesses
- Academia
- Other private and non-profit interests

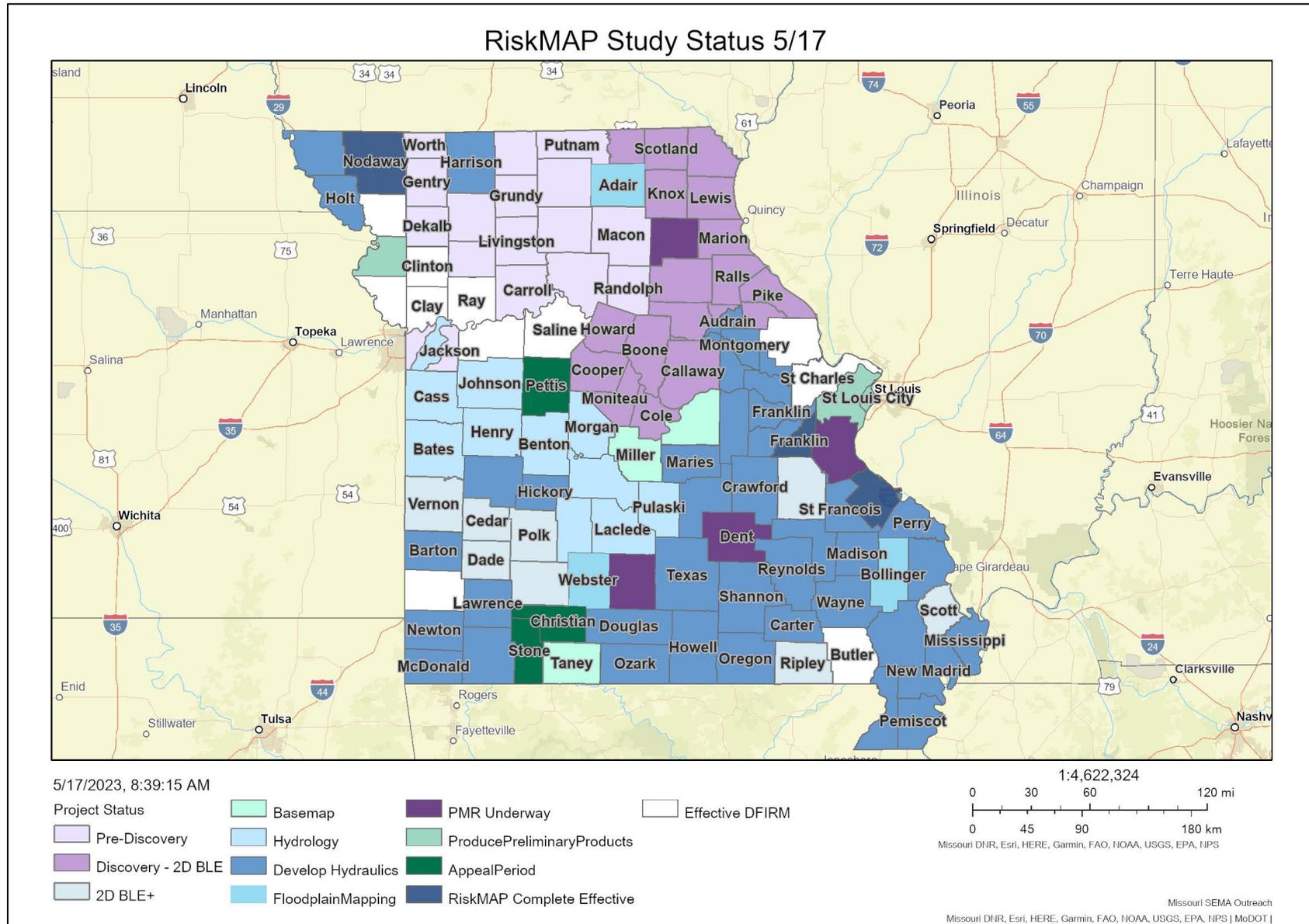
Furthermore, this plan would be incomplete without the incorporation of other data sources to better understand various aspects of the planning process and make this plan more comprehensive in nature. For example, the 2023 Missouri State Hazard Mitigation Plan was utilized for the development of the mitigation strategy aspect of the plan, as members of the Mitigation Planning Committee wished to adopt goals from the State plan into this local plan. Next, the previously approved Vernon County Hazard Mitigation Plan from 2019 sheds light on previous development and explains how the county and its affiliates sought to reduce risk through mitigation measures five years ago. Several aspects of this plan were developed through data provided by FEMA, such as the disaster declarations, or the process of the Risk MAP project, which can be seen on the next page. The Missouri Department of Natural Resources provides this plan with pertinent information on wildfires, as well as the SILVIS Lab from the University of Wisconsin, these combined tell of the wildfire history and potential in Vernon County. Next, this plan draws information from the United States Department of Agriculture, this gives the plan its Agricultural Census data and it presents crop loss statistics through identified perils that result in crop loss insurance payouts. In many cases, data collected through data collection questionnaires from participants in this plan update provide an overview of community, county and school district assets. On occasion, an academic article found on the internet may be used to further illustrate a point of view or shed light on particular hazard mitigation topic, such as planning that involves historical structures.

#### **Coordination with FEMA Risk MAP Project<sup>3(a)</sup>**

At the time of this plan's development, efforts between SEMA, FEMA and their partner WSP had developed updated and new flood risk maps for Vernon County. However, these were the last of a series of one-dimensional maps outlining flood risk in the county. According to WSP in a meeting held in another county, Vernon County will likely receive an update to their flood maps as an amendment to the already existing ones. But this is after they have updated their maps for the entire state to two dimensional maps by 2025.

**Figure 1.1** shows the FEMA Risk MAP Status as of *May 17<sup>th</sup>, 2023*.

Figure 1.1. RiskMAP Study Status Map



## Integration of Other Data, Reports, Studies, and Plans<sup>3(a)</sup>

This comprehensive plan update would be incomplete without the incorporation of other data sources into the plan to ensure that data.

Other data sources include:

- Missouri Hazard Mitigation Plan (2023)
- Previously approved Vernon County Hazard Mitigation Plan (2019)
- 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 (Hazes)
- 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);
- Henry County and local Comprehensive Plans to the extent available
- Henry County Emergency Management
- Henry County Flood Insurance Rate Map from 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, cited in the body of the plan where applicable.

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

- For the first planning meeting, members of the MPC identified and profiled each pertinent natural hazard that could impact them.
- They utilized past disaster declarations in Vernon County to determine the probability of future events. In some cases, the probability **exceeded 100%**, as is the case with wildfires, so the MPC knew that hazards like that could happen more than once in a year.
- This information is included in the risk assessment chapter, Chapter 3.
- There are also technical and feasibility studies that give breadth to each of the natural hazards that will impact Vernon County.

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

- In a majority of cases, jurisdictions identified their assets that could be the most vulnerable to disasters through their data collection questionnaires. A place like Nevada has more to lose than say Schell City, thus because of population differences or infrastructure, one will see more for Nevada.
- School districts identified their key assets **TWO** ways, one, on their data collection questionnaire and the other through submission of the school district's insurance wherever possible.
  - School district insurance is all-inclusive of the assets each district owns and denotes how much it would cost to replace it if a disaster struck the district.

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

Goals were created by the Mitigation Planning Committee at the second planning meeting on October 11<sup>th</sup>. The goals that the Mitigation Planning Committee developed include the following:

- 1. Preserve human life, health, and safety from the adverse impacts of disasters.**
- 2. Defend the continuity of government, essential services, and processes from the adverse impacts of disasters.**
- 3. Protect public and private property from the adverse impacts of disasters.**
- 4. Safeguard community tranquility from the adverse effects of disasters.**

These goals, along with the actions entities will take to reduce their hazard risk, is included in more detail in Chapter 4.

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

- Beginning with the second planning meeting held on October 11<sup>th</sup> and culminating with the third planning meeting on November 8<sup>th</sup>, all focus was dedicated to the Mitigation Strategy.

- MPC members reviewed their old mitigation actions for status reviews sent in between the second and third meetings, some of which were done when their data collection questionnaire was submitted.
- The MPC utilized FEMA's *Mitigation Ideas* from 2013 to develop comprehensive and authoritative mitigation actions they felt best served their entity.
- Each entity developed at least one mitigation action per each hazard identified in the risk assessment, pursuant to Section C3-a in the new Local Mitigation Planning Policy Guide.
- Each action developed by MPC members was analyzed and prioritized according to their significance and then categorized by which goal each action fell under.

### ***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)***

The adoption process for this Vernon County Hazard Mitigation Plan began in February 2024, spanning the entire month until all resolutions had been received. These completed resolutions are in **Appendix E, pages 29-40**.

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

During the final planning meeting on November 8th, members of the MPC agreed to a plan maintenance program that would cover the entirety of the Henry County Natural Hazard Mitigation Plan once formally approved by FEMA. This maintenance program would be good for the duration of the plan's active period.

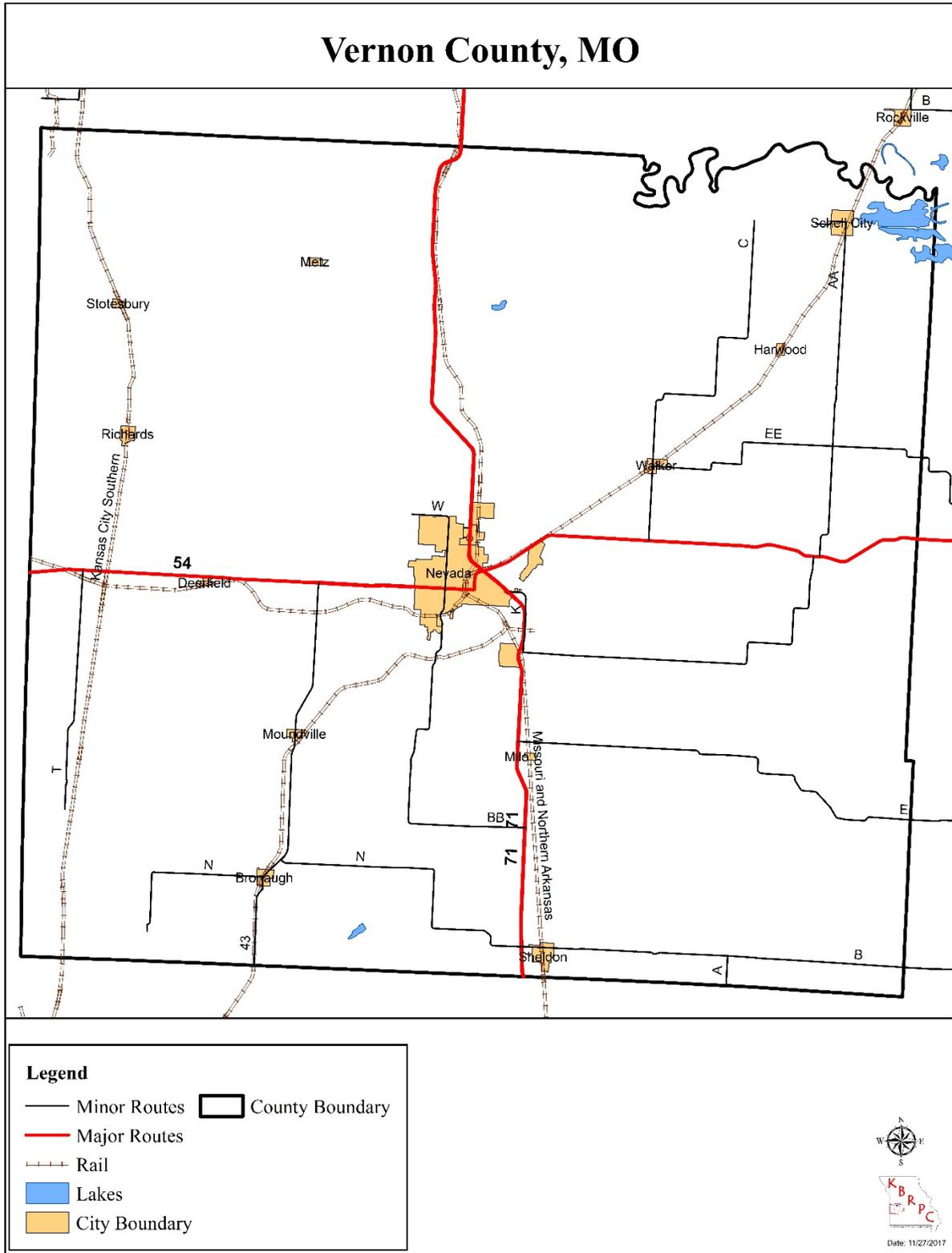
## 2 VERNON COUNTY PROFILE AND CAPABILITIES

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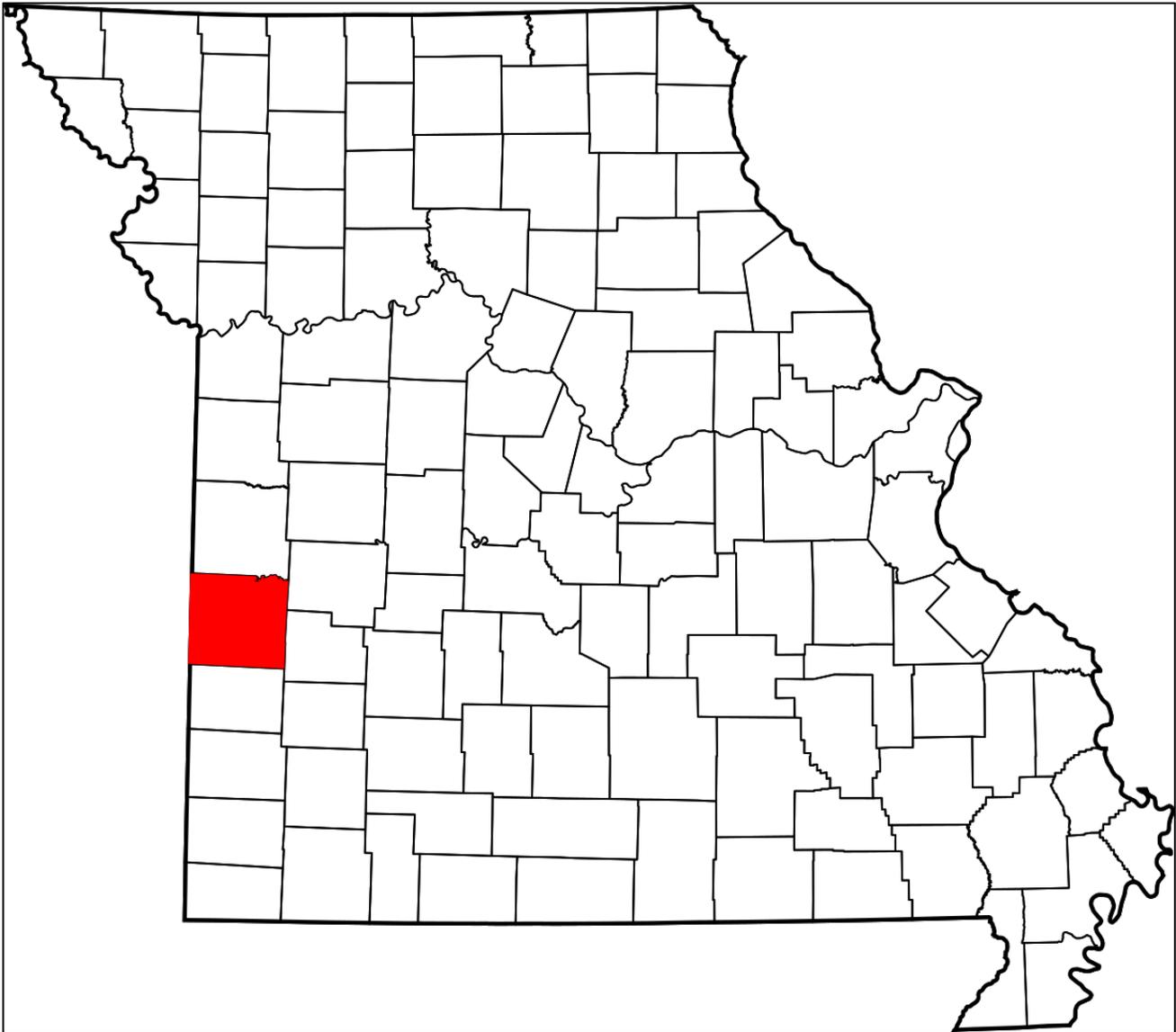
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# 2.1 VERNON COUNTY PROFILE

Figure 2.1. Map of Vernon County



**Figure 2.2. Map of Missouri highlighting Vernon County in RED**



As of the 2020 Census, Vernon County had a population of 19,707, a drop of almost 7.4% compared to the 2010 Census when the population was 21,159. In 2000, the population of Vernon County was 20,454. In most cases, the population of Vernon County may fluctuate between the actual Census counts and the counts of the American Community Survey, or ACS.

The median household income in Vernon County as of 2021 was \$49,494, a number adjusted for inflation, compared to the state, whose average income of households was \$61,847. In 2010, the median household income of Vernon County was \$40,508.

The median home value in Vernon County as of 2021 was \$144,700, which is monumental compared to 2010, when home values was \$86,600. Only a housing market crisis similar to 2008/2009 would cause home values to be that low again.

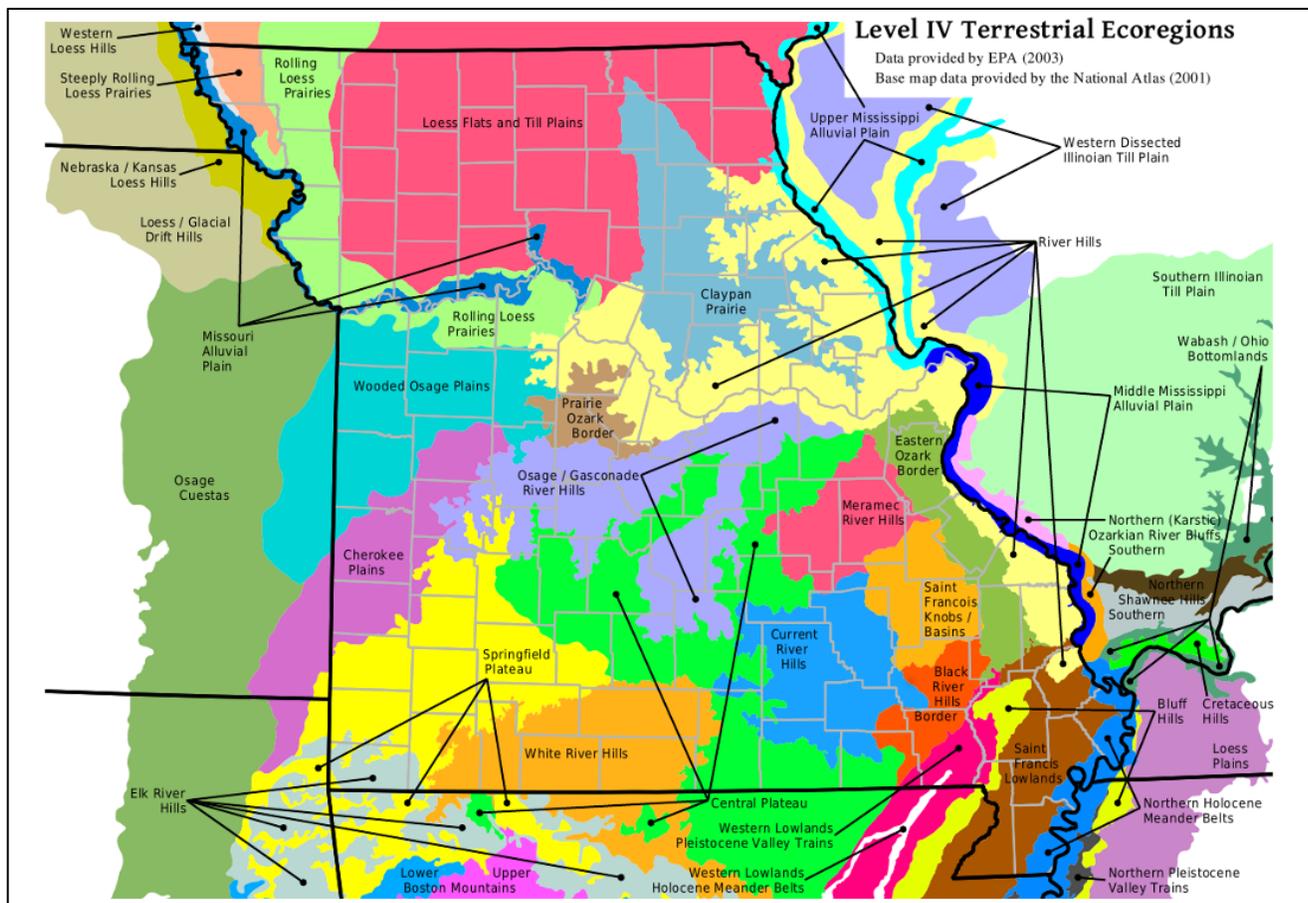
## 2.1.1 Geography, Geology and Topography

Vernon County is located in western Missouri, covering 837 square miles, making it one of Missouri's largest counties. The land of Vernon County is composed mainly of land, 826 square miles to be exact, but 11 square miles of Vernon County is water. Interstate 49, a major north-south highway runs through the heart of Vernon County, connecting places to other areas outside the county such as Kansas City or Joplin. US Highway 54 runs east-west through the county and connects to places like Fort Scott, Kansas in the west or Lake of the Ozarks in the east. Many counties border Vernon County, including the following:

- Bates County – North
- St. Clair County – Northeast
- Cedar County – East
- Barton County – South
- Crawford County (Kansas) – Southwest
- Bourbon County (Kansas) – West
- Linn County (Kansas) – Northwest

Vernon County is unique in which it features 2 terrestrial ecoregions, these are the *Wooded Osage Plains* and *Cherokee Plains*. **Figure 2.3** shows these ecoregions courtesy of the Missouri Herpetological Atlas.

**Figure 2.3. Ecoregions in Missouri – Vernon County is in the Cherokee Plains and Wooded Osage Plains Ecoregions**



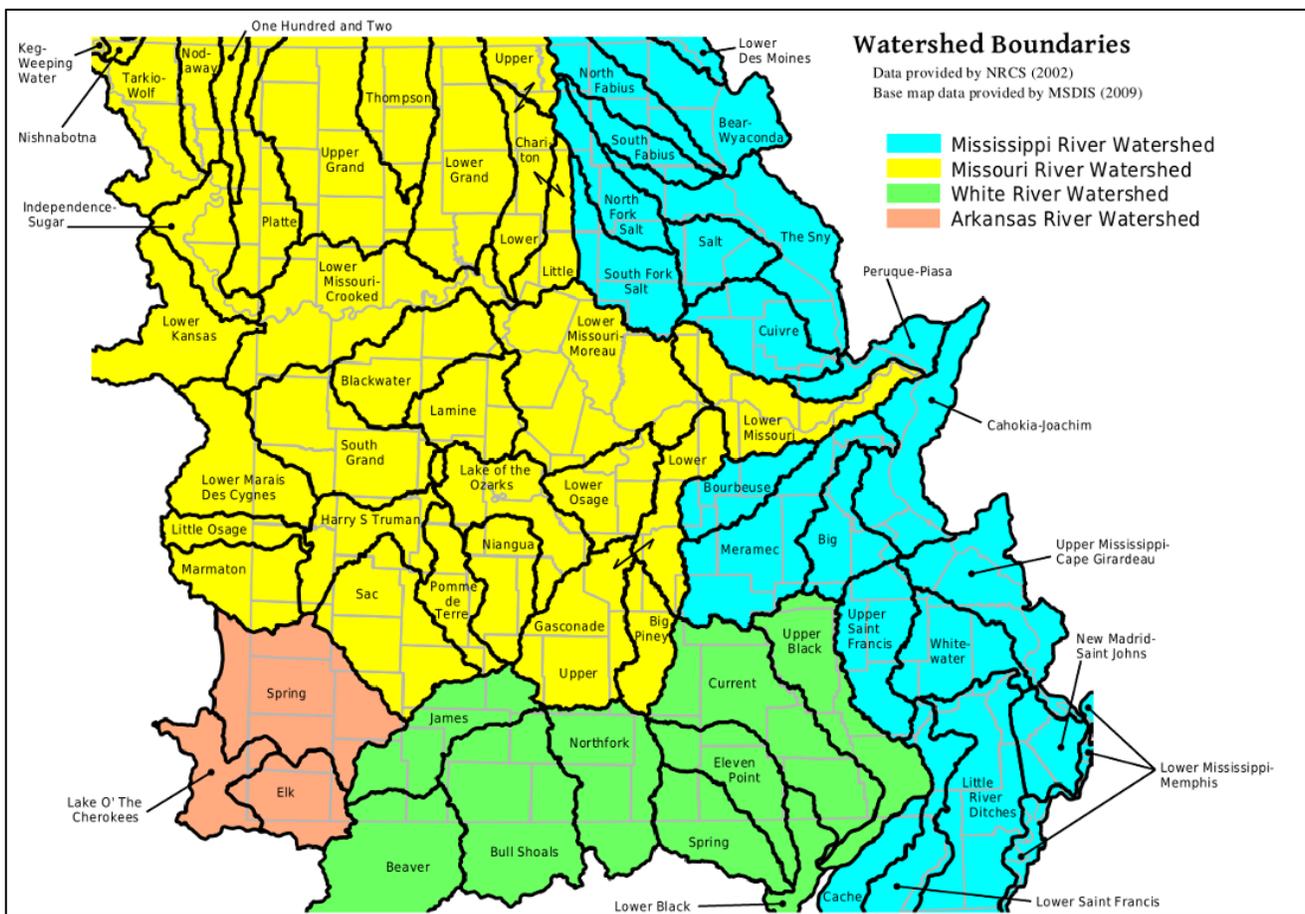
## Wooded Osage Plains

According to the Natural Atlas, this ecoregion found in Henry County is considered to be a non-glaciated undulating plain with smooth, low, limestone escarpments with small areas of exposed bedrock. This encompasses most of the county, the only exception is in far northeastern Vernon County near the Bates County line.

## Cherokee Plains

This ecoregion is one that is consistent with non-glaciated, flat, erosion-prone plains and does not drain well in case of excess moisture. Soil within the Cherokee Plains part of Vernon County are not as fertile as the Wooded Osage Plains soils, but do have the ability to retain water during wetter times. However, it becomes extremely dry during summertime.

To understand Vernon County also requires examining the watersheds in which Vernon County lies. In this case, there are four distinct watersheds in Vernon County, all of which of sub-tributaries of the Missouri River. These include the following: **Sac**, **Marmaton**, **Little Osage**, and **Harry S. Truman**. **Figure 2.4** shows the watersheds of Missouri, including Vernon County.



**Figure 2.4. Watersheds of Missouri**

Finally, one must analyze the geological features of Vernon County to understand why the county has the physical structure that it does. This also sheds light on the natural history of Vernon County and how certain features got the way they did over millions of years. All of Vernon County's geology is comprised of limestone. **Figure 2.5** shows the geology of Missouri, including Vernon County

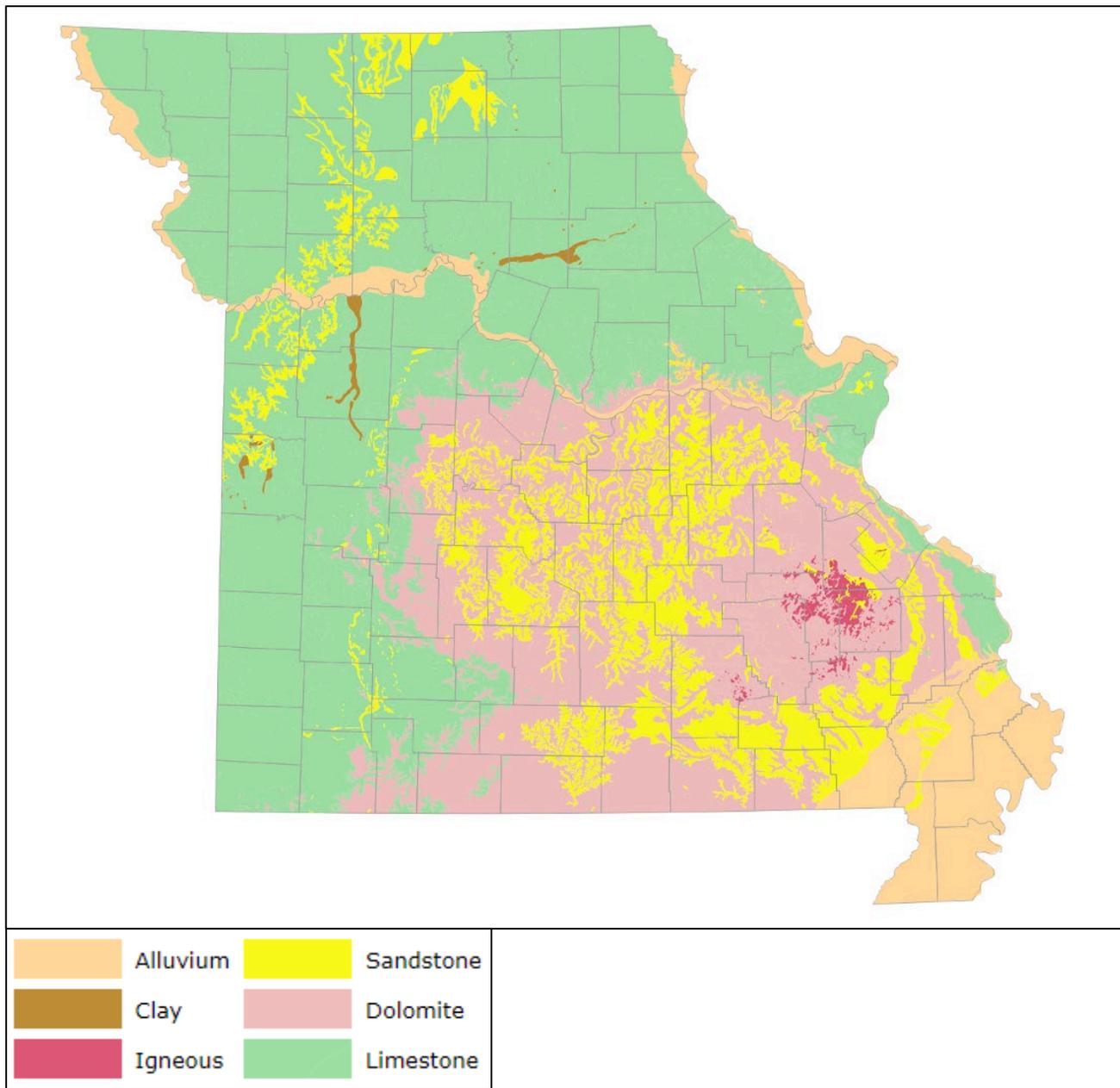


Figure 2.5. Geological Map of Missouri w/Key

### 2.1.2 Climate

According to information provided by the National Weather Service and the National Centers for Environmental Information, or NCEI, the climate in Vernon County is temperate, which means there is some degree of fluctuation between the hottest and the coldest times of the year. The average temperature from January to December is 56.7° as of 2022. Vernon County also averages 46.0 inches of rain per year, which is subject to change due to 2023 being a drought year for the county.

## 2.1.3 Population/Demographics – Communities and County

**Table 2.1. Vernon County Population 2010-2020 by Jurisdiction**  
(Participating Jurisdictions Only)

Jurisdiction	2010 Population	2020 Population	2020 Annual Population Estimate or ACS Population	# Change (2010-2020)	% Change (2010-2020)
Vernon County	21,159	19,707	20,560	-1,452	-7.37%
Bronaugh	249	163	193	-86	-52.76%
Nevada	8,386	8,212	8,198	-174	-2.11%
Schell City	249	228	170	-21	-9.21%
Sheldon	543	435	408	-108	-24.83%

Source: U.S. Bureau of the Census, Decennial Census, annual population estimates/ 5-Year American Community Survey 2021;  
\*population includes the portions of these cities in adjacent counties

## 2.1.4 Population – Townships

Township	2020 Population
Bacon	614
Badger	417
Blue Mound	398
Center	9,392
Clear Creek	556
Coal	239
Deerfield	765
Dover	451
Drywood	1,215
Harrison	233
Henry	247
Lake	196
Metz	298
Montevallo	325
Moundville	647
Osage	277
Richland	157
Virgil	490
Walker	492
Washington	2,298

Source: U.S. Bureau of the Census, Decennial Census

**Table 2.2. Unemployment, Poverty, Education, and Language Percentage Demographics, Vernon 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
Vernon County	9,009	4.3%	8.1%	89.3%	19.1%	5.8%
Bronaugh	58	6.9%	20.0%	47.5%	10.0%	0
Nevada	3,519	4.5%	9.9%	90.3%	21.9%	1.7%
Schell City	37	5.4%	19.5%	85.4%	7.3%	0
Sheldon	186	7.0%	19.1%	82.3%	18.1%	0.6%
Missouri	3,089,254	4.5%	8.9%	90.6%	18.4%	6.3%
United States	165,886,019	5.4%	9.1%	88.5%	20.2%	21.5%

Source: U.S. Census, 2021 American Community Survey, 5-year Estimates.

In order to better understand how vulnerable a population of a given area is, the University of South Carolina developed a tool, called the *Social Vulnerability Index*, or *SoVI*®, which utilizes 29 different socio-economic factors to determine vulnerability to natural hazards. Though the Index has not been updated since 2019, there is still enough information to determine the social vulnerability of Vernon County. In this case, based on a statistical calculation, the *SoVI*® for Vernon County is **0.56**, which is about average for social vulnerability. Scores can range from -5.00 to 5.00, where 5.00 is the most vulnerable and -5.00 is the least vulnerable.

### 2.1.5 History

The following comes from the Vernon County website:

“Vernon County, Missouri was organized on February 27, 1855, and is named for Miles Vernon, a three-time Missouri Senator from Laclede County. In the same year commissioners bought 50 acres for \$250 as the site of the county seat. The county seat was first called Fairview; later the name became Nevada City. Now known as just Nevada, it is geographically located in the center of the county.

The first courthouse was completed in 1857. The upper story was used for county offices and the lower floor held the courtroom and was also available for religious services of all denominations. This building was located one block west of the public square. Appropriations of \$900 were made for construction of the building which measured 28 feet by 18 feet with the first story nine feet high, the second story seven feet. This building was burned with the rest of the town by Federal troops on May 26, 1863. For lack of a suitable building in Nevada, the first post-war sessions of the County Court were held at Little Osage.

The second courthouse was built in the center of the Nevada City square in 1868. The final costs totaled approximately \$25,000. The 50-by-60-foot brick building had a 15-foot tower that rose from a 10-foot base. The building faced south. In time it deteriorated and was sold and razed in 1906.

The present Vernon County Courthouse was completed in 1908. The three-story, Carthage limestone, Romanesque Revival style building measures 80 by 100 feet and rises to 126 feet at the top of the

dome. It was the first courthouse built in Missouri after the Civil War and for a time, viewed as the finest in this part of the state.

The original call for bids stated: "...that the said building be of a size to meet the wants and needs of Vernon County for fifty years. The size must not be so large as to sacrifice quality to size, that it should be proportionate to the perspective of the square, that said building complete shall not exceed the cost of \$75,000." During construction, rapidly rising costs caused alterations to be made to the original plans. An example of materials substitution was the change made to the main staircase from marble and iron to quarter-sawed oak. In actuality the final costs for the courthouse amounted to almost \$80,000.

Our Courthouse was placed on the National Registry of Historic Places on June 27, 1997.

A life-size bronze statue, erected by the State of Missouri, was dedicated on the Courthouse lawn in Nevada in 1935 to the memory of William Joel Stone, a Vernon Countian who served Missouri as a Congressman, Governor, and United States Senator. From 1872 to 1874 he also served as Prosecuting Attorney for Vernon County."

## 2.1.6 Public School Districts, Colleges and Private Schools

Vernon County has **four** school districts, **two** colleges, **one** state sponsored school and **two** private schools.

- Bronaugh R-VII (K-12)
- Nevada R-V (K-12)
- Northeast Vernon County R-I (K-12)
- Sheldon R-VIII (K-12)

Colleges in Vernon County include the following:

- Cottey College – Nevada
- Crowder College – Nevada Campus

The lone state sponsored school in Vernon County is:

- Cedar Ridge School

The two private schools in Vernon County are:

- Missouri Welding Institute
- St. Mary's Early Childhood Center (Part of St. Mary's Catholic School)

## 2.1.7 Occupations

In Vernon County, most of the jobs held are in the management, business, science and arts occupations. Sales and office occupations are the second most common.

**Table 2.3. Occupation Statistics, Vernon 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
Vernon County	3,325	1,247	1,815	776	1,437
Bronaugh	19	11	11	1	12
Nevada	1,470	578	640	107	565
Schell City	13	10	4	2	6
Sheldon	40	35	31	18	49

Source: U.S. Census, 2021 American Community Survey, 5-year Estimates.

## 2.1.8 Agriculture

Agriculture is a large part of life in Vernon County, there are 1,265 total farms, which is down 7 from the 2012 USDA Agricultural Census. Despite the loss of 7 farms in the county, the average farm size for Vernon County has increased over that same timespan, whereas the average farm is now 344 acres, which is up 12 versus the 2012 Census. The majority of farms in Vernon County range between 50 and 179 acres, and most farms value based on sales statistics are less than \$2,500 per farm. Despite this, the market value of products sold in Vernon County is a staggering \$215,609,000, a three percent increase over 2012. More information about Vernon County’s agriculture can be found in the risk assessment. However, some information is included here to provide an overview of how agricultural life operates in Vernon County.

The top crop items grown in Vernon County (in acres):

1. Soybeans for beans – 99,760 acres
2. Corn for grain – 68,883 acres
3. Forage (hay/haylage) – 46,747 acres
4. Wheat for grain – 16,077 acres
5. Pecans – 5,529 acres

The most frequently owned livestock in Vernon County (as of December 31<sup>st</sup>, 2017) include the following:

1. Layers – 137,569
2. Turkeys – 95,728
3. Cattle and Calves – 75,360
4. Pullets – 20,765
5. Sheep and Lambs – 1,975

*Some data is excluded to avoid disclosing sensitive information pertaining to special operations that do not wish to contribute to the Agricultural Census.*

The next agriculture census, 2022, is still taking in data, which then has to be processed, so updated statistics will not be available for this plan due to time constraints but will be included in the next plan.

### 2.1.9 FEMA Hazard Mitigation Assistance (HMA) Grants in Vernon County

Since 2014, the County of Vernon has had 2 hazard mitigation assistance grants for the entire county. Both of these grants have been used to write a Vernon County Natural Hazard Mitigation Plan.

**Table 2.4. FEMA HMA Grants in Vernon County – 2014 & 2020**

Disaster Declaration	Project Type	Sub-Grantee	Date Approved	Project Total
DR-1809	91.1: Local Multi-Hazard Mitigation Plan	Vernon County	07/17/2014	\$46,195.25
DR-4250	91.2: Local Multi-Hazard Mitigation Plan; NEW	Vernon County	07/31/2020	\$158,574.50
<b>Total</b>				<b>\$204,769.75</b>

Source: Federal Emergency Management Agency, 6 December 2023

## 2.1.10 FEMA Public Assistance (PA) Grants in Vernon County

Since 2002, Vernon County has applied for numerous public assistance grants through FEMA and they have been funded for 225, yes 225, total public assistance grants. These have stemmed from multiple disaster declarations, many of which have been attributed to the same disaster declaration in many instances. These grants have been used on both small and large projects and applied to several different categories of public assistance. A breakdown of how public assistance works and which categories these projects falls under is included in the risk assessment.

**Table 2.5. FEMA PA Grants in Vernon County: 2002-Present**

Disaster Declaration	Project Type	Project Size	Applicant	Project Total
DR-1403	Protective Measures	Small	Vernon County	\$ 1,601.16
DR-1403	Debris Removal	Small	Vernon County	\$ 16,143.53
DR-1403	Debris Removal	Small	Vernon County	\$ 1,041.10
DR-1403	Public Utilities	Small	Vernon County	\$ 33,870.30
DR-1412	Roads and Bridges	Small	Vernon County	\$ 20,816.87
DR-1412	Roads and Bridges	Small	Vernon County	\$ 4,518.50
DR-1412	Roads and Bridges	Small	Vernon County	\$ 11,228.21
DR-1412	Roads and Bridges	Small	Vernon County	\$ 32,791.59
DR-1412	Water Control Facilities	Small	Vernon County	\$ 4,340.31
DR-1412	Roads and Bridges	Small	Vernon County	\$ 0
DR-1412	Roads and Bridges	Small	Vernon County	\$ 32,657.88
DR-1412	Roads and Bridges	Small	Vernon County	\$ 15,269.84
DR-1412	Roads and Bridges	Small	Vernon County	\$ 10,871.21
DR-1412	Roads and Bridges	Small	Vernon County	\$ 1,917.88
DR-1412	Water Control Facilities	Small	Vernon County	\$ 6,578.94
DR-1412	Water Control Facilities	Small	Vernon County	\$ 6,979.85
DR-1412	Roads and Bridges	Small	Vernon County	\$ 27,759.56
DR-1412	Roads and Bridges	Small	Vernon County	\$ 7,539.94
DR-1412	Roads and Bridges	Small	Vernon County	\$ 14,658.89
DR-1412	Water Control Facilities	Small	Vernon County	\$ 6,123.19
DR-1412	Roads and Bridges	Small	Vernon County	\$ 22,927.44
DR-1412	Water Control Facilities	Small	Vernon County	\$ 6,877.35
DR-1412	Roads and Bridges	Small	Vernon County	\$ 12,490.37
DR-1412	Recreational or Other	Small	Vernon County	\$ 3,124.91
DR-1412	Roads and Bridges	Small	Vernon County	\$ 4,317.14
DR-1412	Roads and Bridges	Small	Vernon County	\$ 19,501.02
DR-1412	Roads and Bridges	Small	Vernon County	\$ 36,116.22
DR-1412	Roads and Bridges	Small	Vernon County	\$ 6,418.20
DR-1412	Roads and Bridges	Small	Vernon County	\$ 7,893.71
DR-1412	Roads and Bridges	Small	Vernon County	\$ 10,502.80
DR-1412	Roads and Bridges	Small	Vernon County	\$ 40,720.47
DR-1412	Roads and Bridges	Small	Vernon County	\$ 28,823.55
DR-1412	Roads and Bridges	Small	Vernon County	\$ 1,712.04

DR-1412	Roads and Bridges	Small	Vernon County	\$ 4,604.40
DR-1412	Public Buildings	Small	Vernon County	\$ 783.90
DR-1412	Protective Measures	Small	Vernon County	\$ 2,192.78
DR-1412	Roads and Bridges	Small	Vernon County	\$ 13,208.72
DR-1412	Roads and Bridges	Small	Vernon County	\$ 0
DR-1412	Roads and Bridges	Small	Vernon County	\$ 7,387.95
DR-1412	Roads and Bridges	Small	Vernon County	\$ 1,756.96
DR-1412	Roads and Bridges	Small	Vernon County	\$ 29,858.59
DR-1412	Roads and Bridges	Small	Vernon County	\$ 16,903.29
DR-1412	Roads and Bridges	Small	Vernon County	\$ 33,911.39
DR-1412	Roads and Bridges	Small	Vernon County	\$ 8,234.54
DR-1412	Roads and Bridges	Small	Vernon County	\$ 26,294.68
DR-1412	Water Control Facilities	Small	Vernon County	\$ 17,565.39
DR-1412	Roads and Bridges	Small	Vernon County	\$ 2,332.10
DR-1412	Roads and Bridges	Small	Vernon County	\$ 2,078.27
DR-1412	Roads and Bridges	Small	Vernon County	\$ 14,385.08
DR-1412	Roads and Bridges	Small	Vernon County	\$ 16,639.25
DR-1412	Roads and Bridges	Small	Vernon County	\$ 6,729.00
DR-1412	Roads and Bridges	Small	Vernon County	\$ 36,939.95
DR-1412	Roads and Bridges	Small	Vernon County	\$ 18,891.12
DR-1412	Roads and Bridges	Small	Vernon County	\$ 0
DR-1412	Roads and Bridges	Small	Vernon County	\$ 33,674.16
DR-1412	Roads and Bridges	Small	Vernon County	\$ 6,774.66
DR-1412	Roads and Bridges	Small	Vernon County	\$ 29,135.99
DR-1412	Roads and Bridges	Small	Vernon County	\$ 1,977.96
DR-1412	Roads and Bridges	Small	Vernon County	\$ 3,587.13
DR-1412	Roads and Bridges	Small	Vernon County	\$ 11,227.01
DR-1412	Roads and Bridges	Small	Vernon County	\$ 6,518.52
DR-1412	Roads and Bridges	Small	Vernon County	\$ 7,448.31
DR-1412	Roads and Bridges	Small	Vernon County	\$ 28,047.82
DR-1412	Roads and Bridges	Small	Vernon County	\$ 28,231.59
DR-1412	Roads and Bridges	Small	Vernon County	\$ 14,970.23
DR-1412	Roads and Bridges	Small	Vernon County	\$ 36,745.20
DR-1412	Roads and Bridges	Small	Vernon County	\$ 32,810.36
DR-1412	Roads and Bridges	Small	Vernon County	\$ 17,304.07
DR-1412	Roads and Bridges	Small	Vernon County	\$ 10,680.14
DR-1412	Roads and Bridges	Small	Vernon County	\$ 14,827.99
DR-1412	Roads and Bridges	Small	Vernon County	\$ 23,056.57
DR-1412	Roads and Bridges	Small	Vernon County	\$ 38,808.50
DR-1412	Roads and Bridges	Small	Vernon County	\$ 18,840.93
DR-1412	Roads and Bridges	Large	Vernon County	\$ 54,695.15
DR-1412	Roads and Bridges	Small	Vernon County	\$ 1,875.09
DR-1412	Roads and Bridges	Small	Vernon County	\$ 15,029.26

DR-1412	Roads and Bridges	Small	Vernon County	\$ 2,617.77
DR-1412	Roads and Bridges	Small	Vernon County	\$ 10,999.46
DR-1412	Protective Measures	Small	Vernon County	\$ 6,838.71
DR-1412	Roads and Bridges	Small	Vernon County	\$ 16,649.34
DR-1412	Roads and Bridges	Small	Vernon County	\$ 1,899.32
DR-1412	Roads and Bridges	Small	Vernon County	\$ 7,897.17
DR-1412	Roads and Bridges	Small	Vernon County	\$ 33,911.42
DR-1412	Roads and Bridges	Small	Vernon County	\$ 1,114.71
DR-1412	Roads and Bridges	Small	Vernon County	\$ 18,618.10
DR-1412	Roads and Bridges	Small	Vernon County	\$ 19,441.34
DR-1412	Roads and Bridges	Small	Vernon County	\$ 9,437.10
DR-1412	Roads and Bridges	Large	Vernon County	\$ 58,017.46
DR-1412	Roads and Bridges	Small	Vernon County	\$ 27,803.66
DR-1412	Roads and Bridges	Small	Vernon County	\$ 49.50
DR-1412	Roads and Bridges	Small	Vernon County	\$ 27,735.52
DR-1412	Roads and Bridges	Small	Vernon County	\$ 28,096.80
DR-1412	Roads and Bridges	Small	Vernon County	\$ 8,627.26
DR-1412	Roads and Bridges	Small	Vernon County	\$ 1,301.36
DR-1412	Roads and Bridges	Small	Vernon County	\$ 3,924.05
DR-1412	Roads and Bridges	Large	Vernon County	\$ 19,675.25
DR-1412	Roads and Bridges	Small	Vernon County	\$ 11,440.32
DR-1412	Roads and Bridges	Small	Vernon County	\$ 11,412.95
DR-1412	Roads and Bridges	Small	Vernon County	\$ 5,727.54
DR-1412	Roads and Bridges	Small	Vernon County	\$ 23,412.67
DR-1412	Roads and Bridges	Small	Vernon County	\$ 29,407.34
DR-1412	Roads and Bridges	Small	Vernon County	\$ 2,090.29
DR-1412	Roads and Bridges	Small	Vernon County	\$ 3,916.84
DR-1412	Roads and Bridges	Small	Vernon County	\$ 0
DR-1412	Roads and Bridges	Small	Vernon County	\$ 951.86
DR-1631	Protective Measures	Small	Vernon County	\$ 1,049.66
DR-1631	Protective Measures	Small	Vernon County	\$ 99.26
DR-1749	Roads and Bridges	Small	Vernon County	\$ 0
DR-1749	Roads and Bridges	Small	Vernon County	\$ 750.09
DR-1749	Roads and Bridges	Small	Vernon County	\$ 7,734.82
DR-1749	Roads and Bridges	Small	Vernon County	\$ 2,706.05
DR-1749	Roads and Bridges	Small	Vernon County	\$ 5,749.45
DR-1749	Roads and Bridges	Small	Vernon County	\$ 15,462.87
DR-1749	Roads and Bridges	Small	Vernon County	\$ 9,272.28
DR-1749	Roads and Bridges	Small	Vernon County	\$ 8,050.28
DR-1749	Roads and Bridges	Small	Vernon County	\$ 26,186.74
DR-1749	Roads and Bridges	Small	Vernon County	\$ 11,738.81
DR-1749	Roads and Bridges	Small	Vernon County	\$ 14,401.42
DR-1749	Roads and Bridges	Small	Vernon County	\$ 5,408.39

DR-1749	Roads and Bridges	Small	Vernon County	\$	20,637.52
DR-1749	Roads and Bridges	Small	Vernon County	\$	12,726.65
DR-1749	Roads and Bridges	Small	Vernon County	\$	21,466.82
DR-1749	Roads and Bridges	Small	Vernon County	\$	9,247.23
DR-1749	Roads and Bridges	Small	Vernon County	\$	23,067.42
DR-1749	Public Buildings	Small	Vernon County	\$	19,792.50
DR-1749	Roads and Bridges	Small	Vernon County	\$	17,440.40
DR-1749	Roads and Bridges	Small	Vernon County	\$	39,465.86
DR-1749	Roads and Bridges	Small	Vernon County	\$	8,163.83
DR-1749	Recreational or Other	Small	Vernon County	\$	4,718.44
DR-1749	Roads and Bridges	Small	Vernon County	\$	32,312.42
DR-1749	Roads and Bridges	Small	Vernon County	\$	19,170.71
DR-1749	Roads and Bridges	Small	Vernon County	\$	18,308.81
DR-1749	Roads and Bridges	Small	Vernon County	\$	38,211.09
DR-1749	Roads and Bridges	Small	Vernon County	\$	24,298.95
DR-1749	Roads and Bridges	Small	Vernon County	\$	35,484.72
DR-1773	Roads and Bridges	Small	Vernon County	\$	15,117.45
DR-1773	Roads and Bridges	Small	Vernon County	\$	6,484.79
DR-1773	Roads and Bridges	Small	Vernon County	\$	17,290.36
DR-1847	Roads and Bridges	Small	Vernon County	\$	16,762.12
DR-1847	Roads and Bridges	Small	Vernon County	\$	5,569.75
DR-1847	Roads and Bridges	Small	Vernon County	\$	8,109.23
DR-1847	Roads and Bridges	Small	Vernon County	\$	5,236.85
DR-1847	Roads and Bridges	Small	Vernon County	\$	12,753.44
DR-1847	Roads and Bridges	Small	Vernon County	\$	8,857.41
DR-1847	Roads and Bridges	Small	Vernon County	\$	10,655.39
DR-1847	Roads and Bridges	Small	Vernon County	\$	23,589.41
DR-1847	Roads and Bridges	Small	Vernon County	\$	32,758.29
DR-1847	Roads and Bridges	Small	Vernon County	\$	9,546.28
DR-1847	Roads and Bridges	Large	Vernon County	\$	56,585.26
DR-1961	Protective Measures	Small	Vernon County	\$	899.71
DR-1961	Roads and Bridges	Small	Vernon County	\$	8,161.55
DR-1961	Protective Measures	Small	Vernon County	\$	1,903.93
DR-1961	Protective Measures	Small	Vernon County	\$	17,623.29
DR-1961	Public Buildings	Small	Vernon County	\$	823.46
DR-1961	Protective Measures	Small	Vernon County	\$	360.00
DR-1961	Public Utilities	Small	Vernon County	\$	1,168.95
DR-1961	Public Buildings	Small	Vernon County	\$	3,750.00
DR-1961	Protective Measures	Small	Vernon County	\$	1,080.00
DR-1961	Roads and Bridges	Small	Vernon County	\$	3,656.48
DR-1961	Protective Measures	Small	Vernon County	\$	2,164.88
DR-1961	Protective Measures	Small	Vernon County	\$	2,318.51
DR-1961	Protective Measures	Small	Vernon County	\$	1,376.24

DR-1961	Protective Measures	Small	Vernon County	\$ 1,230.00
DR-1961	Roads and Bridges	Small	Vernon County	\$ 17,779.50
DR-1961	Protective Measures	Small	Vernon County	\$ 1,255.10
DR-1961	Protective Measures	Small	Vernon County	\$ 1,287.00
DR-1961	Protective Measures	Small	Vernon County	\$ 1,722.00
DR-1961	Protective Measures	Small	Vernon County	\$ 755.95
DR-1961	Protective Measures	Small	Vernon County	\$ 6,473.66
DR-1961	Roads and Bridges	Small	Vernon County	\$ 11,503.34
DR-1961	Protective Measures	Small	Vernon County	\$ 1,033.61
DR-1961	Protective Measures	Small	Vernon County	\$ 2,106.52
DR-1961	Protective Measures	Small	Vernon County	\$ 479.33
DR-1961	Protective Measures	Small	Vernon County	\$ 1,845.00
DR-1961	Roads and Bridges	Small	Vernon County	\$ 17,745.71
DR-1961	Roads and Bridges	Small	Vernon County	\$ 5,921.25
DR-1961	Roads and Bridges	Small	Vernon County	\$ 8,198.24
DR-1961	Protective Measures	Small	Vernon County	\$ 3,131.51
DR-1961	Roads and Bridges	Small	Vernon County	\$ 15,304.88
DR-1961	Protective Measures	Small	Vernon County	\$ 540.00
DR-1961	Roads and Bridges	Small	Vernon County	\$ 7,127.73
DR-1961	Protective Measures	Small	Vernon County	\$ 418.37
DR-1961	Protective Measures	Small	Vernon County	\$ 1,704.00
DR-1961	Roads and Bridges	Small	Vernon County	\$ 13,713.03
DR-1961	Protective Measures	Small	Vernon County	\$ 1,620.00
DR-1961	Protective Measures	Small	Vernon County	\$ 1,292.88
DR-1961	Roads and Bridges	Small	Vernon County	\$ 12,535.70
DR-1961	Roads and Bridges	Small	Vernon County	\$ 11,885.36
DR-1961	Protective Measures	Small	Vernon County	\$ 615.00
DR-1961	Protective Measures	Small	Vernon County	\$ 1,464.30
DR-4451	State Management	Small	Vernon County	\$ 2,670.46
DR-4451	Roads and Bridges	Small	Vernon County	\$ 7,331.36
DR-4451	Roads and Bridges	Small	Vernon County	\$ 14,667.20
DR-4451	Roads and Bridges	Small	Vernon County	\$ 4,475.01
DR-4451	Roads and Bridges	Small	Vernon County	\$ 28,500.09
DR-4451	Roads and Bridges	Small	Vernon County	\$ 93,230.54
DR-4451	State Management	Small	Vernon County	\$ 1,559.65
DR-4451	Roads and Bridges	Small	Vernon County	\$ 44,676.46
DR-4451	State Management	Small	Vernon County	\$ 977.82
DR-4451	State Management	Small	Vernon County	\$ 2,388.77
DR-4451	Roads and Bridges	Small	Vernon County	\$ 5,937.43
DR-4451	Roads and Bridges	Small	Vernon County	\$ 52,800.98
DR-4451	Roads and Bridges	Small	Vernon County	\$ 47,927.87
DR-4451	Roads and Bridges	Small	Vernon County	\$ 30,714.74
DR-4451	Roads and Bridges	Small	Vernon County	\$ 40,056.80

DR-4451	Roads and Bridges	Small	Vernon County	\$ 35,408.66
DR-4451	Roads and Bridges	Small	Vernon County	\$ 5,209.91
DR-4451	Roads and Bridges	Small	Vernon County	\$ 73,763.96
DR-4451	Roads and Bridges	Small	Vernon County	\$ 12,165.52
DR-4451	Roads and Bridges	Small	Vernon County	\$ 4,321.71
DR-4451	State Management	Small	Vernon County	\$ 12,194.49
DR-4451	Roads and Bridges	Large	Vernon County	\$ 235,491.44
DR-4451	State Management	Small	Vernon County	\$ 14,587.71
DR-4451	Roads and Bridges	Small	Vernon County	\$ 17,614.43
DR-4451	State Management	Small	Vernon County	\$ 650.00
DR-4451	Roads and Bridges	Small	Vernon County	\$ 80,697.84
DR-4451	Roads and Bridges	Small	Vernon County	\$ 19,101.86
DR-4451	Roads and Bridges	Large	Vernon County	\$ 153,239.00
DR-4451	Roads and Bridges	Small	Vernon County	\$ 29,114.89
DR-4451	Roads and Bridges	Small	Vernon County	\$ 39,024.10
DR-4451	State Management	Small	Vernon County	\$ 9,975.18
DR-4451	State Management	Small	Vernon County	\$ 1,340.00
DR-4451	State Management	Small	Vernon County	\$ 0
DR-4451	Roads and Bridges	Small	Vernon County	\$ 35,295.72
DR-4490	Protective Measures	Small	Vernon County	\$ 12,420.38
<b>TOTAL = 225</b>				<b>\$3,823,932.55</b>

Source: Federal Emergency Management Agency 12 January 2023

## 2.2 JURISDICTIONAL PROFILES AND MITIGATION CAPABILITIES<sup>3, 7, and 8</sup>

This section of the plan is dedicated to profiling each community in Vernon County that assisted with the development of this hazard mitigation plan. There will also be a summary table highlighting each community and their capabilities at the end of the profiling section. Traditionally, the unincorporated part of the county is done first, then the incorporated communities, then the public school districts. In the case of Vernon County, extra space is dedicated to the townships within the County as well. There are **20** townships in Vernon County, some larger than others, but all could have some mitigation capabilities that would enable the townships to mitigate natural hazards the same way as the communities would. The main incorporated communities of Vernon County include all of the following: Bronaugh, Deerfield, Harwood, Metz, Milo, Moundville, Nevada, Richards, Schell City, Sheldon, Stotesbury, and Walker. Unincorporated communities of Vernon County is an extensive list, but includes the following: Amos, Arthur, Bellamy, Blaine, Bristow, Carbon Center, Dederick, Ellis, Eve, Fair Haven, Horton, Katy, Ketterman, Montevallo, Panama, Portia, Swart, Rinehart, Virgil City (not to be confused with Virgil Township), and Zodiac.

### 2.2.1 Unincorporated Vernon County

Vernon County's jurisdictions include all the incorporated and unincorporated communities within the boundaries of the County. It is a Class III county, according to the Missouri Association of Counties. The Vernon County Commission preside as the governing body for the county, three members of the commission, and multiple liaisons that serve different roles throughout the county. The Commission is divided into a Presiding Commissioner, a Northern Commissioner, and a Southern Commissioner. These individuals establish countywide policies, creation and maintaining a county budget, and many additional countywide functions. Some of the departments that fall under the Vernon County umbrella include the following:

- Board of Commissioners
- County Assessor
- County Clerk
- County Collector/Treasurer
- County Coroner
- County Circuit Court
- County Prosecutor
- Public Administrator
- Recorder of Deeds
- Vernon County Sheriff
- Vernon County Emergency Management
- Vernon County Geographic Information Systems (GIS) Office

#### Mitigation Initiatives/Capabilities<sup>3, 7, and 8</sup>

- National Flood Insurance Program

The NFIP Floodplain Administrator is a position separate from the County emergency management, and it is the responsibility of this individual to accept, evaluate, and monitor all land use proposals and enforce NFIP regulations where necessary.

The emergency management director of Vernon County, on the other hand, is responsible for collaborating with local officials and private organizations to 1. Prevent avoidable disasters and reduce vulnerabilities of citizens to any disaster that impacts Vernon County, 2. Establish capabilities for protecting citizens from the effects of disasters, 3. Respond effectively to the actual occurrence of

disasters, and 4. Provide the recovery in the aftermath of any emergency involving extensive damage within the County. The emergency manager is also responsible for developing and maintaining the Vernon County Emergency Operations Plan.

**Table 2.6** provides information on Vernon County’s capabilities based on responses to a Data Collection Questionnaire.

**Table 2.6. Unincorporated Vernon County Mitigation Capabilities**

Capabilities	Status Including Date of Document or Policy
<b>Planning Capabilities</b>	
Comprehensive Plan	No
Builder's Plan	No
Capital Improvement Plan	No
City Emergency Operations Plan	Yes
County Emergency Operations Plan	Yes, 2021
Local Recovery Plan	No
County Recovery Plan	No
City Mitigation Plan	No
County Mitigation Plan	Yes
Debris Management Plan	Yes, Update in-progress
Economic Development Plan	No
Transportation Plan	Yes
Land-use Plan	No
Flood Mitigation Assistance (FMA) Plan	No
Watershed Plan	No
Firewise or other fire mitigation plan	No
School Mitigation Plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
<b>Policies/Ordinance</b>	
Zoning Ordinance	No
Building Code	No
Floodplain Ordinance	No
Subdivision Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	No
Stormwater Ordinance	No
Drainage Ordinance	No
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
Landscape Ordinance	No
Seismic Construction Ordinance	No
<b>Program</b>	
Zoning/Land Use Restrictions	No
Codes Building Site/Design	No
Hazard Awareness Program	No
National Flood Insurance Program (NFIP)	Yes
NFIP Community Rating System (CRS) program	No
National Weather Service (NWS) Storm Ready	Yes
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	Yes, 3-9 Location Dependent

Capabilities	Status Including Date of Document or Policy
Economic Development Program	Yes
Land Use Program	No
Public Education/Awareness	Yes
Property Acquisition	No
Planning/Zoning Boards	Yes
Stream Maintenance Program	No
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	Yes
<b>Studies/Reports/Maps</b>	
Hazard Analysis/Risk Assessment (Local)	No
Hazard Analysis/Risk Assessment (County)	Yes, 2018
Flood Insurance Maps	Yes
FEMA Flood Insurance Study (Detailed)	Yes
Evacuation Route Map	No
Critical Facilities Inventory	Yes, 2021
Vulnerable Population Inventory	No
Land Use Map	No
<b>Staff/Department</b>	
Building Code Official	No
Building Inspector	No
Mapping Specialist (GIS)	Yes
Engineer	No
Development Planner	No
Public Works Official	Yes
Emergency Management Director	Yes
NFIP Floodplain Administrator	Yes
Emergency Response Team	Yes
Hazardous Materials Expert	Yes
Local Emergency Planning Committee	Yes
County Emergency Management Commission	No
Sanitation Department	No
Transportation Department	No
Economic Development Department	Coordinated w/Nevada
Housing Department	No
Historic Preservation	No
<b>Non-Governmental Organizations (NGOs)</b>	
American Red Cross	No
Salvation Army	No
Veterans Groups	Yes
Local Environmental Organization	No
Homeowner Associations	Yes
Neighborhood Associations	No
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, etc.)	No

Capabilities	Status Including Date of Document or Policy
<b>Local Funding Availability</b>	
Apply for Community Development Block	Yes
Fund projects through Capital	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	No
Impact fees for new development	Yes
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	Yes
Withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire 5 October 2023

## 2.2.2 City of Bronaugh

Located in southwest Vernon County along Missouri Route 43 is the small town of Bronaugh. There has been a sharp drop in the population of Bronaugh since 2010. At that time, the population was 249, but now the population has dropped to 163 as of the 2020 Census. The old Nevada and Minden Railway once ran through this community in the late 19th and early 20th centuries, and this is evidenced by the old right of way and aptly named 'Railroad Pond'. Though the railroad is no more, the community pushes on. Bronaugh R-VII School is located on the east side of the town. Despite the smallness of this community, there are some mitigation capabilities that help Bronaugh mitigate risk to some extent. These include:

- Local Government
  - Mayor
  - City Clerk
  - City Treasurer
  - City Council
- Bronaugh Fire Department
- National Flood Insurance Program
- Zoning Ordinance
- Land Use Plan

These capabilities and more are featured in **Table 2.7** as a response to a data collection questionnaire.

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

Capability	Status Including Date of Document or Policy
<b>Planning Capabilities</b>	
Comprehensive Plan	No
Builder's Plan	No
Capital Improvement Plan	No
Local Emergency Plan	No
County Emergency Plan	Yes
Local Recovery Plan	No
County Recovery Plan	Yes
Local Mitigation Plan	No
County Mitigation Plan	Yes
Local Mitigation Plan (PDM)	No
County Mitigation Plan (PDM)	No
Economic Development Plan	No
Transportation Plan	No
Land-use Plan	Yes
Flood Mitigation Assistance (FMA) Plan	No
Watershed Plan	No
Firewise or other fire mitigation plan	No
School Mitigation Plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
<b>Policies/Ordinance</b>	
Zoning Ordinance	No
Building Code	Yes
Floodplain Ordinance	Yes, 2014
Subdivision Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	No
Storm Water Ordinance	No

Capability	Status Including Date of Document or Policy
Drainage Ordinance	No
Seismic Construction Ordinance	No
<b>Capability</b>	
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
Landscape Ordinance	No
Iowa Wetlands and Riparian Areas Conservation Plan	No
Debris Management Plan	No
<b>Program</b>	
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	No
National Flood Insurance Program (NFIP) Participant	Yes
NFIP Community Rating System (CRS) Participating Community	No
Hazard Awareness Program	No
National Weather Service (NWS) Storm Ready	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	7
Economic Development Program	Yes
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
<b>Studies/Reports/Maps</b>	
Hazard Analysis/Risk Assessment (Local)	Yes
Hazard Analysis/Risk Assessment (County)	Yes
Flood Insurance Maps	No
FEMA Flood Insurance Study (Detailed)	No
Evacuation Route Map	No
Critical Facilities Inventory	Yes
Vulnerable Population Inventory	No
Land Use Map	No
<b>Staff/Department</b>	
Building Code Official	No
Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	No
Emergency Management Coordinator	Yes
NFIP Floodplain Administrator	Yes
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
<b>Non-Governmental Organizations (NGOs)</b>	
American Red Cross	Yes
Salvation Army	Yes
Veterans Groups	No
Environmental Organization	No

Capability	Status Including Date of Document or Policy
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, etc.)	Yes
Local Funding Availability	
Ability to apply for Community Development Block Grants	Yes
Ability to fund projects through Capital Improvements funding	No
Authority to levy taxes for a specific purpose	No
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	No
Ability to incur debt through general obligation bonds	No
Ability to incur debt through special tax bonds	No
Ability to incur debt through private activities	No
Ability to withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire 7 November 2023

### 2.2.3 City of Nevada

Located in central Vernon County is the county seat of Nevada. The City of Nevada is the largest community in Vernon County, hosting a population of 8,212 as of the 2020 Census. This also makes Nevada the second largest community in the region. Being a larger community enables multiple mitigation capabilities that allow for better day to day operations in the city. The community is also strategically platted at the crossroads of two major thoroughfares, Interstate 49 running north-south and US 54 running east-west. It is also a rail hub for the Missouri and Northern Arkansas Railroad, the line that used to be occupied by the Missouri Kansas Texas Railroad until the late 1980s. As the center of the county, much of Vernon County's activities revolve around Nevada. The City is run by a Home Rule Charter, 5-member city council and a mayor appointed by that council. They also have 6 tornado warning sirens strategically placed in the community.

Some mitigation capabilities within the City of Nevada include the following:

- City Government
  - Mayor
  - City Council
  - City Administrator
- City of Nevada Fire Department
- City of Nevada Police Department
- Six Outdoor Warning Sirens
- Nevada Regional Medical Center
- 2018 Edition of the International Building Code
- 2017 Edition of the National Electric Code
- Local Planning Commission
- National Flood Insurance Program
- Water Treatment Plant
- Wastewater Treatment Plant

This list is not all-inclusive, but a more thorough analysis of Nevada's mitigation capabilities is available in **Table 2.13**.

**Table 2.8. City of Nevada Mitigation Capabilities**

Capability	Status Including Date of Document or Policy
<b>Planning Capabilities</b>	
Comprehensive Plan	Yes, 1984
Builder's Plan	No
Capital Improvement Plan	Yes, 2023
Local Emergency Plan	Yes, 2019
County Emergency Plan	Yes, 2019
Local Recovery Plan	No
County Recovery Plan	No
Local Mitigation Plan	Yes, 2018
County Mitigation Plan	Yes, 2018
Local Mitigation Plan (PDM)	No
County Mitigation Plan (PDM)	No
Economic Development Plan	Yes, 2022
Transportation Plan	Yes, 2016
Land-use Plan	No
Flood Mitigation Assistance (FMA) Plan	No
Watershed Plan	Yes
Firewise or other fire mitigation plan	No
School Mitigation Plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
<b>Policies/Ordinance</b>	
Zoning Ordinance	Yes, City Code Chapter 37
Building Code	Yes, 2018 IBC/2017 NEC
Floodplain Ordinance	Yes, 2020
Subdivision Ordinance	Yes, City Code Chapter 34
Tree Trimming Ordinance	Yes, City Code Chapter 35
Nuisance Ordinance	Yes, City Code Chapter 21
Storm Water Ordinance	Yes, City Code Multiple Chapters
Drainage Ordinance	Yes, City Code Sections 28-43
Seismic Construction Ordinance	No
<b>Capability</b>	
Site Plan Review Requirements	Yes, City Building Code
Historic Preservation Ordinance	No
Landscape Ordinance	No
Iowa Wetlands and Riparian Areas Conservation Plan	No
Debris Management Plan	Yes, 2018 LEOP
<b>Program</b>	
Zoning/Land Use Restrictions	Yes, Planning Commission
Codes Building Site/Design	Yes, Building/Fire Codes
National Flood Insurance Program (NFIP) Participant	Yes
NFIP Community Rating System (CRS) Participating Community	No
Hazard Awareness Program	Yes
National Weather Service (NWS) Storm Ready	No
Building Code Effectiveness Grading (BCEGs)	Yes, 5-Residential 5-Commerical/Industrial
ISO Fire Rating	3
Economic Development Program	Yes

Capability	Status Including Date of Document or Policy
Land Use Program	Yes
Public Education/Awareness	Yes, Fire/Police
Property Acquisition	No
Planning/Zoning Boards	Yes
Stream Maintenance Program	No
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	Yes
<b>Studies/Reports/Maps</b>	
Hazard Analysis/Risk Assessment (Local)	Yes, 2018 LEOP
Hazard Analysis/Risk Assessment (County)	Yes, 2018 LEOP
Flood Insurance Maps	Yes, 2020
FEMA Flood Insurance Study (Detailed)	Yes, 2020
Evacuation Route Map	Yes, 2018 LEOP
Critical Facilities Inventory	Yes, 2018 LEOP
Vulnerable Population Inventory	Yes, 2018 LEOP
Land Use Map	Yes
<b>Staff/Department</b>	
Building Code Official	Yes, Full-Time
Building Inspector	Yes, Full-Time
Mapping Specialist (GIS)	Yes, Part-Time
Engineer	Yes, Contracted
Development Planner	No
Public Works Official	Yes, Full-Time
Emergency Management Coordinator	Yes, Part-Time
NFIP Floodplain Administrator	Yes, Full-Time
Emergency Response Team	Yes, Region D
Hazardous Materials Expert	Yes, Region D
Local Emergency Planning Committee	Yes, Part-Time
County Emergency Management Commission	Yes, Part-Time
Sanitation Department	No
Transportation Department	Yes, Full-Time
Economic Development Department	Yes, Contracted
Housing Department	Yes, Full-Time
Historic Preservation	No
<b>Non-Governmental Organizations (NGOs)</b>	
American Red Cross	No
Salvation Army	No
Veterans Groups	Yes
Environmental Organization	No
Homeowner Associations	Yes
Neighborhood Associations	No
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, etc.)	Yes
<b>Local Funding Availability</b>	
Ability to apply for Community Development Block Grants	Yes
Ability to fund projects through Capital Improvements funding	Yes

Capability	Status Including Date of Document or Policy
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	No
Ability to incur debt through private activities	No
Ability to withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire 20 September 2023

## 2.2.4 City of Schell City

Located in northeast Vernon County near the tri-county border with St. Clair and Bates County is the small community of Schell City. Schell City has a population of **228** as of the 2020 Census, which was 249 at the 2010 Census. The Missouri and Northern Arkansas Railroad runs through the heart of town along its route towards Clinton. Because it is only a small community, they do not have many mitigation capabilities, but they do have some that can better assist with mitigation efforts. One of the two Northeast Vernon County R-I School District's schools is located in Schell City, the elementary school which hosts K-6 students. Fire protection is provided by the Schell City Volunteer Fire Department next to city hall. Some mitigation capabilities within Schell City include the following:

- Local Government
  - Mayor
  - 4-Member City Council
- One Outdoor Warning Siren
  - Activated by Fire Department
- Schell City Volunteer Fire Department
- City Emergency Operations Plan (Combined w/Vernon County EOP)
- Economic Development Plan
- Nuisance Ordinance
- Hazard Awareness Program
- Mutual Aid Agreements
- National Flood Insurance Program (Sanctioned)

These mitigation capabilities and more responses to a data collection questionnaire are featured in **Table 2.9**.

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

Capability	Status Including Date of Document or Policy
<b>Planning Capabilities</b>	
Comprehensive Plan	No
Builder's Plan	No
Capital Improvement Plan	No
Local Emergency Plan	Yes
County Emergency Plan	Yes
Local Recovery Plan	No
County Recovery Plan	No
Local Mitigation Plan	No
County Mitigation Plan	Yes
Local Mitigation Plan (PDM)	No
County Mitigation Plan (PDM)	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 (Mitigation/Response/Recovery)	No
<b>Policies/Ordinance</b>	
Zoning Ordinance	No
Building Code	No
Floodplain Ordinance	No
Subdivision Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	Yes
Storm Water Ordinance	No
Drainage Ordinance	No
Seismic Construction Ordinance	No
<b>Capability</b>	
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
Landscape Ordinance	No
Iowa Wetlands and Riparian Areas Conservation Plan	No
Debris Management Plan	No
<b>Program</b>	
Zoning/Land Use Restrictions	No
Codes Building Site/Design	No
National Flood Insurance Program (NFIP) Participant	Yes
NFIP Community Rating System (CRS) Participating Community	No
Hazard Awareness Program	Yes
National Weather Service (NWS) Storm Ready	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	8
Economic Development Program	Yes
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)	Yes
Mutual Aid Agreements	Yes

<b>Studies/Reports/Maps</b>	
Hazard Analysis/Risk Assessment (Local)	Yes
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
<b>Staff/Department</b>	
Building Code Official	No
Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	No
Emergency Management Coordinator	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
<b>Non-Governmental Organizations (NGOs)</b>	
American Red Cross	No
Salvation Army	No
Veterans Groups	No
Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, etc.)	No
<b>Local Funding Availability</b>	
Ability to apply for Community Development Block Grants	Yes
Ability to fund projects through Capital Improvements funding	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	Yes
Ability to withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire 7 November 2023

## 2.2.5 City of Sheldon

Located in southern Vernon County just off Interstate 49 near the Barton County line is the small community of Sheldon. It had a population of 543 as of the 2010 census, but that fell to 435 at the 2020 census. The Missouri and Northern Arkansas Railroad runs north south through the community. It is one of the oldest platted communities in Vernon County, being platted in 1881. The Sheldon R-VIII School District is located in the eastern portion of town. One of the most unique things about Sheldon is that travelers on I-49 are known to visit this community thanks in large part to the advertising of Jones Boots, a boot store in downtown Sheldon. This community has a handful of mitigation capabilities that better suit the City of Sheldon when it comes to mitigating risk to natural hazards. These include the following:

- Local Government:
  - Mayor
  - City Council
- One tornado warning siren
- Two community shelters
- A few ordinances including noise and zoning
- Sheldon Fire Department

These capabilities and more are included in **Table 2.10** in response to a data collection questionnaire.

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

Capability	Status Including Date of Document or Policy
<b>Planning Capabilities</b>	
Comprehensive Plan	No
Builder's Plan	No
Capital Improvement Plan	No
Local Emergency Plan	No
County Emergency Plan	Yes
Local Recovery Plan	No
County Recovery Plan	No
Local Mitigation Plan	Yes
County Mitigation Plan	Yes
Local Mitigation Plan (PDM)	No
County Mitigation Plan (PDM)	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 (Mitigation/Response/Recovery)	No
<b>Policies/Ordinance</b>	
Zoning Ordinance	Yes
Building Code	Yes
Floodplain Ordinance	No
Subdivision Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	Yes
Storm Water Ordinance	No
Drainage Ordinance	No
Seismic Construction Ordinance	No

Capability	Status Including Date of Document or Policy
<b>Capability</b>	
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
Landscape Ordinance	No
Iowa Wetlands and Riparian Areas Conservation Plan	No
Debris Management Plan	No
<b>Program</b>	
Zoning/Land Use Restrictions	No
Codes Building Site/Design	No
National Flood Insurance Program (NFIP) Participant	No
NFIP Community Rating System (CRS) Participating Community	No
Hazard Awareness Program	No
National Weather Service (NWS) Storm Ready	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	8
Economic Development Program	Yes
Land Use Program	No
Public Education/Awareness	No
Property Acquisition	No
Planning/Zoning Boards	Yes
Stream Maintenance Program	No
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	Yes
<b>Studies/Reports/Maps</b>	
Hazard Analysis/Risk Assessment (Local)	Yes
Hazard Analysis/Risk Assessment (County)	Yes
Flood Insurance Maps	Yes
FEMA Flood Insurance Study (Detailed)	No
Evacuation Route Map	No
Critical Facilities Inventory	Yes
Vulnerable Population Inventory	No
Land Use Map	No
<b>Staff/Department</b>	
Building Code Official	No
Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	Yes
Emergency Management Coordinator	Yes
NFIP Floodplain Administrator	No
Emergency Response Team	No
Hazardous Materials Expert	No
Local Emergency Planning Committee	No
County Emergency Management Commission	Yes
Sanitation Department	No
Transportation Department	No
Economic Development Department	No
Housing Department	No
Historic Preservation	No
<b>Non-Governmental Organizations (NGOs)</b>	
American Red Cross	No
Salvation Army	No
Veterans Groups	No
Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No

Capability	Status Including Date of Document or Policy
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.	Yes
Local Funding Availability	
Ability to apply for Community Development Block Grants	Yes
Ability to fund projects through Capital Improvements funding	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	Yes
Ability to withhold spending in hazard prone areas	Yes

Source: Data Collection Questionnaire 17 October 2023

## 2.2.6 Summary of Jurisdictional Capabilities<sup>3, 7, and 8</sup>

Table 2.11. Mitigation Capabilities Summary Table

CAPABILITIES	Unincorporated Vernon County	City of Bronaugh	City of Nevada	City of Schell City	City of Sheldon
<b>Planning Capabilities</b>					
Comprehensive Plan	No	No	Yes, 1984	No	No
Builder's Plan	No	No	No	No	No
Capital Improvement Plan	No	No	Yes, 2023	No	No
Local Emergency Plan	Yes	No	Yes, 2019	Yes	No
County Emergency Plan	Yes, 2021	Yes	Yes, 2019	Yes	Yes
Local Recovery Plan	No	No	No	No	No
County Recovery Plan	No	Yes	No	No	No
Local Mitigation Plan	No	No	Yes, 2018	No	Yes
County Mitigation Plan	Yes	Yes	Yes, 2018	Yes	Yes
Local Mitigation Plan (PDM)	No	No	No	No	No
County Mitigation Plan (PDM)	No	No	No	No	No
Debris Management Plan	Yes	No	Yes, 2022	No	No
Economic Development Plan	No	No	Yes, 2016	No	No
Transportation Plan	No	Yes	No	No	No
Land-use Plan	No	No	No	No	No
Flood Mitigation Assistance (FMA) Plan	No	No	Yes	No	No
Watershed Plan	No	No	No	No	No
Firewise or other fire mitigation plan	No	No	No	No	No
School Mitigation Plan	No	No	No	No	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No	No	No	No	No
<b>Policies/Ordinances</b>					
Zoning Ordinance	No	No	Yes, City Code Chapter 37	No	Yes
Building Code	No	Yes	Yes, 2018 IBC/2017 NEC	No	Yes
Floodplain Ordinance	No	Yes, 2014	Yes, 2020	No	No
Subdivision Ordinance	No	No	Yes, City Code Chapter 34	No	No
Tree Trimming Ordinance	No	No	Yes, City Code Chapter 35	No	No
Nuisance Ordinance	No	No	Yes, City Code Chapter 21	Yes	Yes

CAPABILITIES	Unincorporated Vernon County	City of Bronaugh	City of Nevada	City of Schell City	City of Sheldon
Storm Water Ordinance	No	No	Yes, City Code Multiple Chapters	No	No
Drainage Ordinance	No	No	Yes, City Code Sections 28-43	No	No
Site Plan Review Requirements	No	No	No	No	No
Historic Preservation Ordinance	No	No	Yes, City Code Chapter 37	No	Yes
Landscape Ordinance	No	No	Yes, 2018 IBC/2017 NEC	No	Yes
Seismic Construction Ordinance	No	No	Yes, 2020	No	No
Capabilities					
Zoning/Land Use Restrictions	No	Yes	Yes, Planning Commission	No	No
Codes Building Site/Design	No	No	Yes, Building/Fire Codes	No	No
National Flood Insurance Program (NFIP) Participant	No	Yes	Yes	Yes	No
NFIP Community Rating System (CRS) Participating Community	Yes	No	No	No	No
Hazard Awareness Program	No	No	Yes	Yes	No
National Weather Service (NWS) Storm Ready	Yes	No	No	No	No
Building Code Effectiveness Grading (BCEGs)	No	No	Yes, 5-Residential 5-Commerical/Industrial	No	No
ISO Fire Rating	Yes, 3-9 Location Dependent	7	3	8	8
Economic Development Program	Yes	Yes	Yes	Yes	Yes
Land Use Program	No	No	Yes	No	No
Public Education/Awareness	Yes	No	Yes, Fire/Police	No	No
Property Acquisition	No	No	No	No	No
Planning/Zoning Boards	Yes	No	Yes	No	Yes
Stream Maintenance Program	No	No	No	No	No
Tree Trimming Program	No	No	No	No	No
Engineering Studies for Streams (Local/County/Regional)	No	No	No	Yes	No
Mutual Aid Agreements	Yes	No	Yes	Yes	Yes

CAPABILITIES	Unincorporated Vernon County	City of Bronaugh	City of Nevada	City of Schell City	City of Sheldon
<b>Programs</b>					
Hazard Analysis/Risk Assessment (Local)	No	Yes	Yes, 2018 LEOP	Yes	Yes
Hazard Analysis/Risk Assessment (County)	Yes, 2018	Yes	Yes, 2018 LEOP	Yes	Yes
Flood Insurance Maps	Yes	No	Yes, 2020	No	Yes
FEMA Flood Insurance Study (Detailed)	Yes	No	Yes, 2020	No	No
Evacuation Route Map	No	No	Yes, 2018 LEOP	No	No
Critical Facilities Inventory	Yes, 2021	Yes	Yes, 2018 LEOP	No	Yes
Vulnerable Population Inventory	No	No	Yes, 2018 LEOP	No	No
Land Use Map	No	No	Yes	No	No
<b>Staff/Department</b>					
Building Code Official	No	No	Yes, Full-Time	No	No
Building Inspector	No	No	Yes, Full-Time	No	No
Mapping Specialist (GIS)	Yes	No	Yes, Part-Time	No	No
Engineer	No	No	Yes, Contracted	No	No
Development Planner	No	No	No	No	No
Public Works Official	Yes	No	Yes, Full-Time	No	Yes
Emergency Management Coordinator	Yes	Yes	Yes, Part-Time	No	Yes
NFIP Floodplain Administrator	Yes	Yes	Yes, Full-Time	No	No
Emergency Response Team	Yes	No	Yes, Region D	No	No
Hazardous Materials Expert	Yes	No	Yes, Region D	No	No
Local Emergency Planning Committee	Yes	No	Yes, Part-Time	No	No
County Emergency Management Commission	No	No	Yes, Part-Time	No	Yes
Sanitation Department	No	No	No	No	No
Transportation Department	No	No	Yes, Full-Time	No	No
Economic Development Department	Coordinated w/Nevada	No	Yes, Contracted	No	No
Housing Department	No	No	Yes, Full-Time	No	No
Historic Preservation	No	No	No	No	No
<b>Non-Governmental Organizations (NGOs)</b>					
American Red Cross	No	Yes	No	No	No
Salvation Army	No	Yes	No	No	No
Veterans Groups	Yes	No	Yes	No	No
Environmental Organization	No	No	No	No	No
Homeowner Associations	Yes	No	Yes	No	No
Neighborhood Associations	No	No	No	No	No
Chamber of Commerce	Yes	Yes	Yes	Yes	No
Community Organizations (Lions, Kiwanis, etc.)	No	Yes	Yes	No	Yes

<b>Financial Resources</b>					
Apply for Community Development Block Grants	Yes	Yes	Yes	Yes	Yes
Fund projects through Capital Improvements funding	Yes	No	Yes	Yes	Yes
Authority to levy taxes for specific purposes	Yes	No	Yes	Yes	Yes
Fees for water, sewer, gas, or electric services	No	Yes	Yes	Yes	Yes
Impact fees for new development	Yes	No	No	Yes	Yes
Incur debt through general obligation bonds	Yes	No	Yes	Yes	Yes
Incur debt through special tax bonds	Yes	No	No	Yes	Yes
Incur debt through private activities	Yes	No	No	Yes	Yes
Withhold spending in hazard prone areas	No	No	No	No	Yes

Source: Data Collection Questionnaires

## 2.2.7 Public School District Profiles and Mitigation Capabilities

In Vernon County, there are **four** main school districts: Bronaugh R-VII, Nevada R-V, Northeast Vernon County R-I, and Sheldon R-VIII. Vernon County is also unique in that they have 2 colleges, Cottey College and Crowder College – Nevada Campus. It is also worth noting that Nevada has a special education institution run by the state, this school being the Cedar Ridge School, who did not participate in this plan update. Of these four districts, Nevada is undoubtedly the largest by enrollment of students. The Nevada School District also has a vocational school for high school students that allows those students who wish to take advantage of the opportunity to learn technical skills such as welding and or carpentry in addition to their high school education. The Northeast Vernon County School District is unique in which its two schools, a high school and elementary school are not in the same community. Once a sixth grader in this district moves up to seventh grade, they go from attending school in Schell City, where the elementary school is, to Walker where the high school is. The next four tables will showcase each school district’s enrollment data and buildings, but also the mitigation capabilities of each school district based on their responses to their district’s data collection questionnaire.

**Table 2.12. Bronaugh R-VII Buildings and Enrollment Data, 19 September 2023**

District Name	Building Name	Building Enrollment
Bronaugh R-VII	Bronaugh Elementary	102
Bronaugh R-VII	Bronaugh High School	74
Total District Enrollment		176

Source: <http://mcds.dese.mo.gov/quickfacts/Pages/District-and-School-Information.aspx> 19 September 2023

**Table 2.13. Nevada R-V Buildings and Enrollment Data, 11 September 2023**

District Name	Building Name	Building Enrollment
Nevada R-V	Bryan Elementary	387
Nevada R-V	Benton Elementary	176
Nevada R-V	Truman Elementary	500
Nevada R-V	Nevada Middle	532
Nevada R-V	Nevada High	787
Total District Enrollment		2382

Source: <http://mcds.dese.mo.gov/quickfacts/Pages/District-and-School-Information.aspx> 11 September 2023

**Table 2.14. Northeast Vernon County R-I Buildings and Enrollment Data 15 September 2023**

District Name	Building Name	Building Enrollment
Northeast Vernon County R-I	Northeast Vernon County R-I Elementary	96
Northeast Vernon County R-I	Northeast Vernon County R-I High School	104
Total District Enrollment		200

Source: <http://mcds.dese.mo.gov/quickfacts/Pages/District-and-School-Information.aspx> 15 September 2023

**Table 2.15. Sheldon R-VIII Buildings and Enrollment Data 19 September 2023**

<b>District Name</b>	<b>Building Name</b>	<b>Building Enrollment</b>
Sheldon R-VIII	Sheldon Elementary	95
Sheldon R-VIII	Sheldon High School	79
Total District Enrollment		174

Source: <http://mcds.dese.mo.gov/quickfacts/Pages/District-and-School-Information.aspx> 19 September 2023

**Table 2.16. Bronaugh R-VII School District Mitigation Capabilities**

Capability	Bronaugh R-VII
<b>Planning Elements</b>	
Master Plan/ Date	Yes, June 2023
Capital Improvement Plan/Date	Yes, June 2023
School Emergency Plan / Date	Yes, August 2023
Weapons Policy/Date	Yes, August 2023
<b>Personnel Resources</b>	
Full-Time Building Official (Principal)	Yes, Superintendent and Principal
Emergency Manager	No
Grant Writer	No
Public Information Officer	No
<b>Financial Resources</b>	
Capital Improvements Project Funding	Yes
Local Funds	Yes
General Obligation Bonds	No
Special Tax Bonds	No
Private Activities/Donations	Yes
State and Federal Funds/Grants	Yes
<b>Other</b>	
Public Education Programs	Yes
Privately or Self- Insured?	Private
Fire Evacuation Training	Yes
Tornado Sheltering Exercises	Yes
Public Address/Emergency Alert System	Yes
NOAA Weather Radios	Yes
Lock-Down Security Training	No
Mitigation Programs	No
Tornado Shelter/Saferoom	Yes, but not FEMA-compliant
Campus Police	Vernon County Sheriff

Source: Data Collection Questionnaire 19 September 2023

## BRONAUGH R-VII

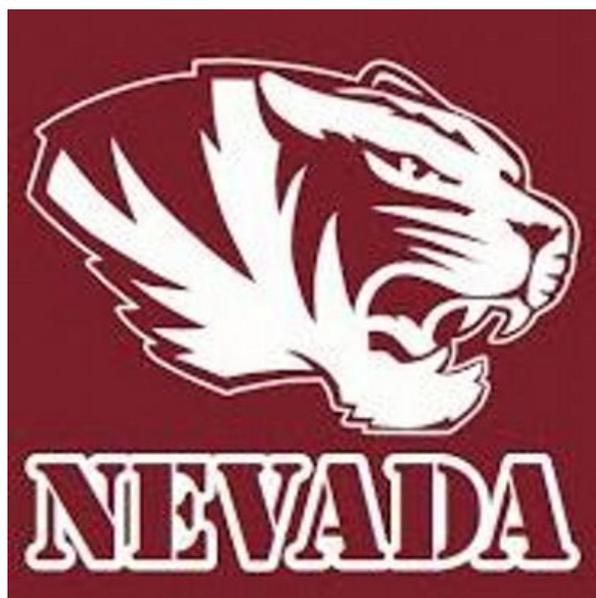


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**Table 2.17. Nevada R-V School District Mitigation Capabilities**

Capability	Nevada R-V
<b>Planning Elements</b>	
Master Plan/Date	Yes
Capital Improvement Plan/Date	Yes
School Emergency Plan/Date	Yes
Weapons Policy/Date	Yes
<b>Personnel Resources</b>	
Full-Time Building Official (Principal)	Yes, Superintendent
Emergency Manager	Yes, Assistant Superintendent
Grant Writer	No
Public Information Officer	No
<b>Financial Resources</b>	
Capital Improvements Project Funding	Yes
Local Funds	Yes
General Obligation Bonds	Yes
Special Tax Bonds	No
Private Activities/Donations	Yes
State and Federal Funds/Grants	Yes
<b>Other</b>	
Public Education Programs	No
Privately or Self- Insured?	Private
Fire Evacuation Training	Yes
Tornado Sheltering Exercises	Yes
Public Address/Emergency Alert System	Yes
NOAA Weather Radios	Yes
Lock-Down Security Training	Yes
Mitigation Programs	No
Tornado Shelter/Saferoom	No
Campus Police	Yes, Vernon County Sheriff/Nevada PD

Source: Data Collection Questionnaire 11 September 2023



**Table 2.18. Northeast Vernon County R-I School District Mitigation Capabilities**

Capability	Northeast Vernon County R-I
<b>Planning Elements</b>	
Master Plan/ Date	Yes, 2023
Capital Improvement Plan/Date	No
School Emergency Plan / Date	Yes, 2023
Weapons Policy/Date	Yes, 2023
<b>Personnel Resources</b>	
Full-Time Building Official (Principal)	Yes, one at each School
Emergency Manager	No
Grant Writer	No
Public Information Officer	No
<b>Financial Resources</b>	
Capital Improvements Project Funding	Yes
Local Funds	Yes
General Obligation Bonds	No
Special Tax Bonds	No
Private Activities/Donations	Yes
State and Federal Funds/Grants	Yes
<b>Other</b>	
Public Education Programs	No
Privately or Self- Insured?	Private
Fire Evacuation Training	Yes
Tornado Sheltering Exercises	Yes
Public Address/Emergency Alert System	Yes
NOAA Weather Radios	Yes
Lock-Down Security Training	Yes
Mitigation Programs	No
Tornado Shelter/Saferoom	No
Campus Police	Vernon County Sheriff

Source: Data Collection Questionnaire 15 September 2023



**Table 2.19. Sheldon R-VIII School District Mitigation Capabilities**

Capability	Sheldon R-VIII
<b>Planning Elements</b>	
Master Plan/ Date	Yes, 2023
Capital Improvement Plan/Date	No
School Emergency Plan / Date	Yes, 2023
Weapons Policy/Date	Yes, 2023
<b>Personnel Resources</b>	
Full-Time Building Official (Principal)	Yes, Superintendent/Principal
Emergency Manager	Yes, Superintendent
Grant Writer	No
Public Information Officer	Yes, Superintendent
<b>Financial Resources</b>	
Capital Improvements Project Funding	Yes
Local Funds	Yes
General Obligation Bonds	No
Special Tax Bonds	No
Private Activities/Donations	Yes
State and Federal Funds/Grants	Yes
<b>Other</b>	
Public Education Programs	No
Privately or Self- Insured?	Self-Insured
Fire Evacuation Training	Yes
Tornado Sheltering Exercises	Yes
Public Address/Emergency Alert System	Yes
NOAA Weather Radios	Yes
Lock-Down Security Training	Yes
Mitigation Programs	No
Tornado Shelter/Saferoom	Yes, but not FEMA Saferooms
Campus Police	Vernon County Sheriff

Source: Data Collection Questionnaire 19 September 2023



**Table 2.20. Cottey College Mitigation Capabilities**

Capability	Cottey College
<b>Planning Elements</b>	
Master Plan/ Date	Yes, 2019
Capital Improvement Plan/Date	No
School Emergency Plan / Date	Yes, 2023
Weapons Policy/Date	Yes, 2023
<b>Personnel Resources</b>	
Full-Time Building Official (Principal)	Yes, Physical Plant
Emergency Manager	No
Grant Writer	No
Public Information Officer	Yes, Marketing
<b>Financial Resources</b>	
Capital Improvements Project Funding	Yes
Local Funds	No
General Obligation Bonds	No
Special Tax Bonds	No
Private Activities/Donations	Yes
State and Federal Funds/Grants	Yes
<b>Other</b>	
Public Education Programs	No
Privately or Self- Insured?	Self-Insured
Fire Evacuation Training	Yes
Tornado Sheltering Exercises	Yes
Public Address/Emergency Alert System	Yes
NOAA Weather Radios	Yes
Lock-Down Security Training	Yes
Mitigation Programs	Yes
Tornado Shelter/Saferoom	Yes
Campus Police	24-Hour On-Campus Security

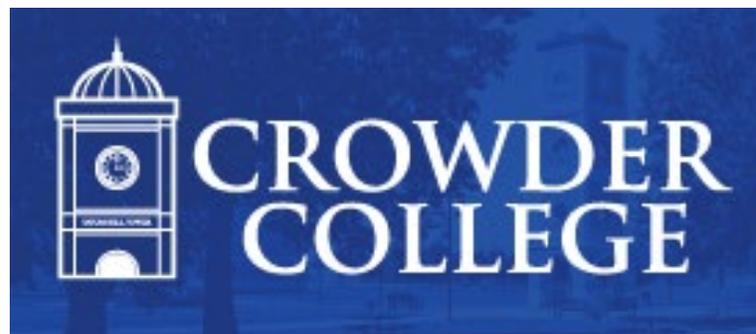
Source: Data Collection Questionnaire 11 September 2023



**Table 2.21. Crowder College Mitigation Capabilities**

Capability	Crowder College
<b>Planning Elements</b>	
Master Plan/ Date	No
Capital Improvement Plan/Date	No
School Emergency Plan / Date	Yes, 2015
Weapons Policy/Date	Yes, 2022
<b>Personnel Resources</b>	
Full-Time Building Official (Principal)	Yes, Instructional Site Director
Emergency Manager	Yes, Police Chief
Grant Writer	Yes, Grants Director
Public Information Officer	Yes
<b>Financial Resources</b>	
Capital Improvements Project Funding	No
Local Funds	No
General Obligation Bonds	No
Special Tax Bonds	No
Private Activities/Donations	No
State and Federal Funds/Grants	No
<b>Other</b>	
Public Education Programs	No
Privately or Self- Insured?	Self-Insured
Fire Evacuation Training	No
Tornado Sheltering Exercises	No
Public Address/Emergency Alert System	Yes
NOAA Weather Radios	Yes
Lock-Down Security Training	No
Mitigation Programs	No
Tornado Shelter/Saferoom	No
Campus Police	Yes, in-house Police Department

Source: Data Collection Questionnaire 14 September 2023



**Table 2.22. Missouri Welding Institute Mitigation Capabilities**

Capability	Missouri Welding Institute
<b>Planning Elements</b>	
Master Plan/ Date	No
Capital Improvement Plan/Date	No
School Emergency Plan / Date	Yes
Weapons Policy/Date	Yes
<b>Personnel Resources</b>	
Full-Time Building Official (Principal)	Yes, Director of Training
Emergency Manager	No
Grant Writer	No
Public Information Officer	No
<b>Financial Resources</b>	
Capital Improvements Project Funding	No
Local Funds	No
General Obligation Bonds	No
Special Tax Bonds	No
Private Activities/Donations	Yes
State and Federal Funds/Grants	No
<b>Other</b>	
Public Education Programs	No
Privately or Self- Insured?	Self-Insured
Fire Evacuation Training	No
Tornado Sheltering Exercises	No
Public Address/Emergency Alert System	Yes
NOAA Weather Radios	Yes
Lock-Down Security Training	No
Mitigation Programs	No
Tornado Shelter/Saferoom	Yes
Campus Police	Vernon County Sheriff/Nevada Police

Source: Data Collection Questionnaire 22 September 2023



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

Capability	Bronaugh R-VII	Nevada R-V	Northeast Vernon County R-I	Sheldon R-VIII	Cottey College	Crowder College	Missouri Welding Institute
<b>Planning Elements</b>							
Master Plan/ Date	Yes, June 2023	Yes	Yes, 2023	Yes, 2023	Yes, 2019	No	No
Capital Improvement Plan/Date	Yes, June 2023	Yes	No	No	No	No	No
School Emergency Plan / Date	Yes, August 2023	Yes	Yes, 2023	Yes, 2023	Yes, 2023	Yes, 2015	Yes
Weapons Policy/Date	Yes, August 2023	Yes	Yes, 2023	Yes, 2023	Yes, 2023	Yes, 2022	Yes
<b>Personnel Resources</b>							
Full-Time Building Official (Principal)	Yes, Superintendent and Principal	Yes, Superintendent	Yes, one at each School	Yes, Superintendent/Principal	Yes, Physical Plant	Yes, Instructional Site Director	Yes, Director of Training
Emergency Manager	No	Yes, Assistant Superintendent	No	Yes, Superintendent	No	Yes, Police Chief	No
Grant Writer	No	No	No	No	No	Yes, Grants Director	No
Public Information Officer	No	No	No	Yes, Superintendent	Yes, Marketing	Yes	No
<b>Financial Resources</b>							
Capital Improvements Project Funding	Yes	Yes	Yes	Yes	Yes	No	No
Local Funds	Yes	Yes	Yes	Yes	No	No	No
General Obligation Bonds	No	Yes	No	No	No	No	No
Special Tax Bonds	No	No	No	No	No	No	No
Private Activities/Donations	Yes	Yes	Yes	Yes	Yes	No	Yes
State and Federal Funds/Grants	Yes	Yes	Yes	Yes	Yes	No	No
<b>Other</b>							
NOAA Weather Radios	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lock-Down Security Training	No	Yes	Yes	Yes	Yes	No	No
Mitigation Programs	No	No	No	No	Yes	No	No
Tornado Shelter/Saferoom	Yes, but not FEMA-compliant	No	No	Yes, but not FEMA Saferooms	Yes	No	Yes
Campus Police	Vernon County Sheriff	Yes, Vernon County Sheriff/Nevada PD	Vernon County Sheriff	Vernon County Sheriff	24-Hour On-Campus Security	Yes, in-house Police Department	Vernon County Sheriff/Nevada Police

Source: Data Collection Questionnaires

# 3 RISK ASSESSMENT

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Vulnerability .....	3.135
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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 chapter is to provide an overview of all hazards that are prevalent in Vernon County, ranging from natural hazards like tornadoes and floods to other hazards such as wildfires and disease outbreaks. This chapter includes new data based on the latest FEMA Social Vulnerability Index for each identified hazard prevalent in Vernon County that impacts communities and school districts. It also identifies critical assets within the county boundaries, including bridges, major employment sources, and agricultural data. The risk assessment will also identify National Flood Insurance Program participants and non-participants alike; Vernon County has both instances.

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.**

Identification of natural hazards begins at the grassroots level of Vernon County, with local and county government determining what is most prevalent in their communities. Communities may find that after reviewing key documents such as the previous Hazard Mitigation Plan, or the Missouri State Hazard Mitigation Plan, certain hazards are not a threat to Vernon County.

### 3.1.1 Review of Existing Mitigation Plans

In the 2023 Missouri State Hazard Mitigation Plan, the State outlines several hazards that overlap with the Vernon County Natural Hazard Mitigation Plan, including the following hazards:

- ▶ Flooding (Riverine and Flash)
- ▶ Dam Failure
- ▶ Earthquakes
- ▶ Drought
- ▶ Extreme Temperatures
- ▶ Severe Thunderstorms
- ▶ Severe Winter Weather
- ▶ Tornadoes
- ▶ Wildfires
- ▶ Pandemic (called a Public Health Emergency at the State level)

However, there are hazards identified by SEMA that are not relevant to Vernon County, and these include the following:

- X Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) Attacks
- X Civil Disorder
- X Cyber Disruption
- X Land Subsidence/Sinkholes
- X Levee Failure
- X Structural/Urban Fires (though these fires may be mentioned as a cause of wildland fires)
- X Hazardous Materials Release (HAZMAT Incidents)
- X Mass Transportation
- X Nuclear Power Plants
- X Special Events
- X Terrorism
- X Utilities Disruption

This plan serves as a key update to the 2019 Vernon County Natural Hazard Mitigation Plan. And because it is a local plan, it is subject to highlighting only the natural hazards, but at the discretion of the County, it may include additional hazards as justified by the County Commission, Emergency Management Director, or other important stakeholders in the community.

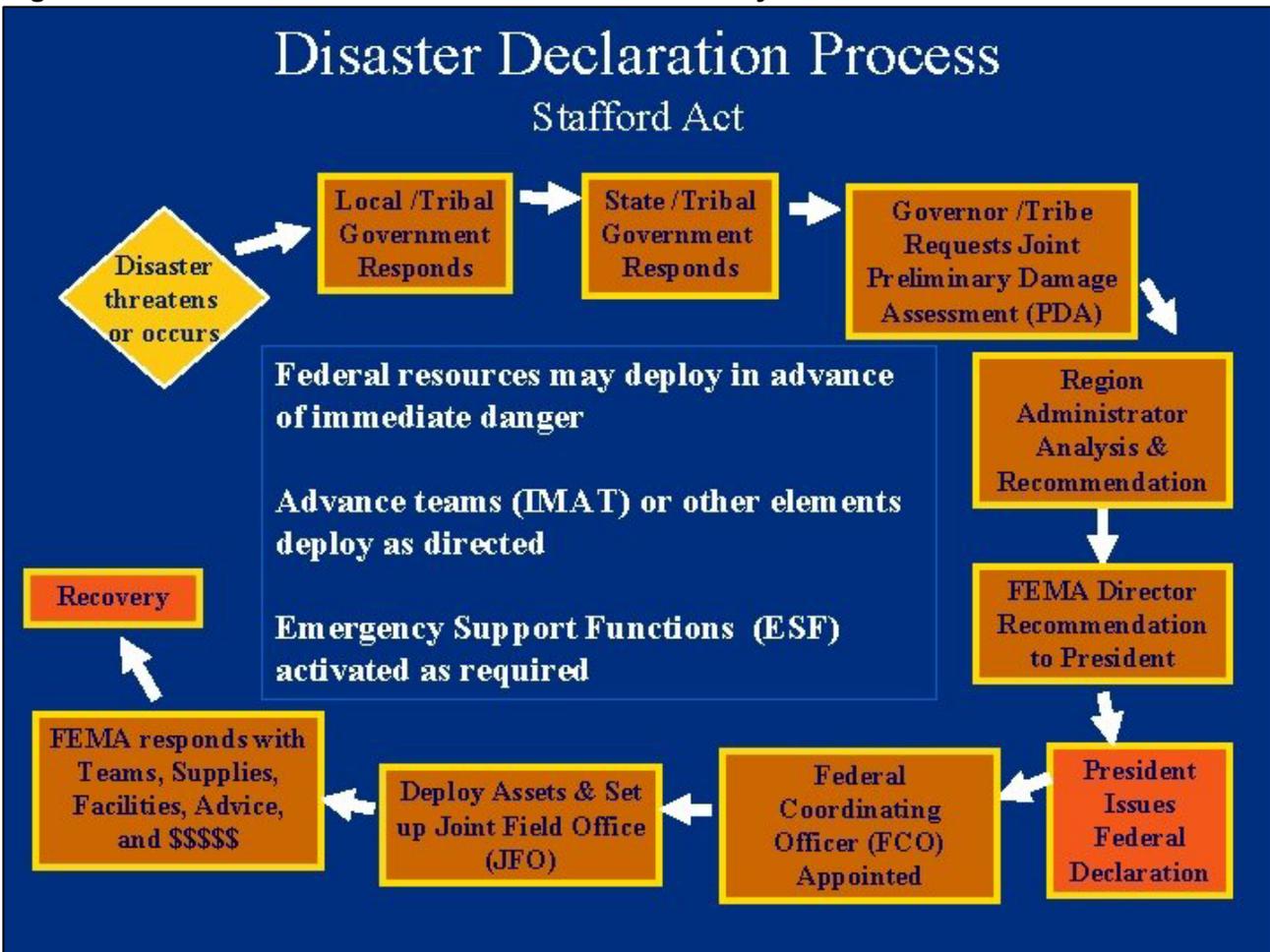
Levee failure and sinkholes are excluded from this plan because there are no mapped levees in Vernon County nor any instances of sinkholes that the Missouri Department of Natural Resources found.

### 3.1.2 Review Disaster Declaration History

The process for receiving a federally declared disaster within Vernon County begins at the local level (City of Nevada, for example). It begins with the incident (wildland fire, flood, etc.). **Secondly**, local officials conduct damage assessments. **Thirdly**, Missouri requests Preliminary Damage Assessments from FEMA Region VII in Kansas City. **Fourthly**, a joint effort between the local, state, and federal governments creates a unified damage assessment. **Fifthly**, the Governor will submit a disaster declaration request to the President on behalf of FEMA. **Sixthly**, FEMA reviews the disaster declaration before final submission to the President. **Seventhly**, President approves or rejects the disaster declaration.

Since 1973, Vernon County has been subject to 22 federally declared disasters, including 1 drought, 1 hurricane evacuation, multiple snow and winter storms, multiple severe weather events, and then more recently COVID-19, a global health crisis spurred by a pandemic that continues at the time of this plan update. **Table 3.1** and **Figure 3.3** showcase each of these disasters and then explain how individual and public assistance works for those unfamiliar with the process.

**Figure 3.1. Disaster Declaration Process – Courtesy of FEMA**



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

<b>Disaster/Emergency Number</b>	<b>Description</b>	<b>Declaration Date Incident Period</b>	<b>Individual Assistance (IA) Public Assistance (PA)</b>
EM-3017-MO	Drought	24 September 1976 24 September 1976	PA-A and PA-B Only
DR-779-MO	Severe Storms & Flooding	14 October 1986 18 Sept. 1986–15 Oct. 1986	IA and PA
DR-995-MO	Flooding & Severe Storms	9 July 1993 10 June 1993–25 Oct. 1993	IA Only
DR-1023-MO	Severe Storms, Flooding and Tornadoes	21 April 1994 9 April 1994–5 May 1994	IA Only
DR-1054-MO	Severe Storms, Tornadoes, Hail, and Flooding	2 June 1995 13 May 1995–23 June 1995	IA and PA
DR-1412-MO	Severe Storms and Tornadoes	6 May 2002 24 April 2002–10 June 2002	IA and PA
DR-1403-MO	Ice Storm	6 February 2002 29 Jan. 2002–13 Feb. 2002	IA and PA
DR-1463-MO	Severe Storms, Tornadoes, and Flooding	6 May 2003 4 May 2003–30 May 2003	IA Only
DR-1524-MO	Severe Storms, Tornadoes, and Flooding	11 June 2004 18 May 2004–31 May 2004	IA Only
EM-3232-MO	Hurricane Katrina Evacuation	10 September 2005 29 Aug. 2005–1 Oct. 2005	PA-B Only
DR-1631-MO	Severe Storms, Tornadoes and Flooding	16 March 2006 8 Mar. 2006–13 Mar. 2006	IA Only
EM-3281-MO	Severe Winter Storms	12 December 2007 8 Dec. 2007–15 Dec. 2007	PA-A and PA-B Only
DR-1749-MO	Severe Storms and Flooding	19 March 2008 17 March 2008–9 May 2008	PA Only
DR-1773-MO	Severe Storms and Flooding	25 June 2008 1 June 2008–13 Aug. 2008	IA and PA
DR-1847-MO	Severe Storms, Tornadoes, and Flooding	19 June 2009 8 May 2009–16 May 2009	PA Only
EM-3303-MO	Severe Winter Storm	30 January 2009 26 Jan. 2009–28 Jan. 2009	PA-B Only

EM-3317-MO	Severe Winter Storm	3 February 2011 31 Jan. 2011–5 Feb. 2011	PA-B Only
DR-1961-MO	Severe Winter Storm and Snowstorm	23 March 2011 31 Jan. 2011–5 Feb. 2011	PA Only
EM-3374-MO	Severe Storms, Tornadoes, Straight-Line Winds, and Flooding	2 January 2016 22 Dec. 2015–9 Jan. 2016	PA-A and PA-B Only
DR-4451-MO	Severe Storms, Tornadoes, and Flooding	9 July 2019 29 April 2019–6 July 2019	PA Only
EM-3482-MO	COVID-19	13 March 2020 20 January 2020–11 May 2023	PA-B Only
DR-4490-MO	COVID-19 Pandemic	26 March 2020 20 January 2020–11 May 2023	PA-B Only
DR-4741-MO	Severe Storms, Straight-Line Winds, Tornadoes, and Flooding	21 Sept. 2023 29 July 2023–14 August 2023	PA Only

Source: Federal Emergency Management Agency, 28 April 2022  
<https://www.fema.gov/data-visualization-summary-disaster-declarations-and-grants>



**Figure 3.2.** In 1986, Vernon County experienced its worst flooding on record, here, US 71 Highway flooded north of Nevada.

*Image courtesy of MidAmerica Live, a news source out of Butler, MO in Bates County.*

Figure 3.3. Guide to Understanding IA and PA – Courtesy of FEMA

## **IA – Individual Assistance**

- *Example: Your house is destroyed by a federally declared disaster (tornado)*

## **PA – Public Assistance**

- *Example: Repairing or replacing a hospital or long-term care facility*

## **PA-A – Debris Removal**

- *Example: Removing large quantities of sand or rock from a major roadway (I.E.: US 54 covered with fallen rock as a result of an earthquake or other means)*

## **PA-B – Emergency Protective Measures**

- *Example: Flood Fight Operations*

## **PA-C – Roads and Bridges**

- *Example: Replacement of washed out low water crossing*

## **PA-D – Water Control Facilities**

- *Example: Flood control measures (building a dike)*

## **PA-E – Public Buildings and Contents**

- *Example: Removal of Abestos during building restoration.*

## **PA-F – Public Utilities**

- *Example: Clearing trees from a right of way for power lines.*

## **PA-G – Parks, recreational and other facilities**

- *Example: Replacing grass and sod at a water treatment facility.*

## **PA-Z – Management Costs**

- *Any other not mentioned costs associated with the public assistance process.*

### 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 (2023)
- Previously approved Vernon County Hazard Mitigation Plan (2019)
- 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);
- County and local Comprehensive Plans to the extent available
- County Emergency Management
- County Flood Insurance Rate Map, FEMA
- Flood Insurance Study, FEMA
- SILVIS Lab, Department of Forest Ecology and Management, University of Wisconsin
- U.S. Army Corps of Engineers
- U.S. Department of Transportation
- United States Geological Survey (USGS)
- Various articles and publications available on the internet
  - *These sources are cited in the body of the plan*

### 3.1.4 Hazards Identified

**Table 3.2. Hazards Identified for Each Jurisdiction and Educational Institution**

Jurisdiction	Dam Failure	Drought	Earthquake	Extreme Temperatures	Flooding (River and Flash)	Severe Winter Weather	Thunderstorm/Lightning /Hail/High Wind	Tornado	Wildfire	Pandemic
Vernon County	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Cities and Villages</b>										
City of Bronaugh	X	✓	✓	✓	✓	✓	✓	✓	✓	✓
City of Nevada	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
City of Schell City	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
City of Sheldon	X	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Educational Institutions</b>										
Cotley College	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Crowder College – Nevada Campus	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bronaugh R-VII School District	X	✓	✓	✓	✓	✓	✓	✓	✓	✓
Missouri Welding Institute	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Nevada R-V School District	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Northeast Vernon County R-I School District	✓ <sup>1</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sheldon R-VIII School District	X	✓	✓	✓	✓	✓	✓	✓	✓	✓

<sup>1</sup> Likely to impact the elementary school in Schell City not the High School in Walker.

### 3.1.5 Multi-Jurisdictional Risk Assessment

This plan is a major update to the previously FEMA-approved Vernon County Natural Hazard Mitigation Plan that was approved on 12 September 2019. Each of the hazards identified in the previous section will be discussed at length throughout this chapter. Some hazards vary in strength and extent across Vernon County, but for the most part each hazard would uniformly impact Vernon County. Lone exception may be given to dam failure, seeing as the dams in Vernon County are spread out throughout the county and have varying inundation areas that would be affected if they failed.

Overall, the climate is uniform throughout Vernon County, but the topography is different in eastern Vernon County as the land rolls more and it is hillier than in central and western Vernon County. Bronaugh, Nevada, Schell City, Sheldon, and Walker are the main incorporated communities and Deerfield, Metz, Milo, Moundville and Richards are the villages of Vernon County. Nevada is the main crossroads of Vernon County as it connects to several other areas by virtue of the highways that come together in Nevada. Interstate 49/71 Highway is the main arterial route that runs north/south through Vernon County and connects places like Sheldon and Nevada to places like Kansas City and Joplin. Missouri Route 43 west of Nevada also connects to Joplin, just on a slower rate and with more countryside. US Route 54 runs east and west through Vernon County, it helps connect Vernon County to Fort Scott, Kansas, and other points of interest. On that note, Vernon County is one of two counties in this region that share a border with Kansas. Bates County lies just north of Vernon County and Barton County to the south. Linn and Bourbon County Kansas are to the west and Cedar County is to the east. St. Clair County is to the northeast of Vernon County.

Because of the uniqueness of Vernon County, hazards and threats vary greatly across the county's geopolitical boundaries.

## 3.2 ASSETS AT RISK

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While Vernon County is a predominantly rural county, it still has many assets that are considered to be at risk from the direct impact of disasters. One of the biggest assets this county of just under 20,000 has is the 3M plant in Nevada, which is also the largest employer in the county. When planning for disasters and determining how to adequately respond to them, knowing the jurisdictions (including townships), as well as the schools, colleges and special school district that all fall within the boundaries of Vernon County.

### 3.2.1 Total Exposure of Population and Structures

#### Unincorporated County and Incorporated Cities

In 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 Vernon County. **Table 3.4** that follows provides the building value exposures for the county and each city in the planning area broken down by usage type. Finally, **Table 3.5** provides the building count total for the county and each city in the planning area broken out by building usage types (residential, commercial, industrial, and agricultural).

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

Jurisdiction	2020 Annual Population Estimate	Building Count	Building Exposure (\$)	Contents Exposure (\$)	Total Exposure (\$)
City of Bronaugh	163	64	\$7,714.00	\$4,619.00	\$12,354.00
City of Nevada	8,212	3,360	\$666,104.00	\$366,548.00	\$1,032,652.00
City of Schell City	228	179	\$27,161.00	\$14,414.00	\$41,575.00
City of Sheldon	435	153	\$25,304.00	\$15,545.00	\$40,850.00
Unincorporated Vernon County	10,189	12,653	\$660,403.00	\$342,012.00	\$1,002,415.00
<b>Totals</b>	<b>19,707</b>	<b>16,865</b>	<b>\$1,442,237.00</b>	<b>\$776,412.00</b>	<b>\$2,218,670.00</b>

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

**Table 3.4. Building Values/Exposure by Usage Type (in \$ Thousands)**

Jurisdiction	Residential	Commercial	Industrial	Agriculture	Education	Government	Total
City of Bronaugh	\$6,153.00	\$1,365.00	0	\$39.00	0	\$157.00	\$7,714.00
City of Nevada	\$427,952.00	\$116,901.00	\$20,949.00	\$145.00	\$95,910.00	\$4,247.00	\$666,104.00
City of Schell City	\$20,921.00	\$3,324.00	0	\$57.00	\$2,230.00	\$629.00	\$27,161.00
City of Sheldon	\$15,998.00	\$5,817.00	\$1,047.00	\$55.00	\$2,230.00	\$157.00	\$25,304.00
Unincorporated Vernon County	\$585,472.00	\$22,715.00	\$13,617.00	\$19,081.00	\$13,383.00	\$6,135.00	\$660,403.00
<b>Totals</b>	<b>\$1,100,491.00</b>	<b>\$160,925.00</b>	<b>\$35,613.00</b>	<b>\$19,658.00</b>	<b>\$113,753.00</b>	<b>\$11,797.00</b>	<b>\$1,442,237.00</b>

Source: Missouri GIS Database, SEMA Mitigation Management Section

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

Jurisdiction	Residential Counts	Commercial Counts	Industrial Counts	Government Counts	Education Counts	Agricultural Counts	Total
City of Bronaugh	40	5	0	1	0	18	64
City of Nevada	2,782	422	20	27	43	66	3,360
City of Schell City	136	12	0	4	1	26	179
City of Sheldon	104	21	1	1	1	25	153
Unincorporated Vernon County	3,806	82	13	39	6	8,707	12,653
<b>Totals</b>	<b>7,154</b>	<b>581</b>	<b>34</b>	<b>75</b>	<b>51</b>	<b>8,970</b>	<b>16,865</b>

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 3.7** 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-Educational Institutions**

Public School District	Enrollment	Building Count	Building Exposure (\$)	Contents Exposure (\$)	Total Exposure (\$)
Bronaugh R-VII	176	16	\$8,678,176.00	\$2,549,187.00	\$11,227,363.00
Nevada R-V	2,382	19	\$88,766,149.00	\$6,255,367.00	\$93,121,806.00
Northeast Vernon County R-I	200	2	\$10,381,240.00	\$1,532,918.00	\$11,914,158.00
Sheldon R-VIII	174	5	\$8,686,002.00	\$1,353,642.00	\$10,039,644.00
Cottey College	311	23	\$126,640,460.00	\$13,961,000.00	\$140,601,460.00
Crowder College	177	1	\$3,889,183.00	\$237,320.00	\$4,126,503.00
Missouri Welding Institute	500 <sup>2</sup>	4	\$3,698,761.00	\$1,123,620.00	\$4,822,381.00

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

\*The Building Exposure, Contents Exposure, and Total Exposure amounts come from the completed Data Collection Questionnaires from Public School Districts. In general, the school districts obtain this information from their insurance coverage amounts.

### 3.2.2 Critical and Essential Facilities and Infrastructure

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

- ▶ **Critical Facility:** *Those facilities are 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 Vernon County's incorporated communities including the county itself, and the townships, a unique feature of Vernon County. The list was compiled from the Data Collection Questionnaire as well as the following sources:

- ▶ 2023 Missouri State Hazard Mitigation Plan
- ▶ Critical/Essential Facilities Lists Completed by the communities.

<sup>2</sup> This enrollment is subject to fluctuation throughout the year, per the Director

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

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	
City of Bronaugh	-	-	-	-	-	X	X	X	X	-	X	-	-	-	-	-	-	-	-	X	X	-	-	7	
City of Nevada	X	-	X	X	X	X	X	X	X	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	21
City of Schell City	-	-	-	-	-	X	X	X	X	-	X	-	-	-	-	-	-	X	-	X	X	-	-	8	
City of Sheldon	-	-	-	-	-	X	X	X	X	-	X	-	-	-	-	-	-	X	-	X	X	-	-	8	
Unincorporated Vernon County	X	-	X	X	X	X	X	X	X	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	22
<b>Totals</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>5</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>66</b>	

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

Figure 3.4. Vernon County Bridges – Courtesy of MoDOT

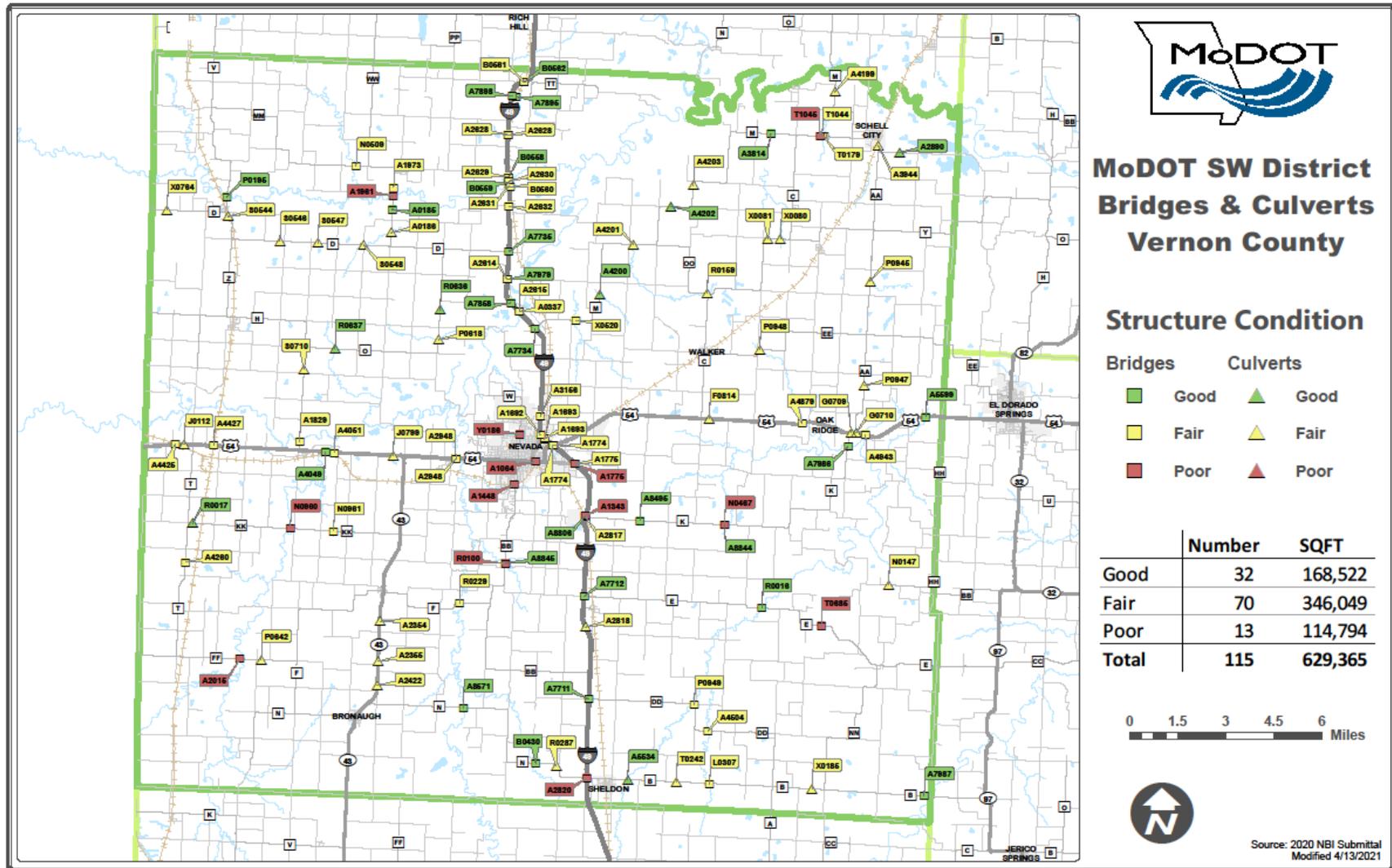
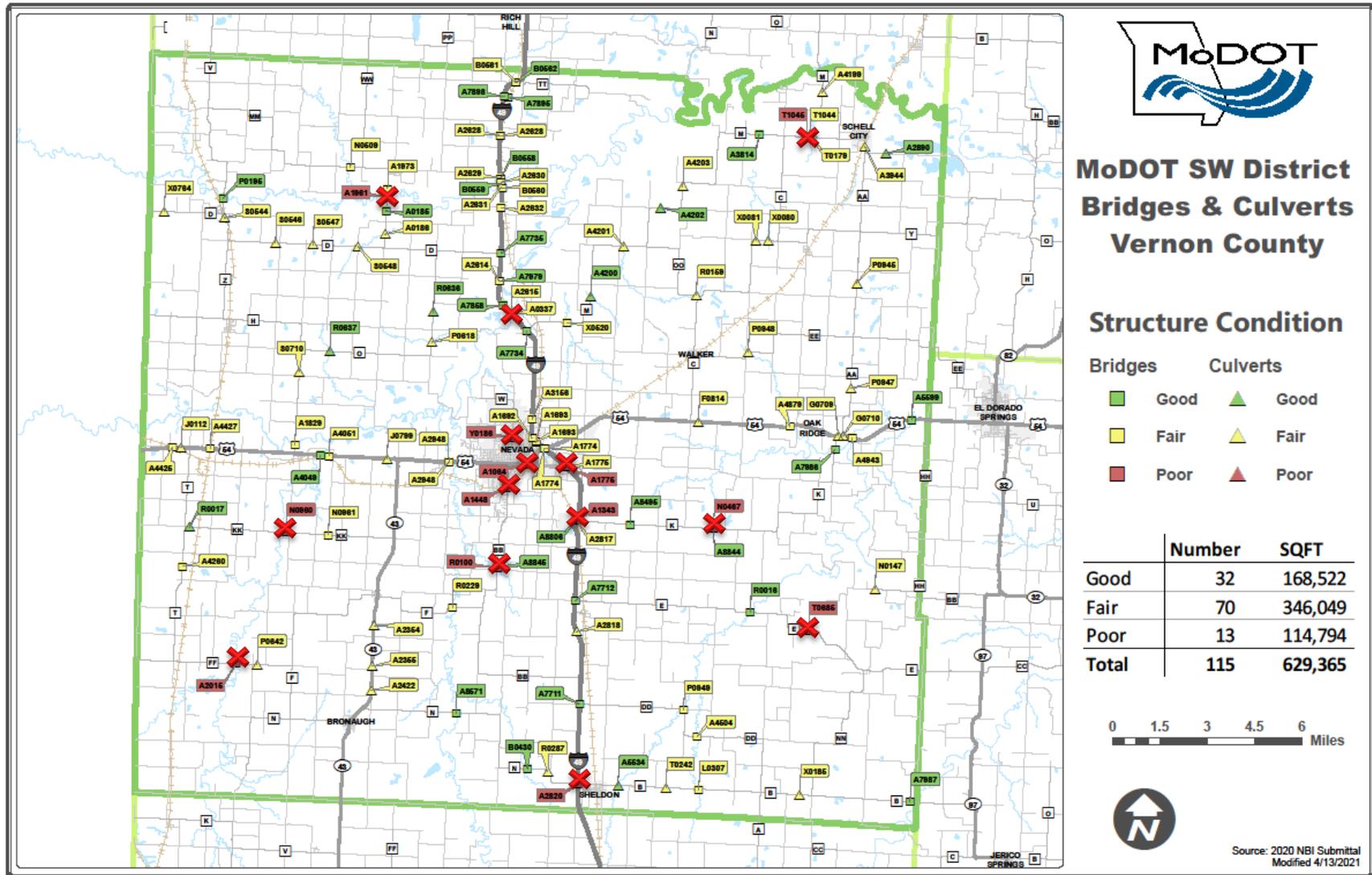


Figure 3.5. Vernon County Structurally Deficient Bridges – Courtesy of MoDOT



### 3.2.3 Other Assets<sup>5(d)</sup>

When it comes to hazard mitigation planning, it is essential to consider other facets of a community. These can include natural resources, cultural resources, critical infrastructure, historical places and major employers. Natural resources can include threatened and endangered species, of which Vernon County has 3 endangered and 3 threatened species. When planning around environments where these species are located, whether on land or in water, careful considerations must be given to these species so as not to damage their environment.

Vernon County is home to several parks and conservation areas as well, which are scattered throughout the county in various communities and some even extend into adjacent counties.

Cultural assets and the community are also important considerations in planning efforts. If a building or particular piece of history exists within a community, the best thing to do is preserve that history for future generations so they may see the value in what used to be and how they can better connect it to the present day. Through mitigation efforts, these cultural artifacts may be saved in case of a major disaster. In some instances, as an act of historic preservation in areas outside Vernon County, cultural pieces of communities have been relocated out of floodplains.

Considering the major employers of Vernon County is also vital during the planning process, and the most notable example in Vernon County is 3M, which employs more than 700 people and is considered big business for a county this size. If 3M lost much of its workforce or was struck by a disaster, it is reasonable that it would cost Vernon County a lot of money to not only rebuild any damaged infrastructure but also rehire the lost workforce. In some instances, a place like 3M or Walmart can assist with planning efforts because some of their services may be seen as vital in the aftermath of a disaster during recovery (Walmart providing water or other necessities that people need in an emergency).

To put this succinctly, planning across Vernon County takes on many forms and takes into consideration several aspects that are both historic to the communities in the county and culturally impactful, these dynamics define what makes Vernon County distinctive.

**Threatened and Endangered Species:** Unlike most counties in the immediate vicinity of Vernon County, there are far fewer endangered species and even threatened species. Currently, Vernon County is home to 3 endangered species and 3 threatened species. The Greater Prairie Chicken is also an Endangered species in nearby Cedar County.

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

Common Name	Scientific Name	Status
Greater Prairie Chicken	Tympanuchus cupido	Endangered
Northern Harrier	Circus hudsonius	Endangered
Niangua Darter	Etheostoma nianguae	Threatened
Eastern Spotted Skunk	Spilogale putorius	Endangered
Mead’s Milkweed	Asclepias meadii	Threatened
Western Prairie Fringed Orchid	Platanthera praeclara	Threatened

Source: Missouri Department of Conservation – <https://mdc.mo.gov/field-guide/statuses?status=994>



**Figure 3.6. Niangua Darter – A *Threatened* Species found in Vernon County**

In addition to the handful of endangered and threatened species in Vernon County, the county is also home to several parks and recreation areas. Some of these may extend into adjacent counties or even states because Vernon County is located on the Kansas-Missouri state line. This is a commonality with rails-to-trails, old railroads that have been converted into multi-use trail systems. Some addresses may need further clarification if they are located off a rural road.

**Table 3.9. Parks in Vernon County**

<b>Park / Conservation Area</b>	<b>Address</b>	<b>City</b>
August A. Busch Memorial Wetlands at Four Rivers Conservation Area	1600 E Ball Rd	Rich Hill
Balltown Access	S 1300 Rd/E Duck Rd.	Richards
Big Drywood Creek Conservation Area	850 Rd	Deerfield
Bristow Conservation Area	S 2100 Rd and Rebel Rd.	Nevada
Bushwacker Lake Conservation Area	Yucca Rd.	Sheldon
Cephas Ford Access	S 1500 Rd	Richards
Clear Creek Conservation Area	S 2425 VC Rd	Sheldon
Douglas Branch Conservation Area	Indian Line Rd.	Richards
Flight Lake Conservation Area	E Lady Rd.	Richards
Gama Grass Prairie Conservation Area	E Bailey Rd	Metz
Gay Feather Prairie Conservation Area	E Union Track Rd.	Milo
Horseshoe Park	211 N Ash St.	Nevada
Izaak Walton Lake	400 W Atlantic St.	Nevada
Little Osage Prairie	1650 Rd. North	Milo
Marmaduke Park	600 W Highland Avenue	Nevada
Metz Park	64765 Main St.	Metz
McGennis Youth Center Lake	S WW Hwy.	Metz
Osage Prairie Conservation Area	1725 Rd. S	Milo
Radio Springs Lake	1100 S College St.	Nevada
Schell-Osage Conservation Area	4662 2950 Rd	Schell City

Source: <http://mdc7.mdc.mo.gov/applications/moatlas/AreaList.aspx?txtUserID=quest&txtAreaNm=s>  
 The best source for park information is usually county and community websites.

**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. In Vernon County, there are 3 properties on the National Register of Historic Places.

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

Property	Address	City	Date Listed
Vernon County Courthouse	100 W Cherry Street	Nevada	06/26/1997
Vernon County Jail/Sheriff’s House & Office (Bushwhacker Museum)	229 N Main Street	Nevada	08/15/1977
Infirmery Building (Missouri State Hospital Building 3) (Nevada State Hospital)	2095 N Ash Street	Nevada	11/24/2005

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



**Figure 3.7. Vernon County Courthouse located in Nevada**

Courtesy of the former Economic Developer for Vernon County, Ben Vickers, the following employers earmark the largest nongovernmental employers in the County. 3M is the most employable organization in Vernon County with more than 700 employees.

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

Employer Name	Main Locations	Product or Service	Employees
3M	Nevada	Plastics Manufacturing	700+
Nevada Regional Medical Center	Nevada	Healthcare	518
Nevada R-V School District	Nevada	Educational Services	365
US Bank	Vernon County	Financial Services	270
Wal-Mart	Nevada	Merchandising	265
Heartland Behavioral Science	Nevada	Healthcare	240
Nevada Habilitation Services	Nevada	Nursing and Residential Care Facilities	210
Cottey College	Nevada	Educational Services	162
Auburn Pharmacy	Nevada	Pharmacy Services	98
ADM	Nevada	Agribusiness	80
Peerless Products Inc.	Nevada	Metal Window and Door Manufacturing	50
Smithfield Foods	Nevada	Agribusiness	45

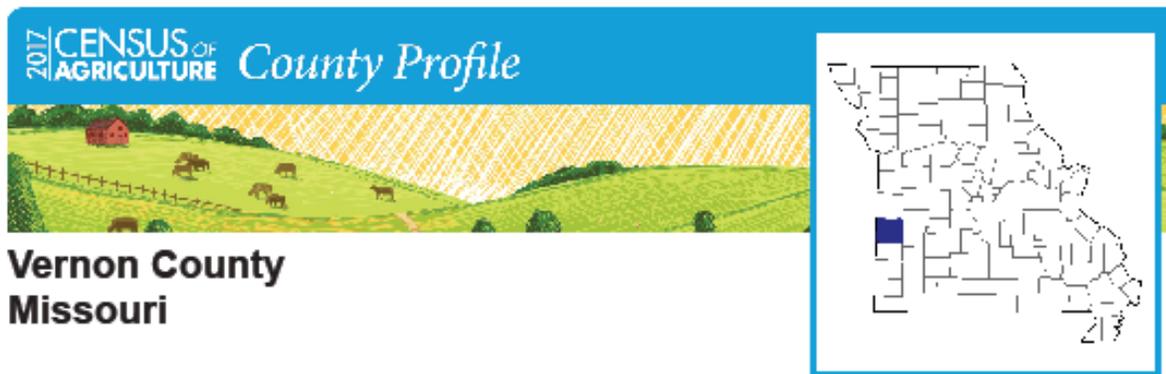
Source: Ben Vickers, Former Vernon County Economic Developer, <https://www.buildvc.org/doing-business-here/major-employers/>



### ***Agricultural Life in Vernon County***

Agriculture plays a significant role in the Vernon County economy; they produce 2% of the entire state of Missouri's agriculture sales. While most farmers in Vernon County have livestock, poultry and other products compared to crops, the value of agriculture in Vernon County is still significant. The United States Department of Agriculture conducts a quinquennial agricultural census that captures a summary of the agricultural life of counties, states, the Nation, and even US territories. This plan features data from the 2017 USDA Agricultural Census, and while the 2022 Agricultural Census is nearing completion, the data from that census will not be available until after this plan has been submitted for review.

**Table 3.12. Agriculture-Related Jobs in Vernon County**



**Vernon County  
Missouri**

**Total and Per Farm Overview, 2017 and change since 2012**

	2017	% change since 2012
Number of farms	1,265	-7
Land in farms (acres)	435,671	+4
Average size of farm (acres)	344	+12
<b>Total (\$)</b>		
Market value of products sold	215,609,000	+3
Government payments	4,835,000	+6
Farm-related income	7,832,000	-48
Total farm production expenses	156,375,000	-7
Net cash farm income	71,901,000	+19
<b>Per farm average (\$)</b>		
Market value of products sold	170,442	+11
Government payments (average per farm receiving)	10,223	+36
Farm-related income	14,477	-49
Total farm production expenses	123,617	(Z)
Net cash farm income	56,839	+28

**2** Percent of state agriculture sales

**Share of Sales by Type (%)**

Crops	38
Livestock, poultry, and products	62

**Land in Farms by Use (%) \***

Cropland	62
Pastureland	24
Woodland	8
Other	5

**Acres irrigated: 12,188**

3% of land in farms

**Land Use Practices (% of farms)**

No till	12
Reduced till	10
Intensive till	14
Cover crop	7

**Farms by Value of Sales**

	Number	Percent of Total *
Less than \$2,500	371	29
\$2,500 to \$4,999	102	8
\$5,000 to \$9,999	121	10
\$10,000 to \$24,999	215	17
\$25,000 to \$49,999	138	11
\$50,000 to \$99,999	102	8
\$100,000 or more	216	17

**Farms by Size**

	Number	Percent of Total *
1 to 9 acres	46	4
10 to 49 acres	264	21
50 to 179 acres	443	35
180 to 499 acres	325	26
500 to 999 acres	82	6
1,000 + acres	105	8



United States Department of Agriculture  
National Agricultural Statistics Service

[www.nass.usda.gov/AgCensus](http://www.nass.usda.gov/AgCensus)

**Market Value of Agricultural Products Sold**

	Sales (\$1,000)	Rank in State <sup>b</sup>	Counties Producing Item	Rank in U.S. <sup>b</sup>	Counties Producing Item
<b>Total</b>	<b>215,609</b>	<b>9</b>	<b>114</b>	<b>464</b>	<b>3,077</b>
<b>Crops</b>	<b>82,335</b>	<b>19</b>	<b>114</b>	<b>688</b>	<b>3,073</b>
Grains, oilseeds, dry beans, dry peas	75,009	22	112	539	2,916
Tobacco	-	-	4	-	323
Cotton and cottonseed	-	-	5	-	647
Vegetables, melons, potatoes, sweet potatoes	1,757	5	113	599	2,821
Fruits, tree nuts, berries	3,094	3	111	284	2,748
Nursery, greenhouse, floriculture, sod	333	40	108	1,161	2,601
Cultivated Christmas trees, short rotation woody crops	-	-	37	-	1,384
Other crops and hay	2,141	40	114	1,139	3,040
<b>Livestock, poultry, and products</b>	<b>133,274</b>	<b>8</b>	<b>114</b>	<b>361</b>	<b>3,073</b>
Poultry and eggs	11,747	20	112	527	3,007
Cattle and calves	30,652	11	113	503	3,055
Milk from cows	10,158	5	97	449	1,892
Hogs and pigs	79,799	2	111	76	2,858
Sheep, goats, wool, mohair, milk	262	25	111	623	2,984
Horses, ponies, mules, burros, donkeys	598	3	113	360	2,970
Aquaculture	-	-	43	-	1,251
Other animals and animal products	59	31	111	936	2,878

<b>Total Producers <sup>a</sup></b>	<b>2,149</b>	<b>Percent of farms that:</b>	<b>Top Crops in Acres <sup>d</sup></b>
<b>Sex</b>		<b>Have internet access</b>	<b>70</b>
Male	1,348	<b>Farm organically</b>	<b>1</b>
Female	801	<b>Sell directly to consumers</b>	<b>4</b>
<b>Age</b>		<b>Hire farm labor</b>	<b>23</b>
<35	321	<b>Are family farms</b>	<b>96</b>
35 – 64	1,198		
65 and older	630		
<b>Race</b>			<b>Livestock Inventory (Dec 31, 2017)</b>
American Indian/Alaska Native	5		Broilers and other meat-type chickens
Asian	2		430
Black or African American	-		Cattle and calves
Native Hawaiian/Pacific Islander	-		75,360
White	2,131		Goats
More than one race	11		1,658
<b>Other characteristics</b>			Hogs and pigs
Hispanic, Latino, Spanish origin	17		(D)
With military service	191		Horses and ponies
New and beginning farmers	535		1,389
			Layers
			137,589
			Pullets
			20,765
			Sheep and lambs
			1,975
			Turkeys
			95,728

See 2017 Census of Agriculture, U.S. Summary and State Data, for complete footnotes, explanations, definitions, commodity descriptions, and methodology.

<sup>a</sup> May not add to 100% due to rounding. <sup>b</sup> Among counties whose rank can be displayed. <sup>c</sup> Data collected for a maximum of four producers per farm.

<sup>d</sup> Crop commodity names may be shortened; see full names at [www.nass.usda.gov/igo/cropnames.pdf](http://www.nass.usda.gov/igo/cropnames.pdf). \* Position below the line does not indicate rank.

(D) Withheld to avoid disclosing data for individual operations. (NA) Not available. (Z) Less than half of the unit shown. (-) Represents zero.

USDA is an equal opportunity provider, employer, and lender.

### 3.3 LAND USE AND DEVELOPMENT

#### 3.3.1 Development Since Previous Plan Update<sup>5(e)</sup>

This rendition of the Vernon County Hazard Mitigation Plan serves as a vital update to the previously approved Hazard Mitigation Plan written for Vernon County and approved by FEMA on 12 September 2019. When that particular plan was written, it did not include data from the 2020 Census, it fell one calendar year short of that information being available. It also did not include the latest information relating to housing developments, or demolition of existing homes. In some cases, the changes in populations may be quite drastic. Consider the following... if a town of 50 loses 25 people, that's a 50% loss in population, that has happened in many places, on the other hand, if a city had a population of 8,300 and it falls to 8,200, that difference is only a 1% population loss. The hope is that communities in decline, which unfortunately applies to much of Vernon County, hopefully begin to rebound as new opportunities for employment arise or people begin seeking out Vernon County as a place to call home.

**Table 3.13. County Population Growth, 2010-2020**

Jurisdiction	Total Population 2010	Total Population 2020	2010-2020 # Change	2010-2020 % Change
Vernon County	21,159	19,707	-1,452 ↓	-7% ↓
City of Bronaugh	249	163	-86 ↓	-35% ↓
City of Nevada	8,386	8,212	-174 ↓	-2% ↓
City of Schell City	249	228	-21 ↓	-8% ↓
City of Sheldon	543	435	-108 ↓	-20% ↓

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

Traditionally, growth and decline in cities is measured by more than one variable. It is not only the population growth and decline, but it is also a loss or gain in housing development. In the case of Vernon County, unfortunately, every community has declined in population and housing development since the 2010 census. In some cases, the losses have been significant... for example, in Deerfield and Richards, their populations have decreased by more than 51%, more than half the population. In terms of housing losses, these two communities have lost at least 36% of their housing that existed just a decade ago. Hopefully, there will be a turnaround in these losses over the coming years, but it will remain to be seen.

**Table 3.14. Change in Housing Units, 2010-2020**

Jurisdiction	Housing Units 2010	Housing Units 2020	2010-2020 # Change	2010-2020 % Change
City of Bronaugh	107	78	-29 ↓	-37.17% ↓
City of Nevada	4,019	3,960	-59 ↓	-1.49% ↓
City of Schell City	133	116	-17 ↓	-14.66% ↓
City of Sheldon	238	220	-18 ↓	-8.18% ↓
Vernon County	9,495	8,921	-574 ↓	-6.43% ↓

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

## Changes in Development Since the 2019 Vernon County HMP

- ▶ **City of Bronaugh** – *The only new development within Bronaugh is the new multiuse community building in the City park.*
- ▶ **City of Nevada** – *The fire chief for Nevada, who is also the local emergency management director, has noted that there have been 84 new residential developments, 8 new commercial developments, and 1 new industrial development since the 2019 plan was developed.*
- ▶ **City of Schell City** – *The city clerk has noted that there has been no significant changes in development in Schell City since 2019.*
- ▶ **City of Sheldon** – *The mayor and city clerk have noted only one new development in Sheldon since 2019, they received a new Dollar General.*

### **3.3.2 Future Land Use and Development<sup>5(e)</sup>**

- ▶ **City of Bronaugh** – *The mayor does not anticipate any new developments occurring in Bronaugh in the near future.*
- ▶ **City of Nevada** – *The fire chief has noted two projects will occur within Nevada over the next five years... one is an update to the water treatment plant located at 1300 W Cherry Street and a wastewater lift-station line upgrade on the north side of the community.*
- ▶ **City of Schell City** – *The city clerk says that she does not anticipate any new developments in the next five years for their small community.*
- ▶ **City of Sheldon** – *The mayor does not anticipate any new developments occurring in Sheldon in the near future.*

### School District's Future Development

- ▶ **Bronaugh R-VII** – *The school district has noted no known construction projects will be completed at the school over the next five years, per the superintendent.*
- ▶ **Northeast Vernon County R-I** – *The school district has noted no known construction projects will be completed at the school over the next five years, per the superintendent.*
- ▶ **Nevada R-V** – *The school district has noted no known construction projects will be completed at the school over the next five years, per the superintendent. The only exception is a new school being built, but will be finished in the fall of 2024.*
- ▶ **Sheldon R-VIII** – *The school district has noted no known construction projects will be completed at the school over the next five years, per the superintendent.*

### 3.4 HAZARD PROFILES, VULNERABILITY, AND PROBLEM STATEMENTS

All hazards that impact Vernon County will be included in this section. For each identified hazard, there are **seven** key components that are utilized for each hazard. **First**, the hazard must be described within the 'Hazard Description'. **Second**, the geographic area in which the hazard occurs is detailed in the 'Geographic Location' section. **Third**, each hazard's strength, magnitude, and extent are discussed in the 'Strength/Magnitude/Extent' section. **Fourth**, all the previous occurrences are outlined in the 'Previous Occurrences' section, but only outlines within the last 20 (sometimes more depending on the hazard) years each relevant occurrence of a particular disaster. **Fifth**, the likelihood of an event occurring in the future is noted in 'Probability of Future Occurrence'. **Sixth**, consideration is given to how climate change will impact each hazard's occurrence in the future for better or worse. **Seventh**, the last section has a problem statement and addresses how to better deal with each hazard that impacts Vernon County, such as seeking safe rooms in schools or shelters for public-usage buildings.

**Figure 3.8. General Overview of Hazard Profile Planning Process**



## **Hazard Profiles**

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

Each individual hazard will have a certain level of information, based on what is readily available and what is open-source information, classified information is withheld but may be requested through appropriate parties pursuant to the Freedom of Information Act and Missouri Sunshine Law. Hazards will be listed alphabetically throughout the risk assessment, with exception given to any added sections outside the usual, such as Pandemics.

- ▶ **Hazard Description:** Generally describes the hazard and its impact on critical infrastructures throughout Vernon County.
- ▶ **Geographic Location:** Describes in detail where the hazard is likely to have impact throughout Vernon County. Occasionally, maps from ArcGIS or other mapping tools is used to illustrate the locations impacted by given hazards. This will result in variances across Vernon County and surrounding counties.
- ▶ **Strength/Magnitude/Extent:** This section is told in three parts. Strength refers to the size of a given hazard, which is how much of an area it covers. Magnitude is the intensity of a hazard or disaster, EF2 for example gives the magnitude of a tornado. Extent is the area affected by the hazard or disaster, which will cause variance similar to Geographic Location.
- ▶ **Previous Occurrences:** This section gives recaps on previous occurrences of a given hazard, for example, all severe winter weather events in Vernon County since 2003, sometimes earlier than this, depending on the frequency of an event.
- ▶ **Probability of Future Occurrence:** Generally speaking, this section determines thoroughly how likely a given hazard is to strike within a given year. In some cases, the probability of the hazard easily exceeds 100%, such as wildfires. In that situation, estimates are provided for how many events may occur per year instead of the probability of that event.
- ▶ **Changing Future Conditions Considerations:** Each natural hazard outlined in this plan should give some consideration to Climate Change, whether it is believed in or not. Because Climate Change's effects are far reaching, it is generally understood that events are becoming more severe and occurring more frequently. They are also occurring during times when it was previously unheard of; for example, a tornado occurring in December or a wildfire occurring in January because it's so dry. These are just two examples of the extreme weather phenomenon that is taking place, but it is due to changes in the earth's climate that are driving this. Some is man-induced, but there is still time to slow and even delay the most significant events that Climate Change brings, such as sea level rise and other defining events and disasters.

## **Vulnerability Assessments**

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

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

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

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

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

Immediately following the hazard profiles is the vulnerability assessment for each identified hazard in Vernon County. This is crucial because it has the most requirements during the plan review process at the State and Federal level. It identifies the jurisdictional vulnerability to specifically identified hazards and includes a summary of the hazard with its associated impacts.

The Vulnerability Assessment describes the number of current buildings in Vernon County, critical infrastructures, and vital facilities that are located in hazard-prone areas of the county.

This aids in providing an estimated valuation of the properties that could be damaged or destroyed by natural disasters, and these estimates have a multiplicative value of 1000 wherever possible due to the heightened value of certain buildings. By identifying these vulnerable structures, it sets the tone for the subsequent methodology.

The Vulnerability Assessment also has implications for land uses in Vernon County, both present and future alike, so this way Mitigation Actions may be taken to reduce vulnerability to specific hazards.

Lastly, the Vulnerability Assessment addresses the National Flood Insurance Program and those properties insured under the NFIP; however, the situation in Vernon County is unique. Most communities are participating in the NFIP, but some are not, and are sanctioned as a direct result of this.

Each hazard has a different subheading, all of which are explained in this section.

▶ **Vulnerability Overview:**

This subsection provides an overview of the vulnerability for each hazard on the various appurtenances in Vernon County.

▶ **Potential Losses to Existing Development:**

Includes an estimated projection of losses in a major disaster on the critical lifelines and infrastructure within Vernon County such as schools or important stores. The key difference is that this only applies to currently developed areas in Vernon County, not new infrastructure that could be built at a later date.

▶ **Previous and Future Development:**

If an area has made substantial changes since the last plan update in 2019, it will be considered 'previous' development and how it could be impacted by a disaster. Future development on the other hand is developments that will be built in the next five years once this plan is finished and active, such as building a new safe room or warming/cooling center in Wheatland as an example.

▶ **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, further outlined in Chapter 4.

## 3.4.1 Flooding (River and Flash)

### Hazard Profile

#### *Hazard Description*<sup>4(a)(2)</sup>

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”, now called **1% flood**, refer to the area in the floodplain that is subject to a one percent or greater chance of flooding in any given year. Floodplains are part of a larger entity called a basin, which is defined as all the land drained by a river and its branches.

Flooding caused by dam failure is discussed in **Section 3.4.2**. It will not be addressed in this section.

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

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

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

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

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

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

Geographic Location<sup>4(a)(1)</sup>

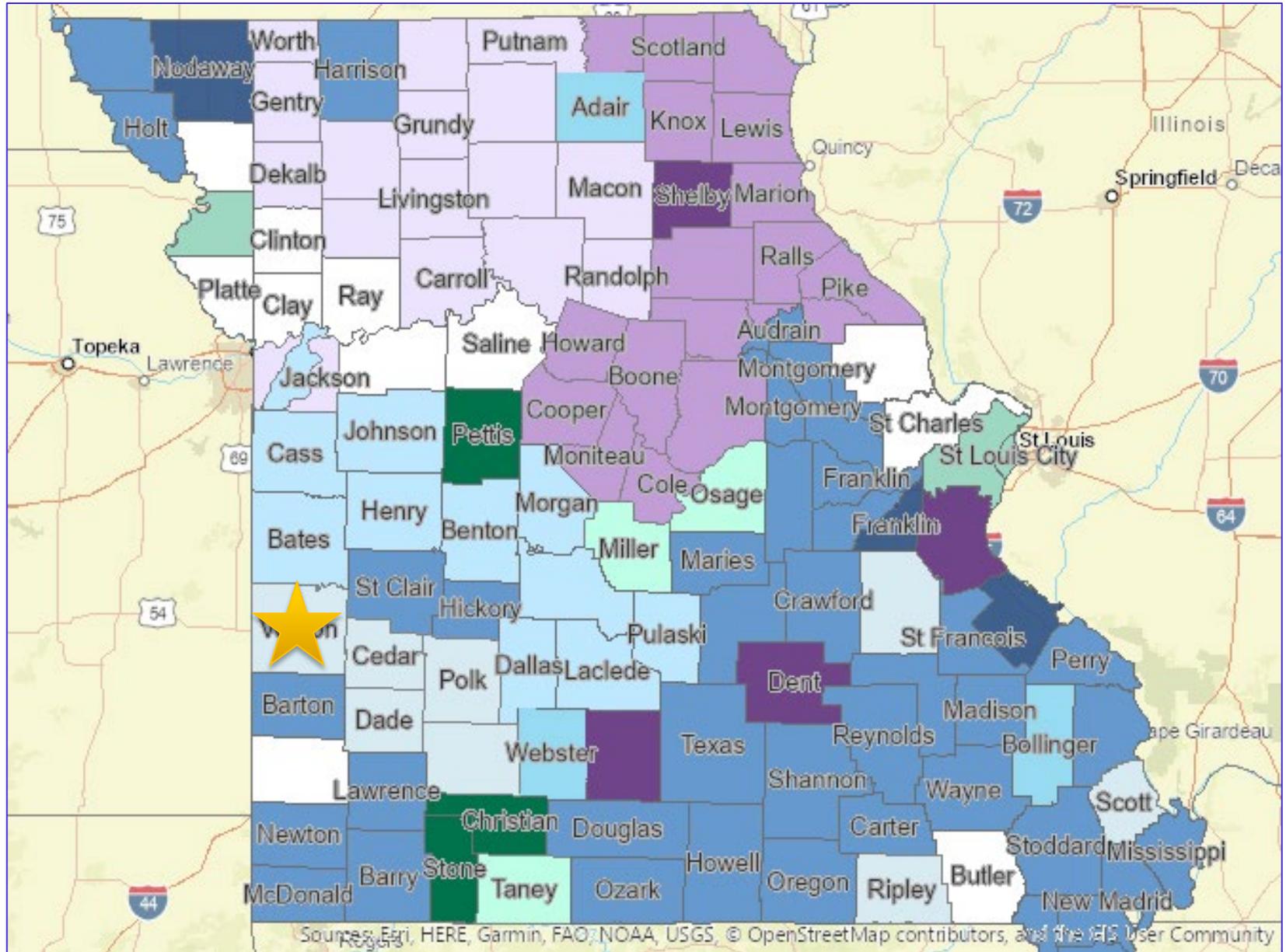


Figure 3.9. SEMA RISKMAP Project – Vernon County is in the HYDROLOGY Phase of Mapping

**Table 3.15. Vernon County NCEI Flood Events by Location, 2000-2023**

Location	# of Events
Unincorporated Vernon County	6
-Unincorporated County (Dederick) – 1 flood event	
-Unincorporated County (Ellis) – 1 flood event	
-Unincorporated County (Horton) – 1 flood event	
-Unincorporated County (Reo) – 1 flood event	
-Unincorporated County (Vernon (Zone)) – 2 flood events	
Bronaugh	1
-Bronaugh – 1 flood event	
Deerfield	5
-Deerfield – 5 flood events	
Nevada	3
-Nevada – 3 flood events	
Richards	2
-Richards – 2 flood events	
Walker	4
-Walker – 4 flood events	

Source: National Centers for Environmental Information, 21 April 2023

**Table 3.16. Vernon County NCEI Flash Flood Events by Location, 2000-2023**

Location	# of Events
Unincorporated Vernon County	10
-Unincorporated County (unspecified) – 3 flash flood events	
-Unincorporated County (Countywide) – 1 flash flood event	
-Unincorporated County (Ellis) – 2 flash flood events	
-Unincorporated County (Eve) – 1 flash flood event	
-Unincorporated County (Fair Haven) – 1 flash flood event	
-Unincorporated County (Horton) – 2 flash flood events	
Deerfield	8
-Deerfield – 8 flash flood events	
Milo	5
-Milo – 5 flash flood events	
Nevada	16
-Nevada – 11 flash flood events	
-Nevada Airport – 5 flash flood events	
Richards	4
-Richards – 4 flash flood events	
Sheldon	1
-Sheldon – 1 flash flood event	
Walker	1
-Walker – 1 flash flood event	

Source: National Centers for Environmental Information, 21 April 2023

## Strength/Magnitude/Extent

Flooding has long been a prevalent hazard within the State of Missouri and Vernon County, for as long as people have settled near watersheds, there has always been the possibility of flooding every year and sometimes more than once a year. Floods on the Missouri and Mississippi Rivers have been anywhere from a few feet over flood stage to major and record floods such as the Great Flood of 1993. Some recent floods have come close to these records but have fortunately fallen short.

While Vernon County is not located in these water basins, there are a fair share of watersheds in Vernon County that present the possibility of historic flooding. The Little Osage and Marmaton Rivers are 2 of the main rivers that flow through Vernon County and have presented flooding challenges for years.

Ultimately the strength and magnitude of a flood in Vernon County depends on how much rain is received in an area and the present conditions at the time... for example, if it is particularly wet and 9 inches of rain falls on already saturated soil over a three-day period, it is generally expected that the Marmaton River will rise above flood stage and cause issues along the river and surrounding floodplains. The extent of the flood is tied to the severity of the event, in a major flood it would be reasonable to conclude that there will be damage to property and infrastructure near the river.

## National Flood Insurance Program (NFIP) Participation<sup>5(c)</sup>

In Vernon County, there are participating communities in the NFIP, but there are also sanctioned communities as well. For the mitigation strategy in Chapter 4, Bronaugh, Nevada, Walker and Vernon County as a whole will provide mitigation actions to ensure they stay participants in the NFIP.

**Table 3.17. NFIP Participation in Vernon County**

Community ID#	Community Name	NFIP Participant (Y/N/Sanctioned)	Current Effective Map Date	Regular-Emergency Program Entry Date
290618A	City of Bronaugh	Y	05/01/2020	04/01/2014
290442A	City of Nevada	Y	05/01/2020	02/15/1985
290841A	Vernon County	Y	05/01/2020	07/01/1987
290631A	City of Walker	Y	NSFHA	09/10/1984
295439A	Village of Metz	Sanctioned	05/01/2020	05/01/2021
290692A	Village of Richards	Sanctioned	05/01/2020	05/01/2021
290519A	City of Schell City	Sanctioned	05/01/2020	04/18/1976
295442A	Village of Stotesbury	Sanctioned	05/01/2020	05/01/2021

Source: NFIP Community Status Book, 18 November 2022

KEY: M= No elevation determined – all Zone A, C, and X: NSFHA = No Special Flood Hazard Area; E=Emergency Program

Included are maps of each community in Vernon County that is part of the NFIP, but it also includes the schools where applicable, there are also those communities not in the NFIP, but a map is included, this includes sanctioned communities.

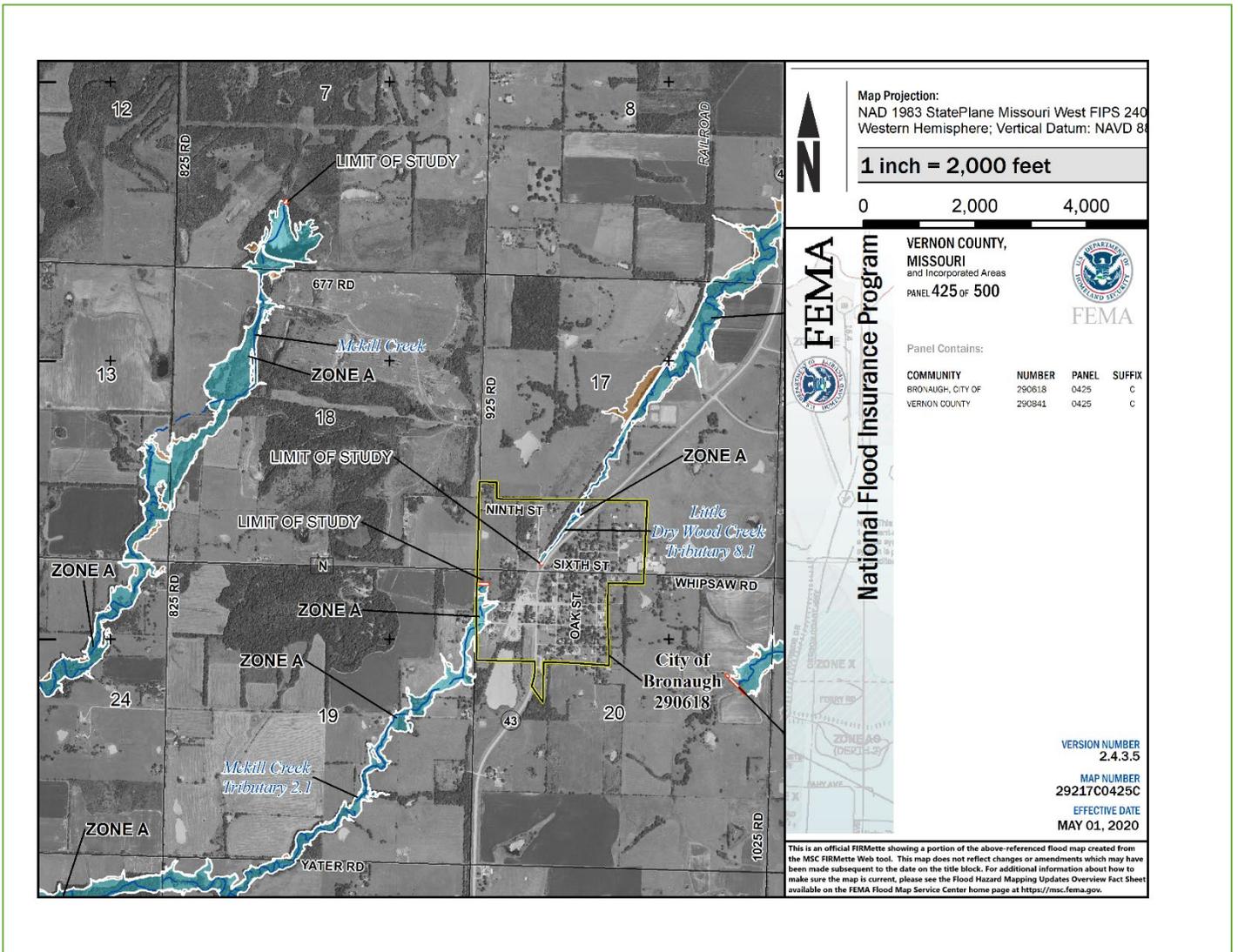


Figure 3.10. City of Bronaugh FIRMETTE – Courtesy of FEMA

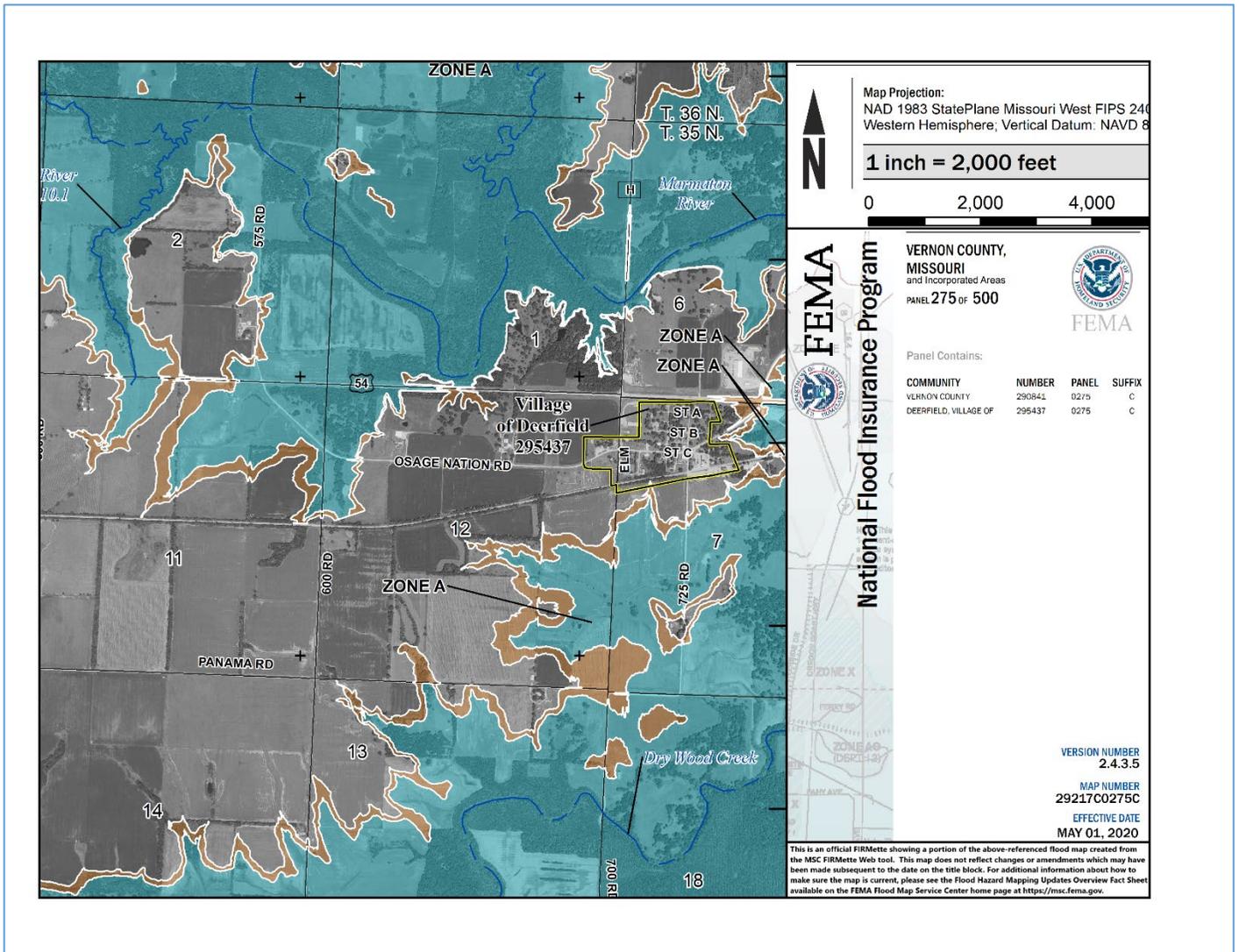


Figure 3.11. Village of Deerfield FIRMETTE – Courtesy of FEMA

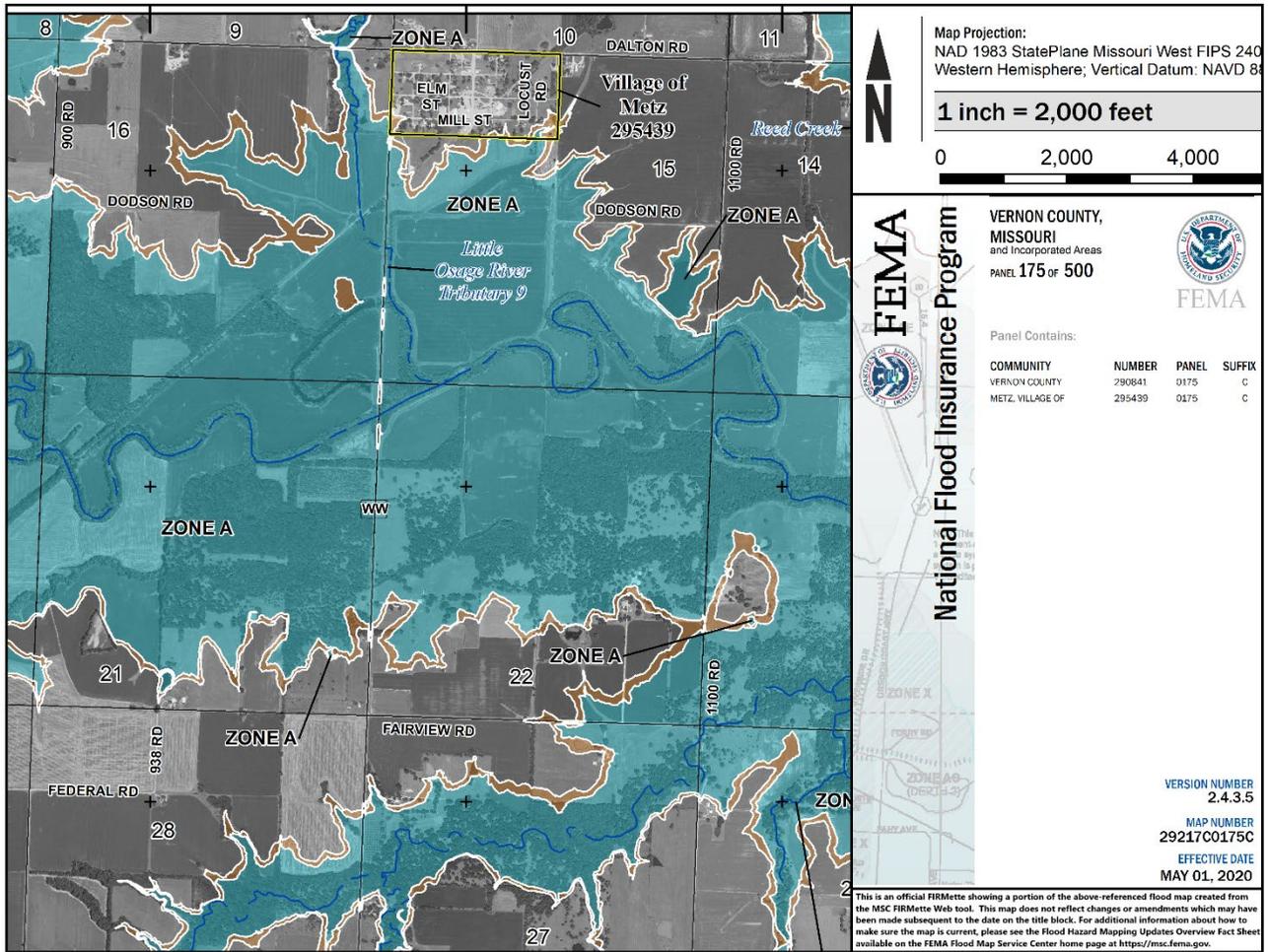


Figure 3.12. Village of Metz FIRMETTE – Courtesy of FEMA

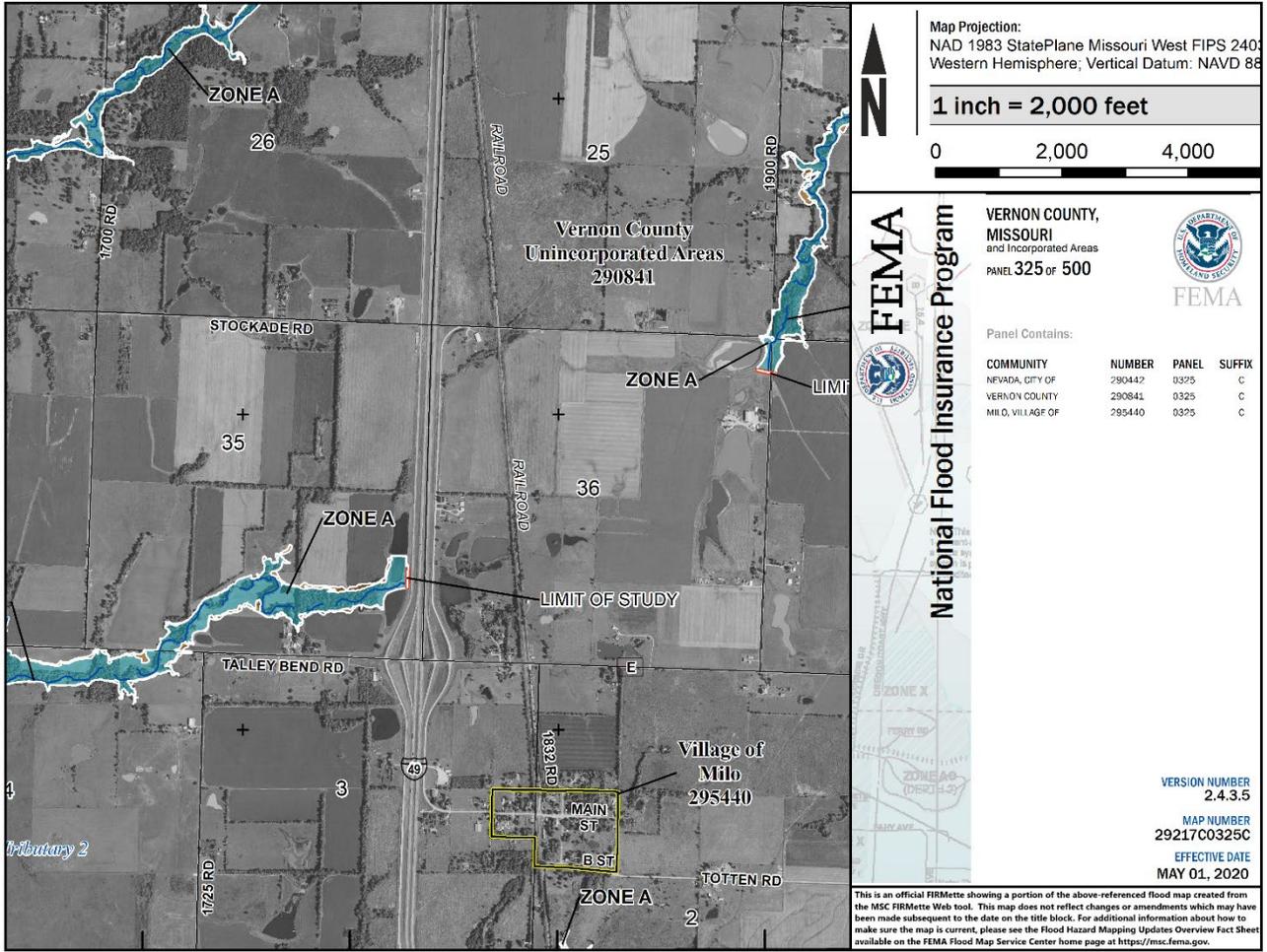


Figure 3.13. Village of Milo FIRMETTE – Courtesy of FEMA

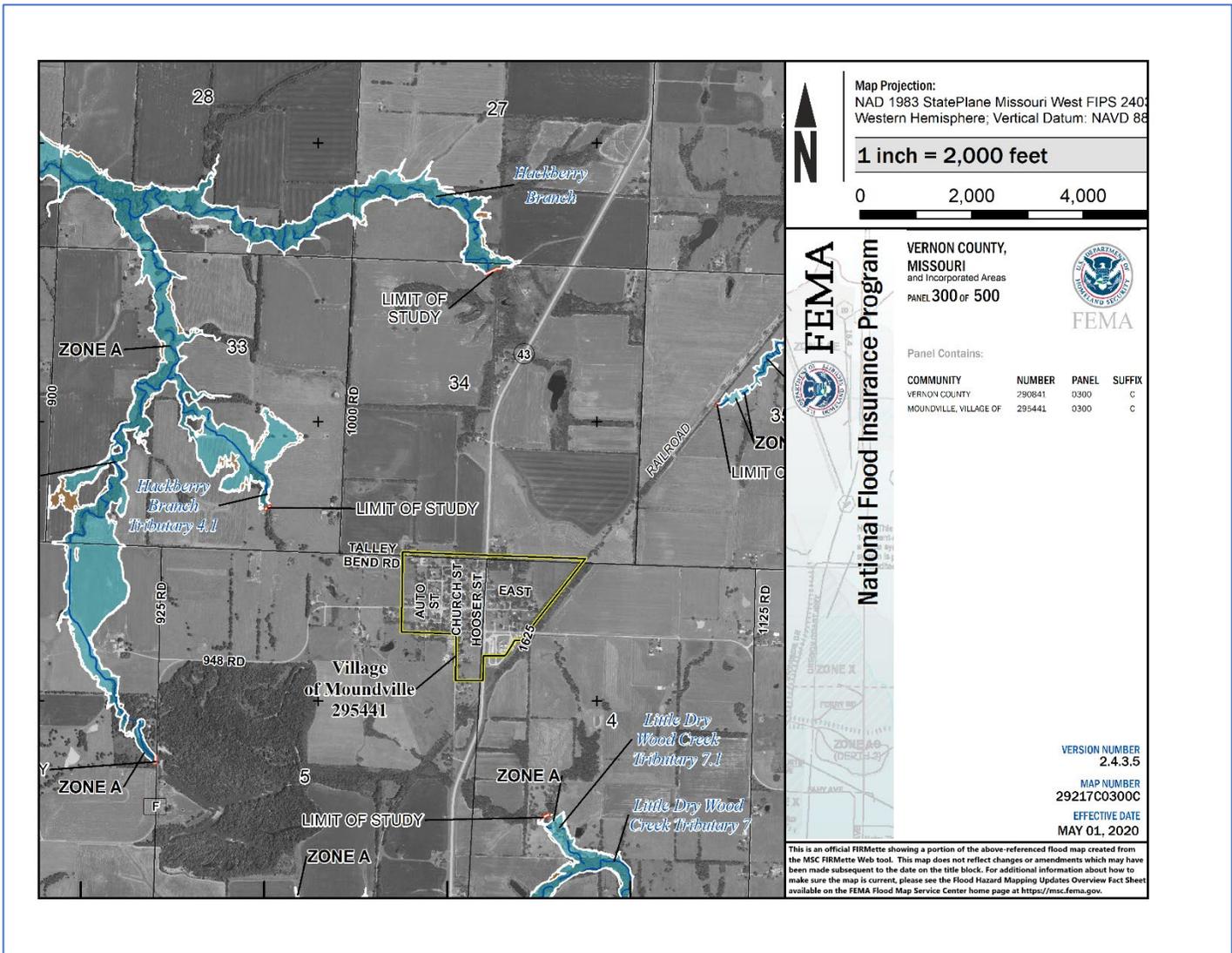


Figure 3.14. Village of Moundville FIRMETTE – Courtesy of FEMA

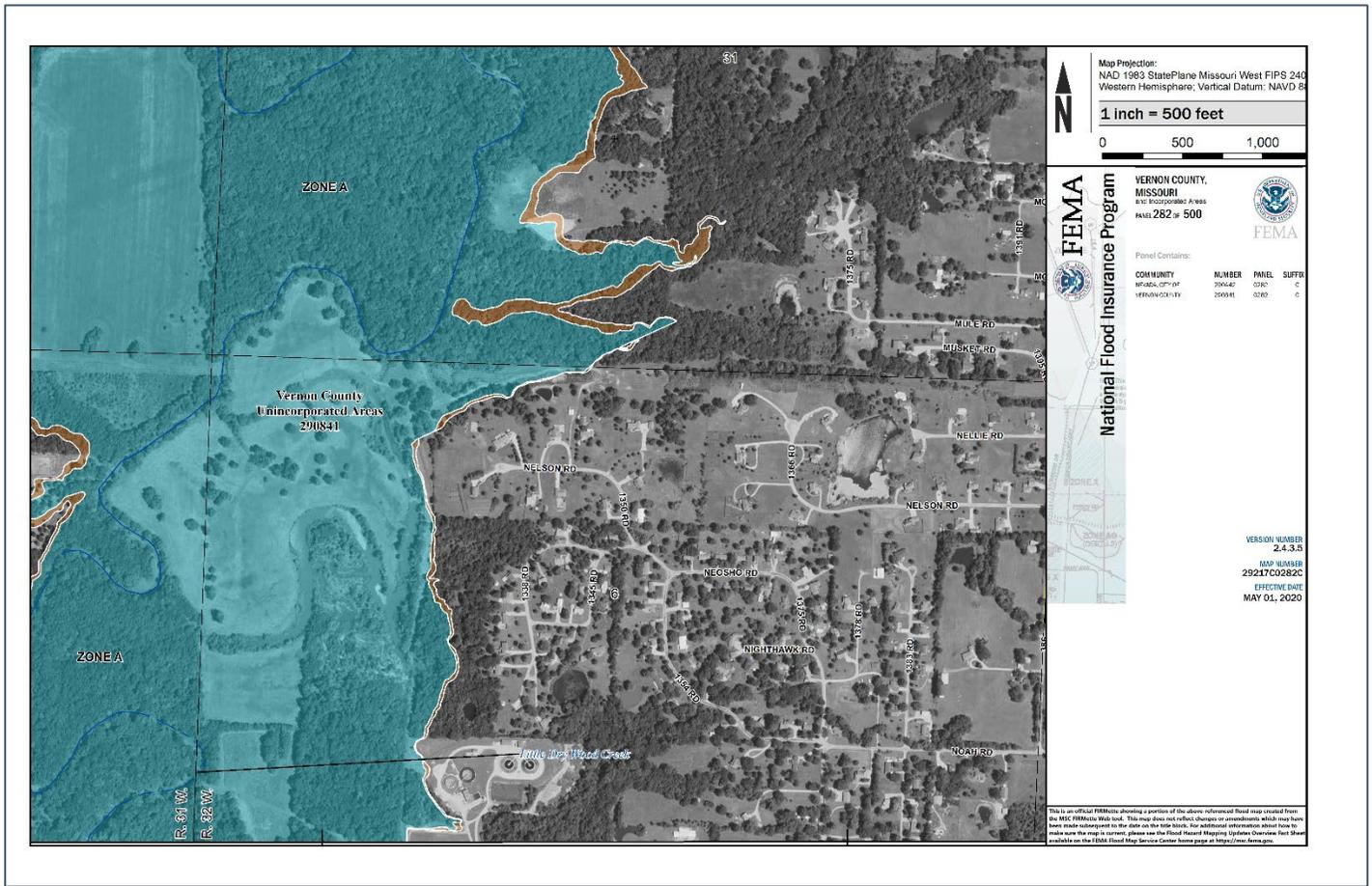


Figure 3.15. City of Nevada FIRMETTE 1 of 6 – Courtesy of FEMA

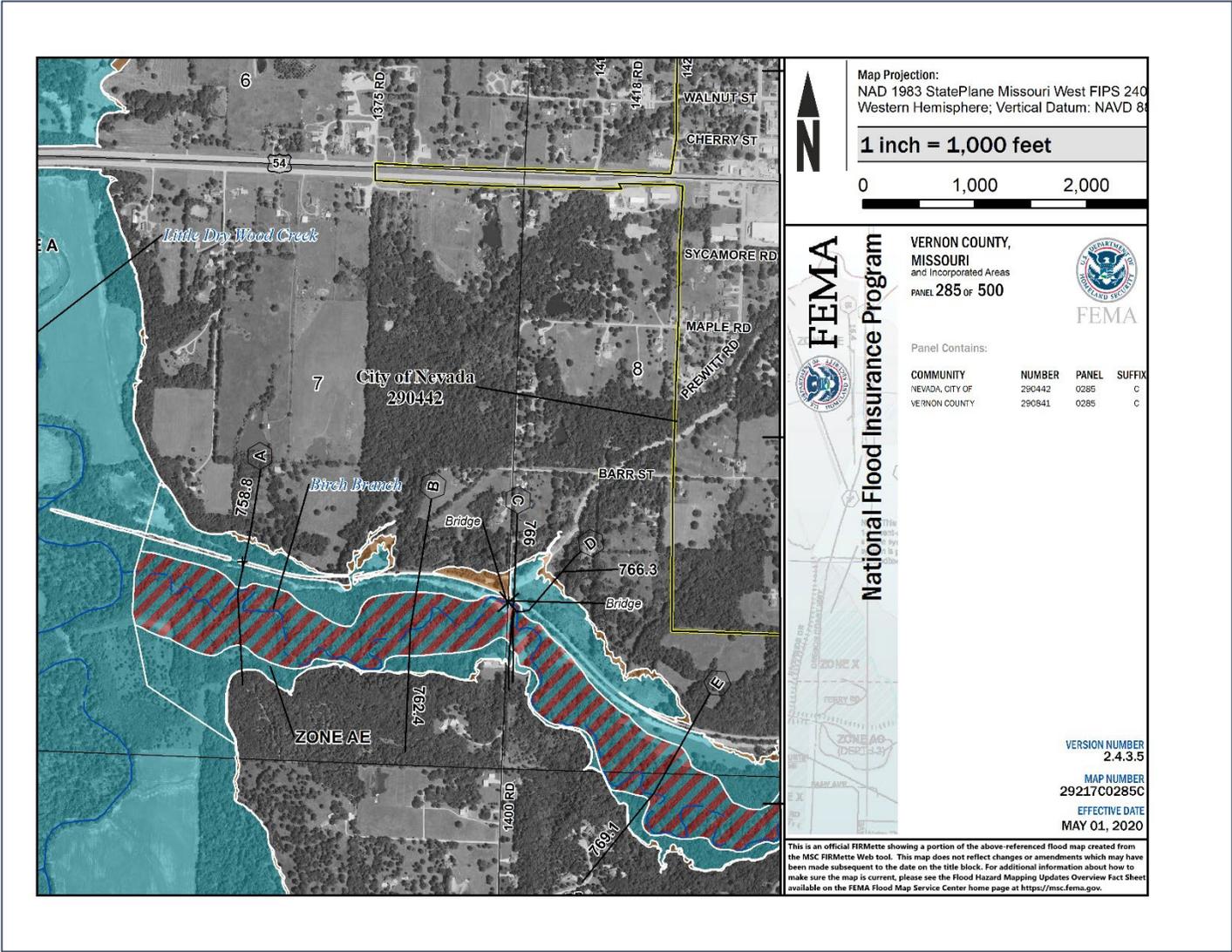


Figure 3.16. City of Nevada FIRMETTE 2 of 6 – Courtesy of FEMA

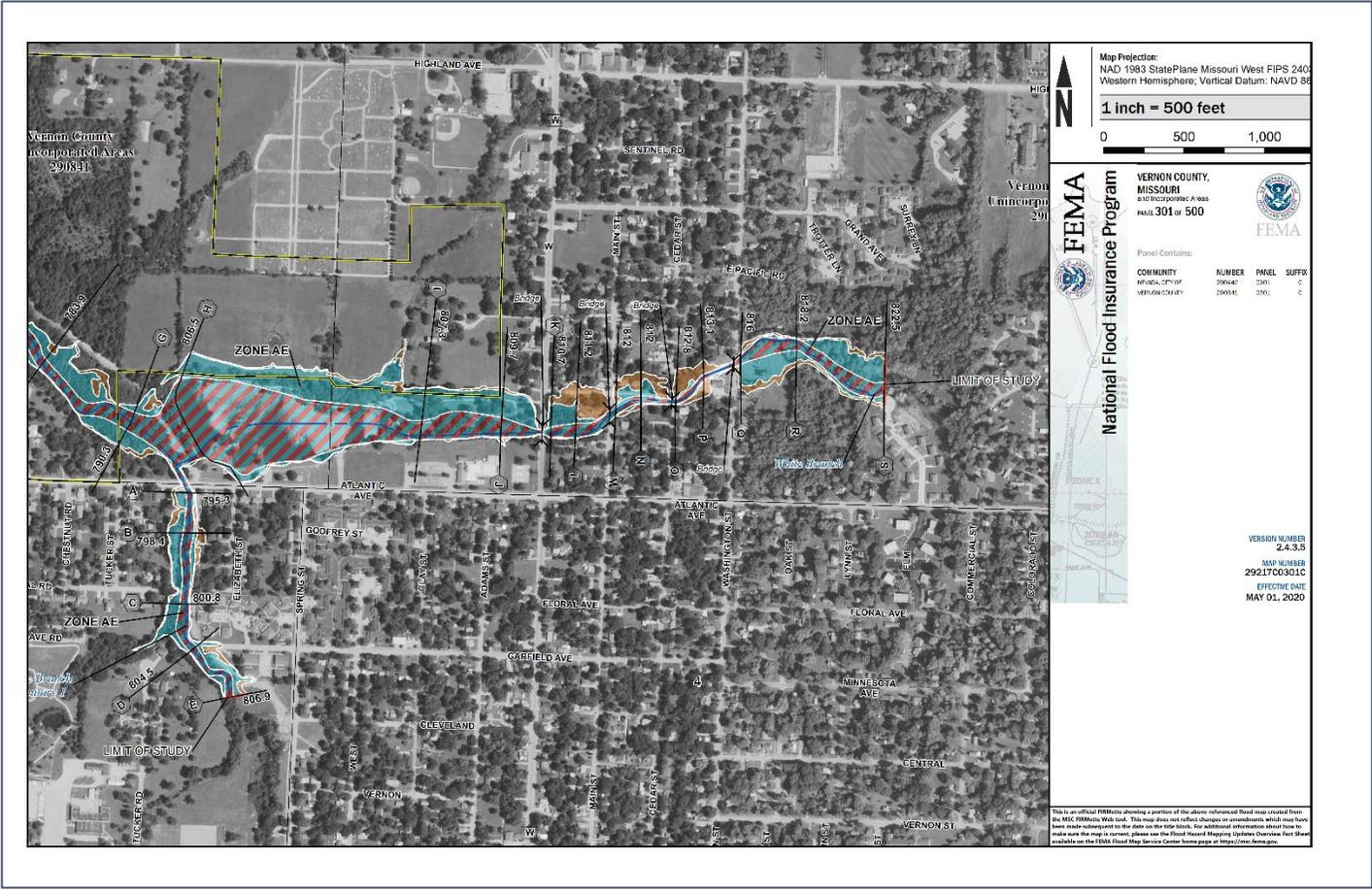


Figure 3.17. City of Nevada FIRMETTE 3 of 6 – Courtesy of FEMA

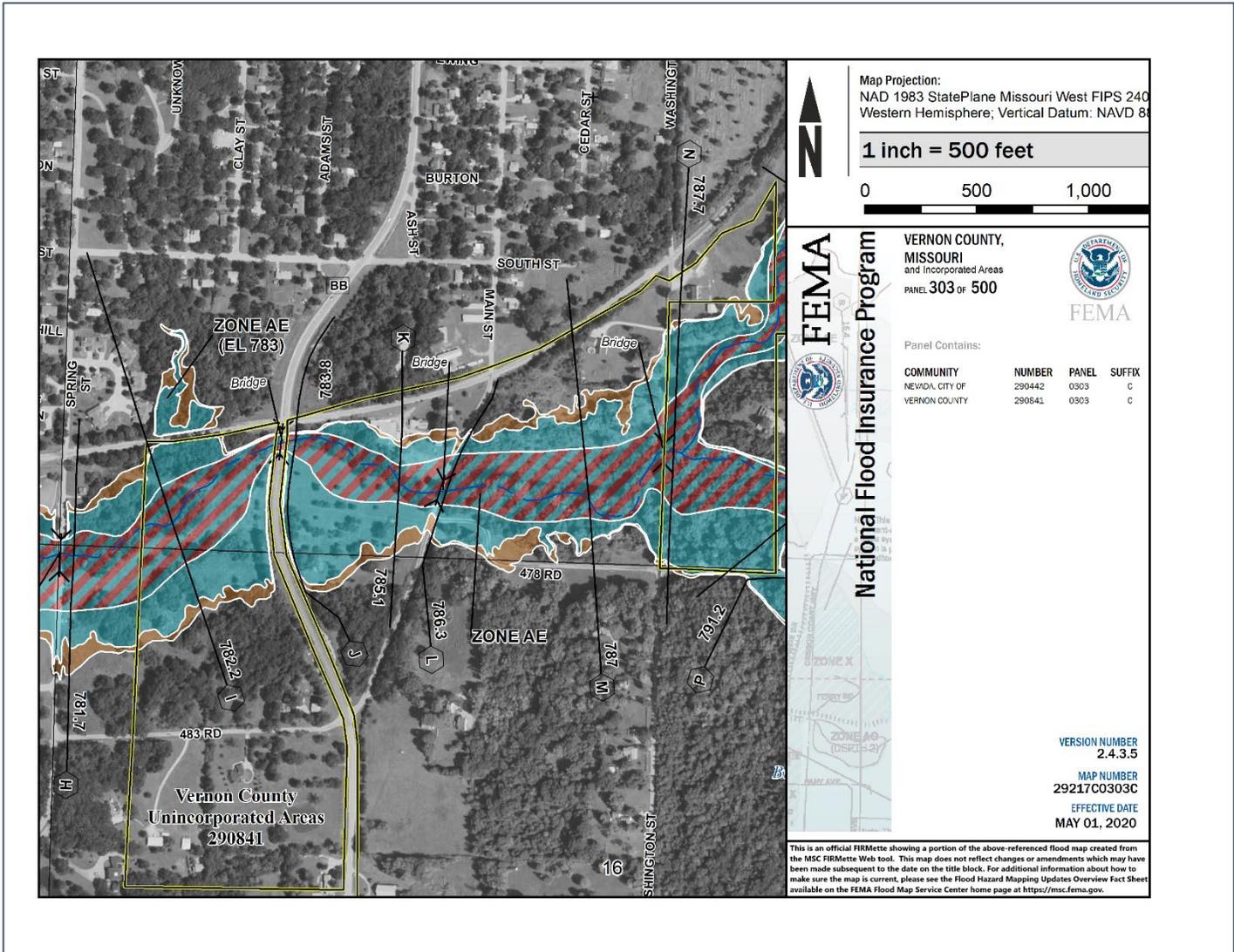


Figure 3.18. City of Nevada FIRMETTE 4 of 6 – Courtesy of FEMA

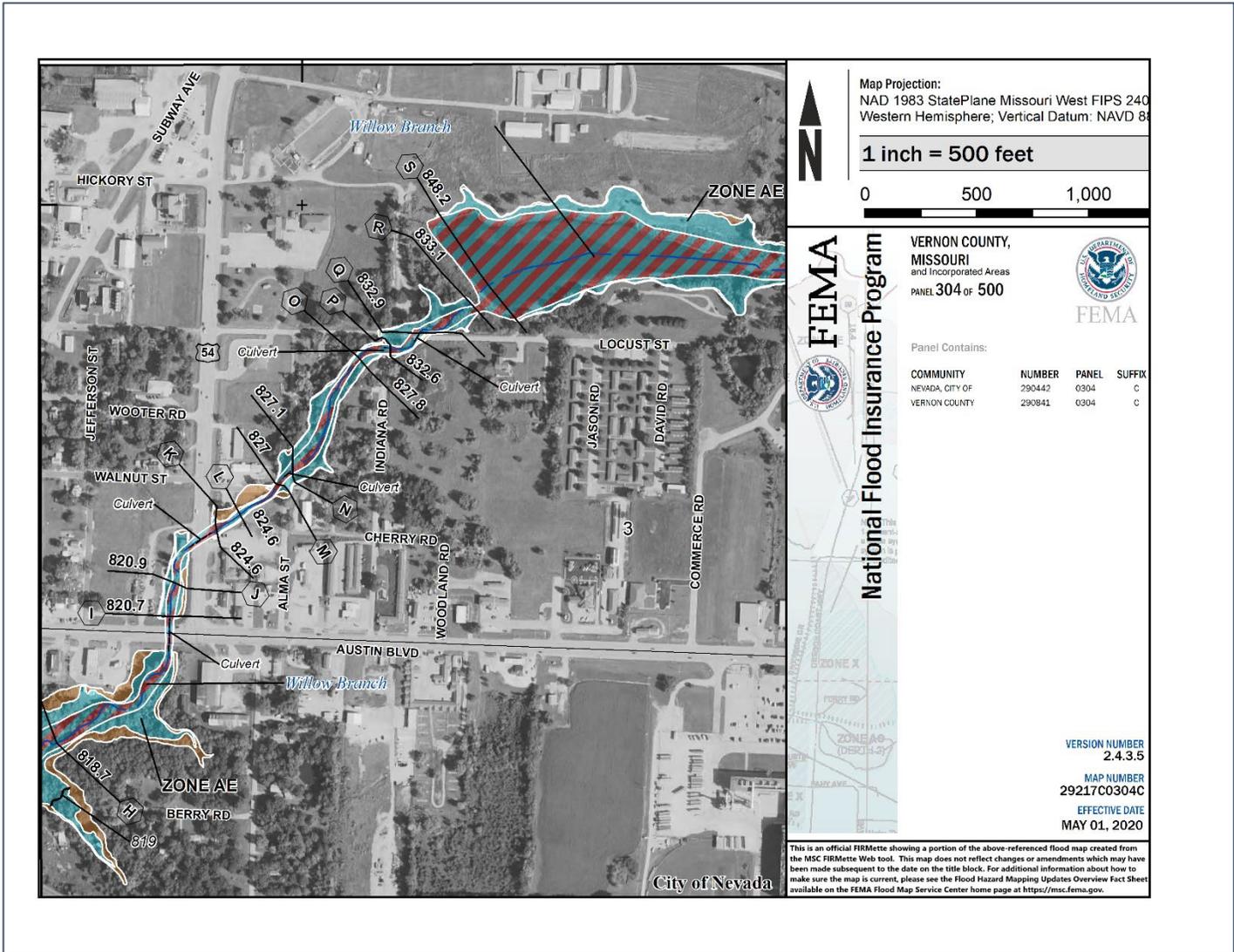


Figure 3.19. City of Nevada FIRMETTE 5 of 6 – Courtesy of FEMA

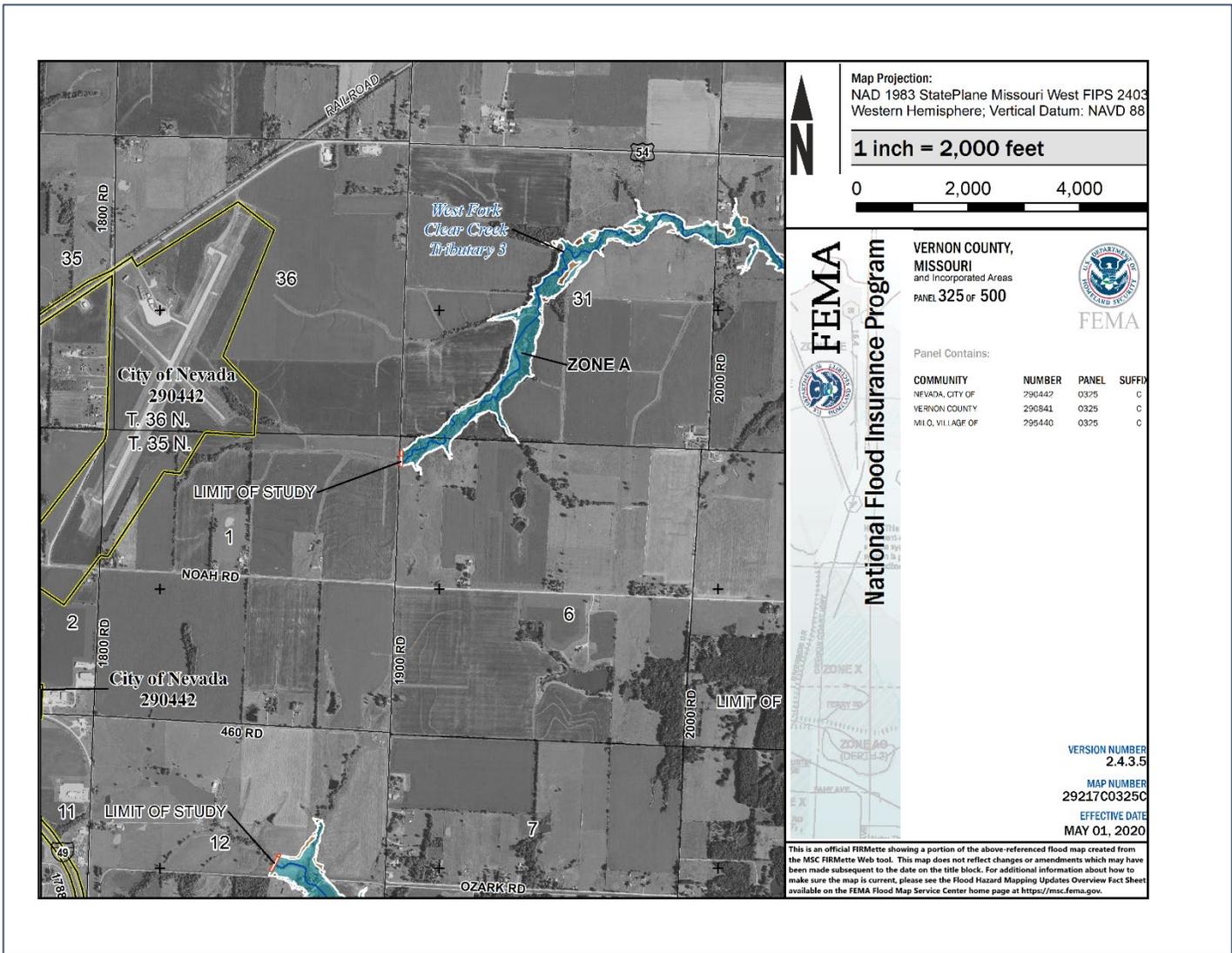


Figure 3.20. City of Nevada FIRMETTE 6 of 6 – Courtesy of FEMA

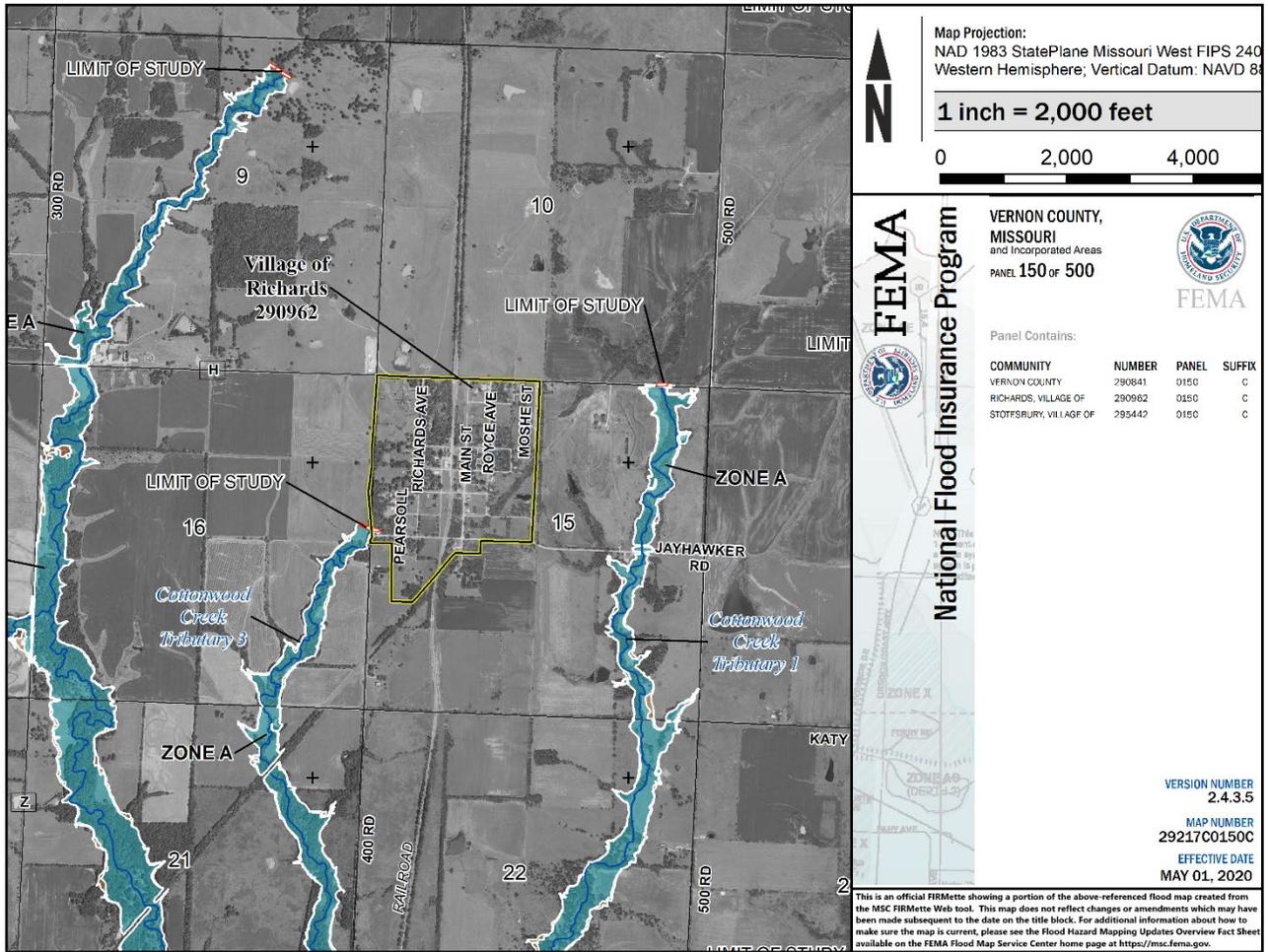


Figure 3.21. Village of Richards FIRMETTE – Courtesy of FEMA

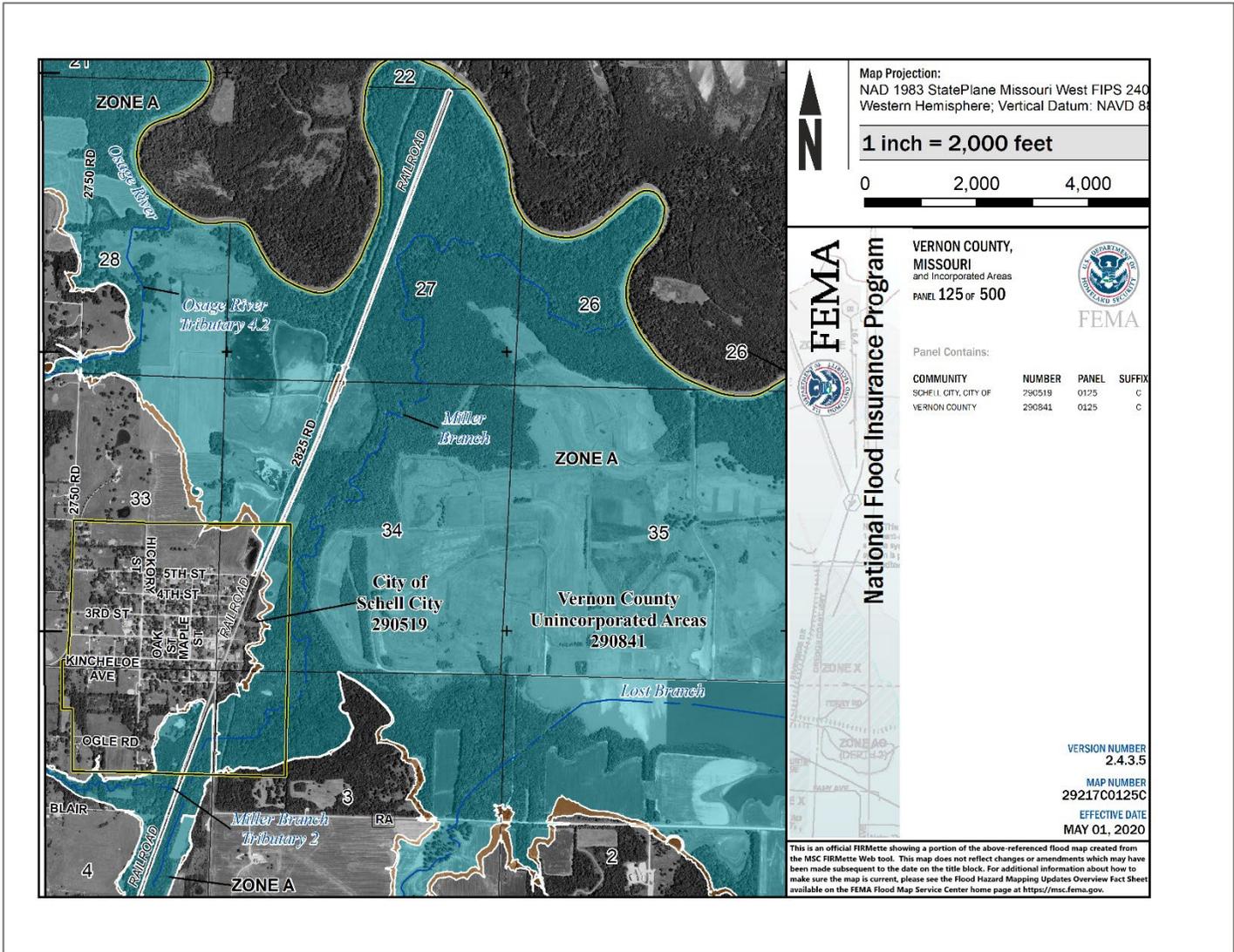


Figure 3.22. City of Schell City FIRMETTE – Courtesy of FEMA

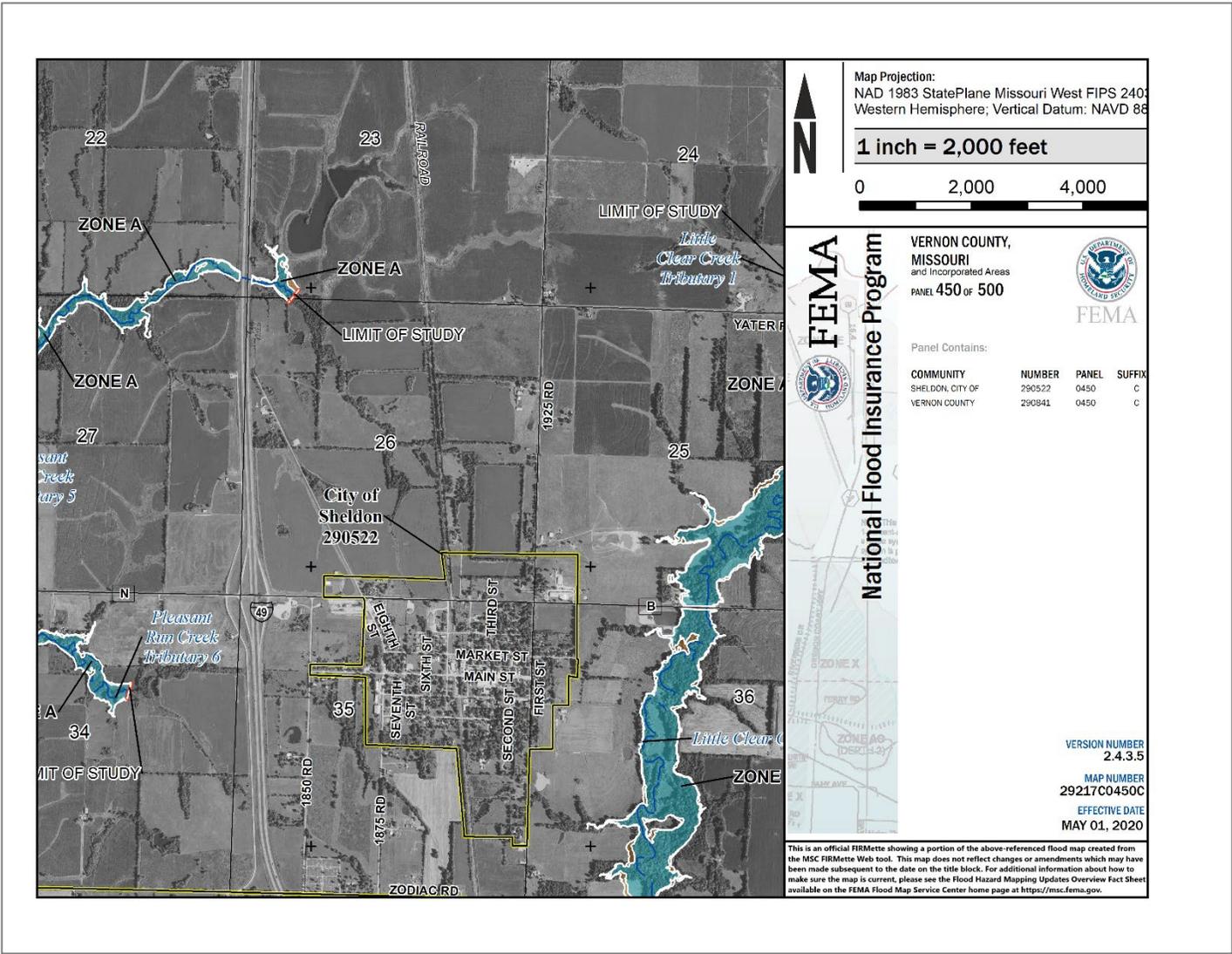


Figure 3.23. City of Sheldon FIRMETTE – Courtesy of FEMA

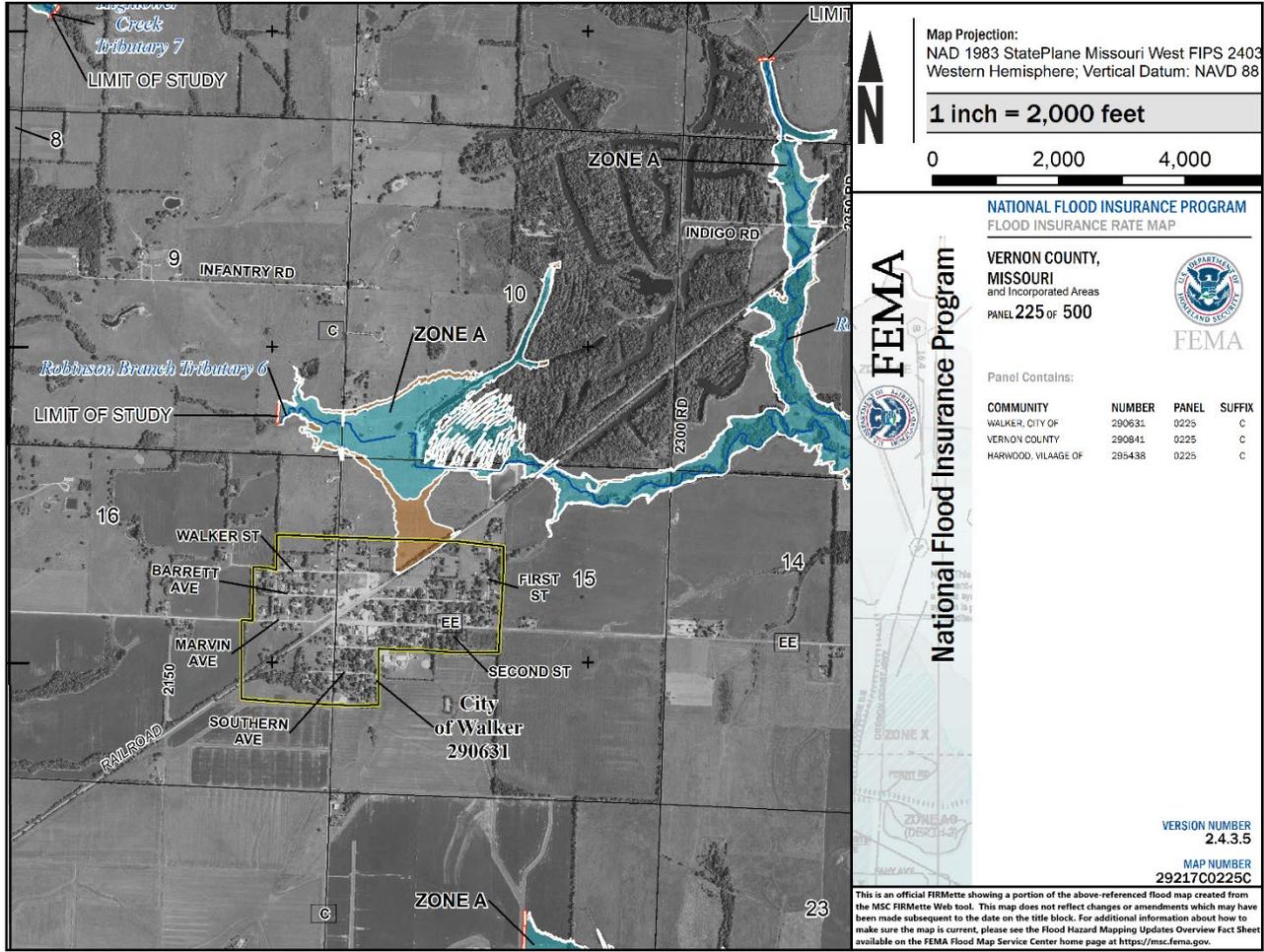


Figure 3.24. City of Walker FIRMETTE – Courtesy of FEMA

## Repetitive Loss/Severe Repetitive Loss Properties5(c)

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 2 repetitive loss properties. As of 31 January 2024, 2 properties have been mitigated, leaving 0 un-mitigated repetitive loss properties.

**Table 3.18. Vernon County Repetitive Loss Properties**

Jurisdiction	# of Properties	Type of Property	# Mitigated	Building Payments	Content Payments	Total Payments	Average Payment	# of Losses
Vernon County	2	Residential	2	\$24,035.08	\$7,867.37	\$31,902.45	\$15,951.23	0

Source: Flood Insurance Administration as of 31 January 2024

**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.

Vernon County has 0 severe repetitive loss properties, according to SEMA. However, they do have two repetitive loss properties, which are both residential properties.

Previous Occurrences<sup>4(a)(3)</sup>

**Table 3.19. NCEI Vernon County Flash Flood Events Summary, 2000-2023**

Year	# of Events	# of Deaths	# of Injuries	Property Damages	Crop Damages
2000	2	0	0	0	0
2001	3	0	0	0	0
2002	2	0	0	0	0
2003	0	0	0	0	0
2004	0	0	0	0	0
2005	5	0	0	0	0
2006	1	0	0	0	0
2007	5	0	0	0	0
2008	6	0	0	0	0
2009	6	0	0	0	0
2010	8	0	0	\$22,000.00	0
2011	0	0	0	0	0
2012	8	0	0	\$5,000.00	0
2013	6	0	0	\$5,000.00	0
2014	0	0	0	0	0
2015	1	0	0	0	0
2016	0	0	0	0	0
2017	4	0	0	0	0
2018	0	0	0	0	0
2019	2	0	0	0	0
2020	0	0	0	0	0
2021	1	0	0	0	0
2022	0	0	0	0	0
2023	0	0	0	0	0
<b>Total</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>\$32,000.00</b>	<b>0</b>

Source: NCEI, data accessed 28 June 2022

In July 2010, a small flash flood resulted in \$2,000 in damages to the small , the NCEI recorded the following narrative:

- **The low water area on 255 Street was closed between Valley and Wagon Roads. Damage to the road surface by flood waters kept the road closed after the water had receded.**

Later that year, a flash flood impacted Nevada, causing \$20,000 in damage to a low water crossing, and the NCEI had this to say about the event:

- **A low water bridge was washed out at the intersection of Tally Bend Road and County Road 1700.**

In April 2012, another flash flood impacted the city of Nevada, this time only causing \$5,000 in damages, this taken from a law enforcement report that day:

- **A section of Panama Road was washed out.**

Lastly, in August 2013, the small community of Milo was the victim of a flash flood that resulted in \$5,000 worth of damages, this taken from a law enforcement report:

- **A portion of Stockade Road was reported as washed out by flood waters.**

**Table 3.20. NCEI Vernon County Riverine Flood Events Summary, 2000-2023**

Year	# of Events	# of Deaths	# of Injuries	Property Damages	Crop Damages
2000	0	0	0	0	0
2001	0	0	0	0	0
2002	2	0	0	\$10,000.00	0
2003	0	0	0	0	0
2004	0	0	0	0	0
2005	3	0	0	0	0
2006	0	0	0	0	0
2007	3	0	0	0	0
2008	2	0	0	0	0
2009	0	0	0	0	0
2010	1	0	0	0	0
2011	0	0	0	0	0
2012	3	0	0	0	0
2013	2	0	0	0	0
2014	0	0	0	0	0
2015	5	1	0	0	0
2016	1	0	0	0	0
2017	0	0	0	0	0
2018	0	0	0	0	0
2019	3	0	0	0	0
2020	1	0	0	0	0
2021	1	0	0	0	0
2022	2	0	0	0	0
2023	0	0	0	0	0
<b>Total</b>	<b>29</b>	<b>1</b>	<b>0</b>	<b>\$10,000.00</b>	<b>0</b>

Source: NCEI, 28 June 2022

In 2015, the lone time in the last 23 years that a flood event in Vernon County was tragic, the following narrative was obtained from the NCEI Storm Database:

- **A 29-year-old male duck hunter drowned when his flat-bottomed kayak type of boat overturned while trying to return to shore during 30 mph winds and rising water. The area of water in which he was hunting was normally controlled at a depth of two feet; however, the region was flooded by the confluence of the Marmaton and Little Osage Rivers. Time and date was estimated.**

*No narrative exists for Vernon County for the 2002 flood event that resulted in \$10,000 worth of damages.*

**Probability of Future Occurrence**

River Flooding

$$\frac{29 \text{ River Floods Since January 2000}}{24 \text{ Years Since January 2000}}$$

**100% Probability AND at least one River Flood per year**

Flash Flooding

$$\frac{60 \text{ Flash Flood Events Since January 2000}}{24 \text{ Years Since January 2000}}$$

**100% Probability AND 2 to 3 flash floods average per year**

**Changing Future Conditions Considerations<sup>4(c)</sup>**

Over the coming years, and as the onset of climate change continues to shape how weather events around the world, it is expected that flooding events in Vernon County will continue to rise. With more than 80 combined flash and riverine floods occurring in Vernon County over the last 23 years, this is only expected to increase. Due in part to more frequent rain events and at times heavy rain events, Vernon County will see more flash flooding and riverine flooding within its geographic boundaries. Fortunately, participation in the National Flood Insurance Program has saved some communities like Bronaugh and Nevada money from significant flood losses. If the flooding from 1986 was any indication, if the Osage, Marmaton, and or Drywood watersheds experience prolonged heavy rainfall, I-49 could be impassable between Nevada and Kansas City, cutting off a major thoroughfare.

## **Vulnerability**<sup>5(b); 5(d)</sup>

### ***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 roadbeds. In some instances, steep slopes that are saturated with water may cause mud or rockslides 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.

Recall **Section 3.2.2** and the discussion on Scour Critical bridges identified by the Missouri Department of Transportation, these bridges are among the most vulnerable during floods. When a bridge has a weakened support system, either in the trusses or other critical aspect of the bridge, a significant flood can wash out the bridge, making a route impassible indefinitely. With the cost to replace and repair bridges at an all-time high, places like Vernon County must take careful considerations with those bridges and other infrastructure deemed essential to the communities in which they lie within.

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

Based on current developments in Vernon County, there exists some degree of structures that should be identified as vulnerable to the effects of flooding. A majority of those structures fall within the City of Nevada, the largest incorporated community in Vernon County. Although its airport is not within an identified floodplain, it still gets flooded from time to time. Though no damages have been reported as a result of this. Flooding is also common in other places of Vernon County, such as its townships, although with limited resources, these entities do not have the full ability to fight back flooding.

### ***Impact of Previous and Future Development***<sup>4(c); 5(f)</sup>

It is known that areas impervious to flooding are already going to be at risk for any flooding that takes place in the future, but what makes this complicated is new developments. New developments may occur in areas that may have never experienced a flooding situation but by being located where they are, it may create new risk that did not previously exist. It is up to the county and its entities to ensure that no development takes place within identified flood zones. Unfortunately, competing with peoples' interests has and always be, one of the biggest struggles in mitigation. People wish to live in high-risk areas despite best efforts to mitigate risk will be something Vernon County should monitor and look for potential mitigation strategies that

## **Hazard Summary by Jurisdiction**

- ▶ **Vernon County** – *Flooding is a common problem in Vernon County as a whole, seeing as there have been 89 combined instances of flooding since 2000. Damages range from minor to moderate throughout the county and this is likely to continue going forward.*
- ▶ **City of Bronaugh** – *Since 2000, flooding has not been a common problem in this small community, only having one recorded flood event in that time. So this community may experience flooding again in the future, but the odds are quite slim.*
- ▶ **City of Nevada** – *Flooding in Nevada is common, there has been 19 combined instances of flooding in the community or at the airport, which is not in a floodplain, but is subject to flash flooding. Damages have been limited in Nevada, so floods are more of a short-term disruption to life for a short period of time than a long-drawn out disaster.*
- ▶ **City of Schell City** – *Even with Schell City’s location in Northeast Vernon County, flooding has not been an issue in the community, but the community should be cognizant of the possibility of flooding issues that could make travel difficult either into or out of Schell City.*
- ▶ **City of Sheldon** – *The community of Sheldon has only seen one flash flood event in the last 24 years, which is minor compared to some other communities that have seen more. There exists some potential for floods in Sheldon, but these are few and far between.*

## **Educational Institutions**

- ▶ **Bronaugh R-VII** – *Although flooding is not overly common in the City of Bronaugh, it is even less common within school district boundaries, but a flash flood near the school cannot be ruled out.*
- ▶ **Cottey College** – *Due to Cottey’s location within the City of Nevada, flooding is not likely to be an issue for the college, the only impacts may be travel if routes to the college are impassable.*
- ▶ **Crowder College** – *Similar to Cottey, the flooding impacts at Crowder College’s Nevada campus are subject to the same effects, only this college is located in a different area of Nevada.*
- ▶ **Missouri Welding Institute** – *Similar to Crowder, the flooding impacts at the Missouri Welding Institute campus are subject to the same effects, only this college is located in a different area of Nevada.*
- ▶ **Nevada R-V** – *Nearly all of the Nevada School District’s property is not located in a floodplain; however, a flash flood near school grounds is entirely possible as this does not require a floodplain to take place.*
- ▶ **Northeast Vernon County R-I** – *Flooding has a unique impact for this school district, recall earlier note that this district has buildings in two separate communities. Flooding could impact either the high school in Walker or the elementary school in Schell City, what are the odds of both? Unlikely, but possible.*
- ▶ **Sheldon R-VIII** – *Flooding is not likely at Sheldon Schools, however, one cannot overlook the possibility of a flash flood due to heavy rainfall.*

## **Problem Statement**

As seen in the previous analysis of flooding in Vernon County, it is a common problem, it is not limited to the incorporated communities like Bronaugh or Nevada, all of the communities and villages are subject to flooding at any given time. There are ways to address this problem, fortunately, FEMA suggests several different activities that could be incorporated into flood mitigation going forward. For the aforementioned Bronaugh and Nevada, but also Walker, and Vernon County collectively, participation in the National Flood Insurance Program is a great start to mitigating the problem of flooding. This action directly ties into the policies, plans and procedures aspects of flood mitigation and management. Additional actions that could be undertaken in Vernon County that deal with flood mitigation include the following: improving stormwater drainage systems and providing a grassy swale along roadsides to prevent floodwaters from overtaking major streets and highways. One last possible, of many, solutions to addressing flood mitigation within Vernon County stems from the Natural Systems Protection category of flood mitigation. This suggested action would be to preserve floodplains as open spaces, this mitigates flood damages to where it just floods an open area and not properties. Flooding is a common problem for Vernon County, but ultimately it is one natural hazard that has plenty of solutions.

### 3.4.2 Dam Failure<sup>4(b)(1)b; 4(b)(2,3)</sup>

#### **Hazard Profile**

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

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

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

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**Table 3.21. MoDNR Dam Hazard Classification Definitions**

<b>Hazard Class</b>	<b>Definition</b>
Class I	<b>Most significant threat to public safety.</b>
Class II	<b>Moderate threat to public safety</b>
Class III	<b>Least threatening to public safety</b>

Source: Missouri Department of Natural Resources, [http://dnr.mo.gov/env/wrc/docs/rules\\_req\\_94.pdf](http://dnr.mo.gov/env/wrc/docs/rules_req_94.pdf)

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**Table 3.22. NID Dam Hazard Classification Definitions**

<b>Hazard Class</b>	<b>Definition</b>
Low Hazard	<b>Minimal chance of dam failure</b>
Significant Hazard	<b>Enhanced chance of dam failure.</b>
High Hazard	<b>Extreme chance of dam failure</b>

Source: National Inventory of Dams

## Geographic Location

### Dams Located Within Vernon County

**Table 3.23. Dams in the Vernon County**

Dam Name	Emergency Action Plan (EAP)AP	Dam Height (Ft)	Normal Storage (Acre-Ft)	Last Inspection Date	River	Nearest Downstream City	Distance To Nearest City (Miles)	Dam Owner
Beard Lake Dam	Not required	20	105	N/A	TR-Kitten Creek	Roscoe	None given	Euell Beard
Bushwhacker Dam	No	40	156	09/28/2015	Little Dry Wood Creek	Bronaugh	19	Missouri Department of Conservation
C.H. Jones Dam	Not required	10	15	N/A	TR West Fork Clear Creek	Dederick	3	C.H. Jones
Charles Lake Dam	Not required	10	187	N/A	TR to Pryor Creek	Horton	7	Mrs. Leona Charles
Charles Vincent Dam	Not required	20	112	N/A	TR West Fork Clear Creek	Nevada	<1	Unknown
Covington Dam	Not required	15	80	N/A	TR Robinson Branch	Walker	5	Unknown
Elliott Lake Dam	Not required	15	128	N/A	TR to Marmaton River	Horton	12	Clifton Elliot

Floyd Hines Dam	Not required	18	135	N/A	TR Beecham Branch	El Dorado Springs	~4	Unknown
Foreman Lake Dam	Not required	20	160	N/A	TR West Fork Clear Creek	Dederick	Not given	Charles Foreman
Francis Lake Dam	Not required	20	310	N/A	TR to Little Dry Wood Creek	Dederick	Not given	Howard Francis
Fred Wilmont Dam	Not required	20	64	N/A	TR Little Osage River	Richards	~2.5	Unknown
Hines Section 10 Lake Dam	Not required	15	85	N/A	TR to Beecham Branch Clear Creek	Taperville	Not provided	Floyd Hines
Hines Section 3 North Dam	Not required	20	139	N/A	TR to Kitten Creek	Taperville	Not provided	Floyd Hines
Hines Section 3 South Dam	Not required	20	187	N/A	TR to Beecham BR and Clear Creek	Taperville	Not provided	Floyd Hines
Izaak Walton Lake Dam	Not required	25	67	N/A	TR to White Branch	Nevada	2	City of Nevada
Jantz	Not required	15	40	N/A	TR Shiloh CR	Richards	~2	Unknown

John L Cunningham	Not required	20	36	N/A	TR Moore Branch	Nevada	~1.5	Unknown
Katy Allen Lake Dam	Not required	25	60	06/21/1979	Willow Branch	Nevada	<1	Vernon County
Kysar Lake	Not required	18	41	N/A	TR-Osage River	Schell City	~8	Al Kyser
Long Lower Lake Dam	Not required	10	40	N/A	TR to Marmaton River	Taperville	30	Robert S. Long
Long Upper Lake Dam	Not required	20	53	N/A	TR to Marmaton River	Schell City	Not given	Robert S. Long
Marquardt Dam	Not required	15	40	N/A	TR West Fork Clear Creek	Nevada	1	Unknown
Marvin Vickers Dam	Not required	10	20	N/A	TR Clear Creek	Dederick	Not given	Unknown
Mononame 47	Not required	12	40	N/A	TR Osage River	Schell City	<1	Unknown
Mononame 64	Not required	19	44	N/A	TR Cottonwood Creek	Metz	3	Unknown
Mononame 78	Not required	10	47	N/A	TR Osage River Offstream	Schell City	1	Unknown
Mononame 202	Not required	10	30	N/A	TR West Fork Clear Creek	Dederick	Not given	Unknown
Mononame 308	Not required	21	36	N/A	TR Shiloh Creek	Richards	Not given	Unknown
Mononame 310	Not required	13	26	N/A	TR Robinson Branch	Oak Ridge	Not given	Unknown
Mononame 636	Not required	20	46	N/A	TR Clear Creek	El Dorado Springs	Not given	Unknown
Mononame 658	Not required	20	30	N/A	TR Cynthia Creek	Montevallo	Not given	Unknown
Mononame 671	Not required	20	25	N/A	McKill Creek	Bronaugh	Not given	Unknown
O'Connell Dam	Not required	15	35	N/A	TR Marmaton River	Nevada	Not given	Unknown

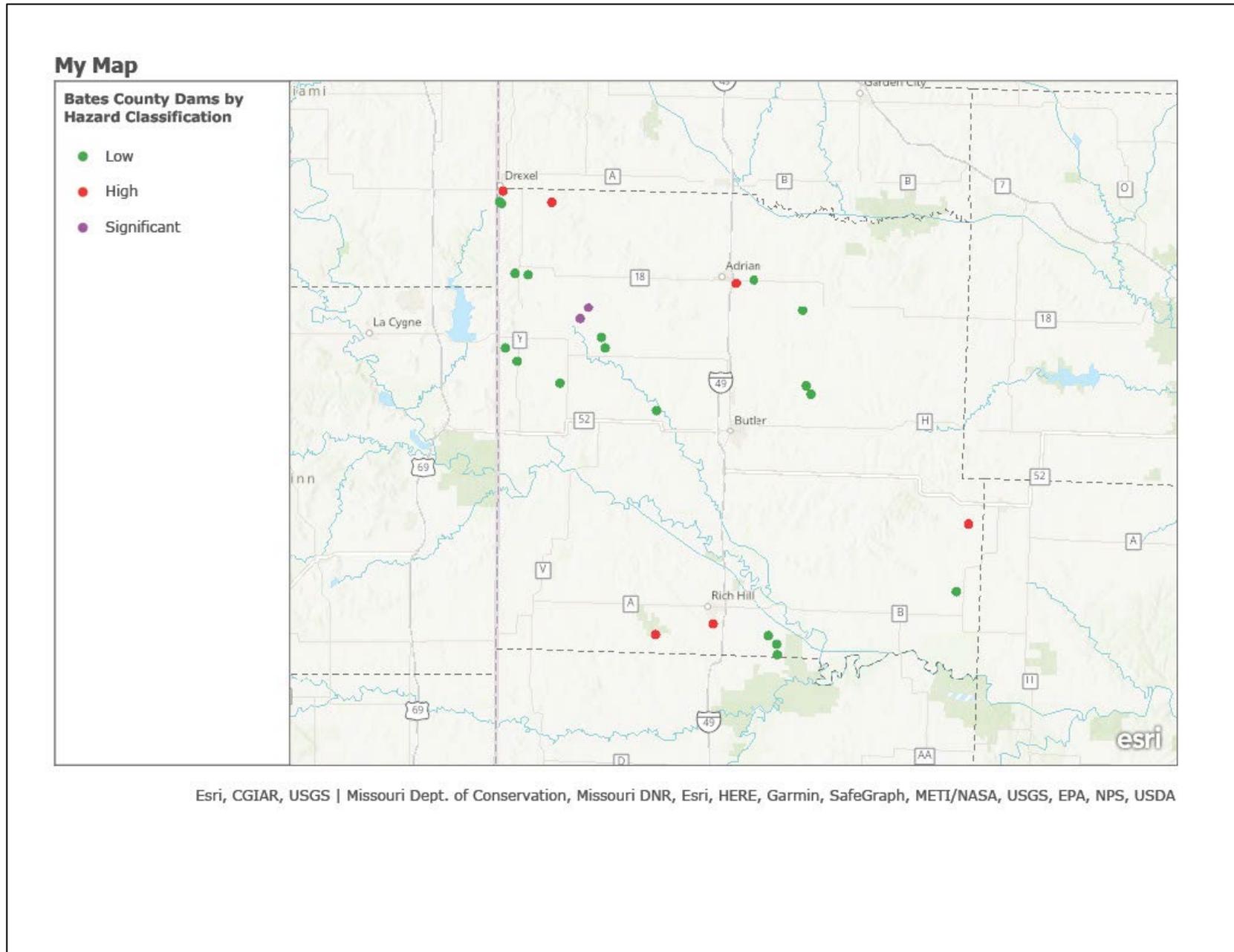
Pickrel Dam	Not required	15	70	N/A	TR to Little Dry Wood Creek	Horton	Not given	Mary Pickrel
Phol-Harner Lake Dam	Not required	15	40	N/A	TR to Pryor Creek	Metz	5	Mrs. Harmer & Mrs. Pohl
Pottorf Lake Dam	Not required	25	94	N/A	TR to Clear Creek	Dederick	21	J.L. Pottorf
Radio Springs Park	Not required	15	64	N/A	Birch Branch Offstream	Nevada	<1	Unknown
Richard Mcwherter	Not required	17	91	N/A	TR Dry Wood Creek	Nevada	1	Unknown
Seitz Lake Dam	Not required	33	265	N/A	TR Moores Branch Dry Wood Creek	Deerfield	Not given	Eugene Seitz
Steele Lake Dam	Not required	22	125	N/A	TR West Fork Dry Wood Creek	Deerfield	Not given	Louis Mack Steele
Timber Hill River Bend INC Dam	Not required	15	66	N/A	TR Little Osage River	Taberville	27	Timber Hill River Bend
Wilmont & Steele INC Lake Dam	Not required	20	54	N/A	TR Little Osage River	Horton	9	Wilmont & Steele Inc.
Wilson Lake Dam	Not required	20	56	N/A	TR to West Fork Clear Creek	Nevada	11.75	Gilbert Wilson
<b>TOTAL DAMS IN VERNON COUNTY</b>								<b>43</b>

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

<b>Key</b>	
●	Low Hazard
■	Significant Hazard
●	High Hazard



Figure 3.26. Upstream Dams Outside Vernon County (Located in Bates County)



Source: U.S. Army Corps of Engineers, Missouri Department of Natural Resources, ESRI

### ***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. For this reason, dam failures could flood areas outside of mapped flood hazards.

### ***Previous Occurrences***

According to the National Weather Service office in Springfield, Vernon County has had **zero** instances of dam failure.

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

Because Vernon County has never had a recorded dam failure, it is not possible to calculate the probability of one occurring in the future. However, it would only take one dam failure in Vernon County to change this calculation.

### ***Changing Future Conditions Considerations***

SEMA's data suggests that climate change will have a lasting impact on dam safety in the future, but the reason this exists is because of the close correlation between flooding and dam safety. As more flooding events occur in the future, so too will the increased strain on dams, both state of Missouri owned and privately owned will become higher. Therefore, climate change will enhance the risk of dam failures in Vernon County.

## **Vulnerability**

### ***Vulnerability Overview***

Vulnerability to dam failures in Vernon County is a tricky analysis to perform. For one, there are no dams in Vernon County that have access to advanced mapping technology to produce informational inundation layers from the Corps of Engineers. If this data were available for dams in Vernon County, there could be reasonable assumptions of what dam failure would truly look like in Vernon County. One could hypothesize that anyone living near one of the dams in Vernon County could be considered vulnerable if that dam fails, but the extent of this remains unknown.

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

Ordinarily, dam failures can be visualized with potential inundation layers from the US Army Corps of Engineers, but this has limitations. Those limitations come into play when dam ownership is not federally controlled dams on major waterways. As is the case in Vernon County, all dams here are privately owned and not maintained by the US Army Corps of Engineers, though they do maintain all records of all dams in their master database. Because inundation layers are not possible for Vernon County, it is hard to tell exactly how much risk exists from dam failure.

It can be estimated based on the location of the Katy Allen Lake Dam within the city of Nevada that if it failed for any reason, then it would likely spill water into the main thoroughfares of the east side of town, which has a large business presence. This would result in detours and likely a significant amount of damage.

**Impact of Previous and Future Development**

Although it is not possible to see what effect a dam failure in Vernon County would look like, there are no federally controlled dams in the county, one can sort of envision possible effects this particular event may have. A couple of high hazard potential dams in Vernon County lie within the city limits of Nevada, the largest community in the County, but are not necessarily large dams. However, this should not cause a false sense of security, as these dams are just as likely to experience failure as any other dam of similar size or storage capacity. One of these dams, Katy Allen Lake, is located near the Vernon County Fairgrounds adjacent to a larger commercialized area in the City of Nevada. The other, Izaak Walton Lake, located on the north side of town, is close to a small energy producing power plant that could impact utilities if something were to happen to it.

**Hazard Summary by Jurisdiction**

- ▶ **Vernon County** – *Although there has not been a dam failure on record in Vernon County, there are many dams in the county that could potentially fail.*
- ▶ **City of Bronaugh** – *There are no dams near Bronaugh, but the community is taking steps to educate their residents on the possibility of it.*
- ▶ **City of Nevada** – *Dam failure in Nevada is highly possible, there are a couple of dams, small ones, but classified as high hazard potential. Extra caution should be exercised with these dams.*
- ▶ **City of Schell City** – *There are a few small dams near Schell City, but the chances of them actually impacting the community are relatively low.*
- ▶ **City of Sheldon** – *Similar to Bronaugh, there are no dams near Sheldon, but the community will take steps to educate about the possibility of it happening.*

## **Educational Institutions**

- ▶ **Bronaugh R-VII** – Although dam failure is unlikely to impact Bronaugh Schools, the district is still taking steps to ensure that there is adequate education on this hazard.
- ▶ **Cottey College** – Although dam failure is possible in Nevada, Cottey's location within the community is out of harm's way for a dam failure.
- ▶ **Crowder College** – Although dam failure is possible in Nevada, Crowder's location within the community is out of harm's way for a dam failure.
- ▶ **Missouri Welding Institute** – Although dam failure is possible in Nevada, Missouri Welding Institute's location within the community is out of harm's way for a dam failure.
- ▶ **Nevada R-V** – Although dam failure is possible in Nevada, the Nevada School District's locations within the community is out of harm's way for a dam failure.
- ▶ **Northeast Vernon County R-I** – Dam failure and this school district takes a unique approach, it could impact both the elementary school in Schell City and the high school in Walker.
- ▶ **Sheldon R-VIII** – Although dam failure is unlikely to impact Sheldon Schools, the district is still taking steps to ensure that there is adequate education on this hazard.

## **Problem Statement**

Vernon County is unique in which they do not have any federally maintained dams within its boundaries, but this does not mean that the dams that are in Vernon County are not high hazard dams... in fact there are 5 of them, one of which is owned by the county. Based on some information obtained from the Vernon County website, the Katy Allen Lake Dam, the one owned by Vernon County, is undergoing ongoing maintenance at this time thanks to a grant from 3M, one of the county's largest employers, which is a form of structural mitigation for dam failure and reduces the risk of failure. Dam failure can also take on several different forms and practices of mitigation. Most of these concur with flood mitigation measures. But because dam failure is often seen as a manmade disaster, it can make things a little complicated. However, one of the best strategies and techniques that can be used to better deal with dam failure and that is the educational aspect of mitigation. It is usually best practice to educate people on the hazard associated with dam failure so that they can be aware of the hazard.

### 3.4.3 Earthquakes

#### **Hazard Profile**

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

An earthquake occurs when tectonic plates below the Earth's surface shift and create seismic waves and tectonic tremors, which can result in violent shaking on the Earth's surface. Historically, some of the most significant earthquakes in the United States have occurred, not in California, but in Missouri. In back-to-back successive years: 1811 and 1812 twice, the New Madrid Fault in Southeast Missouri shook the area violently. In particular, the 1812 quake was severe enough that it caused the Mississippi River to temporarily reverse its course. Vernon County must acknowledge their risk to earthquakes is significant even though there has not been a major earthquake statewide in over 200 years. Many older buildings in Vernon County could easily crumble if not retrofitted to modern standards. Those standards are subject to approval and execution by proper authorities though.

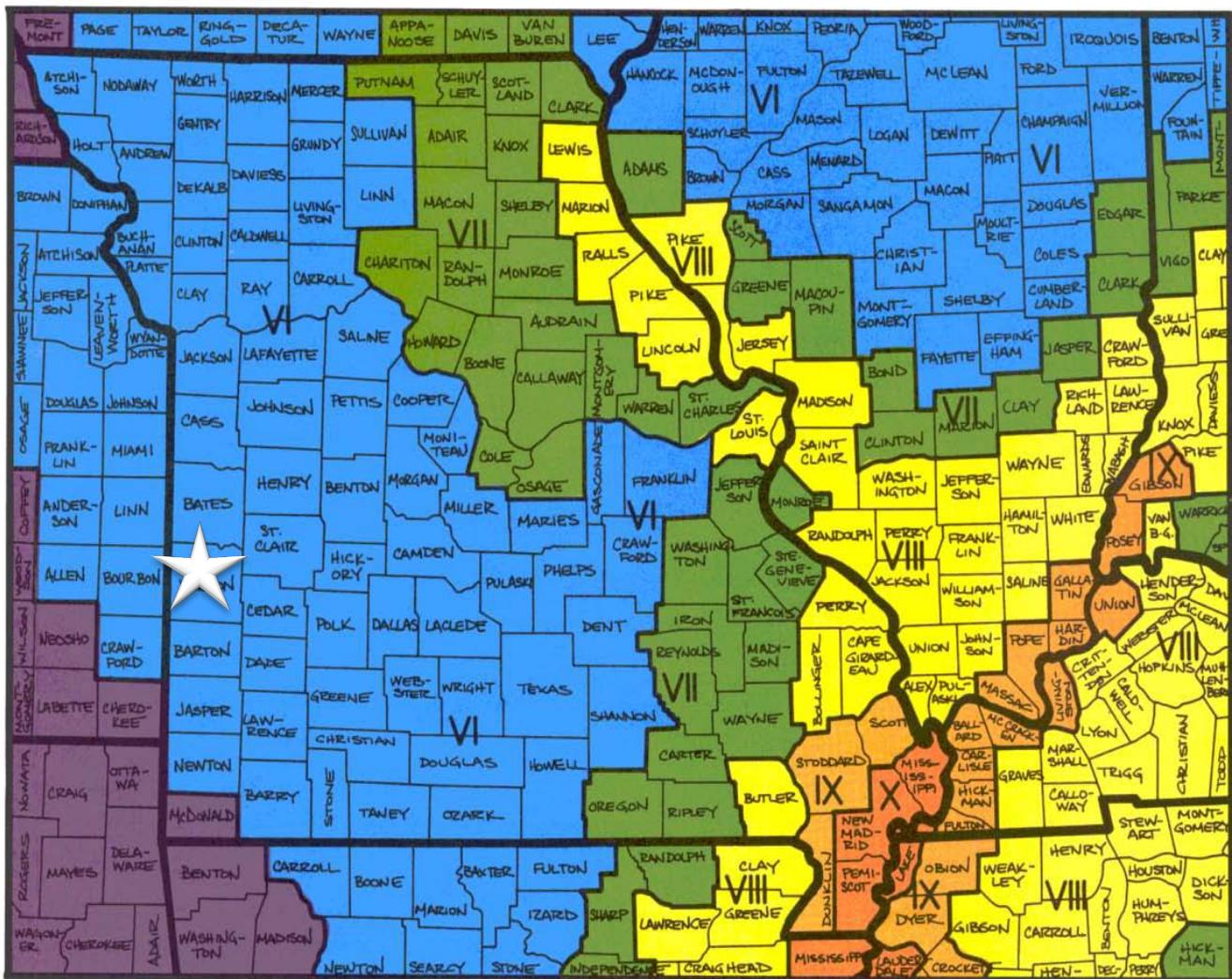
##### ***Geographic Location***

Due to Vernon County's location within the state of Missouri, it lies within the impact zone of the New Madrid Faultline. Although the New Madrid Fault has not been extremely active with major earthquakes since the early 19<sup>th</sup> century, scientists predict that the New Madrid Fault could see a resurgence again in the future. Vernon County would feel the effects of a significant New Madrid Earthquake, one that ranks higher than 6.0M<sub>w</sub> on the Richter Scale. See the following, **Figure 3.27**, for more information regarding potential impacts of each significant earthquake intensity, both 7.6M<sub>w</sub> and 8.6M<sub>w</sub>, respectively.

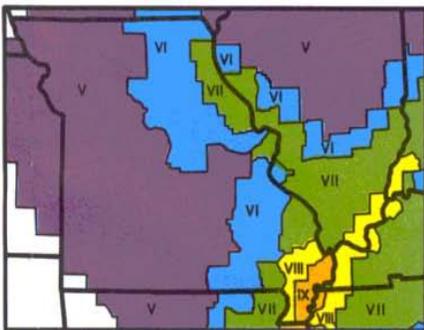
Also worth noting is Vernon County's proximity to the Nemaha Ridge, a Faultline smaller than that of New Madrid, but still poses an earthquake risk to the county and surrounding region. Nemaha is located in northeastern Kansas and stretches down to Oklahoma City passing through Manhattan, Kansas and other parts of the state before crossing into Oklahoma. The history of Nemaha earthquakes is scarce, but it is one that has the potential to be a concern in the future.

The white star on the next page is indicative of where Vernon County lies in relation to potential earthquake impacts stemming from New Madrid.

Figure 3.27. Impact Zones for Earthquake Along the New Madrid Fault

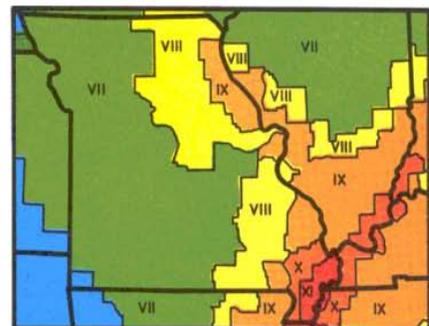


This map shows the highest projected Modified Mercalli intensities by county from a potential magnitude - 7.6 earthquake whose epicenter could be anywhere along the length of the New Madrid seismic zone.



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.



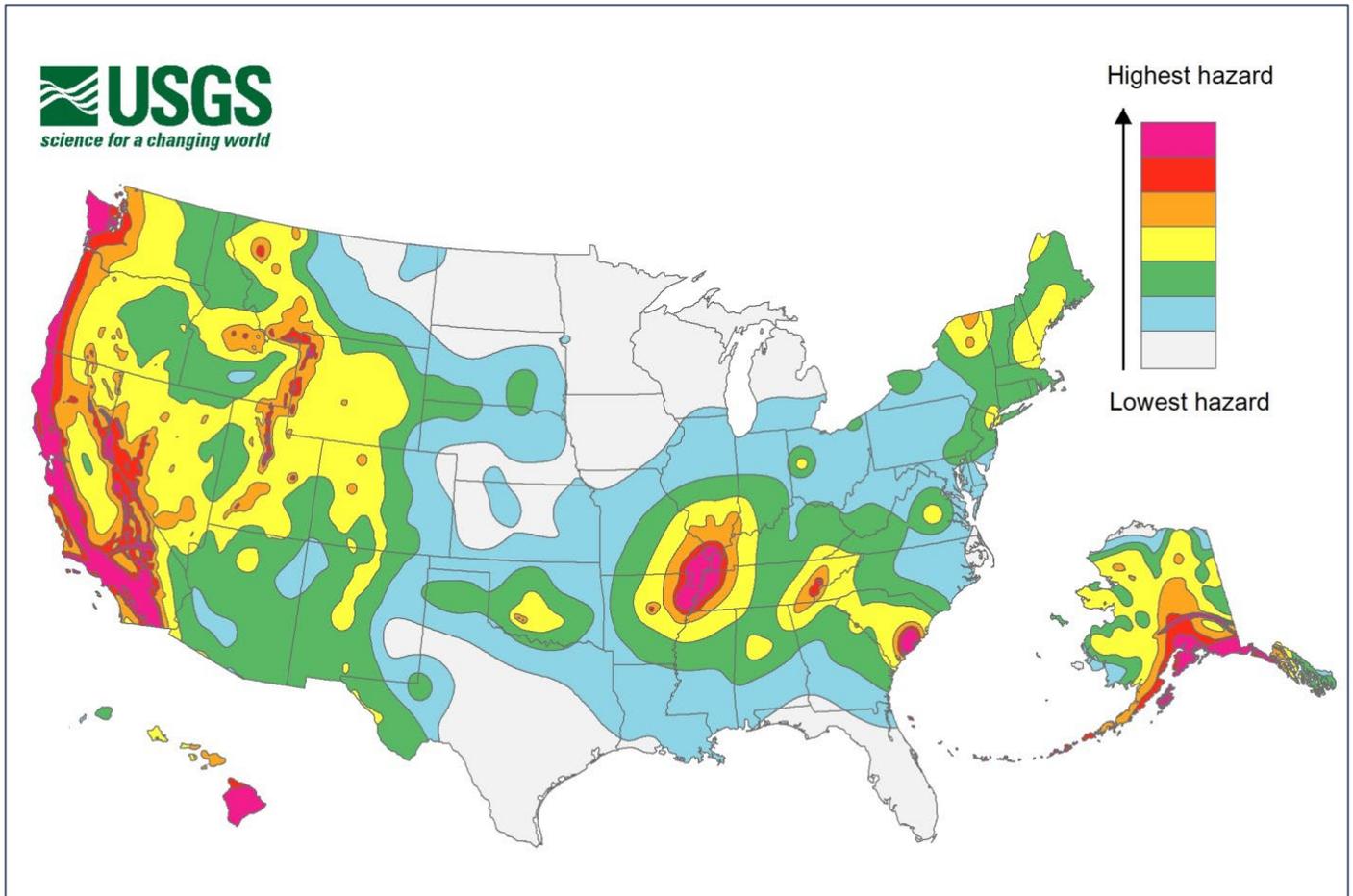
Source: [https://sema.dps.mo.gov/docs/EQ\\_Map.pdf](https://sema.dps.mo.gov/docs/EQ_Map.pdf)

Figure 3.28. Projected Earthquake Intensities

## MODIFIED MERCALLI INTENSITY SCALE

- I People do not feel any Earth movement.
  - II A few people might notice movement.
  - III Many people indoors feel movement. Hanging objects swing.
  - IV Most people indoors feel movement. Dishes, windows, and doors rattle. Walls and frames of structures creak. Liquids in open vessels are slightly disturbed. Parked cars rock.
  - V** Almost everyone feels movement. Most people are awakened. Doors swing open or closed. Dishes are broken. Pictures on the wall move. Windows crack in some cases. Small objects move or are turned over. Liquids might spill out of open containers.
  - VI** Everyone feels movement. Poorly built buildings are damaged slightly. Considerable quantities of dishes and glassware, and some windows are broken. People have trouble walking. Pictures fall off walls. Objects fall from shelves. Plaster in walls might crack. Some furniture is overturned. Small bells in churches, chapels and schools ring.
  - VII** People have difficulty standing. Considerable damage in poorly built or badly designed buildings, adobe houses, old walls, spires and others. Damage is slight to moderate in well-built buildings. Numerous windows are broken. Weak chimneys break at roof lines. Cornices from towers and high buildings fall. Loose bricks fall from buildings. Heavy furniture is overturned and damaged. Some sand and gravel stream banks cave in.
  - VIII** Drivers have trouble steering. Poorly built structures suffer severe damage. Ordinary substantial buildings partially collapse. Damage slight in structures especially built to withstand earthquakes. Tree branches break. Houses not bolted down might shift on their foundations. Tall structures such as towers and chimneys might twist and fall. Temporary or permanent changes in springs and wells. Sand and mud is ejected in small amounts.
  - IX** Most buildings suffer damage. Houses that are not bolted down move off their foundations. Some underground pipes are broken. The ground cracks conspicuously. Reservoirs suffer severe damage.
  - X** Well-built wooden structures are severely damaged and some destroyed. Most masonry and frame structures are destroyed, including their foundations. Some bridges are destroyed. Dams are seriously damaged. Large landslides occur. Water is thrown on the banks of canals, rivers, and lakes. Railroad tracks are bent slightly. Cracks are opened in cement pavements and asphalt road surfaces.
  - XI** Few if any masonry structures remain standing. Large, well-built bridges are destroyed. Wood frame structures are severely damaged, especially near epicenters. Buried pipelines are rendered completely useless. Railroad tracks are badly bent. Water mixed with sand, and mud is ejected in large amounts.
  - XII Damage is total, and nearly all works of construction are damaged greatly or destroyed. Objects are thrown into the air. The ground moves in waves or ripples. Large amounts of rock may move. Lakes are dammed, waterfalls formed and rivers are deflected.
- Intensity is a numerical index describing the effects of an earthquake on the surface of the Earth, on man, and on structures built by man. The intensities shown in these maps are the highest likely under the most adverse geologic conditions. There will actually be a range in intensities within any small area such as a town or county, with the highest intensity generally occurring at only a few sites. Earthquakes of all three magnitudes represented in these maps occurred during the 1811 - 1812 "New Madrid earthquakes." The isoseismal patterns shown here, however, were simulated based on actual patterns of somewhat smaller but damaging earthquakes that occurred in the New Madrid seismic zone in 1843 and 1895.
- Prepared and distributed by  
THE MISSOURI STATE  
EMERGENCY MANAGEMENT AGENCY  
P.O. BOX 116  
JEFFERSON CITY, MO 65102  
Telephone: 573-526-9100

Figure 3.29. United States Seismic Hazard Map



Source: United States Geological Survey at [https://earthquake.usgs.gov/hazards/hazmaps/conterminous/2014/images/HazardMap2014\\_lg.jpg](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***

According to Homefacts.com, Vernon County has had **0** recorded instances of earthquakes since 1931.

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

Although the true probability for an earthquake impacting Vernon County cannot be calculated due to lack of sufficient historical record, the New Madrid Faultline and Nemaha Faultline provide some insight into what may come at a later date. So the probability, at least for now is **0**, but this should not be grounds for a false sense of security that neither fault will ever be active again. When New Madrid shakes violently again as it did in 1811, 1812 and 1813, the damages will most certainly impact Vernon County and its many appurtenances.

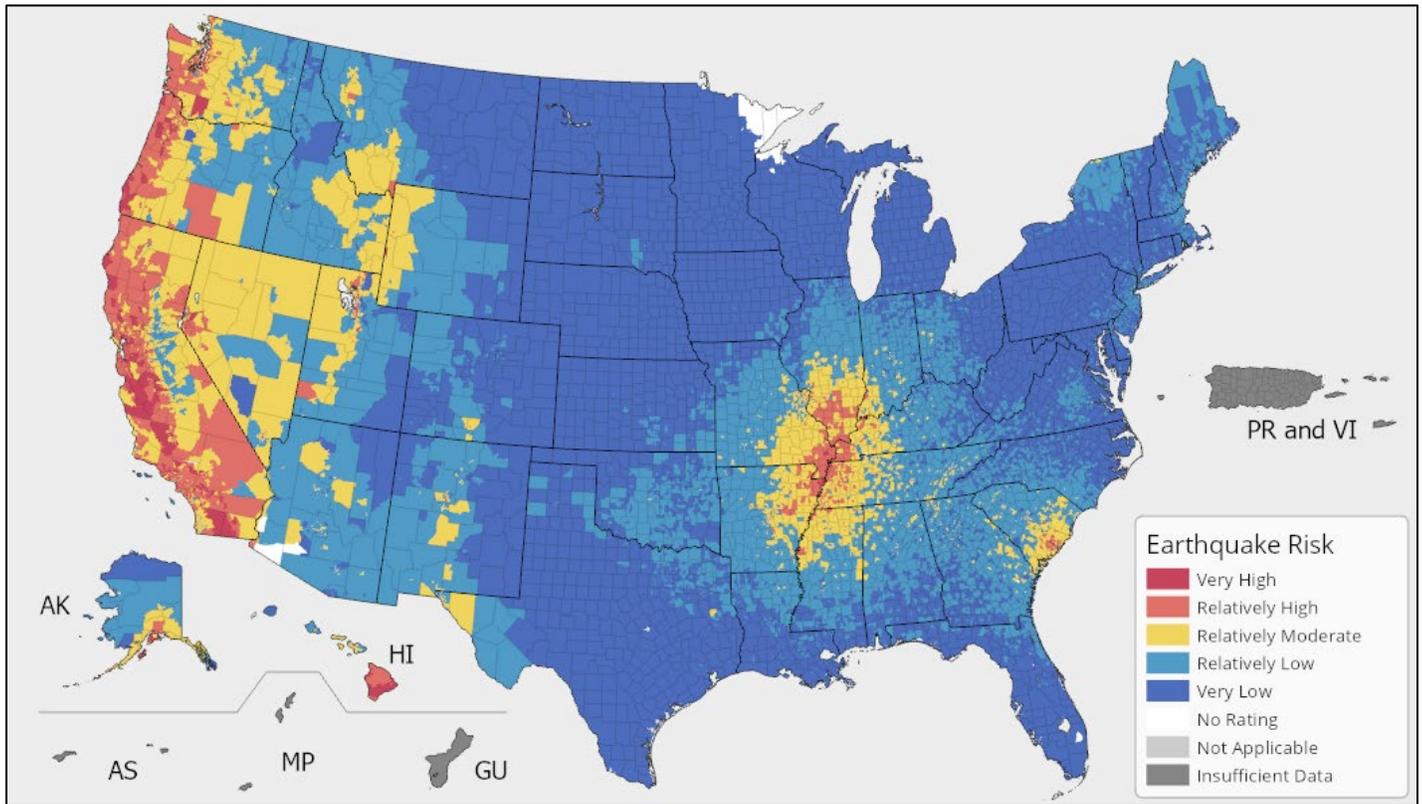
## ***Changing Future Conditions Considerations***

Unfortunately the science between earthquakes and climate change is currently inconclusive, there is not a direct link between the two right now. However there is one small issue that lingers, and begs the question: Will more severe earthquakes occur due to climate change? The answer for now is **unknown** until further research can be conducted.

## **Vulnerability**

### ***Vulnerability Overview***

In 2022, the Missouri Department of Commerce & Insurance published their updated report entitled "Residential Earthquake Coverage in Missouri", a report which provides insights into the status of earthquake insurance around the State, including Vernon County. While Vernon County is not in the hot zone for an earthquake stemming from the New Madrid Fault, the ripple effects will be felt statewide, having a significant impact on the vulnerability of Vernon County. It is expected that Vernon County will have 'Strong' shaking from New Madrid, which already enhances the county's vulnerability. Approximately 2 to 7% of Vernon County residents have earthquake insurance, but this may be backed up by the cost of the insurance. Since 2000, costs of earthquake insurance has increased from \$35 to \$135 because Vernon County is considered a low-risk county. However, this report suggests that there are 389 earthquake exposed pieces of infrastructure within the county, 6,471 home exposures, and 6.0% have earthquake coverage. A premium cost on earthquake insurance in Vernon County is \$86, one of the lowest in the State. The figure on the next page from FEMA highlights vulnerability from an earthquake based on the National Risk Index,



**Figure 3.30. Earthquake Risk according to FEMA's National Risk Index**

**a. Vernon County has a *Relatively Low* Risk of Earthquakes**

***Potential Losses to Existing Development***

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

It is widely known and accepted that current development is already at risk from earthquake damages, but what can be said about future developments in Vernon County? Future developments in Vernon County, as it might suggest, do not add directly to the overall risk but rather the exposure associated with a powerful earthquake.

***Hazard Summary by Jurisdiction***

- ▶ **Vernon County** – Although FEMA identified Vernon County as having a relatively low risk of earthquakes in the National Risk Index, all it will take is one significant earthquake from the New Madrid Faultline to change this narrative.
- ▶ **City of Bronaugh** – Earthquakes are likely to impact Bronaugh, as being part of the New Madrid Seismic Zone, but it remains to be seen whether the effects will be devastating or not.
- ▶ **City of Nevada** – Earthquakes are likely to impact Nevada, as being part of the New Madrid Seismic Zone, but it remains to be seen whether the effects will be devastating or not.

- ▶ **City of Schell City** – Earthquakes are likely to impact Schell City, as being part of the New Madrid Seismic Zone, but it remains to be seen whether the effects will be devastating or not.
- ▶ **City of Sheldon** – Earthquakes are likely to impact Sheldon, as being part of the New Madrid Seismic Zone, but it remains to be seen whether the effects will be devastating or not.

### **Educational Institutions**

- ▶ **Bronaugh R-VII** – An earthquake is likely to have a devastating impact on the Bronaugh School District, as the infrastructure of the district is older and likely not earthquake resistant.
- ▶ **Cottey College** – An earthquake is likely to have a devastating impact on Cottey College, as the infrastructure of the college is older and likely not earthquake resistant.
- ▶ **Crowder College** – An earthquake is likely to have a devastating impact on Crowder College, as the infrastructure of the college is older and likely not earthquake resistant.
- ▶ **Missouri Welding Institute** – An earthquake is likely to have a devastating impact on the Missouri Welding Institute, as the infrastructure of the institution is older and likely not earthquake resistant.
- ▶ **Nevada R-V** – An earthquake is likely to have a devastating impact on the Bronaugh School District, as the infrastructure of the district is older and likely not earthquake resistant.
- ▶ **Northeast Vernon County R-I** – An earthquake is likely to have a devastating impact on the Northeast Vernon County School District, as the infrastructure of the district is older and likely not earthquake resistant.
- ▶ **Sheldon R-VIII** – An earthquake is likely to have a devastating impact on the Sheldon School District, as the infrastructure of the district is older and likely not earthquake resistant.

### **Problem Statement**

Earthquakes have long been the hazard that scientists are trying to predict down to the minute before the shaking starts. Although this has been widely seen in California and along related faults on the west coast, similar methods have not been employed in the Midwest or Southeast, where earthquakes rattle communities like Charleston, South Carolina. Because earthquakes are hard to predict, mitigation efforts can be employed at any time and then hopefully when the earthquake happens, the mitigation efforts taken beforehand hold. Most often, earthquake mitigation revolves around the built environment and infrastructure. For Vernon County, these are the most likely mitigation strategies, such as retrofitting existing structures to be able to withstand a powerful earthquake. However, with a large quantity of older structures, that is not as easy to do. Schools perform annual safety drills to help prepare them for earthquakes, but they should look at retrofitting school infrastructure during construction projects that would better suit them in case New Madrid becomes active again.

## 3.4.4 Drought

### Hazard Profile

#### *Hazard Description*

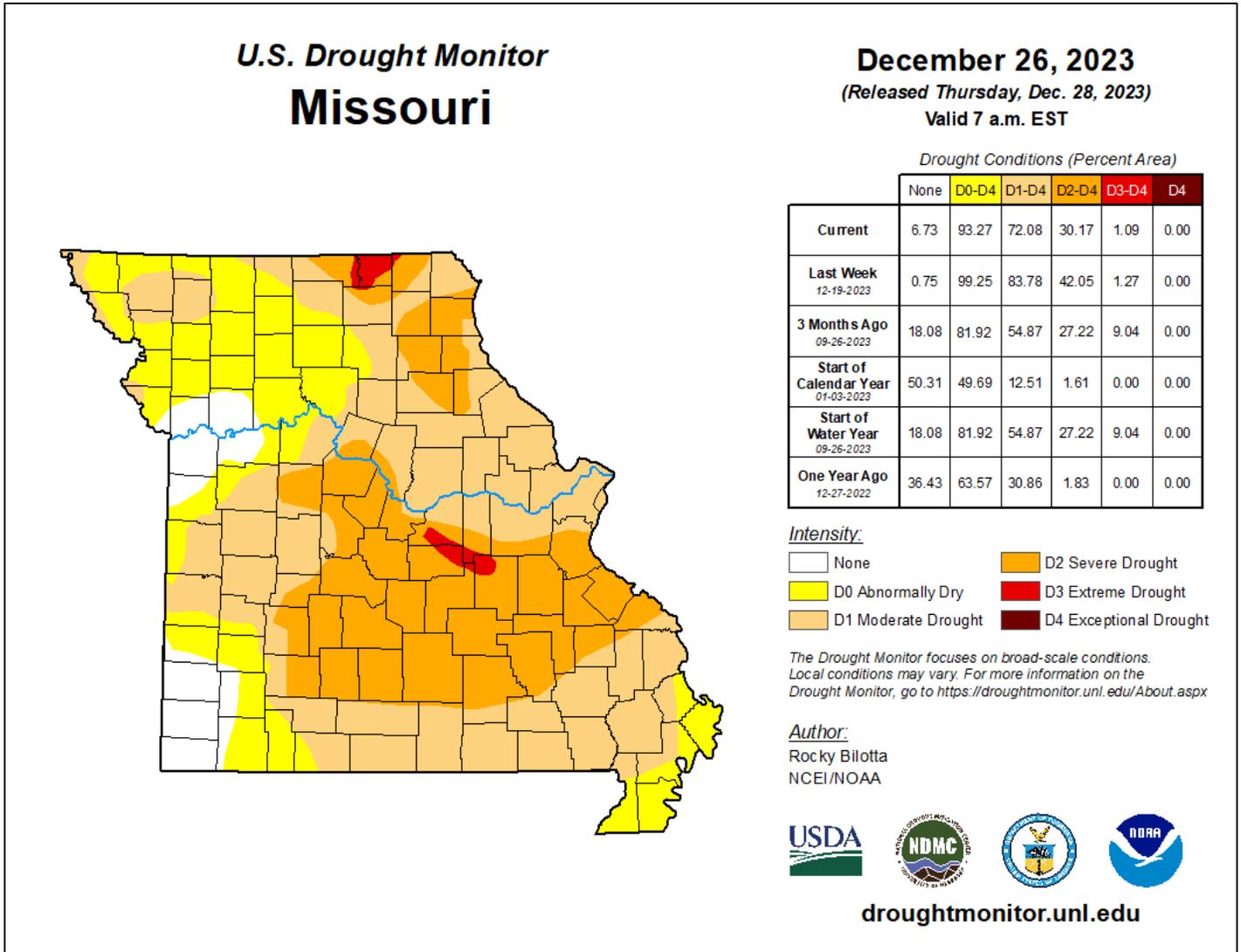
**Drought** is generally defined as a condition of moisture levels significantly below normal for an extended period of time over a large area that adversely affects plants, animal life, and humans. A drought period can last for months, years, or even decades. There are four types of drought conditions 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 region-specific since the atmospheric conditions that result in deficiencies of precipitation are highly variable from region to region.
- **Hydrological** drought is associated with the effects of periods of precipitation (including snowfall) shortfalls on surface or subsurface water supply (e.g., streamflow, reservoir and lake levels, ground water). The frequency and severity of hydrological drought is often defined on a watershed or river basin scale. Although all droughts originate with a deficiency of precipitation, hydrologists are more concerned with how this deficiency plays out through the hydrologic system. Hydrological droughts are usually out of phase with or lag the occurrence of meteorological and agricultural droughts. It takes longer for precipitation deficiencies to show up in components of the hydrological system such as soil moisture, streamflow, and ground water and reservoir levels. As a result, these impacts also are out of phase with impacts in other economic sectors.
- **Agricultural** drought focus is on soil moisture deficiencies, differences between actual and potential evaporation, reduced ground water or reservoir levels, etc. Plant demand for water depends on prevailing weather conditions, biological characteristics of the specific plant, its stage of growth, and the physical and biological properties of the soil.
- **Socioeconomic** drought refers to when physical water shortage begins to affect people.

#### *Geographic Location*

Droughts usually are not isolated to one part of Vernon County, when they happen, they tend to impact the entire county. The United States Department of Agriculture in collaboration with the National Weather Service and a few other agencies perform routine updates to drought conditions across the country, especially when conditions are most prevalent for droughts. In this case, the USDA put out a map of drought conditions that existed in the State of Missouri, including Vernon County, on 26 December 2023, a time when Vernon County was experiencing abnormally dry and moderate drought conditions.

Figure 3.31. U.S. Drought Monitor Map of Missouri on 26 December 2023



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

**Strength/Magnitude/Extent**

In the United States and Vernon County, the Palmer Index was devised as a way to measure the strength, magnitude and extent of a drought situation. This index ranges from -4 to +4 with 0 being neutral. When drought conditions provide a Palmer Index reading of -4, it is usually extremely dry, and droughts are often more severe. On the other hand, when the Palmer Index reads +4, conditions are extremely moist, so the ground is super saturated. Only rarely do conditions reach either extreme in conditions north of the equator, they are more common in other parts of the world subject to extreme droughts or extreme rainfalls.

**Previous Occurrences**

Droughts tend to happen quite frequently throughout Vernon County, and usually losses due to droughts are seen through the lens of crop production, or in this case crop losses. Droughts may drag on for months depending on their severity. Herein are the losses associated with droughts in the last ten years in Vernon County. Keep in mind that droughts have happened prior to 2013, but for this particular section, only 2013 through 2023 are considered. All losses are cumulative.

**Table 3.24. Crop Losses from Drought in Vernon County Since 2013 – Courtesy of USDA**

Crop Year	Crop Loss
2013	\$5,385,970.39
2014	\$456,127.17
2015	\$344,640.10
2016	\$272,064.25
2017	\$26,655.55
2018	\$2,847,724.12
2019	\$0
2020	\$4,195,410.60
2021	\$72,947.80
2022	\$11,949,697.55
2023	\$15,585,442.80
<b>Total</b>	<b>\$41,136,680.33</b>

**Probability of Future Occurrence**

$$\frac{35 \text{ Months in Drought Since January 2004}}{240 \text{ Months since January 2004}} \sim$$

**14.58% Chance of Future Droughts in Vernon County**

This calculation is subject to a high degree of error, due to the unpredictability of droughts.

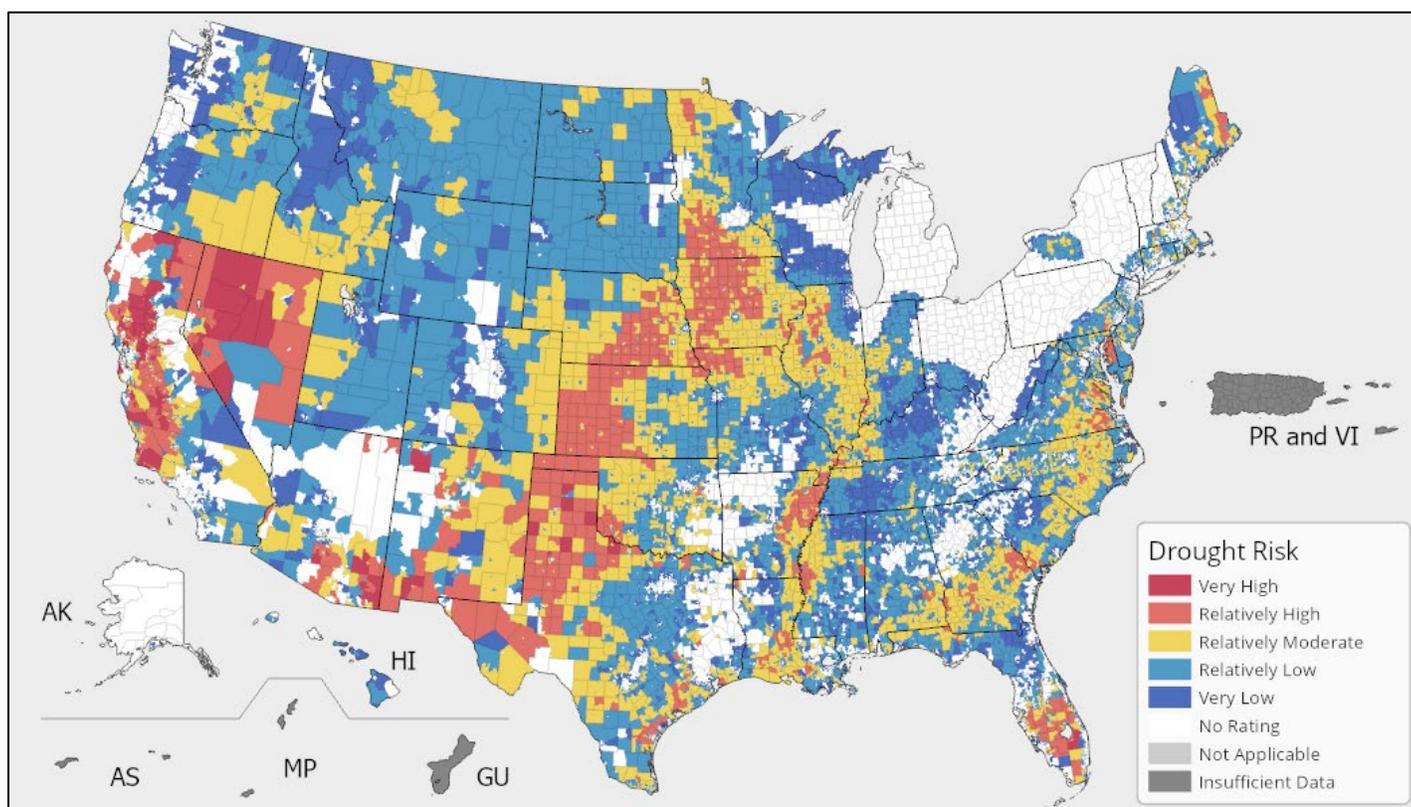
**Changing Future Conditions Considerations**

Droughts are a normal part of the climate in the State and in particular Vernon County. Due to this, evaporation rates resulting from wetter springs will increase the future intensity of droughts within the county. As temperatures in the summertime rise with the onset of Climate Change, this is expected to make the effects of droughts feel much worse because there will be enhanced evaporation rates, making items such as crops dry out faster when not watered fast enough.

## Vulnerability

### **Vulnerability Overview**

Vulnerability to droughts is often analyzed using a mixed methods approach. In the case of Vernon County, it can be qualitatively analyzed using FEMA’s National Risk Index, which does not assign a numerical risk to the county, rather it uses models based on infrastructure and topography. In this case, the vulnerability of droughts in Vernon County may be seen as low, or in FEMA terms, *relatively low*. However, drought vulnerabilities in Vernon County are also quantified through the analysis of crop losses from USDA data. As seen in **Table 3.25**, there has been significant losses of crops in Vernon County from drought conditions, especially now that total losses for 2023 are known. When quantified, vulnerability to drought conditions in Vernon County looks extremely high due to the more than \$41 million dollars in crop losses in the last ten years. This does not consider people’s vulnerability to this natural hazard. To all extents and purposes, people become vulnerable to a drought when the infrastructure they rely on, such as water supplies, start to run low. Research has shown that people become vulnerable to droughts when “precipitation and crop yields become scarily low, it is also a matter of not preparing in-time or using drought resistant measures, such as drought resistant seeds in agriculture”<sup>3</sup>. In Vernon County, it is not fully known whether this could help mitigate drought efforts or not, but even then it has to start at the grassroots level. FEMA’s National Risk Index for Drought Risk



**a. Vernon County has a Relatively Low risk for Droughts**

- i. **\*This is based on losses associated with crops, per FEMA’s logic\***

<sup>3</sup> Iglesias, A., Moneo, M., Quiroga, S. (2009). Methods for Evaluating Social Vulnerability to Drought. In: Iglesias, A., Cancelliere, A., Wilhite, D.A., Garrote, L., Cubillo, F. (eds) Coping with Drought Risk in Agriculture and Water Supply Systems. Advances in Natural and Technological Hazards Research, vol 26. Springer, Dordrecht. [https://doi.org/10.1007/978-1-4020-9045-5\\_11](https://doi.org/10.1007/978-1-4020-9045-5_11)

### ***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.

Historically, Vernon County has seen some significant losses associated with drought conditions, the worst in the last 10 years coming in 2022, where there was almost **\$12 million** in losses, followed by 2013, 2020, and 2018. 2023 was the worst year in the last 10 years, losses totaled nearly **\$16 million**.

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

Usually drought losses of the past can tell just how significant droughts of the future will be, and this is especially true in Vernon County. With one exception, 2019, droughts have had varying degrees of impacts on the county and in particular, the agricultural way of life. With losses culminating to approximately \$42 million since 2013 due to droughts, these losses are significant for a rural county. As agricultural life is a large part of the economy of Vernon County, it is expected that future development may result in more losses due to droughts than ever before. If the drought from 2023 was any indication of what's to come, losses from drought in Vernon County could exceed \$20 million during the dry season.

### ***Changing Future Conditions Considerations***

With regard to Climate Change and the ever-changing landscape of droughts, it is widely expected that droughts will become worse because of the changing climate, there is no easy way to say that. Ultimately, the correlation between the two is quite strong, when the weather is exceptionally hot and dry for long periods of time, droughts follow. The same can be said for a lack of snowfall, although that is not as frequently discussed as the droughts that can take place during the warmer months. Going forward, expect more droughts, and in some cases more severe droughts, due to the vastly changing climatological conditions. These will impact both people, animals and crops in some form or another.

## **Hazard Summary by Jurisdiction**

- ▶ **Vernon County** – Droughts have long been a problem in Vernon County, some have been quite severe, others have not been nearly as bad, but when it is a significant drought season, the losses are severe, and this places extra strain on water systems for people, livestock and crops. Droughts will continue to be an issue in the county when it is not abnormally wet.
- ▶ **City of Bronaugh** – As a small community, drought has the potential to be problematic on water supplies and this will in turn make life difficult for the residents and the agricultural life of Bronaugh.
- ▶ **City of Nevada** – As the largest incorporated community in Vernon County, the City of Nevada could face the greatest risks associated with drought. Not only would it make water supplies subject to fluctuations, but it would impact firefighting efforts, then peoples' lives and ultimately livestock and crops.
- ▶ **City of Schell City** – As a small community, drought has the potential to be problematic on water supplies and this will in turn make life difficult for the residents and the agricultural life of Schell City.
- ▶ **City of Sheldon** – As a small community, drought has the potential to be problematic on water supplies and this will in turn make life difficult for the residents and the agricultural life of Sheldon.

## **Educational Institutions**

- ▶ **Bronaugh R-VII** – When it comes to a drought's impact on Bronaugh schools, drought would likely impact the water supply to the schools and the socioeconomic aspects of the school (students, administration, teachers, etc.)
- ▶ **Cottey College** – When it comes to a drought's impact on Cottey College, drought would likely impact the water supply to the schools and the socioeconomic aspects of the school (students, administration, teachers, etc.)
- ▶ **Crowder College** – When it comes to a drought's impact on Crowder College, drought would likely impact the water supply to the schools and the socioeconomic aspects of the school (students, administration, teachers, etc.)
- ▶ **Missouri Welding Institute** – When it comes to a drought's impact on the Missouri Welding Institute, drought would likely impact the water supply to the schools and the socioeconomic aspects of the school (students, administration, teachers, etc.)
- ▶ **Northeast Vernon County R-I** – When it comes to a drought's impact on Northeast Vernon County schools, drought would likely impact the water supply to the schools and the socioeconomic aspects of the school (students, administration, teachers, etc.)
- ▶ **Nevada R-V** – When it comes to a drought's impact on Nevada schools, drought would likely impact the water supply to the schools and the socioeconomic aspects of the school (students, administration, teachers, etc.)
- ▶ **Sheldon R-VIII** – When it comes to a drought's impact on Sheldon schools, drought would likely impact the water supply to the schools and the socioeconomic aspects of the school (students, administration, teachers, etc.)

## **Problem Statement**

Drought is a frequently occurring hazard in Vernon County, and the fact that it has a large agricultural presence makes the hazard all the more susceptible to creating devastating effects on the communities and the farmers in the county. One way communities address drought concerns is through the implementation of water supply monitoring, which is beneficial so officials can monitor water levels and address shortcomings much faster. Additionally, ideas such as soil conservation may be explored as a solution to mitigate, not eliminate, drought problems, but this depends on the chemistry of the soil and altering the land is not always a good idea, but it may work if the benefits outweigh the risk. As much of the county may have older water supply systems, looking at ways to retrofit it for modern times may also assist with drought mitigation.

### 3.4.5 Extreme Temperatures (Heat and Cold)

#### **Hazard Profile**

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

Extreme temperature events, both hot and cold, can impact human health and mortality, natural ecosystems, agriculture and other economic sectors. According to information provided by FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks. Ambient air temperature is one component of heat conditions, with relative humidity being the other. The relationship of these factors creates what is known as the apparent temperature. The Heat Index chart shown in **Figure 3.32** 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 of 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.

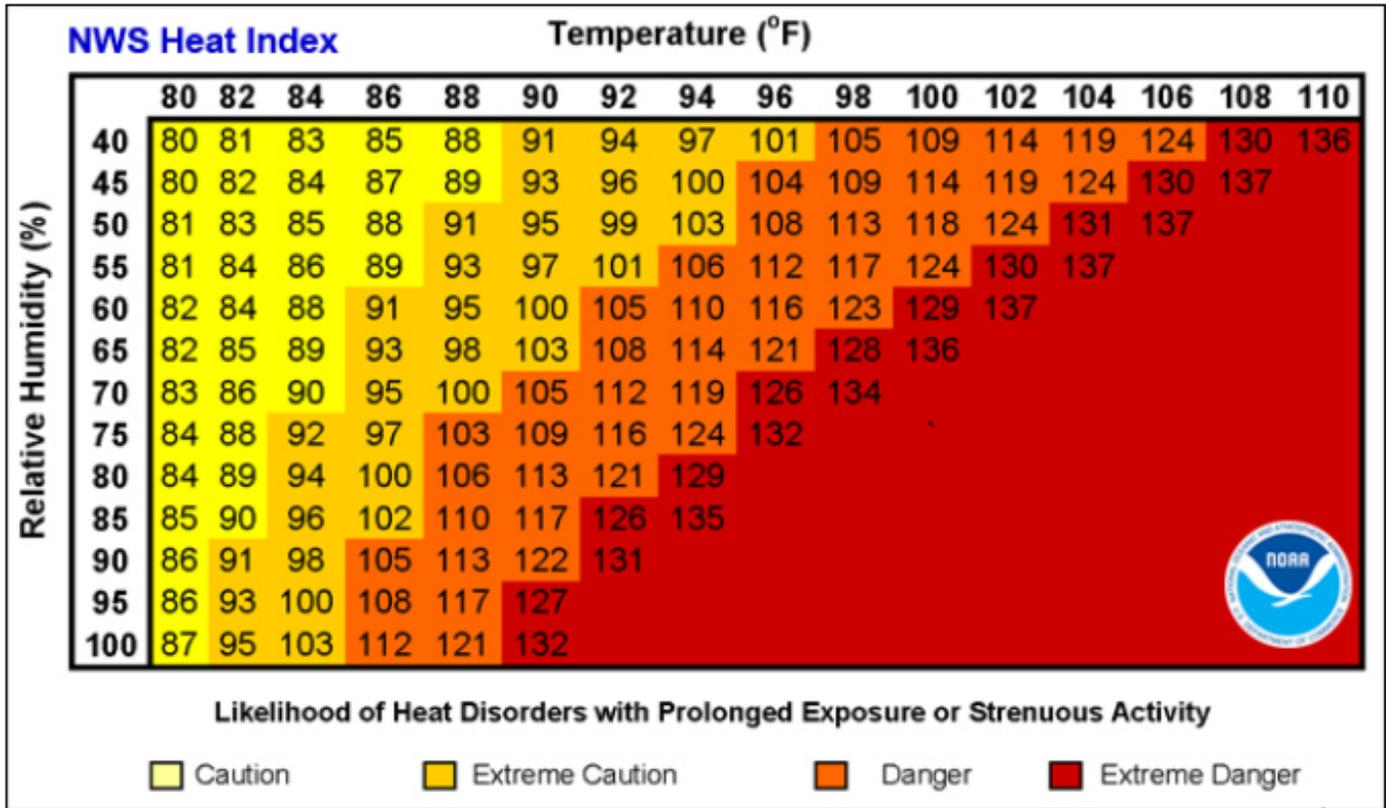
##### ***Geographic Location***

Traditionally, extreme temperatures do not vary across Vernon County, it is likely to impact the entire county all at one time. This is due in part to how extreme temperatures do not fluctuate from area to area.

##### ***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.

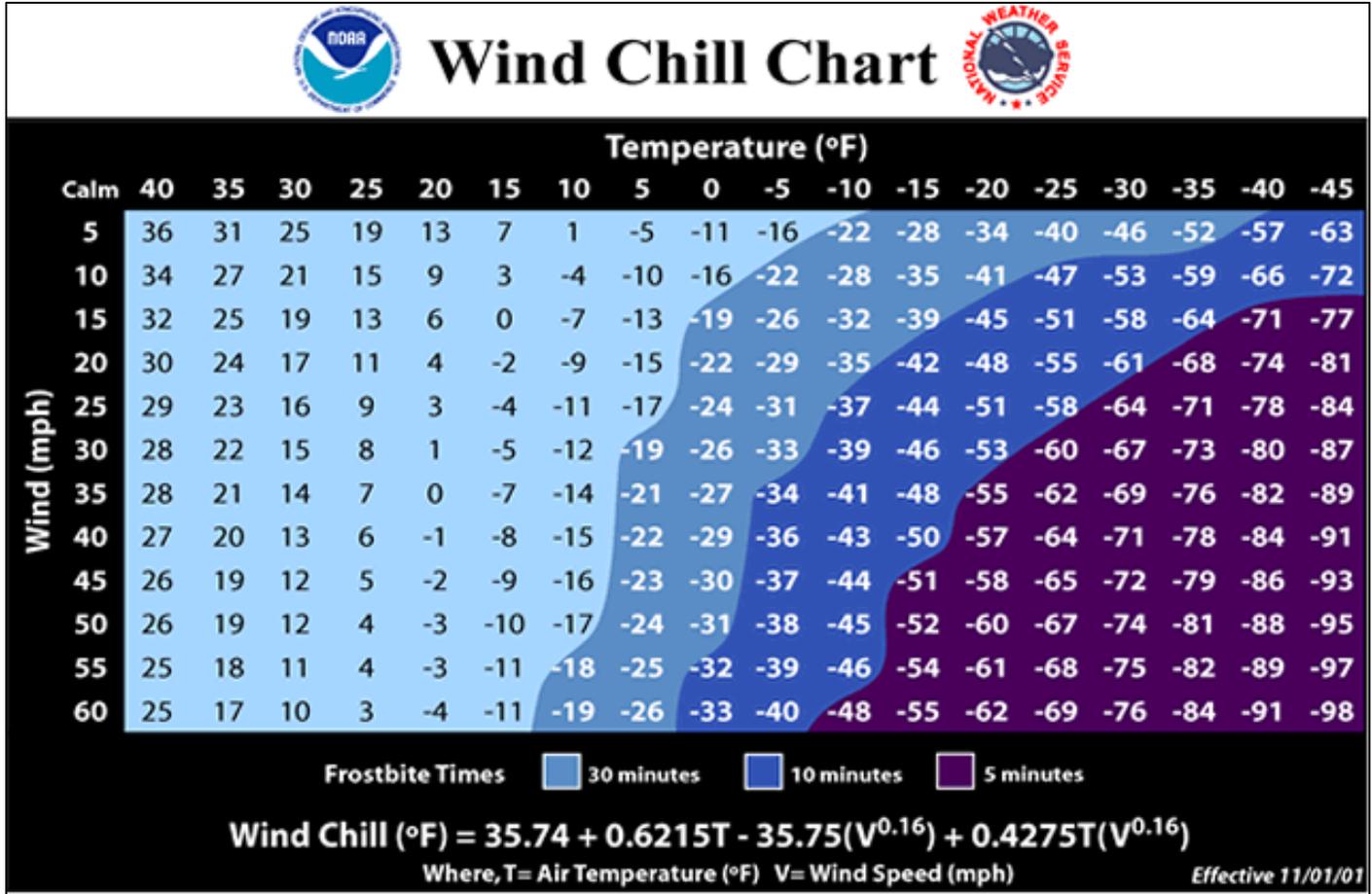
Figure 3.32. Heat Index (HI) Chart



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.

Figure 3.33. Wind Chill Chart



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

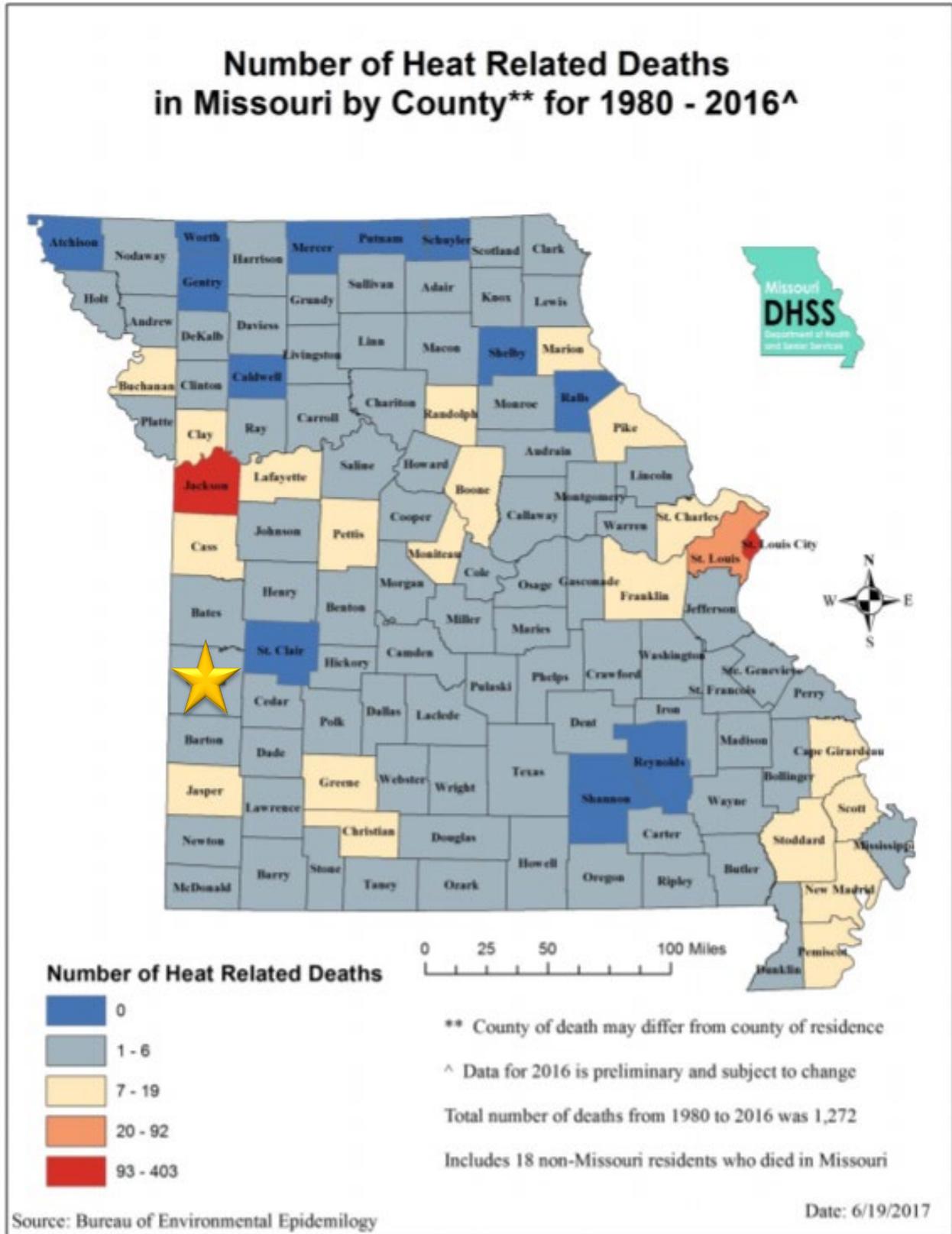
**Previous Occurrences**

Historically speaking, Vernon County has experienced three extreme cold events in the last 23 years, but no excessive heat events. As a result, no one has been killed or injured as a direct result of the excessive cold events. The first extreme cold event took place in the winter of 2000-2001, and then again in February 2021. The event from 2000-2001 does not have a Vernon County specific narrative, but the one from February 2021 does and that is as follows:

- **On the morning of February 15th, a minimum wind chill of -20 degrees was reported in Nevada. In addition, the morning low on February 16th was -10 degrees in Nevada.**

Other than this, there have been no recorded extreme heat or extreme cold events in Vernon County since at least 2000.

Figure 3.34. Heat Related Deaths in Missouri 2000 - 2016



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

Extreme heat can cause stress to crops and animals. According to USDA Risk Management Agency, losses to insurable crops during the 10-year time period from 2013 to 2023 were **\$9,188,596.59**. 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 Vernon County, according to NCEI data. The National Weather Service states that among natural hazards, no other natural disaster—not lightning, hurricanes, tornadoes, floods, or earthquakes—causes more deaths.

### **Probability of Future Occurrence**

Despite researching all known extreme heat and/or extreme cold events since 1950, Vernon County has only had **3** events, all occurring within the last 25 years.

$$\frac{3 \text{ Events Since January 2000}}{24 \text{ Years Since January 2000}} =$$

**12.5% Chance of Extreme Temperatures Impacting Vernon County**

### **Changing Future Conditions Considerations**

It can be said that extreme heat events are most taxing on the elderly population and the younger populations roughly one in the same. It creates increased demand for cooling mechanisms when the temperature gets very high in the summer, likewise increased heating in the wintertime. This demand may result in power outages when it is least convenient. Other concerns include the buckling of highways during the summer when the heat scorches the asphalt surface, which would result in prolonged road closures to fix the highway. Unlike other counties around it, Vernon County’s roads are a mix of 2-lane highways and 4-lane highways, including Interstate 49, a major north-south connection route. A buckled road could be a costly repair for the County. Furthermore, algal blooms that flourish in warmer water temperatures, could be more prevalent as temperatures gradually rise, this does two things... decreased water quality and decreased air quality. All these potential hazards are possible outcomes of increasing temperatures due to Climate Change.



Figure 3.35. Example of Interstate buckling due to **Extreme Heat**, Courtesy of KMBC 9 – Kansas City

## Vulnerability

### **Vulnerability Overview**

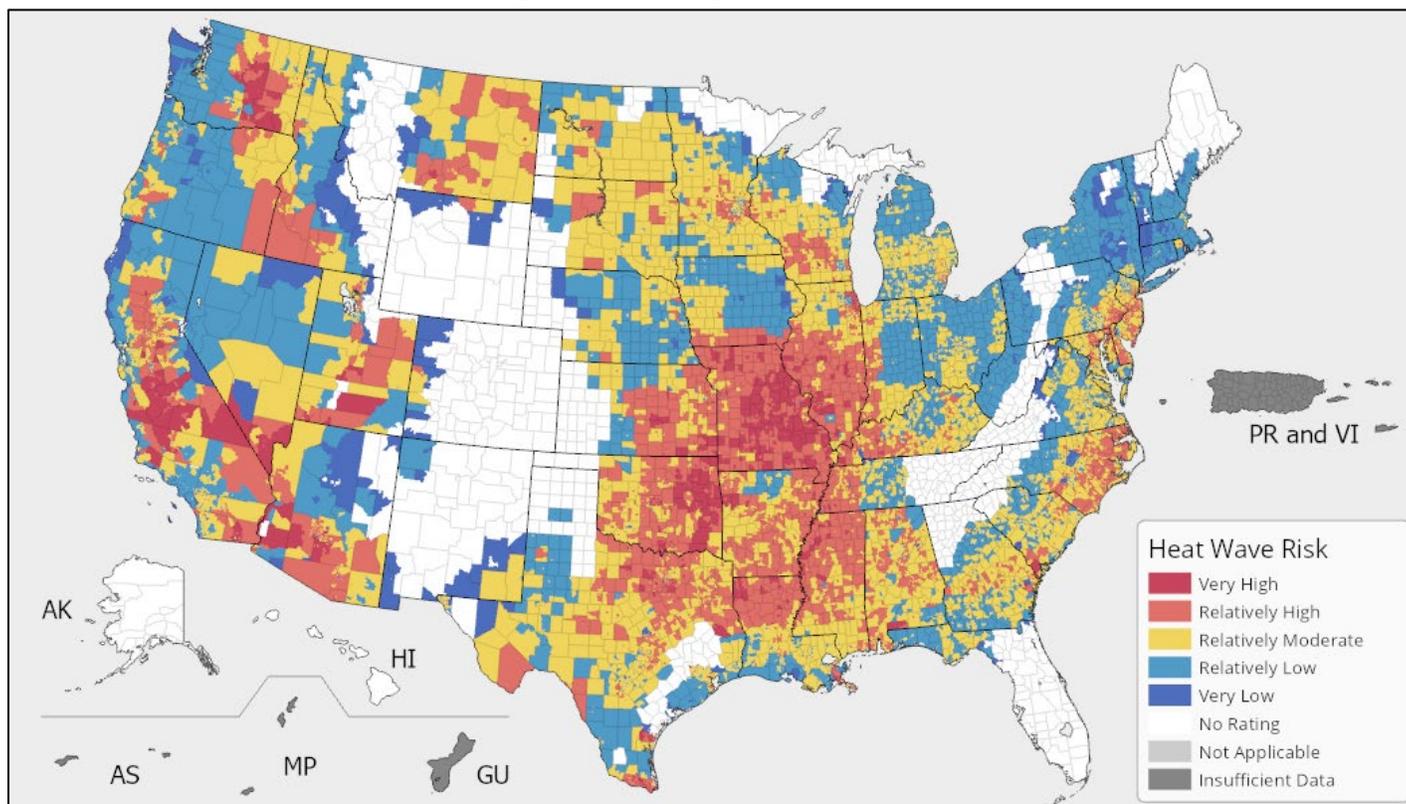
Those at greatest risk for heat-related illness include infants and children up to five years of age, people 65 years of age and older, people who are overweight, and people who are ill or on certain medications. However, even young and healthy individuals are susceptible if they participate in strenuous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

**Table 3.27** lists typical symptoms and health impacts due to exposure to extreme heat.

**Table 3.25. Typical Health Impacts of Extreme Heat**

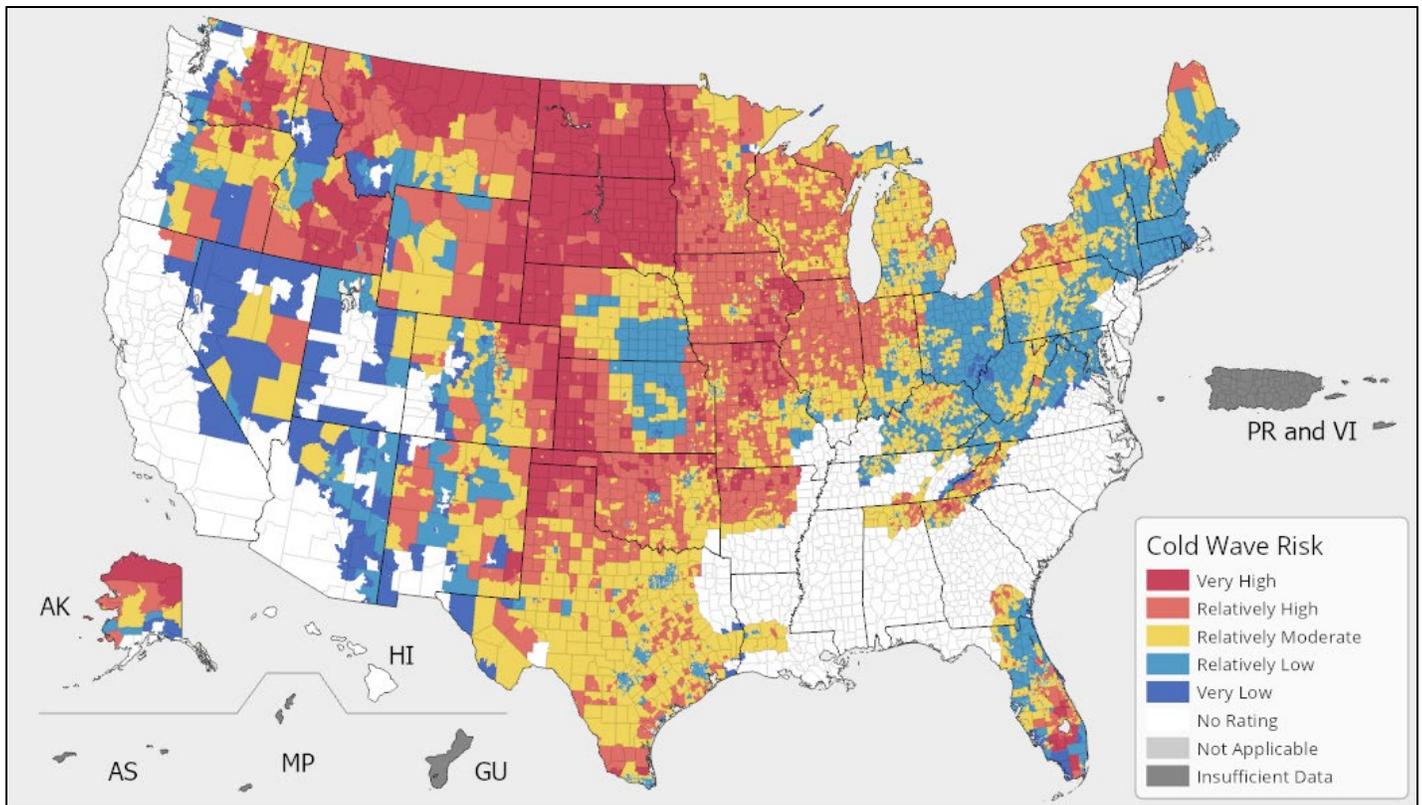
HEAT INDEX (HI)	DISORDER
80-90°F (HI)	Fatigue possible with prolonged exposure and/or physical activity
90-105°F (HI)	Sunstroke, heat cramps, and heat exhaustion possible with prolonged exposure and/or physical activity
105-130°F (HI)	Heatstroke/sunstroke highly likely with continued exposure

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



**Figure 3.36. FEMA’s National Risk Index for Extreme Heat**

a. Vernon County has a **Relatively High** extreme heat risk



**FEMA's National Risk Index for Extreme Cold**

**b. Vernon County has a **Relatively Moderate** Risk for Extreme Cold**

***Potential Losses to Existing Development***

There are two ways to look at the potential losses to existing development in Vernon County stemming from extreme temperatures. FEMA's National Risk Index sums it up qualitatively, whereas the United States Department of Agriculture sums it up qualitatively. In FEMA's eyes, looking at things qualitatively allows one to actually see those losses in Vernon County due to extreme temperatures being quite high. USDA data, on the other hand, gives a dollar amount of losses in the county, which as previously reported is close to \$10 million in crop losses, just from heat alone. As a result, losses based on current developments in Vernon County have the potential to be quite significant.

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

Traditionally, a growth in population can add to the risk of extreme heat or cold, and it is normally the very young or the very old that are most susceptible to heat's effects. While no incorporated communities in Vernon County have been in growth mode for the last 10 years, the percentage of people over the age of 65 has been increasing in the county. Notable places where the population of those over the age of 65 exceeds 20% include Deerfield, Metz, Milo, Schell City and Sheldon. Recall that these communities are much smaller than Nevada, so the numbers may be skewed when looking at the County population overall.

## **Hazard Summary by Jurisdiction**

- ▶ **Vernon County** – Extreme temperatures are a common problem in Vernon County, even if the NCEI data would suggest otherwise. Of all hazards in this risk assessment, this one is the hazard where the county faces its highest vulnerability, ranking both relatively high and relatively moderate for heat and cold. This is further complicated by a significant agricultural presence, and a high degree of socially vulnerable populations, with almost 1 in 5 being over the age of 65. There is so much throughout the county that make these two intertwined hazards particularly prevalent.
- ▶ **City of Bronaugh** – Bronaugh is likely to face the effects of extreme temperatures, but it may be seen more in terms of crop losses. A small portion of the population does meet the socially vulnerable threshold, so this adds to the risk.
- ▶ **City of Nevada** – Nevada has the highest population of any community in Vernon County, but this also creates opportunities for vulnerability to extreme temperatures, in fact it has one of the lowest recorded temperatures in recent years, when it was -10 degrees in February 2021.
- ▶ **City of Schell City** – Although Schell City has a small population, this community has the highest degree of socially vulnerable individuals of any community in Vernon County based on the last Census data. Nearly 2 out of 5 people are over the age of 65 and nearly 17% are children under the age of 5. This increases risk of extreme temperatures in Schell City.
- ▶ **City of Sheldon** – The community of Sheldon has never faced a recorded extreme temperature event in recent years, however, they do have a significant population count that is considered to be socially vulnerable, which makes the community in general more vulnerable to the likes of extreme heat and cold.

## **Educational Institutions**

- ▶ **Bronaugh R-VII** – Typically, one of the most vulnerable population groups in extreme heat and extreme cold are school-aged children, but Bronaugh has a low population of children under the age of 5, so special consideration should be given during schooldays where it is extremely hot or cold.
- ▶ **Cottey College** – Assessing risk of extreme temperatures at a college is unique, as there are various ages of students, not very young ones, but the students are still at risk of exposure to extreme heat and extreme cold, both of which may impact operations at Cottey.
- ▶ **Crowder College** – Assessing risk of extreme temperatures at a college is unique, as there are various ages of students, not very young ones, but the students are still at risk of exposure to extreme heat and extreme cold, both of which may impact operations at Crowder.
- ▶ **Missouri Welding Institute** – Extreme temperatures have the potential to pose problems at the Missouri Welding Institute, as it may cause issues with the heating/cooling system or result in classes being cancelled due to temperature extremes.
- ▶ **Nevada R-V** – Typically, one of the most vulnerable population groups in extreme heat and extreme cold are school-aged children, and Nevada has a high population of children under the age of 5, so special consideration should be given during schooldays where it is extremely hot or cold.
- ▶ **Northeast Vernon County R-I** – Naturally, one of the most vulnerable population groups in extreme heat and extreme cold are school-aged children, and both communities where this school district has buildings have a substantial population of children under the age of 5, so special consideration should be given during schooldays where it is extremely hot or cold.

- ▶ **Sheldon R-VIII** – Typically, one of the most vulnerable population groups in extreme heat and extreme cold are school-aged children, and Sheldon has a moderately high population of children under the age of 5, so special consideration should be given during schooldays where it is extremely hot or cold.

**Socially Vulnerable Populations – Those Under 5 and Over 65**

Those at greatest risk for heat-related illness and deaths include children up to five years of age, people 65 years of age and older, people who are overweight, and people who are ill or on certain medications. To determine jurisdictions within the planning area with populations more vulnerable to extreme heat, demographic data was obtained from the 2010 census on population percentages in each jurisdiction comprised of those under age 5 and over age 65. Data was not available for overweight individuals and those on medications vulnerable to extreme heat. **Table 3.27** 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 3.26. Vernon County Population Under Age 5 and Over Age 65, 2020 Census Data**

Jurisdiction	Population Under 5 yrs.	Population 65 yrs. and over
*Vernon County	6.3%	19.4%
City of Bronaugh	1.0%	2.1%
City of Nevada	5.0%	19.1%
City of Schell City	16.5%	39.4%
City of Sheldon	10.8%	23.3%

Source: U.S. Census Bureau, (\*) includes entire population of each city or county

All schools in Vernon County are subject to MSHSAA regulations regarding temperatures and how activities are conducted on schoolgrounds during extreme temperature events. The only difference is that it is based on wet bulb temperature, which differs from ambient temperature. Additionally, all schools in the county have working heating and cooling systems at this time.

## **Problem Statement**

Extreme temperatures, as highlighted, have the greatest impact on Vernon County, both in terms of vulnerability and losses to key facets of the county's economy. When compared to losses associated with the likes of droughts and other hazards, extreme temperatures have ranked near the middle of all losses. As the global climate warms, so will the likelihood of extreme temperature events be becoming more frequent in not only Vernon County but also the world. On a local level, learning how to deal with this particular hazard can take on a few different forms of mitigation. A lot of it revolves around education of citizens on how to stay warm during colder months or stay cooler during warmer times of the year. Schools are already required to follow state mandates, so their athletes do not become overexposed to the heat or the cold. Communities may also look into building cooling systems in areas where there is limited access to sufficient cooling, or heating centers where socially vulnerable populations are for use in the summertime. As such, there are several ways to beat the heat as meteorologists say or stay warm in the winter, it is just a matter of how communities and schools choose to do so.

## 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 (discussed separately in **Section 3.4.1**) and tornadoes (discussed separately in **Section 3.4.8**).

##### *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 it has been known to fall more than 10 miles away from the rainfall area. Thunder is simply the sound that lightning makes. Lightning is a huge discharge of electricity that shoots through the air causing vibrations and creating the sound of thunder.

##### *Hail*

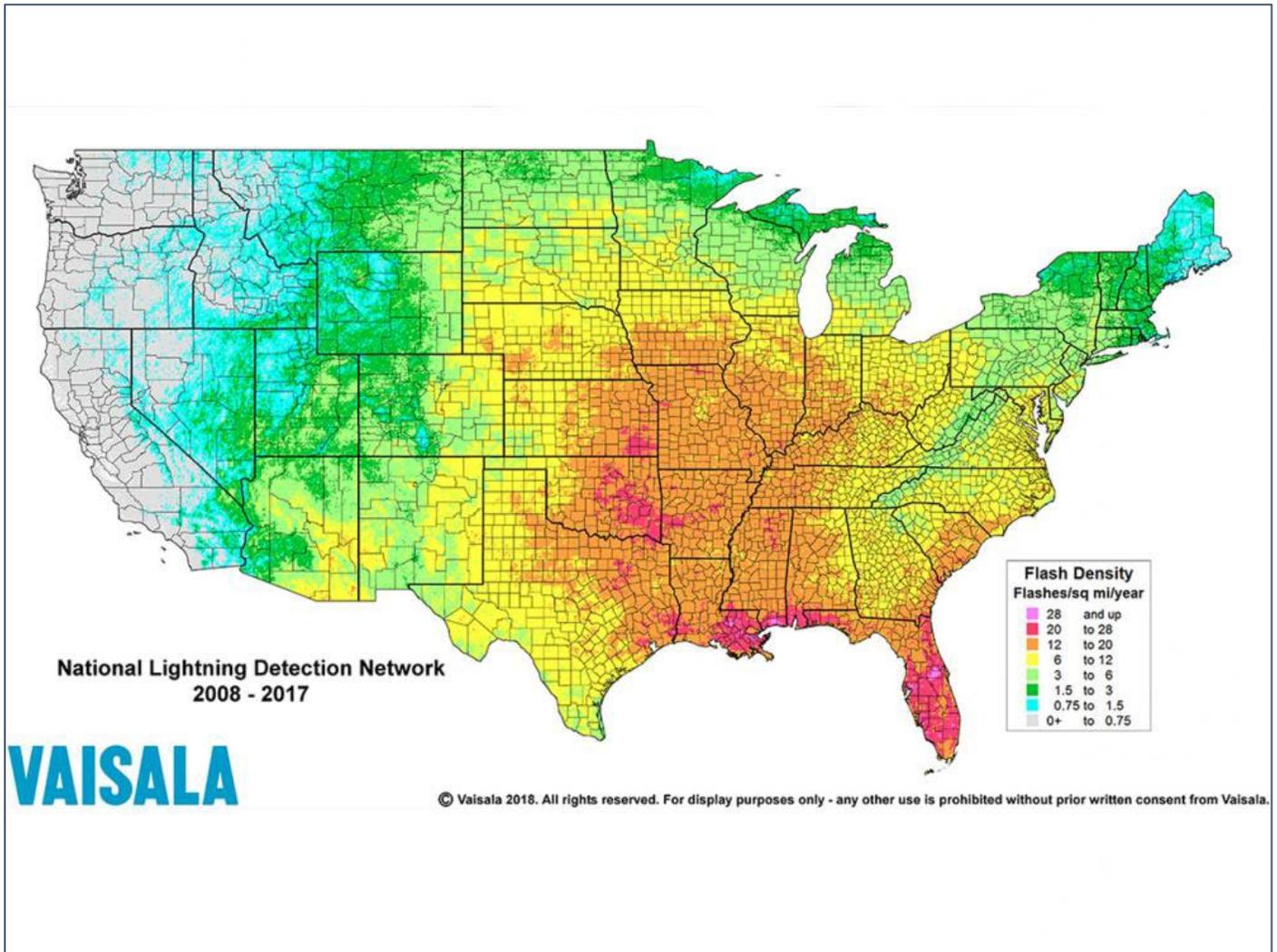
According to the National Oceanic and Atmospheric Administration (NOAA), hail is precipitation that is formed when thunderstorm updrafts carry raindrops upward into extremely cold atmosphere causing them to freeze. The raindrops form into small frozen droplets. They continue to grow as they come into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

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

### Geographic Location

Normally lightning strikes associated with thunderstorms can happen anywhere in Vernon County, they are not unique to the county. What is unique about lightning strikes is the frequency in which they occur throughout the County. When viewing **Figure 3.38**, one can note that Vernon County experiences approximately 12 to 20 flashes of lightning per square mile, as of 2018. That number may have changed but it gives an approximation of how often lightning in Vernon County strikes.

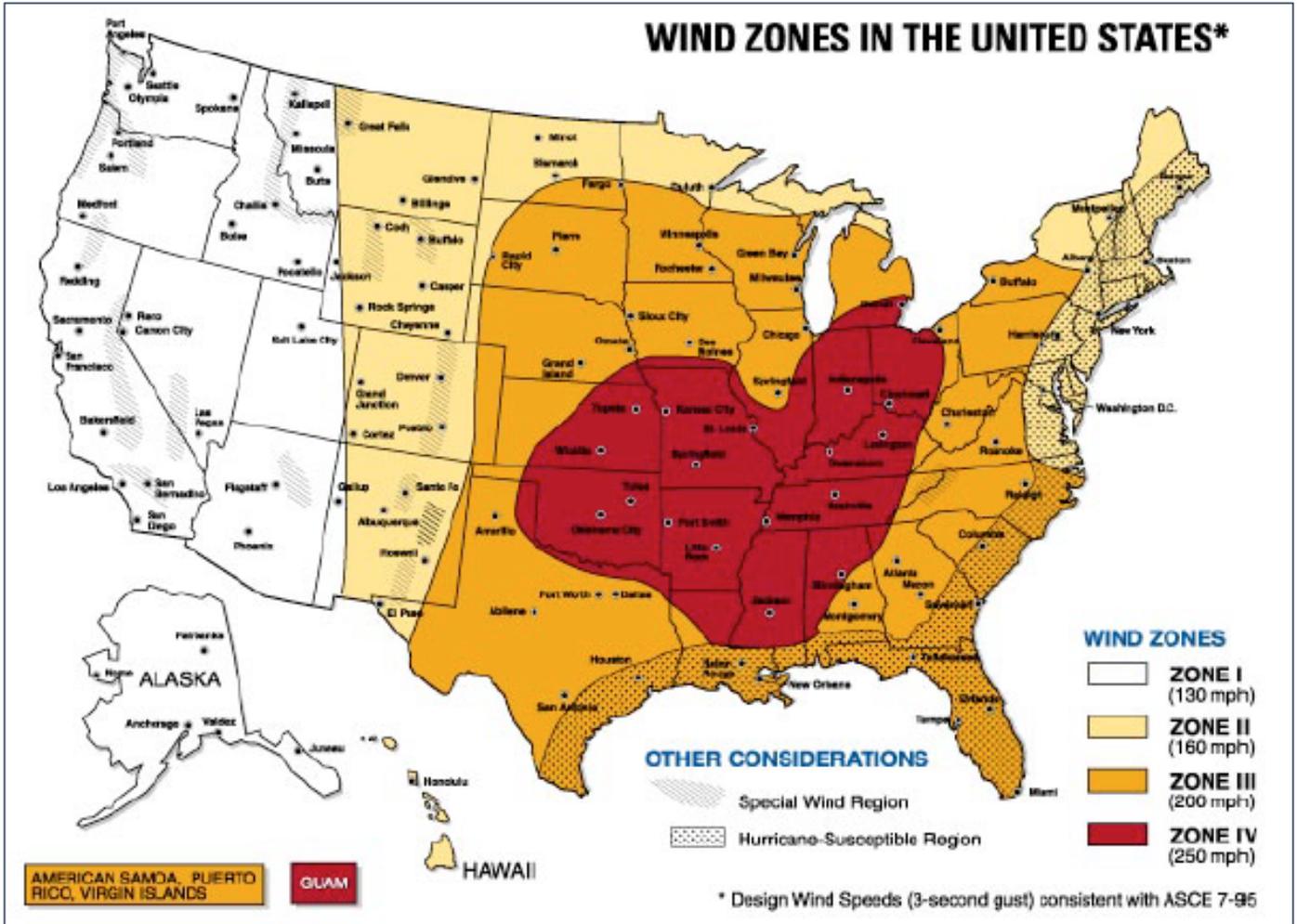
**Figure 3.37. Location and Frequency of Lightning in Missouri**



Source: National Weather Service: <http://www.vaisala.com/en/products/thunderstormandlightningdetectionsystems/Pages/NLDN.aspx>

In addition to lightning strikes, strong winds are also classified into the discussion. These winds are ultimately not surface level winds, but rather they are upper-atmospheric winds that when conditions are prime, can produce violent and significant severe storms. Based on the information presented in **Figure 3.37**, Vernon County is considered to be in Zone IV, which has upper-level winds of up to 250 miles per hour.

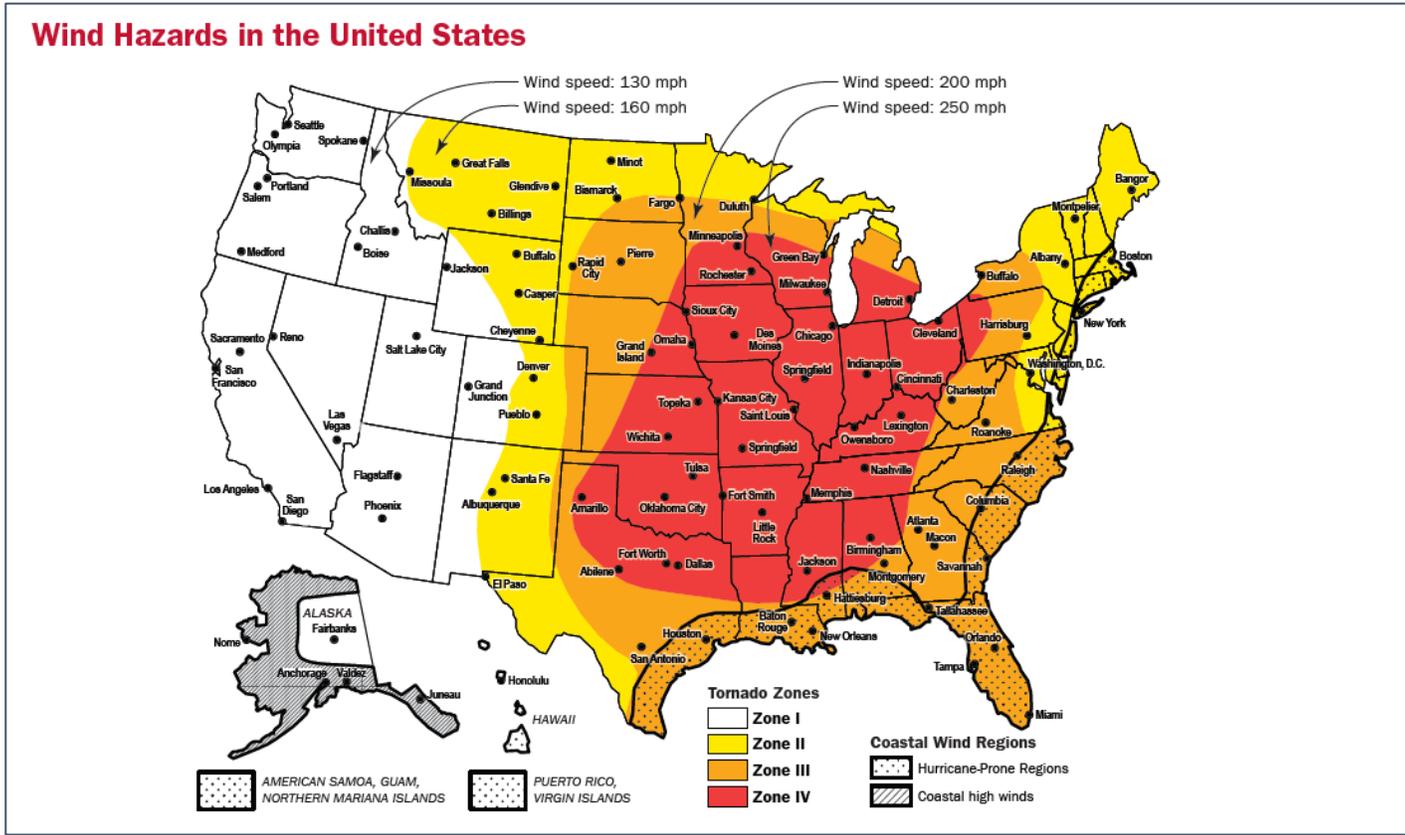
Figure 3.38. Wind Zones in the United States



Source: FEMA 320, Taking Shelter from the Storm, 3rd edition, [https://www.fema.gov/pdf/library/ism2\\_s1.pdf](https://www.fema.gov/pdf/library/ism2_s1.pdf)

New guidance from FEMA updates the severity of severe thunderstorm winds, as seen in **Figure 3.40**. Vernon County is still in the identified 'Zone IV' from the previous graphic, the next one simply reiterates the concept that severe thunderstorm-based winds continue to be prevalent in Vernon County.

Figure 3.39. Wind Hazards in the United States – Courtesy of FEMA



## Strength/Magnitude/Extent

Based on information provided by the Tornado and Storm Research Organization (TORRO), **Table 3.29** below describes typical damage impacts of the various sizes of hail.

**Table 3.27. Tornado and Storm Research Organization Hailstorm Intensity Scale**

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

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

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

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

The 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

Between Hail and Thunderstorms, Vernon County has had plenty of recorded instances of each event in the last ten years... they have not, however, had a High Wind nor Lightning event in the last ten years that was reported to the NCEI, even as there are crop insurance payouts from excess winds in 2016, 2017, 2018 and 2019. This is one limitation of the NCEI where data reported to other agencies may not have been reported to the NCEI, nevertheless, these instances are embedded in the crop loss data statistics. Similar disparities exist for lightning, while no NCEI events of lightning exist within the last 10 years, three of those years have seen a lightning related insurance payout. Those being 2014, 2018, and 2019.

Location	County	Date	Magnitude (kts.)	Property Damage	Crop Damage
Nevada	Vernon	05/19/2013	52	\$0.00	0
Nevada Airport	Vernon	05/19/2013	55	\$0.00	0
Walker	Vernon	06/15/2013	52	\$10,000.00	0
Nassau Junction	Vernon	08/06/2013	52	\$5,000.00	0
Nevada	Vernon	08/06/2013	52	\$0.00	0
Nevada Airport	Vernon	03/27/2014	52	\$5,000.00	0
Nevada Airport	Vernon	04/27/2014	52	\$25,000.00	0
Nevada Airport	Vernon	04/27/2014	52	\$1,000.00	0
Nevada Airport	Vernon	07/08/2014	52	\$5,000.00	0
Nevada	Vernon	07/08/2014	52	\$1,000.00	0
Sheldon	Vernon	07/08/2014	52	\$1,000.00	0
Virgil City	Vernon	09/01/2014	52	\$0.00	0
Rousertown	Vernon	09/01/2014	52	\$0.00	0
Nevada	Vernon	05/16/2015	52	\$0.00	0
Sheldon	Vernon	06/12/2015	56	\$10,000.00	0
Metz	Vernon	07/01/2015	52	\$5,000.00	0
Nevada	Vernon	07/01/2015	52	\$50,000.00	0
Nevada	Vernon	07/01/2015	52	\$25,000.00	0
Nevada	Vernon	08/08/2015	52	\$0.00	0
Nevada	Vernon	08/23/2015	52	\$5,000.00	0
Nevada	Vernon	04/26/2016	52	\$0.00	0
Nevada	Vernon	04/26/2016	52	\$0.00	0
Horton	Vernon	04/26/2016	56	\$0.00	0
Schell City	Vernon	04/26/2016	56	\$2,000.00	0
Bronaugh	Vernon	06/23/2016	52	\$0.00	0
Moundville	Vernon	07/07/2016	52	\$10,000.00	0
Horton	Vernon	03/06/2017	52	\$1,000.00	0
Nevada	Vernon	03/06/2017	56	\$1,000.00	0
Nevada	Vernon	06/15/2017	52	\$10,000.00	0
Nevada	Vernon	10/21/2017	52	\$1,000.00	0
Arthur	Vernon	10/21/2017	52	\$0.00	0
Walker	Vernon	10/21/2017	56	\$1,000.00	0
Nevada Airport	Vernon	06/12/2018	52	\$0.00	0
Walker	Vernon	06/26/2018	50	\$2,000.00	0
Nevada Airport	Vernon	08/16/2018	52	\$0.00	0
Metz	Vernon	05/06/2019	61	\$0.00	0
Horton	Vernon	05/06/2019	52	\$5,000.00	0
Nevada	Vernon	05/20/2019	52	\$0.00	0
Horton	Vernon	05/20/2019	53	\$0.00	0
Horton	Vernon	06/01/2019	52	\$3,000.00	0
Arthur	Vernon	06/01/2019	52	\$0.00	0
Horton	Vernon	06/01/2019	52	\$0.00	0
Nevada	Vernon	06/01/2019	52	\$12,000.00	0
Dederick	Vernon	06/01/2019	61	\$0.00	0
Schell City	Vernon	06/01/2019	52	\$0.00	0
Moundville	Vernon	06/01/2019	52	\$0.00	0
Bronaugh	Vernon	06/01/2019	52	\$0.00	0
Sheldon	Vernon	06/01/2019	52	\$0.00	0
Walker	Vernon	06/21/2019	52	\$8,000.00	0
Nevada	Vernon	08/16/2019	52	\$0.00	0
Nevada	Vernon	05/03/2020	52	\$0.00	0
Bronaugh	Vernon	05/03/2020	52	\$0.00	0
Milo	Vernon	05/03/2020	52	\$0.00	0
Moundville	Vernon	05/15/2020	52	\$0.00	0
Horton	Vernon	06/04/2020	52	\$1,000.00	0
Total				\$205,000.00	0

Table 3.28. Thunderstorm Events in Vernon County 2013-2023

Location	County	Date	Magnitude (in.)	Property Damage	Crop Damage
Nevada	Vernon	04/07/2013	1.50	\$0	\$0
Milo	Vernon	04/07/2013	1.75	\$500,000	\$0
Sheldon	Vernon	04/07/2013	1.75	\$0	\$0
Milo	Vernon	07/20/2013	0.75	\$0	\$0
Nassau Junction	Vernon	04/03/2014	0.88	\$0	\$0
Horton	Vernon	04/27/2014	1.00	\$0	\$0
Nevada	Vernon	09/17/2014	0.75	\$0	\$0
Deerfield	Vernon	03/24/2015	0.88	\$0	\$0
Moundville	Vernon	04/08/2015	0.88	\$0	\$0
Milo	Vernon	04/08/2015	1.75	\$0	\$0
Deerfield	Vernon	07/14/2015	0.88	\$0	\$0
Deerfield	Vernon	03/23/2016	1.00	\$0	\$0
Deerfield	Vernon	03/23/2016	1.00	\$0	\$0
Deerfield	Vernon	03/23/2016	1.00	\$0	\$0
Walker	Vernon	07/09/2016	0.75	\$0	\$0
Nevada	Vernon	07/09/2016	0.75	\$0	\$0
Deerfield	Vernon	02/28/2017	1.00	\$0	\$0
Nevada	Vernon	02/28/2017	1.00	\$0	\$0
Walker	Vernon	02/28/2017	1.00	\$0	\$0
Sheldon	Vernon	02/28/2017	1.00	\$0	\$0
Deerfield	Vernon	03/09/2017	0.75	\$0	\$0
Nevada	Vernon	03/09/2017	0.75	\$0	\$0
Nevada	Vernon	03/09/2017	2.00	\$0	\$0
Nevada	Vernon	03/09/2017	1.25	\$0	\$0
Nevada Airport	Vernon	03/09/2017	1.75	\$0	\$0
Walker	Vernon	03/09/2017	2.75	\$50,000	\$0
Schell City	Vernon	05/30/2017	0.88	\$0	\$0
Fair Haven	Vernon	05/31/2017	1.00	\$0	\$0
Milo	Vernon	05/14/2018	1.00	\$0	\$0
Montevallo	Vernon	05/14/2018	1.00	\$0	\$0
Sandstone	Vernon	08/10/2018	1.75	\$0	\$0
Schell City	Vernon	02/06/2019	0.88	\$0	\$0
Metz	Vernon	05/06/2019	0.88	\$0	\$0
Nevada	Vernon	05/22/2019	1.00	\$0	\$0
Sheldon	Vernon	05/04/2020	1.25	\$0	\$0
Bristow	Vernon	08/10/2020	1.00	\$0	\$0
Walker	Vernon	08/10/2020	2.50	\$25,000	\$0
Dederick	Vernon	08/10/2020	2.50	\$10,000	\$0
Deerfield	Vernon	03/05/2022	1.00	\$0	\$0
Nevada Airport	Vernon	03/05/2022	0.75	\$0	\$0
Sheldon	Vernon	04/21/2022	1.25	\$0	\$0
Nevada Airport	Vernon	04/21/2022	1.00	\$0	\$0
Montevallo	Vernon	04/21/2022	1.25	\$1,000,000	\$0
Deerfield	Vernon	04/21/2022	1.00	\$0	\$0
Total				\$1,585,000.00	\$0

**Table 3.29. Hail Events in Vernon County 2013-2023**

**Crop Losses in Vernon County**

The United States Department of Agriculture maintains records of payouts to farmers from their insurance companies based on losses experienced during “perils”. These records date back to 1989, and are compiled into massive text documents which can be imported into Microsoft Excel using the data import feature then sorted for ease of use. For all intents and purposes, the data for Vernon County is only used from 2013 forward. Each of these four tables denotes pay outs based on thunderstorms (which the USDA uses ‘excess moisture/precipitation/rain’ as a substitute), high winds, lightning and hail. Agriculture is a significant part of the economy in Vernon County, so any losses are considered significant losses.

**Table 3.30. Crop Insurance Claims Paid in Vernon County from Thunderstorms, 2013-2023**

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2013	Wheat	Excess Moisture/Precipitation/Rain	\$514,036.00
2013	Oats	Excess Moisture/Precipitation/Rain	\$320.00
2013	Corn	Excess Moisture/Precipitation/Rain	\$6,105,617.31
2013	Grain Sorghum	Excess Moisture/Precipitation/Rain	\$19,110.00
2013	Soybeans	Excess Moisture/Precipitation/Rain	\$779,380.80
2014	Wheat	Excess Moisture/Precipitation/Rain	\$905,186.00
2014	Corn	Excess Moisture/Precipitation/Rain	\$1,557.20
2014	Grain Sorghum	Excess Moisture/Precipitation/Rain	\$15,674.54
2014	Soybeans	Excess Moisture/Precipitation/Rain	\$66,337.59
2015	Wheat	Excess Moisture/Precipitation/Rain	\$2,113,737.79
2015	Corn	Excess Moisture/Precipitation/Rain	\$3,039,706.80
2015	Grain Sorghum	Excess Moisture/Precipitation/Rain	\$202,305.80
2015	Soybeans	Excess Moisture/Precipitation/Rain	\$4,210,741.91
2016	Wheat	Excess Moisture/Precipitation/Rain	\$96,637.21
2016	Corn	Excess Moisture/Precipitation/Rain	\$273,090.38
2016	Grain Sorghum	Excess Moisture/Precipitation/Rain	\$16,016.00
2016	Soybeans	Excess Moisture/Precipitation/Rain	\$150,771.44
2017	Wheat	Excess Moisture/Precipitation/Rain	\$416,391.12
2017	Oats	Excess Moisture/Precipitation/Rain	\$2,151.00
2017	Corn	Excess Moisture/Precipitation/Rain	\$1,940,236.69
2017	Soybeans	Excess Moisture/Precipitation/Rain	\$1,320,264.58
2018	Wheat	Excess Moisture/Precipitation/Rain	\$1,698,479.14
2018	Corn	Excess Moisture/Precipitation/Rain	\$60,403.95
2018	Soybeans	Excess Moisture/Precipitation/Rain	\$289,114.50
2019	Wheat	Excess Moisture/Precipitation/Rain	\$1,133,434.87
2019	Corn	Excess Moisture/Precipitation/Rain	\$4,879,409.05
2019	Grain Sorghum	Excess Moisture/Precipitation/Rain	\$24,311.00
2019	Soybeans	Excess Moisture/Precipitation/Rain	\$3,862,360.73
2020	Wheat	Excess Moisture/Precipitation/Rain	\$2,695,978.00
2020	Oats	Excess Moisture/Precipitation/Rain	\$5,057.00
2020	Corn	Excess Moisture/Precipitation/Rain	\$3,474,356.50
2020	Grain Sorghum	Excess Moisture/Precipitation/Rain	\$24,295.00
2020	Soybeans	Excess Moisture/Precipitation/Rain	\$638,126.00
2021	Wheat	Excess Moisture/Precipitation/Rain	\$1,374,192.50
2021	Oats	Excess Moisture/Precipitation/Rain	\$3,974.00
2021	Corn	Excess Moisture/Precipitation/Rain	\$1,254,974.50
2021	Grain Sorghum	Excess Moisture/Precipitation/Rain	\$86,817.00
2021	Soybeans	Excess Moisture/Precipitation/Rain	\$3,385,416.20
2022	Wheat	Excess Moisture/Precipitation/Rain	\$2,616,551.30
2022	Corn	Excess Moisture/Precipitation/Rain	\$1,464,253.30
2022	Grain Sorghum	Excess Moisture/Precipitation/Rain	\$4,157.00
2022	Soybeans	Excess Moisture/Precipitation/Rain	\$563,616.50
2023	Wheat	Excess Moisture/Precipitation/Rain	\$8,740.00
<b>Total</b>			<b>\$51,737,288.20</b>

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

**Table 3.31. Crop Insurance Claims Paid in Vernon County from High Winds, 2013-2023**

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2016	Corn	Wind/Excess Wind	\$20,331.00
2017	Soybeans	Wind/Excess Wind	\$15,702.00
2018	Corn	Wind/Excess Wind	\$16,759.00
2018	Soybeans	Wind/Excess Wind	\$17,224.00
2019	Soybeans	Wind/Excess Wind	\$4,361.00
<b>Total</b>			<b>\$57,170.00</b>

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

**Table 3.32. Crop Insurance Claims Paid in Vernon County from Lightning, 2013-2023**

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2014	Wheat	Lightning	\$671.00
2018	Corn	Lightning	\$14,185.00
2019	Corn	Lightning	\$1,620.00
2019	Grain Sorghum	Lightning	\$998.00
2019	Soybeans	Lightning	\$7,118.00
<b>Total</b>			<b>\$24,592.00</b>

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

**Table 3.33. Crop Insurance Claims Paid in Vernon County from Hail, 2013-2023**

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2013	Wheat	Hail	\$4,497.00
2013	Soybeans	Hail	\$21,290.00
2017	Wheat	Hail	\$20,982.25
2017	Corn	Hail	\$7,653.49
2018	Corn	Hail	\$37,743.32
2018	Soybeans	Hail	\$725.50
2019	Wheat	Hail	\$2,467.00
2019	Corn	Hail	\$1,875.60
2020	Corn	Hail	\$80,766.00
2022	Wheat	Hail	\$3,997.00
<b>Total</b>			<b>\$181,997.16</b>

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

**Probability of Future Occurrence**

Thunderstorms

*56 Thunderstorm Events Since January 2013*  
*10 Years Since January 2013*

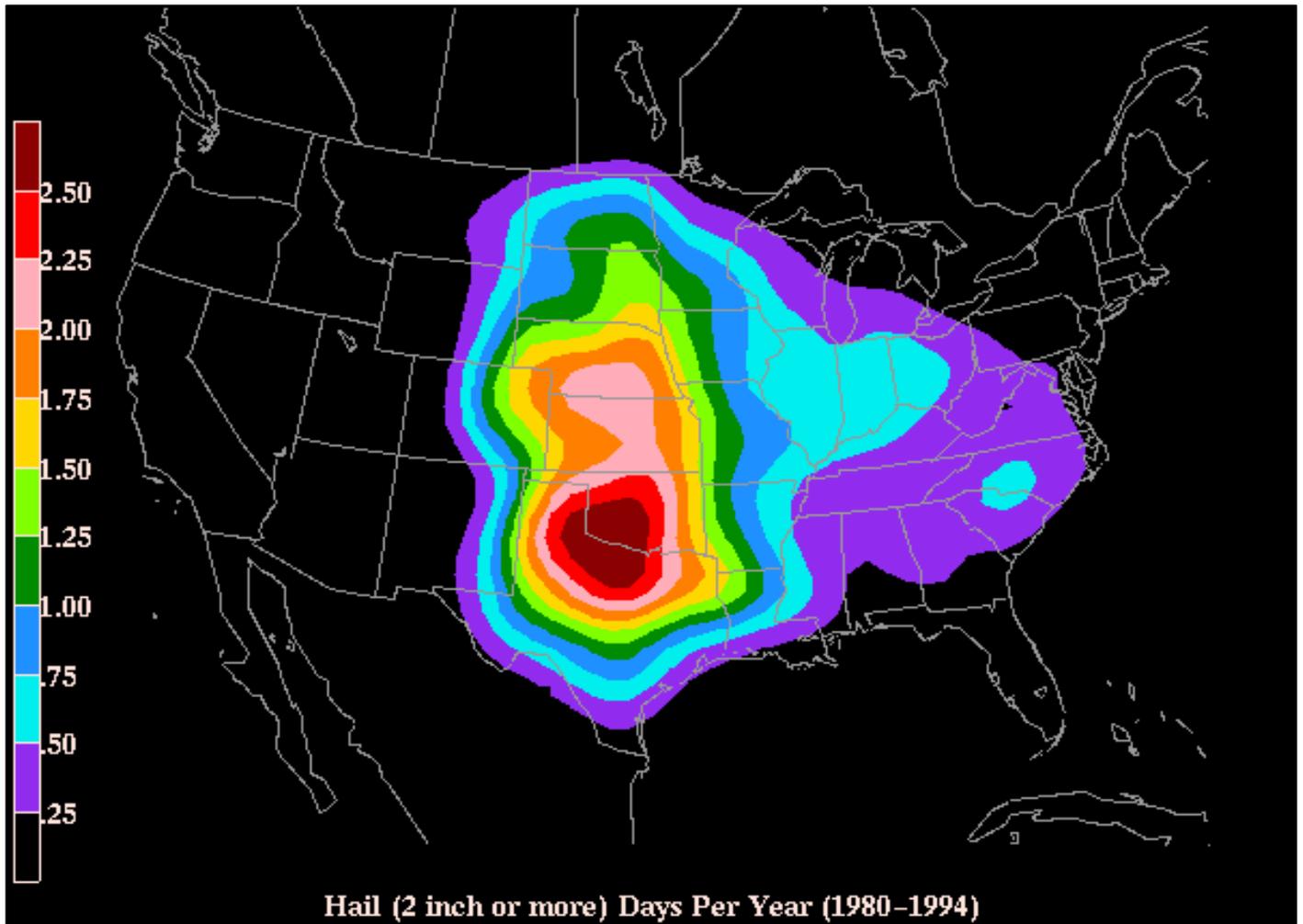
**100% Probability/5-6 Thunderstorms Per Year**

Hail

*45 Hail Events Since January 2013*  
*10 Years Since January 2013*

**100% Probability/4-5 Hail Events Per Year**

**Figure 3.40. Annual Hailstorm Probability (2" diameter or larger), U 1980- 1994**



Source: NSSL, [http://www.nssl.noaa.gov/users/brooks/public\\_html/bighail.gif](http://www.nssl.noaa.gov/users/brooks/public_html/bighail.gif)

## ***Changing Future Conditions Considerations***

Because of increased warming of the climate, it is expected that these conditions are going to increase the probability of severe thunderstorms in the future. The phrase “convective available potential energy” or CAPE is the starting point for nearly all thunderstorms. As these storms increase not only in frequency but become stronger, the risk associated with severe thunderstorms will also increase. Efforts will be taken by Vernon County to solidify critical infrastructure that would be advantageous in mitigating the risk of severe thunderstorms such as updating and adding storm sirens in underserved areas of the county.

## **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.

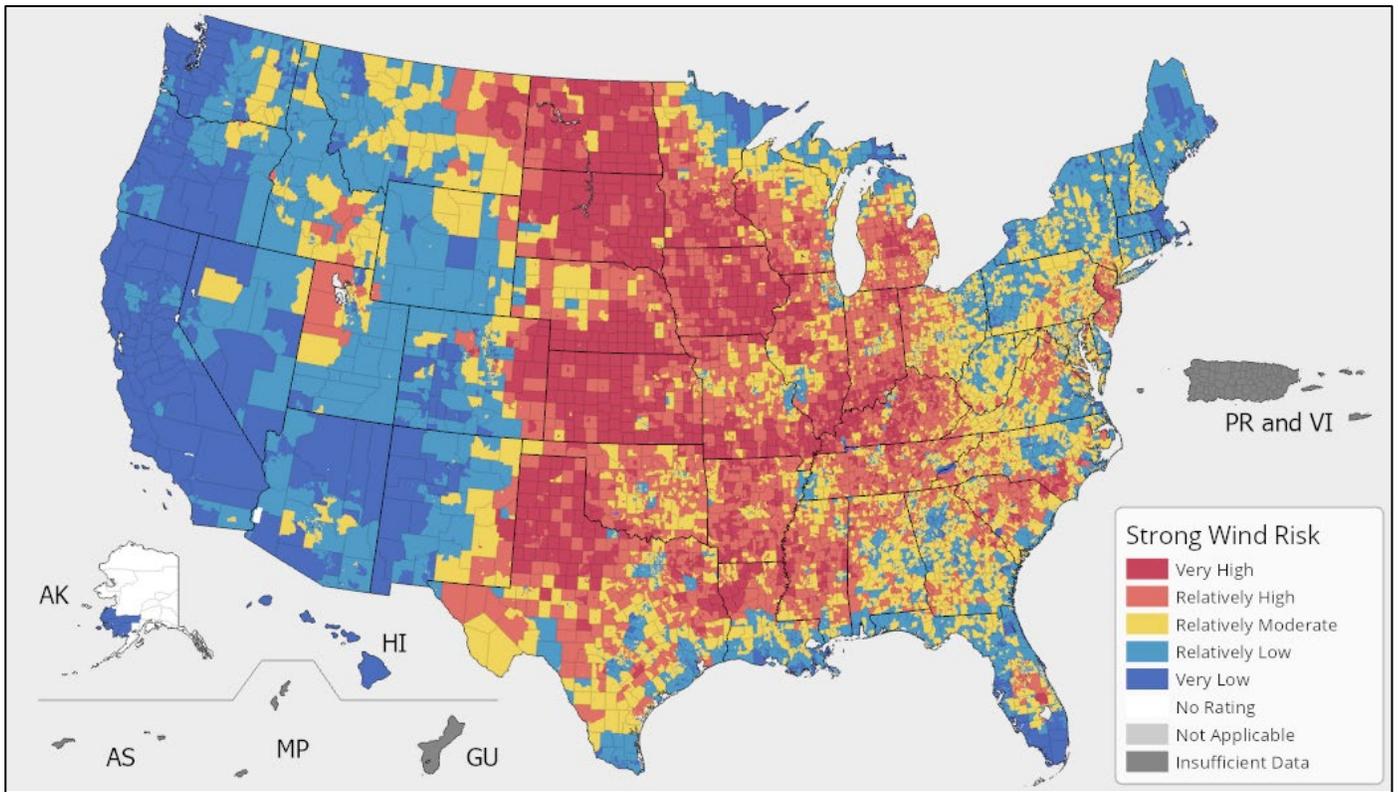
Most lightning damages occur to electronic equipment located inside buildings. But structural damage can also occur when a lightning strike causes a building fire. In addition, lightning strikes can cause damages to crops, if fields or forested lands are set on fire. Communications equipment and warning transmitters and receivers can also be knocked out by lightning strikes.

For more information, please visit:

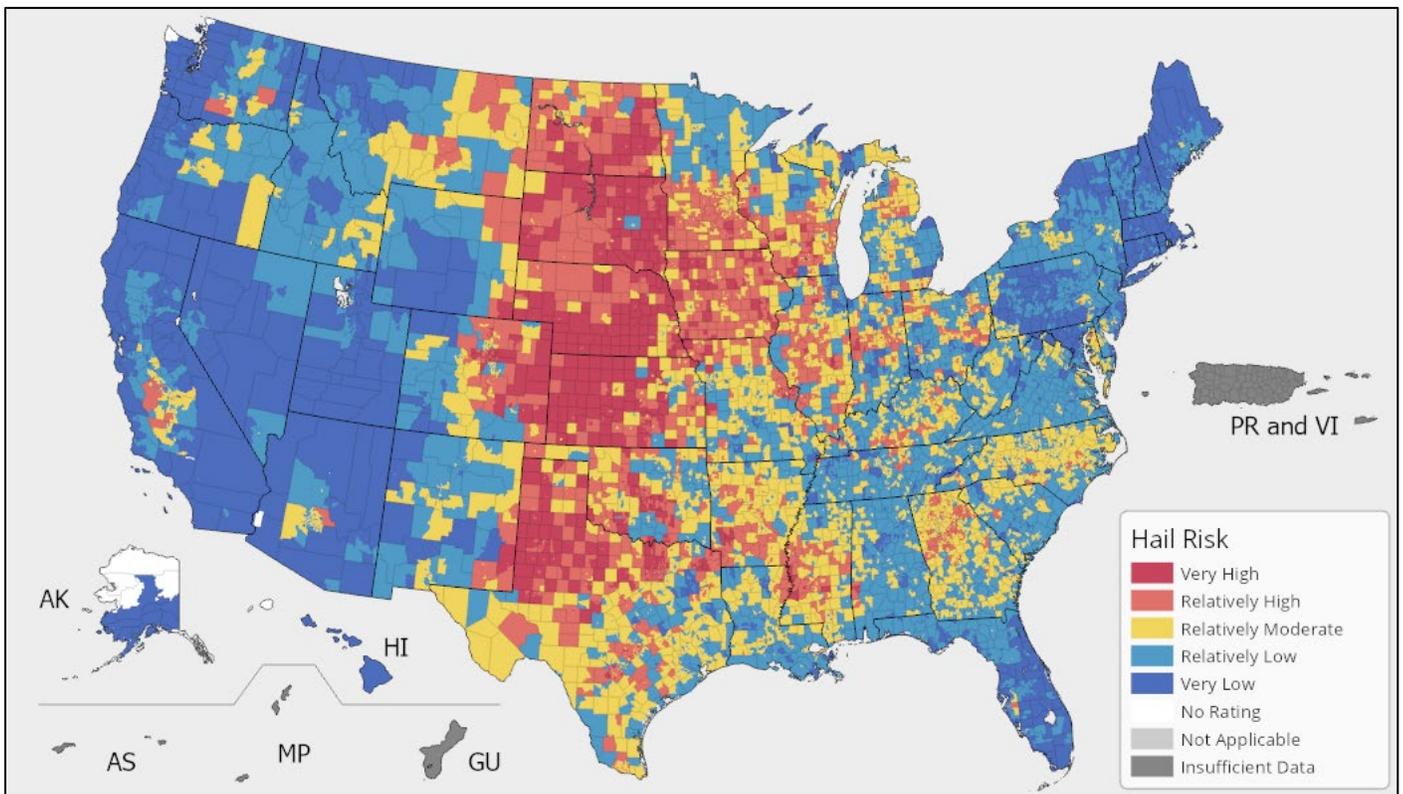
<http://www.vaisala.com/en/products/thunderstormandlightningdetectionsystems/Pages/NLDN.aspx>

and <http://www.lightningsafety.noaa.gov/>

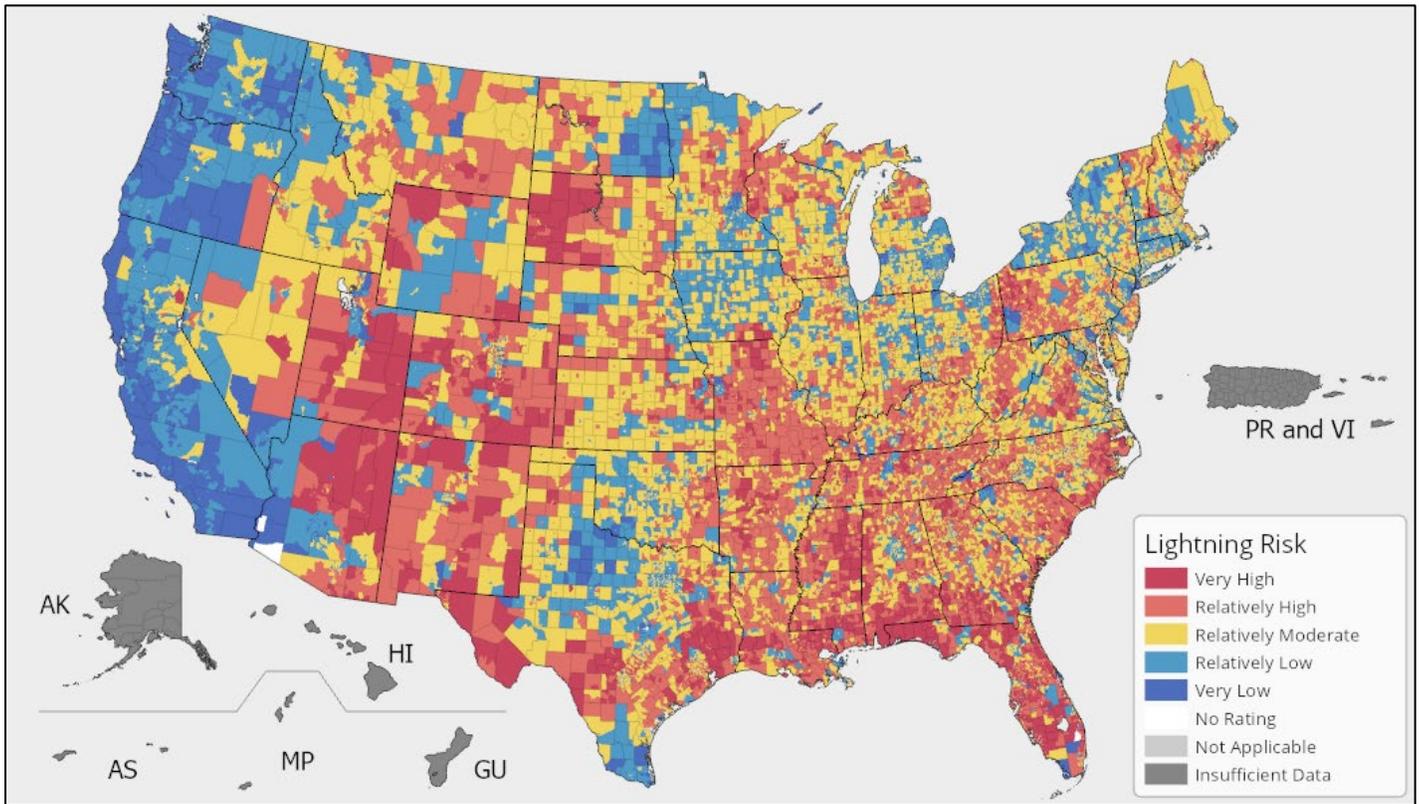
The following graphics from FEMA’s National Risk Index indicate the varying degrees of vulnerability in Vernon County from each of the most commonly occurring severe thunderstorm types. Vulnerability ranges from **Relatively High** for Hail and Strong Winds to **Relatively Moderate** for Lightning.



**Figure 3.41. FEMA's National Risk Index for Strong Winds**



**Figure 3.42. FEMA's National Risk Index for Hail**



**Figure 3.43. FEMA’s National Risk Index for Lightning**

***Potential Losses to Existing Development***

Since at least 2013, and likely dating back years prior, the toll stemming from severe storms, high winds, lightning, and hail has left the environment of Vernon County with a stiff bruising and significant losses to the existing development. As a result, it is expected that losses like this will continue long into the future.

***Previous and Future Development***

Of all locations in Vernon County that should be most concerned about severe weather as it relates to new developments in their jurisdiction, its Nevada. Nevada is the largest incorporated community in Vernon County, and this opens the door to expanded vulnerability that which did not exist previously or in a lighter capacity. There is some new developments in other parts of the county, but Nevada has built the most in the last five years that would make it to their economic disadvantage if there was widespread damages to any previous or future development occurring within the community.

## **Hazard Summary by Jurisdiction**

- ▶ **Vernon County** – Severe weather occurs frequently in Vernon County, in fact, 101 documented instances since 2013 is remarkable. This is further backed up by the number of crop insurance payouts from the USDA. Needless to say, severe weather will frequently occur in Vernon County for years to come.
- ▶ **City of Bronaugh** – Bronaugh has been extremely lucky with severe weather, at least NCEI data suggests this. However, because of the vastness of severe weather, this small community cannot dodge all severe weather, especially since it is near the Kansas border.
- ▶ **City of Nevada** – The City of Nevada gets frequent severe storms, some worse than others. In their situation, they also have an airport which usually is a first indicator of severe weather approaching, you won't see planes flying when severe weather approaches. Expect more severe storms in Nevada going forward.
- ▶ **City of Schell City** – Schell City has seen its fair share of severe winds and hailstorms, fortunately these storms have not resulted in any significant damages. However, storms cannot be overlooked here in the future.
- ▶ **City of Sheldon** – In the last ten years, Sheldon has experienced some strong winds that resulted in damages, thus occurring in 2014 and 2015. As such, this community is vulnerable to any future severe weather that may roll through the area.

## **Educational Institutions**

- ▶ **Bronaugh R-VII** – Schools are often considered at risk for severe weather, so they practice tornado drills and other weather safety drills throughout the year, as is the case at Bronaugh Schools. Though a saferoom would be a nice addition to the campus.
- ▶ **Cottey College** – Schools are often considered at risk for severe weather, so they practice tornado drills and other weather safety drills throughout the year, as is the case at Cottey. Though a safe room or a few would be nice additions to the campus.
- ▶ **Crowder College** – Schools are often considered at risk for severe weather, so they practice tornado drills and other weather safety drills throughout the year, as is the case at Crowder. Though a safe room or a few would be nice additions to the campus.
- ▶ **Missouri Welding Institute** – Schools are often considered at risk for severe weather, so they practice tornado drills and other weather safety drills throughout the year, as is the case at the Missouri Welding Institute. Though a safe room or a few would be nice additions to the campus.
- ▶ **Nevada R-V** – Schools are often considered at risk for severe weather, so they practice tornado drills and other weather safety drills throughout the year, as is the case at Nevada Schools. Though a saferoom would be a nice addition to the campus.
- ▶ **Northeast Vernon County R-I** – Schools are often considered at risk for severe weather, so they practice tornado drills and other weather safety drills throughout the year, as is the case at Northeast Vernon County Schools. Though a saferoom would be a nice addition to the campus.
- ▶ **Sheldon R-VIII** – Schools are often considered at risk for severe weather, so they practice tornado drills and other weather safety drills throughout the year, as is the case at Sheldon Schools. Though a saferoom would be a nice addition to the campus.

## **Problem Statement**

Severe weather is commonly occurring hazard throughout Vernon County, there is no denying this, it has happened so frequently that they may see multiple severe weather events each year. As the elements of Climate Change takes its toll on people and infrastructures, it is likely that these severe weather events will continue to be prevalent in Vernon County. Some communities in the county will experience them more than others, some worse than others too, but in any indication, severe weather events will remain a constant in Vernon County going forward. Ways to mitigate against severe weather depend on the sub-hazard associated with severe weather. An overarching example of this would include the purchase of crop insurance by farmers, if you recall, Vernon County accounts for 2% of the state's agricultural economy. That may be just one aspect of mitigating against all forms of severe weather, but schools have slightly different options. Although schools cannot purchase crop insurance, most mitigation efforts surrounding severe weather deal with ways to protect students and staff. Some schools look at building lightning detection devices on campuses so that in the event there is severe weather in the area, these detectors will sound to ensure that safety is paramount and there is sufficient time to seek shelter before the storm. These have been seen on college campuses and they may be of use to public school districts. It is expected that both the county as a whole and its educational institutions will take appropriate measures to ensure mitigation against severe weather using a variety of solutions including storm shelters among other possible answers.

### 3.4.7 Severe Winter Weather (Snow, Blizzards, Ice, etc.)

#### Hazard Profile

##### *Hazard Description*

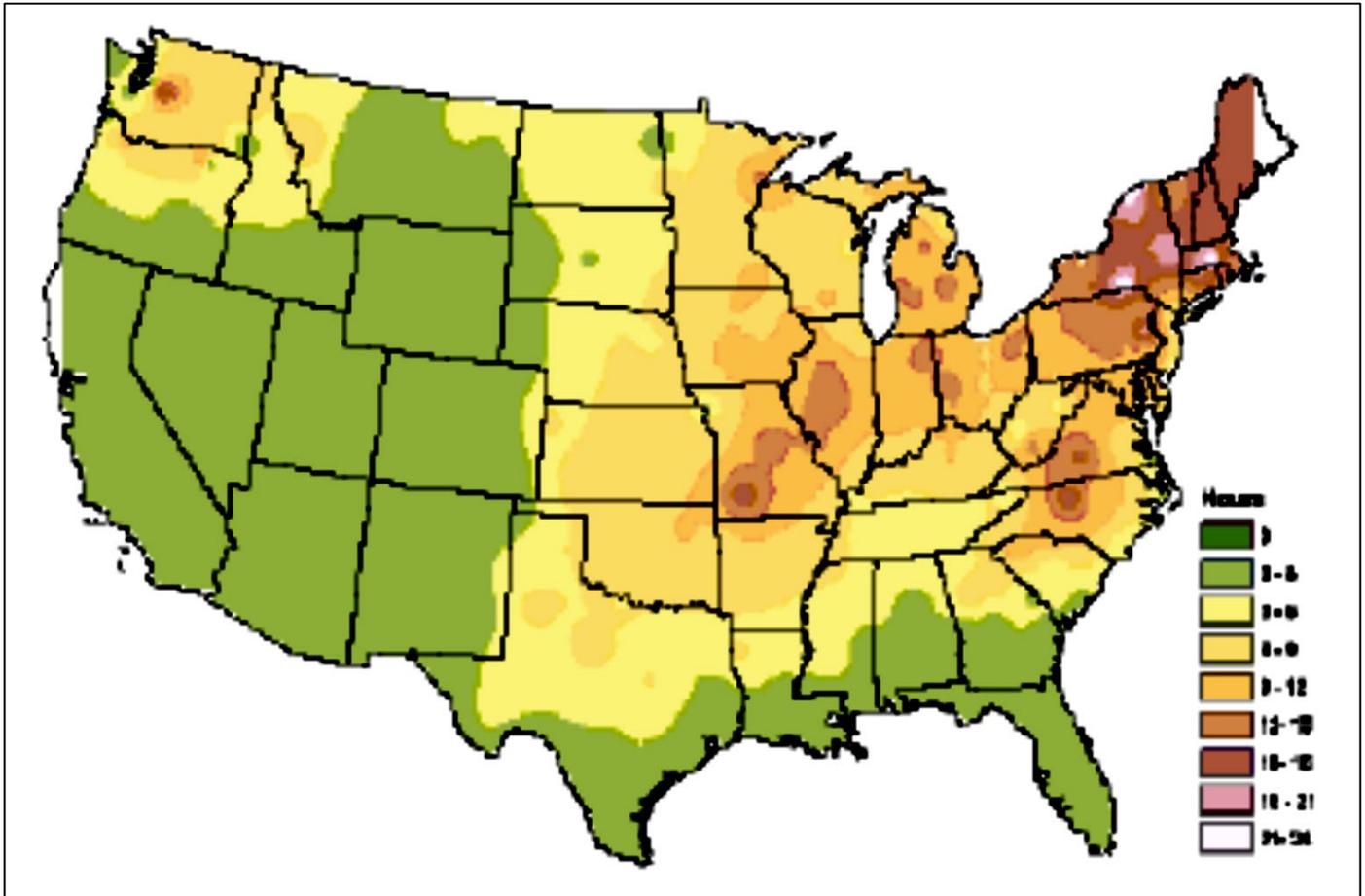
A major winter storm can last for several days and be accompanied by high winds, freezing rain or sleet, heavy snowfall, and cold temperatures. The National Weather Service describes different types of winter storm events as follows.

- ▶ **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**

Due to the unique geography of Vernon County, the entire county is susceptible to the effects of freezing rain and other wintry precipitation. The National Weather Service estimates that Vernon County receives at least 9 to 12 hours of freezing rain per year, as seen in **Figure 3.45**.

**Figure 3.44. 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**

- ▶ **Winter Weather Advisory** — Winter weather conditions are expected to cause significant inconveniences and may be hazardous. If caution is exercised, these situations should not become life threatening. Often the greatest hazard is to motorists.
- ▶ **Winter Storm Watch** — Severe winter conditions, such as heavy snow and/or ice are possible within the next day or two.
- ▶ **Winter Storm Warning** — Severe winter conditions have begun or are about to begin.
- ▶ **Blizzard Warning** — Snow and strong winds will combine to produce a blinding snow (near zero visibility), deep drifts, and life-threatening wind chill.
- ▶ **Ice Storm Warning** -- Dangerous accumulations of ice are expected with generally over one quarter inch of ice on exposed surfaces. Travel is impacted, and widespread downed trees and power lines often result.
- ▶ **Wind Chill Advisory** -- Combination of low temperatures and strong winds will result in wind chill readings of -20°F or lower.
- ▶ **Wind Chill Warning** -- Wind chill temperatures of -35°F or lower are expected. This is a life-threatening situation.
- ▶ **Snow Squall Warning** – Heavy bursts of snow coupled with 30 mph or high winds, and visibility is reduced to ¼ of a mile or less.  
***\*This is a newer winter weather warning that is not often issued but can be used as long as the aforementioned three criteria are met.***

### **Previous Occurrences**

In the last 23 years, there have been 37 different severe winter weather events that have taken place within Vernon County. In all instances, there has been no injuries nor crop damages, but a total of \$1,020,000 worth of property damages has been recorded. ***Those highlighted in yellow on the next page are part of federally declared winter weather disasters.***

**Table 3.34. NCEI Vernon County Winter Weather Events Summary, 2000-Present**

Type of Event	Inclusive Dates	# of Injuries	Property Damages	Crop Damages
Heavy Snow	12/12-13/2000	0	\$5,000	0
Ice Storm	01/28/2001	0	0	0
Ice Storm	02/21/2001	0	0	0
<b>Ice Storm</b>	<b>01/30-31/2002</b>	<b>0</b>	<b>\$200,000</b>	<b>0</b>
Winter Storm	03/02/2002	0	0	0
Winter Storm	12/24/2002	0	0	0
Winter Storm	01/02/2003	0	0	0
Winter Storm	03/04/2003	0	0	0
Heavy Snow	12/10/2003	0	0	0
Winter Storm	02/05/2004	0	0	0
Winter Storm	11/30/2006	0	\$40,000	0
Ice Storm	01/12-14/2007	0	0	0
Winter Storm	01/20/2007	0	0	0
<b>Ice Storm</b>	<b>12/09-10/2007</b>	<b>0</b>	<b>\$750,000</b>	<b>0</b>
Ice Storm	02/11/2008	0	0	0
Ice Storm	02/21/2008	0	0	0
Winter Storm	01/26-27/2009	0	0	0
Winter Storm	03/27-28/2009	0	0	0
Winter Storm	12/24-25/2009	0	0	0
Winter Storm	03/20-21/2010	0	0	0
<b>Blizzard</b>	<b>02/01/2011</b>	<b>0</b>	<b>0</b>	<b>0</b>
Winter Storm	02/21/2013	0	0	0
Winter Storm	02/25-26/2013	0	0	0
Winter Storm	03/24/2013	0	0	0
Winter Storm	12/20-22/2013	0	0	0
Winter Storm	01/05/2014	0	0	0
Ice Storm	02/06-07/2019	2 (Indirect)	0	0
Heavy Snow	02/05/2020	0	0	0
Winter Weather	12/31/2020	0	0	0
Winter Storm	01/01/2021	0	\$25,000	0
Winter Storm	02/14-15/2021	0	0	0
Winter Weather	02/17/2021	0	0	0
Winter Weather	01/06/2022	0	0	0
Winter Storm	02/02-03/2022	0	0	0
Winter Storm	02/17/2022	0	0	0
Winter Weather	02/23-24/2022	0	0	0
Winter Weather	03/10-11/2022	0	0	0
<b>TOTAL</b>		<b>0</b>	<b>\$1,020,000.00</b>	<b>0</b>

Source: NCEI, data accessed 7 November 2022 → Yellow Highlight indicates federally declared disaster

Of all 37 events that have occurred in Vernon County in the last 23 years, only **2** have resulted in Federally Declared disasters, the ice storm of 2002 and blizzard in 2011. For each of those events, this is their event narratives, first in 2002, then the 2011 event narrative:

- A large-scale ice storm event developed over southeast Kansas and west central Missouri during the early morning hours of January 30, 2002. Synoptically, a shallow arctic air mass moved through the region dropping surface temperatures in the upper 20s. Strong jet stream winds from the southwest provided the influx of sub-tropical type regime. In addition, deep moisture from the Gulf of Mexico surged northward above this shallow arctic air mass to set the stage for a prolonged ice storm.***

***Light to moderate rainfall, fell over the sub-freezing surface temperatures for nearly 36 hours. Ice began accumulating on trees and power lines from southeast Kansas, and into west central Missouri Wednesday morning. Law enforcement officers and local weather observers reported nearly one-half inch of ice accumulated on trees and power lines before 6 am Wednesday morning. The freezing rain, mixed with sleet at times, continued through the day with an additional one quarter to one half inch of ice by Wednesday evening. Total ice accumulations approached one inch thick on tree and power lines by Wednesday night and Thursday. The ice started to weight down trees, power lines and other objects which caused widespread power outages.***

***During the height of the storm, nearly 150,000 people were without power from southeast Kansas, into west central and central Missouri. In addition, trees snapped which caused damage to homes, businesses, and cars.***

***Although most of the main highway routes were wet, secondary roads were ice covered throughout the event. Numerous automobile accidents were reported, along with injuries. The storm system begun to wind down Thursday morning as temperatures rose above freezing. However, additional ice related problems continued through the early afternoon as the melting ice fell on cars, homes and businesses.***
- A major winter storm brought heavy wintry precipitation to the Missouri Ozarks and southeast Kansas on February 1, 2011. This impressive winter storm brought heavy snow and blizzard conditions from Oklahoma through eastern Kansas and the northwest half of Missouri and into the western Great Lakes region.***

***Snowfall amounts ranged from around 20 to 24 inches in parts of west central into central Missouri to trace amounts over south central Missouri. In addition to the heavy snowfall, winds of 15 to 30 mph with some gusts near 40 mph occurred during the day and nighttime hours of February 1st creating significant blowing and drifting of snow along with bitterly cold wind chills. This created blizzard conditions with near zero visibility at times and snow drifts up to several feet.***

***Significant accumulations of sleet and freezing rain occurred across portions of southern Missouri. Sleet accumulations of one half to 2 inches fell along and just south of the Interstate 44 corridor. Freezing rain accumulations ranged from one tenth to three quarters of an inch along and south of Interstate 44 with accumulations up to three quarters of an inch in south central Missouri into the eastern Missouri Ozarks.***

***A major winter storm produced heavy snow and blizzard conditions at times across southwest Missouri. Heavy snow accumulations of 15 to 20 inches were observed. Northwest winds of 20 to 40 mph resulted in drifts up to few feet and visibilities less than one quarter mile. Travel was extremely treacherous with some roads impassable.***

Although winter storms usually occur in times when crops have not been planted yet, this usually occurs with the onset of springtime, there may be times when severe winter weather and snowy conditions impact crops,

especially if the storm hits in very late winter or at a time of the year when it was least expected... example, a blizzard in April or May when it is usually warmer. The only exception to this was in April 2007, when Vernon County received a total payout from USDA in the amount of \$11,760,000 for crop damages stemming from a hard frost/freeze event. Since these events fall outside the 10-year time window, it cannot be considered.

### **Probability of Future Occurrence**

*37 Winter Weather Events Since January 2000*  
*24 Years Since January 2000*

**100% Probability and 1 to 2 winter weather events per year on average.**

### **Changing Future Conditions Considerations**

It is expected that with the onset of Climate Change prolonged periods of cold weather will become far fewer and less frequent than they were a handful of years ago. As a result of this, ice cover on lakes will be thinner, therefore reducing the protection of wildlife that depends on the wintertime ice cover. In turn this may increase the probability of springtime flooding because warmer air will cause snow to instead fall as rain. Warmer winters will also result in oxygen depletion for fish which may cause substantial fish kills.

### **Vulnerability**

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

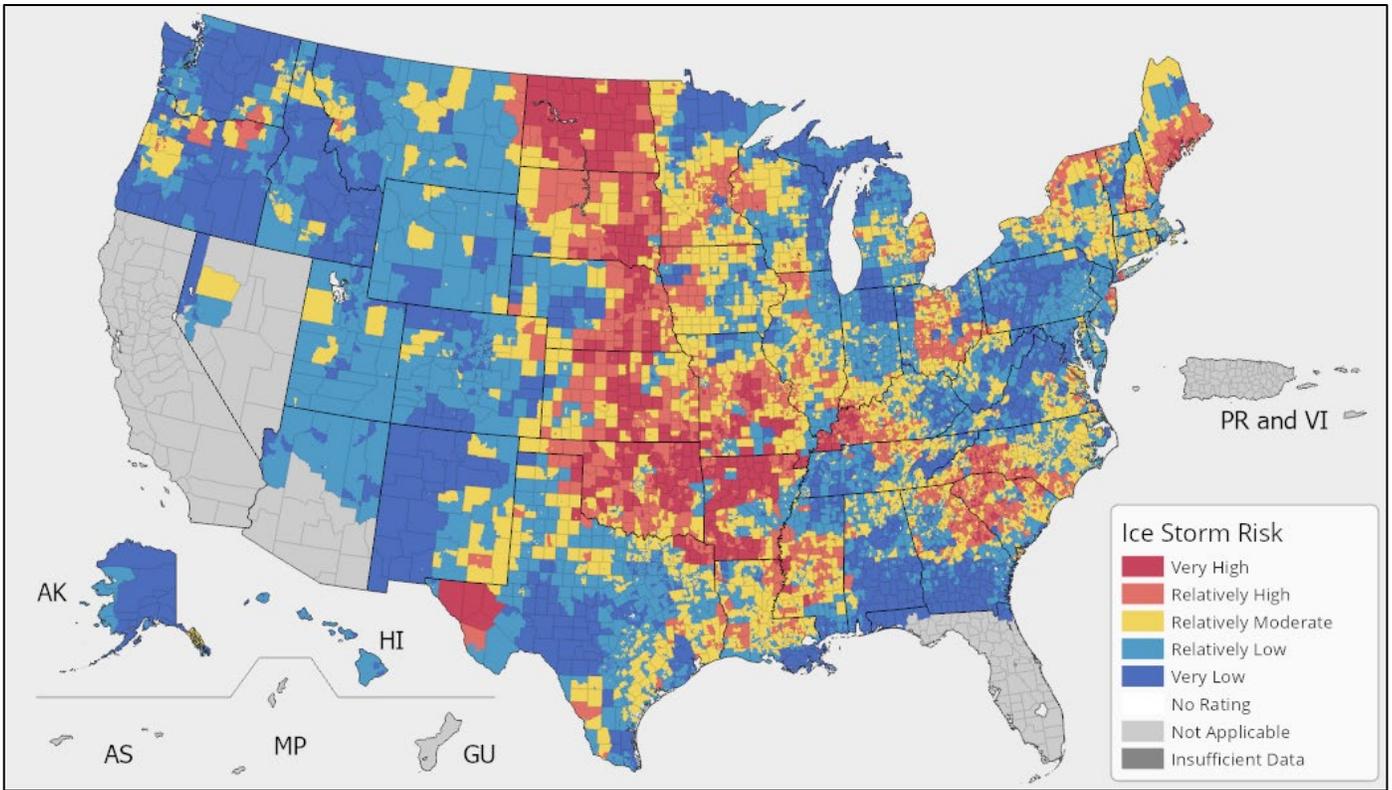
Heavy snow can bring a community to a standstill by inhibiting transportation (in whiteout conditions), weighing down utility lines, and by causing structural collapse in buildings not designed to withstand the weight of the snow. Repair and snow removal costs can be significant. Ice buildup can collapse 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.

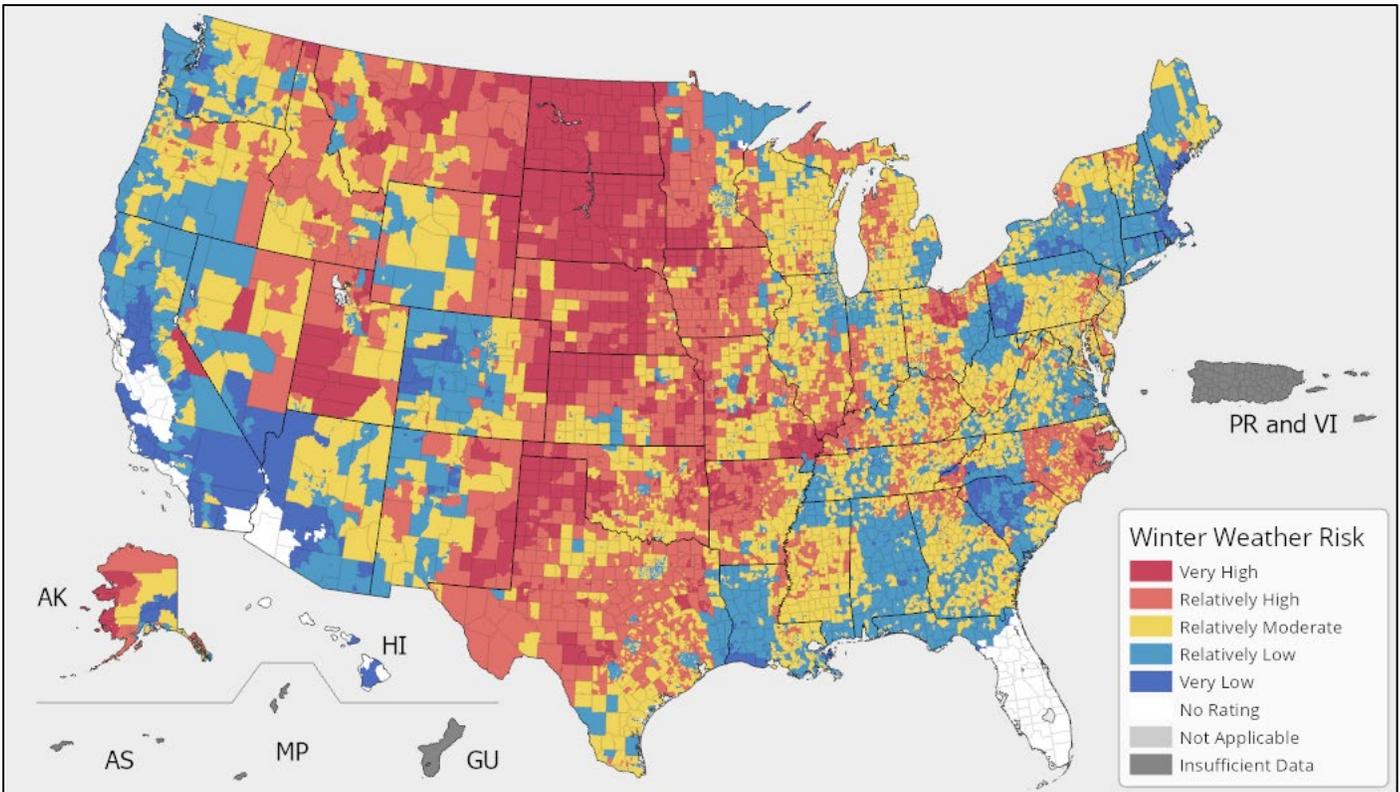
Overhead power lines and infrastructure are also vulnerable to damages from winter storms. In particular ice accumulation during winter storm events damage to power lines due to the ice weight on the lines and equipment. Damages also occur to lines and equipment from falling trees and tree limbs weighted 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.

The graphics on the next page from FEMA's National Risk Index suggest Vernon County has a **Relatively Moderate** risk for both ice storms and severe winter weather as a whole.



**Figure 3.45. FEMA's National Risk Index for Ice Storms**



**Figure 3.46. FEMA's National Risk Index for Winter Weather**

## **Potential Losses to Existing Development**

Historically, Vernon County has experienced its fair share of losses associated with severe winter weather events throughout the county. Some events have resulted in only \$5,000 worth of damages, but the ice storm of 2007 has been by far and to date, the most significant storm that Vernon County has ever faced. Some areas outside Vernon County have experienced more losses historically, but this may be due in large part to that when severe winter weather events impact major pieces of critical infrastructure and can result in larger losses. Based on the assessment of past events, it is likely that the losses in Vernon County stemming from severe winter weather will vary from minor damages to major and significant damages to property and other critical infrastructure within the County.

## **Previous and Future Development**

As is the case with many natural hazards, severe winter weather being no exception, the case for impacts on previous developments is unique. Structures already built are susceptible to the effects of severe winter weather as they have been around for any number of years. In some instances, buildings can withstand multiple severe winter weather events and will likely stand through future storms. However, future developments is where things get difficult to pinpoint. Future developments will largely depend on how they are built, as construction trends change throughout the years, being able to withstand a significant ice storm may not be as easy as it once was. Even the best new construction has some degree of flaws that make permeable to a severe winter weather event. Thankfully, Vernon County has not had a major severe winter weather event since 2007, but there is always the possibility of one every winter.

## **Hazard Summary by Jurisdiction**

- ▶ **Vernon County** – *The county has seen its fair share of severe winter weather, with 37 instances dating back to 2000, the county may experience more than one severe winter weather event per year based on historical models.*
- ▶ **City of Bronaugh** – *As is the case with most communities in Vernon County, Bronaugh is isolated from the rest of the county. Yes, Route 43 running north-south through the community is subject to MoDOT maintenance in the winter, the rest of the community could be ground to a halt in a major ice storm or snowstorm.*
- ▶ **City of Nevada** – *As the central point of Vernon County, Nevada plays no favorites when it comes to severe winter weather. The only difference is that Nevada has a lot more infrastructure and this increases the vulnerability that this community faces. However, one significant severe winter weather event could slow things in Nevada dramatically.*
- ▶ **City of Schell City** – *As is the case with most communities in Vernon County, Schell City is isolated from the rest of the county. This would make travel in and out of Schell City difficult, and a lot of essential functions of the community would not be able to operate normally.*
- ▶ **City of Sheldon** – *As is the case with most communities in Vernon County, Sheldon is isolated from the rest of the county. This would make travel in and out of Sheldon difficult, and a lot of essential functions of the community would not be able to operate normally.*

## **Educational Institutions**

- ▶ **Bronaugh R-VII** – Depending on the severity of the severe winter weather, the superintendent of Bronaugh Schools and their transportation director would be tasked with making the tough decision of whether to cancel class for the day due to the conditions. However, with virtual learning now something most districts consider normal, classes could be done in a hybrid format if snow impacted the ability of students to get to class.
- ▶ **Cottey College** – Usually severe winter weather does not impact the ability of colleges to function like it does for public schools; however, college students do occasionally get a rare “snow day” or if the college cannot operate normally, classes will be cancelled for the day. This is to be expected at Cottey College in case of inclement weather.
- ▶ **Crowder College** – Usually severe winter weather does not impact the ability of colleges to function like it does for public schools; however, college students do occasionally get a rare “snow day” or if the college cannot operate normally, classes will be cancelled for the day. This is to be expected at Crowder College in case of inclement weather.
- ▶ **Missouri Welding Institute** – Usually severe winter weather does not impact the ability of specialized trade schools to function like it does for public schools; however, students do occasionally get a rare “snow day” or if the trade school cannot operate normally, classes will be cancelled for the day. This is to be expected at the Missouri Welding Institute in case of inclement weather.
- ▶ **Nevada R-V** – Depending on the severity of the severe winter weather, the superintendent of Nevada Schools and their transportation director would be tasked with making the tough decision of whether to cancel class for the day due to the conditions. However, with virtual learning now something most districts consider normal, classes could be done in a hybrid format if snow impacted the ability of students to get to class.
- ▶ **Northeast Vernon County R-I** – Depending on the severity of the severe winter weather, the superintendent of Northeast Vernon County Schools and their transportation director would be tasked with making the tough decision of whether to cancel class for the day due to the conditions. However, with virtual learning now something most districts consider normal, classes could be done in a hybrid format if snow impacted the ability of students to get to class.
- ▶ **Sheldon R-VIII** – Depending on the severity of the severe winter weather, the superintendent of Sheldon Schools and their transportation director would be tasked with making the tough decision of whether to cancel class for the day due to the conditions. However, with virtual learning now something most districts consider normal, classes could be done in a hybrid format if snow impacted the ability of students to get to class.

## **Problem Statement**

Severe winter weather has long been a problem in Vernon County, but it does not always result in damages nor a disaster declaration. Sometimes it does, other times it is a major inconvenience. Regardless of situation, looking at ways to mitigate this hazard takes a sophisticated approach. The easiest way to mitigate against this hazard is to be educated on it, yes people know what snow is or how to deal with it, but we all can use a courtesy reminder. Other possibilities include building snow and ice resistant roofs, but also tree trimming helps especially around power lines and other sources of danger.

## 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*

Tornadoes are unique in which they can happen anywhere in Vernon County at any time, this is further emphasized in **Figure 3.48** with the vast history of tornadoes in the county.

## 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 damaged 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 with a distance of 30 feet, toss homes more than 300 feet from their foundations, and siphon millions of tons of water from water bodies. Tornadoes also can generate a tremendous amount of flying debris or “missiles,” which often become airborne shrapnel that causes additional damage. If wind speeds are high enough, missiles can be thrown at a building with enough force to penetrate windows, roofs, and walls. However, the less spectacular damage is much more common.

Tornado magnitude is classified according to the EF-Scale (or the Enhanced Fujita Scale, based on the original Fujita Scale developed by Dr. Theodore Fujita in 1971<sup>4</sup>, a renowned severe storm researcher). The EF-Scale (see **Table 3.36**) 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 3.35. 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](http://www.spc.noaa.gov/faq/tornado/ef-scale.html)

The wind speeds for the EF scale and damage descriptions are based on information on the NOAA Storm Prediction Center as listed in **Table 3.37**. The damage descriptions are summaries. For the actual EF scale it is necessary to look up the damage indicator (type of structure damaged) and refer to the degrees of damage associated with that indicator. Information on the Enhanced Fujita Scale's damage indicators and degrees of damage is located online at [www.spc.noaa.gov/efscale/ef-scale.html](http://www.spc.noaa.gov/efscale/ef-scale.html).

<sup>4</sup> Fujita, T. T. (1971). *Proposed characterization of tornadoes and hurricanes by area and intensity* (No. NASA-CR-125545).

**Table 3.36. Enhanced Fujita Scale with Potential Damage**

Enhanced Fujita Scale			
Scale	Wind Speed (mph)	Relative Frequency	Potential Damage
EF0	65-85	53.5%	Light. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over. Confirmed tornadoes with no reported damage (i.e. those that remain in open fields) are always rated EF0).
EF1	86-110	31.6%	Moderate. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	111-135	10.7%	Considerable. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes complete destroyed; large trees snapped or uprooted; light object missiles generated; cars lifted off ground.
EF3	136-165	3.4%	Severe. Entire stores of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	166-200	0.7%	Devastating. Well-constructed houses and whole frame houses completely levelled; cars thrown, and small missiles generated.
EF5	>200	<0.1%	Explosive. Strong frame houses levelled off foundations and swept away; automobile-sized missiles fly through the air in excess of 300 ft.; steel reinforced concrete structure badly damaged; high rise buildings have significant structural deformation; incredible phenomena will occur.

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

Enhanced weather forecasting has provided the ability to predict severe weather likely to produce tornadoes days in advance. Tornado watches can be delivered to those in the path of these storms several hours in advance. Lead time for actual tornado warnings is about 30 minutes. Tornadoes have been known to change paths very rapidly, thus limiting the time in which to take shelter. Tornadoes may not be visible on the ground if they occur after sundown or due to blowing dust or driving rain and hail.

## Previous Occurrences

There are limitations to the use of NCEI tornado data that must be noted. For example, one tornado may contain multiple segments as it moves geographically. A tornado that crosses a county line or state line is considered a separate segment for the purposes of reporting to the NCEI. Also, a tornado that lifts off the ground for less than 5 minutes or 2.5 miles is considered a separate segment. If the tornado lifts off the ground for greater than 5 minutes or 2.5 miles, it is considered a separate tornado. Tornadoes reported in Storm Data and the Storm Events Database are in segments.

**Table 3.37. Recorded Tornadoes in Vernon County, 2003 – Present**

Date	Beginning Location	Ending Location	Length (miles)	Width (yards)	F/EF Rating	Death	Injury	Property Damage	Crop Damages
05/04/2003	3 Mi E of Sheldon	3 Mi E of Sheldon	0.2 Miles	20 Yards	F0	0	0	0	0
05/06/2003	Fair Haven	Fair Haven	0.2 Miles	20 Yards	F0	0	0	0	0
03-12-2006	3 Mi E of Sheldon	3 Mi E of Sheldon	11 Miles	100 Yards	F1	0	2	\$700,000	0
05-03-2006	16 Mi SW of Nevada	16 Mi SW of Nevada	7 Miles	50 Yards	F0	0	0	0	0
04-27-2007	0 Mi N of Metz	0 Mi N of Walker	12.92 Miles	25 Yards	EF0	0	0	\$10,000	0
03-31-2008	2 Mi E of Moundville	2 Miles ENE of Moundville	0.17 Miles	10 Yards	EF0	0	0	0	0
06-02-2008	0 Mi E of Schell City	4 Mi SE of Schell City	3.95 Miles	300 Yards	EF0	0	1	\$150,000	0
06-10-2009	4 Mi NNE of Dederick	4 Mi NE of Dederick	1.45 Miles	50 Yards	EF0	0	0	0	0
04-27-2014	5 Mi WSW of Milo	4 Mi WSW of Milo	0.34 Miles	100 Yards	EF0	0	0	0	0
08-19-2018	5 Mi SSE of Montevallo	5 Mi SSE of Montevallo	0.1 Miles	50 Yards	EF0	0	0	\$5,000	0
08-19-2018	2 Mi SE of Sheldon	2 Mi SSW of Rousertown	1.01 Miles	100 Yards	EF1	0	0	\$25,000	0
<b>TOTAL</b>						0	3	<b>\$890,000.00</b>	0

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

From the NCEI, this is the narrative from the 2006 storm that caused \$700,000.00 in damages:

***A supercell thunderstorm produced a tornado that initially touched down east of Sheldon. The tornado tracked across rural southeast Vernon County, destroying six homes, and one church located near Virgil City. The tornado extended into Cedar County.***



## **Probability of Future Occurrence**

11 Tornado Events in Vernon County Since January 2003  
11 Years Since January 2003

**100% Probability; At least 1 Tornado Per Year**

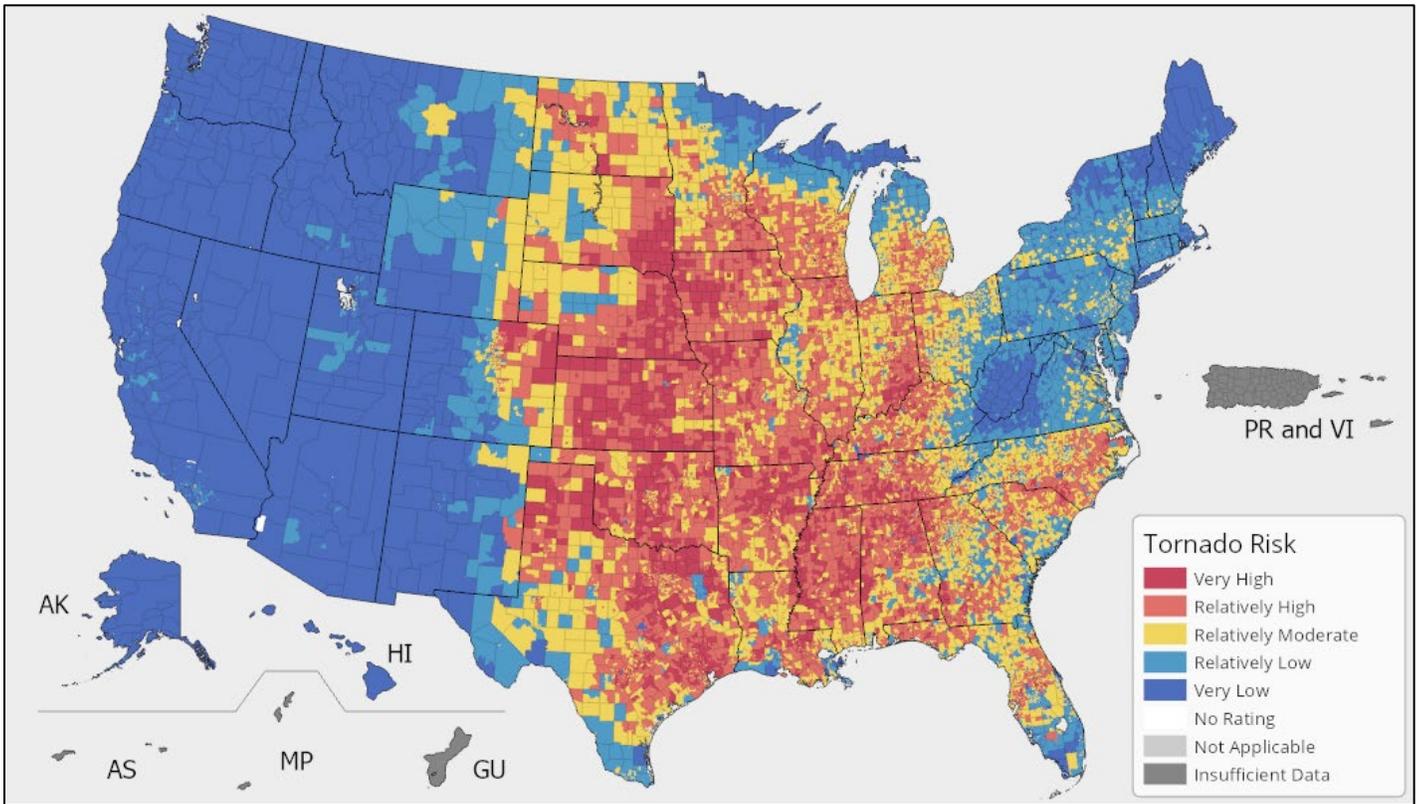
### **Changing Future Conditions Considerations**

Drawing the comparison between the outbreak of tornadic supercell thunderstorms and the onset of climate change has some unique results. While climate change may not cause more severe weather to occur in places like Vernon County, scientists believe that it actually causes more significant severe weather to occur. There are likely to be more powerful tornadoes in the future, whereas in the past it was less likely that an F/EF3 or greater would occur within the county. Going off the 2011 Joplin Tornado as a frame of reference, tornadoes are occurring at more severe intensities now than ever before, and for places like Vernon County, this is expected to continue as atmospheric conditions rapidly change over time.

## **Vulnerability**

### **Vulnerability Overview**

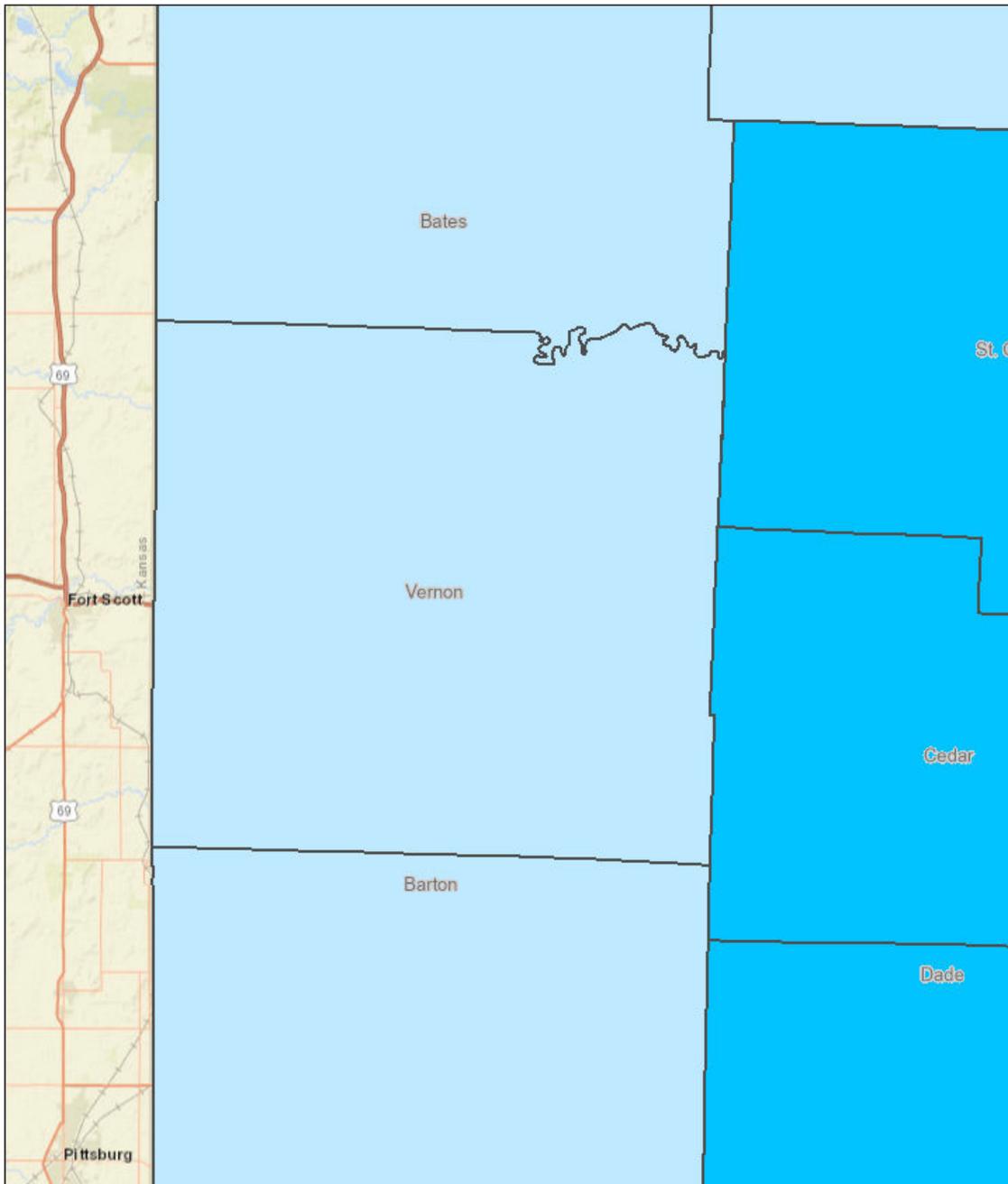
Vernon County, like much of the Midwestern United States, falls within the area known as “Tornado Alley”. This area is specifically designated by scientists and meteorologists and having the most frequently occurring tornadoes every year. Although the storms may vary in severity, there is a considerable and consistent history of tornadoes in Vernon County. Due to this, the vulnerability associated with tornadoes in Vernon County is considerably higher than say a place like Northwest Illinois. Researchers continue to study the frequency of tornadoes in Tornado Alley and have seen a pattern shift based upon changes in climatology. The changes suggest that Tornado Alley may shift more south and eastward to places like Alabama and Georgia, but even with this climatic shift, Vernon County remains significantly at risk and therefore vulnerable to the effects of tornadic supercell thunderstorms.



**Figure 3.48. FEMA’s National Risk Index for Tornadoes**

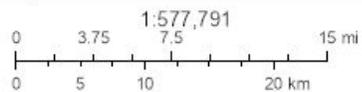
Based on this graphic from FEMA’s National Risk Index, the vulnerability of tornadoes in Vernon County is twofold. Most of the county is **Relatively Moderate**, but in the northeastern part of the county, that vulnerability jumps up to **Relatively High**. The graphic on the next page shows the percentage of mobile homes in Vernon County, these populations are **EXCEPTIONALLY** vulnerable to tornadoes.

## Mobile Home Percentage - Vernon County



12/21/2023, 8:38:28 AM

- Counties
- Percentage of Mobile Homes
- 8.241040 - 12.995729
- 12.995730 - 23.774419



Esri, HERE, Garmin, NGA, USGS, NPS

Esri, HERE, Garmin, NGA, USGS, NPS | Bruce L. Wilson, Missouri Department of Agriculture, Division of Weights, Measures and Consumer Protection, Land Survey Program | ArcGIS Web AppBuilder

**Figure 3.49. Percentage of Mobile Homes in Vernon and Surrounding Counties – Courtesy of SEMA**

Figure 3.50. Tornado Alley in the U.S.



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

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

Only twice, at least since 2003, have tornadoes in Vernon County caused a considerable number of damages to property, thus being measured as having more than \$150,000 worth of damages. Based on the map provided by Purdue University on page 3.119, there have been more significant tornadoes in the past, and in many cases Nevada, the largest city in the County, has been the target of many of these storms. Damages from these storms suggest that future storms could cause even more damage because of a greater population density and more buildings are present than there were when say either the 1958 F3 or 1995 F3 tornadoes tore through the heart of the community. Buildings that have stood in the aftermath of either storm may assist in lessening the effects of tornadoes in Vernon County, but as infrastructure ages, they become just as vulnerable as the general population.

### ***Previous and Future Development***

It is widely believed that previous developments remain vulnerable to the effects of tornadoes, which is true. However, the same cannot be said for future developments in Vernon County. Yes, they will be vulnerable to tornadoes as soon as they are built, but it depends on location, building construction, and previous instances of tornadoes in the proximity of the new development.

## **Hazard Summary by Jurisdiction**

- ▶ **Vernon County** – Tornadoes are quite common in Vernon County, both in recent years and in years past, and some have been quite strong, three have been F3 strength, but this was before the Fujita Scale was revamped in 2007. Since then, there have been numerous smaller intensity storms that have resulted in some degree of damages. Communities with a storm in recent years are discussed further below.
- ▶ **City of Bronaugh** – Although Bronaugh has not had a significant tornado since 1982, the community remains ever vigilant for the next storm that could roll through the small community.
- ▶ **City of Nevada** – Nevada has seen its fair share of tornadoes, but the catch is that they have all occurred prior to 2000, the most recent one being in 1995, which was an F3. The community stays on guard in case of any future events.
- ▶ **City of Schell City** – Schell City is a community with a recent experience dealing with a tornado, in 2008, an EF0 spawned over the community before departing. When it was over, there was \$150,000 in damages.
- ▶ **City of Sheldon** – A tornado in 2006 nearly impacted the City of Sheldon, but spawned east of the city, this one caused damages in other counties though. Additionally, a storm in 1992 also came close to Sheldon, but they have been spared from direct hits.

## **Educational Institutions**

- ▶ **Bronaugh R-VII** – Because the tornadoes that impacted Bronaugh in the 1980s do not have an event narrative, it is not known whether they impacted the schools there or not. Nevertheless, Bronaugh Schools is looking for a tornado shelter should funding become available.
- ▶ **Cottey College** – Cottey College’s risk of tornadoes mirrors that of the City of Nevada and the Nevada School District, so there is a potential for storms to impact the campus, and saferooms would be great for the college.
- ▶ **Crowder College** – Crowder College’s risk of tornadoes mirrors that of the City of Nevada and the Nevada School District, so there is a potential for storms to impact the campus, and saferooms would be fantastic for the college.
- ▶ **Missouri Welding Institute** – Missouri Welding Institute’s risk of tornadoes mirrors that of the City of Nevada and the Nevada School District, so there is a potential for storms to impact the campus, and saferooms would be terrific for the trade school.
- ▶ **Nevada R-V** – The Nevada School District is one of the biggest in the region, but they do not have any tornado shelters on their campuses. Because the community around them has a history of tornadoes, they will be looking for money to build tornado shelters at their schools.
- ▶ **Northeast Vernon County R-I** – Because the tornado that impacted Schell City in the 2008 does not have an event narrative, it is not known whether they impacted the school there or not. Yet, Northeast Vernon County Schools is looking for a tornado shelter should funding become available.
- ▶ **Sheldon R-VIII** – Although no tornado has directly impacted the community of Sheldon, this does not mean that the community is not at risk of possible storms in the future. To minimize their risk, they are looking for money to build saferooms to protect students and staff.

## **Problem Statement**

Being in the thick of Tornado Alley is usually problematic as this is the prime area of tornado developments, and this is especially true in Vernon County. They have had a long history of tornadoes, of all varying strengths, sizes, and degrees of damages caused by these monsters of nature. Even the lowest on the Enhanced Fujita Scale, an EF0, can leave several thousands of dollars' worth of damage to a community. As was the case in Schell City in 2008. Fortunately there have not been any major tornadoes in Vernon County since then, but it remains a constant threat for this county. Schools are always looking to add storm shelters because it is the most productive way they can mitigate the threat posed by tornadoes. Its harder for communities to incorporate storm shelters because they can become extremely expensive and beyond a community's budget. Ultimately, based on history of tornadoes in Vernon County, it is expected that tornadoes will continue to be a threat to the county, its communities and educational institutions.

## 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 to 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

The term refers to the zone of transition between unoccupied land and human development and needs to be defined in the plan. Within the WUI, there are two specific areas identified: 1) Interface and 2) Intermix. The interface areas are those areas that abut wildland vegetation and the Intermix areas are those areas that intermingle with wildland areas.

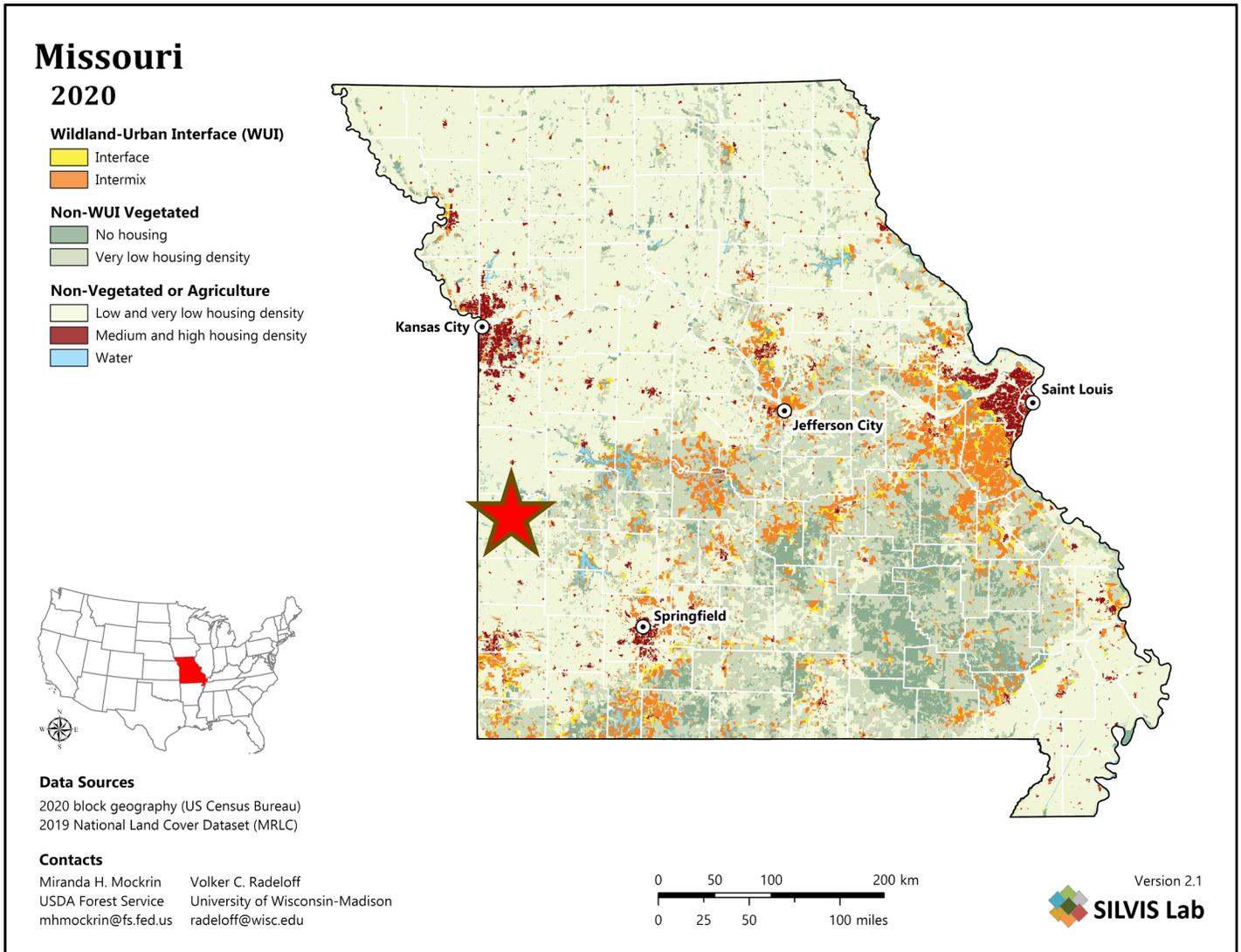


Figure 3.51. 2020 WUI Interface Map of Missouri, Vernon County is indicated by a Red Star

### ***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.

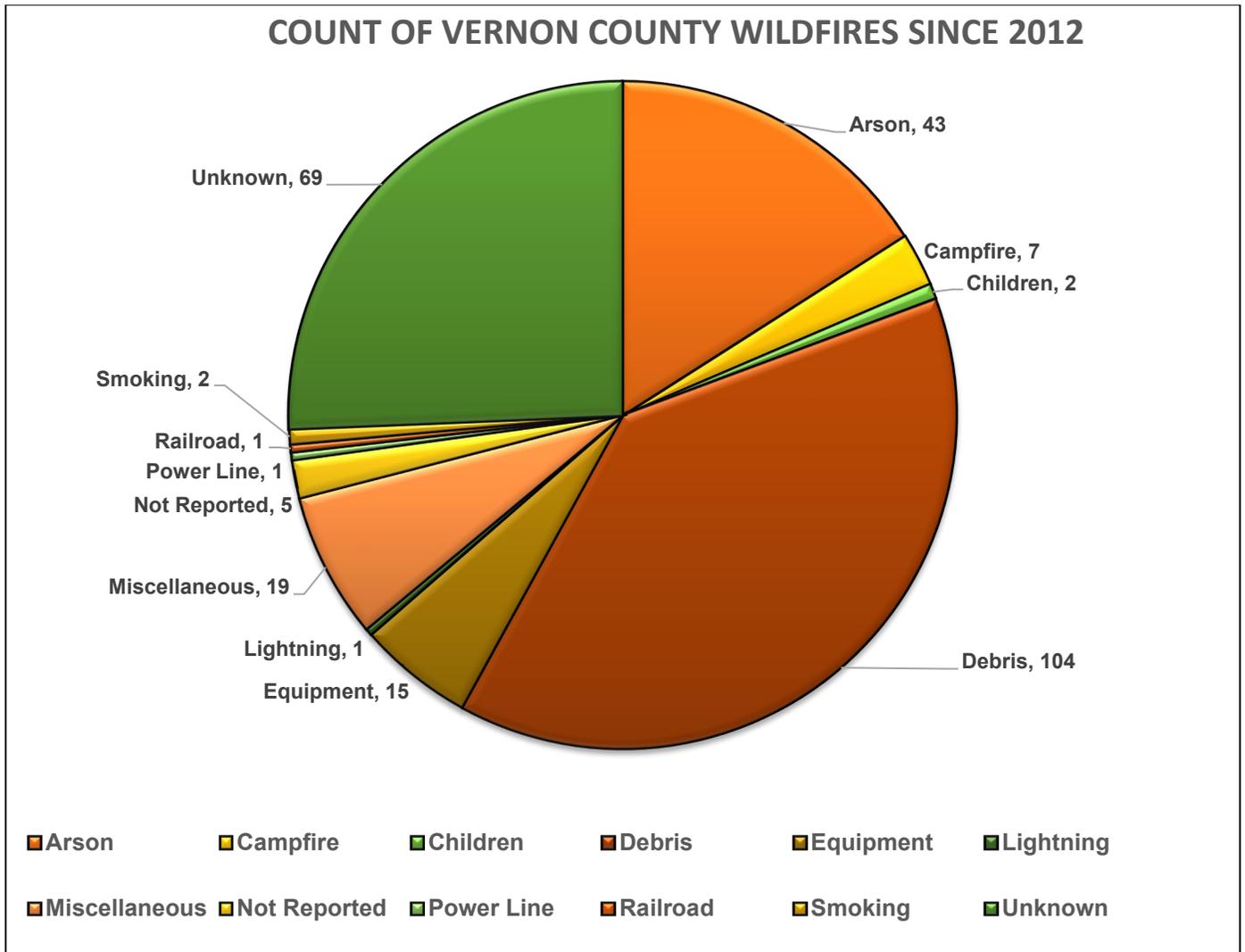
Wildland fires in Missouri have been mostly a result of human activity rather than lightning or some other natural event. Wildfires in Missouri are usually surface fires, burning the dead leaves on the ground or dried grasses. They sometimes do “torch” or “crown” out in certain dense evergreen stands 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 to suppress fires safely.

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

**Previous Occurrences**

Since 2012, Vernon County has had **270** wildland fires, stemming from a variety of causation agents. The chart below, **Figure 3.53**, describes these causation agents and how many fires were caused by each one.



**Figure 3.52. Wildland Fires in Vernon County by Count of Cause**

**Probability of Future Occurrence**

$$\frac{272 \text{ Wildfires since January 2014}}{10 \text{ Years Since January 2014}} \approx$$

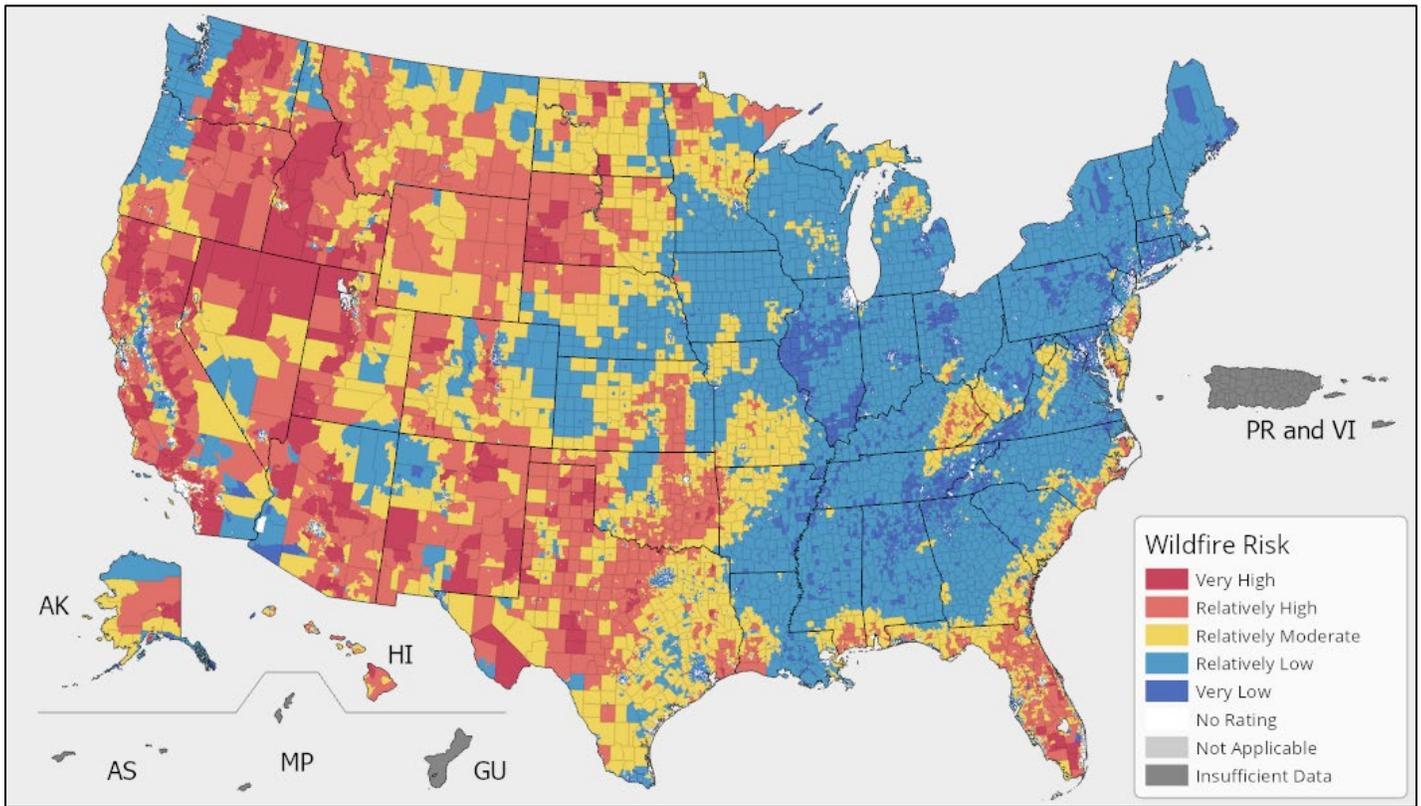
**27 fires annually on average**

**100% Probability**

**Changing Future Conditions Considerations**

Similar to tornadoes, wildfires are one natural hazard that struggles to correlate the effects of Climate Change to more and more fires in the future. Prescribed burning within Vernon County may become less and less likely if warmer days do not allow for such healthy burns. If droughts in Vernon County get worse, then it is likely that wildfires could continue to worsen as well. It remains to be seen whether the effects of Climate Change will impact the likelihood of wildfires in Vernon County in the future.

**Vulnerability**



**Figure 3.53. FEMA's National Risk Index for Wildfires**

**a. Vernon County has a Relatively Low Risk for major wildfires**

## **Potential Losses to Existing Development**

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

Traditionally, the areas identified to be most at risk of wildfires are those where there is a lot of development in larger population areas. This holds true for Vernon County in places like Nevada, which fits the parameters of a larger population area, and possesses critical infrastructure that would be considered most at risk for wildfires. However, anywhere in the county can be considered at risk since it has a large agricultural presence outside of Nevada. Based upon building trends in Vernon County, these additional buildings in areas prone to wildfires will add to the risk capacities.

### **Hazard Summary by Jurisdiction**

- ▶ **Vernon County** – Wildfires are common in Vernon County, though they are often not major wildfires that are seen in other parts of the country. Even so, **272** recorded fires in the last 10 years is a significant number of wildfires.
- ▶ **City of Bronaugh** – In the last ten years, the Bronaugh Volunteer Fire Department has responded to 60 wildfires, for a small rural department, this is very taxing on resources and manpower, the biggest being in 2017, a 257-acre fire started by debris.
- ▶ **City of Nevada** – Typically, the Nevada Fire Department does not respond to many wildfires, but they have rolled out to a couple in the last ten years, one burned 30 acres but did not have a cause, the other a campfire that only burned 4 acres, started by a campfire, both fires occurred in 2017.
- ▶ **City of Schell City** – According to the Missouri Department of Conservation, there has not been a recorded wildfire near Schell City, however they should remain vigilant as there is a lot of forested area nearby, which makes prime wildfire fuel.
- ▶ **City of Sheldon** – Sheldon has responded to the second most wildfires of any department in Vernon County, second only to Bronaugh Fire Department, they have also had a reasonably large wildfire since 2014. In 2017, an arsonist caused a 100-acre wildfire, this has been the most destructive one that Sheldon Fire responded to.

## **Educational Institutions**

- ▶ **Bronaugh R-VII** – Wildfires pose a threat to Bronaugh Schools, but the sheer magnitude of the fire would be measured in damages to school property if it is a significant wildfire.
- ▶ **Cottey College** – Wildfires pose a threat to Cottey College, but the sheer magnitude of the fire would be measured in damages to school property if it is a significant wildfire.
- ▶ **Crowder College** – Wildfires pose a threat to Crowder College, but the sheer magnitude of the fire would be measured in damages to school property if it is a significant wildfire.
- ▶ **Missouri Welding Institute** – Wildfires pose a threat to the Missouri Welding Institute, but the sheer magnitude of the fire would be measured in damages to school property if it is a significant wildfire.
- ▶ **Nevada R-V** – Wildfires pose a threat to Nevada Schools, but the sheer magnitude of the fire would be measured in damages to school property if it is a substantial wildfire.
- ▶ **Northeast Vernon County R-I** – Wildfires pose a threat to the Northeast Vernon County Schools, but the sheer magnitude of the fire would be measured in damages to school property if it is a major wildfire.
- ▶ **Sheldon R-VIII** – Wildfires pose a threat to Sheldon Schools, but the sheer magnitude of the fire would be measured in damages to school property if it is a significant wildfire.

## **Problem Statement**

Wildfires occur frequently in Vernon County, it is the most commonly occurring natural hazard in the county, even if it is not the most devastating. Outside of Nevada, communities around Vernon County rely largely on volunteer fire service, which can easily be overwhelmed in case a major wildfire breaks out.

## 3.4.10 Pandemic

### Hazard Profile

#### *Hazard Description*

According to the Centers for Disease Control and Prevention (CDC), a pandemic is classified as a global outbreak of a disease. Normally, this stems from a viral outbreak of a given disease, one that has high infectivity rates and sometimes high morbidity rates. New outbreaks contain little to no immunity; therefore, the virus spreads globally.

#### *Geographic Location*

All of Vernon County is susceptible to a pandemic outbreak due to its characteristic of being able to spread globally to all sectors of the world.

#### *Strength/Magnitude/Extent*

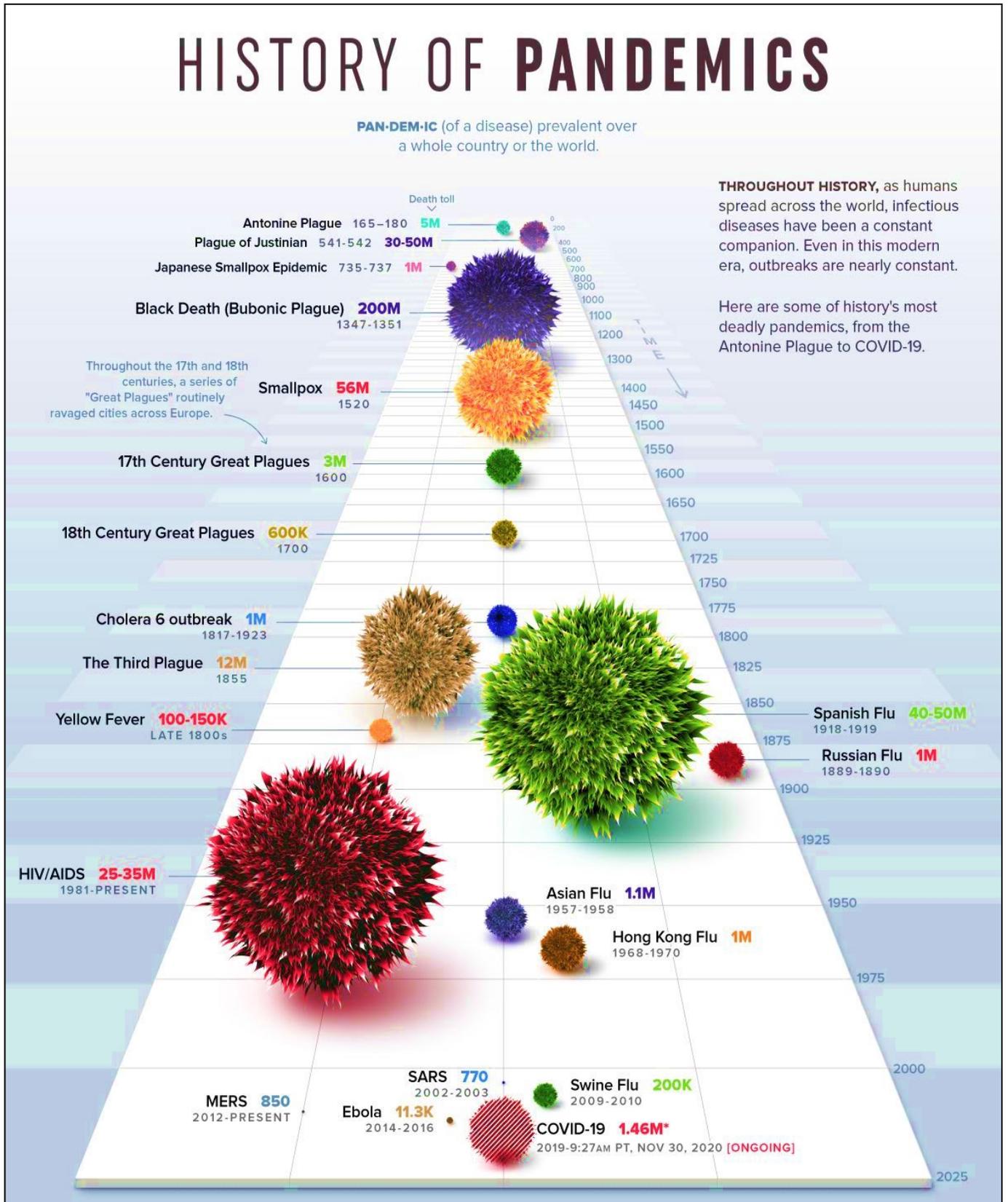
Risk of pandemics is independent of many factors, including severity of the disease-causing agent, the spread probability and how soon the agent can be contained by medical experts at the highest level. Vaccines are developed in response to pandemics, but they are time-consuming to develop, test, and deploy. While the vaccine is being developed by high-ranking scientists and medical personnel, non-pharmaceutical intervention strategies may be employed to combat the disease. These are essential to slowing spread of the agent and can be essential in mitigating its impacts.

#### *Previous Occurrences*

Vernon County, like the rest of the global community, is currently experiencing a pandemic situation. COVID-19, the short name given to a novel coronavirus, is currently causing the current pandemic. COVID-19's infectivity rate is remarkably high, and its lethality rate is high, though not everyone who contracts the virus dies from the virus. It was declared a Pandemic by the World Health Organization (WHO) on March 11th, 2020. Many of the viral outbreaks in recent (<100 years) have been the result of influenza related bugs. Since 1900, there have been four instances of this type of pandemic, including the Spanish Flu outbreak in 1918 and 1919. Most all have been respiratory diseases that progress in a specific way, outlined further in the "Pandemic Intervals Framework", a product of the CDC. Usually, a pandemic begins with the investigation phase, followed by recognition, initiation, and acceleration. Currently, COVID-19 is in the acceleration phase, but signs suggest that it may be nearing a deceleration phase in 2021, though it is unclear of whether that will occur or not as a pair of vaccines are rolling out at the end of 2020. Countries around the world may be in different phases, and even different parts of the same country may not match the rest of the country itself. Same rule of logic applies to counties in the United States. Vernon County's status will be presented shortly.

Throughout history, dating back to the mid-2nd century AD, there have been numerous pandemics, some in Europe, some in the Americas, and some all over the world. **Figure 3.54** further illustrates this point, showcasing pandemics back as far as 165 AD. \*Note: this graphic is dated in November 2020, so it does not reflect the status of COVID-19 as of 1 January 2024, a time where the World Health Organization has deemed the COVID pandemic over and no longer a global health emergency, though the virus may still be present in impoverished areas of the globe and people can still get sick from it.

Figure 3.54. History of Pandemics from 165 AD thru Present Day



Source: <https://www.visualcapitalist.com/history-of-pandemics-deadliest/>

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

Pandemics will be a threat to Vernon County long into the future, as they are also a concern globally.

## ***Changing Future Conditions Considerations***

Climate change, to the surprise of many, has an impact on future disease outbreaks. This stems from the loss of habitats of many animals, who can be the instigator of pandemic outbreaks and who can transmit a disease to humans. Flooding, discussed earlier in this risk assessment, can also cause many pollutants, and carry pathogens that may seep into homes and businesses. Some pathogenic agents also spread in hotter weather.

## **Vulnerability**

### ***Vulnerability Overview***

According to the CDC, each sector of the population is vulnerable to the effects of a pandemic. Seeing as much of Vernon County is in the older population (>65 years), an outbreak like what is being experienced with COVID-19, would have major ramifications for the economy and the communities in the county. The CDC has found that the Social Vulnerability Score for Vernon County is **0.50**, which amounts to a **LOW** to **MODERATE** vulnerability for the entire population.

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

During disease outbreaks, like COVID-19, people have been required to adjust their daily routines, schools have done hybrid (in-person and online) learning off and on, and restaurants/bars have not been allowed indoor dining to prevent the pandemic from spreading. However, some have not complied with this, continuing indoor dining, or taking actions to stop the spread of COVID-19. The losses have hit some well-known areas harder than others, meaning that recovery will be harder for those who have been forced into uncharted territory.

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

Pandemics disrupt normal life in some capacity, and if urbanization is going to continue at a high rate, then it is likely diseases will come with that. Macro trends in society may not be as prevalent in rural communities, like Vernon County, but it is trickle-down effect from the larger metropolitan areas like Springfield or Kansas City.

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

Vernon County is a rural county, so it would make sense for adequate protective measures to protect against community spread. Larger areas do not have this advantage; however, pandemics are global so no one community in the county has pure immunity to a pandemic.

## **Problem Statement**

The best course of action for keeping transmission of a disease outbreak, residents of Vernon County should follow best practices during a pandemic, refusal to comply only exacerbates the situation further. By following these actions, the county can be safer, and the pandemic will be resolved faster. Providing information to the public is also important and improvising if needed.

4 MITIGATION STRATEGY ..... 4.1

4.1 Goals ..... 4.1

4.2 Identification and Analysis of Mitigation Actions..... 4.2

4.3 Implementation of Mitigation Actions ..... 4.4

**44 CFR Requirement §201.6(c)(3): The plan shall include a mitigation strategy that provides the jurisdiction’s blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.**

This section presents the mitigation strategy updated by the Mitigation Planning Committee (MPC) based on the [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 Hazard Mitigation Review Guide (October 1, 2012)*.

- **Mitigation Goals** are general guidelines that explain what you want to achieve. Goals are long-term policy statements and global visions that support the mitigation strategy. The goals address the risk of hazards identified in the plan.
- **Mitigation Actions** are specific actions, projects, activities, or processes taken to reduce or eliminate long-term risk to people and property from hazards and their impacts. Implementing mitigation actions helps achieve the plan’s mission and goals.

**4.1 Goals<sup>6(a)</sup>**

**44 CFR Requirement §201.6(c)(3)(i): [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.**

This planning effort is an update to Vernon County’s existing hazard mitigation plan approved by FEMA on 12 September 2019. Therefore, the goals from the 2019 Vernon 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 and developed the following goals:

1. **Preserve human life, health, and safety from the adverse effects of disasters.**
2. **Defend the continuity of government and essential services and processes from the adverse effects of disasters.**
3. **Protect public and private property from the adverse effects of disasters.**
4. **Safeguard community tranquility from the adverse effects of disasters.**

## 4.2 Identification and Analysis of Mitigation Actions

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

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

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

The focus of Meeting #3 was update of the mitigation strategy. For a comprehensive range of mitigation actions to consider<sup>7(a)</sup>, the MPC reviewed the following information during Meeting #3:

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

For Meeting #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 & F 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 **7** completed actions, **22** continuing actions (either ongoing or modified), and **3** deleted actions.

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

**Table 4.1. Action Status Summary**

Jurisdiction	Completed Actions	Continuing Actions (ongoing or modify)	Deleted Actions
Vernon County	None.	2.1	1.1, 3.1, 4.1
Bronaugh	4.2	1.1, 2.1, 3.2	None.
Nevada	None.	1.2, 2.2, 3.2, 4.3	None.
Schell City	None.	1.1, 2.1, 3.2, 4.2	None.
Sheldon	4.2	1.1, 2.1, 3.2	None.
Bronaugh R-7	4.2	1.3, 2.3, 3.2	None.
Nevada R-5	2.3, 3.2, 4.2	1.3	None.
Sheldon R-8	3.2	1.3, 2.3, 4.3	None.

*\*For many first-time participants or returning participants, such as Northeast Vernon County R-I School District who participated in 2013 but not 2019, their mitigation actions will be considered as **new** actions and will not be subject to the Action Status Summary seen above; however, their proposed actions for this plan will be evaluated with the next version of the Vernon County Hazard Mitigation Plan.*

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)
City of Bronaugh – 4.2: Disaster Drills	Completed sometime between 2019 and 2022 – Financial details are not known
City of Sheldon – 4.2: Disaster Drills	Completed sometime between 2019 and 2022 – Financial details are not known
Bronaugh R-VII School District – 4.2: Disaster Drills	District is required to perform various disaster drills throughout the year, no costs.
Nevada R-V School District – 2.3: Protect Critical Facilities	Completed July 1 <sup>st</sup> , 2021, for \$500 using general funds.
Nevada R-V School District – 3.2: Equipment Upgrades	Completed July 1st, 2021, for \$12,500 using school revenue funds.
Nevada R-V School District – 4.2: School Emergency Drills	Completed July 1st, 2022, with no cost as no financial obligations were necessary
Sheldon R-VIII School District – 3.2: Communication Upgrades at the School	Completed between 2019 and 2023 for \$1,000 allocated from School Safety budget
Deleted Actions	Reason for Deletion
Vernon County – 1.1: Lack of emergency alert systems	Presiding Commissioner states that this project was not feasible for the population density of his county.
Vernon County – 3.1: Flood signage for low water crossings	Presiding Commissioner states that a lack of interest and follow through shuttered this project.
Vernon County – 4.1: Implementation of disaster plans in the county	Presiding Commissioner noted that this plan was not complete due to unforeseen circumstances.

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

## 4.3 Implementation of Mitigation Actions

**44 CFR Requirement §201.6(c)(3)(ii): The mitigation strategy shall include an action strategy describing how the actions identified in paragraph (c)(2)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefits review of the proposed projects and their associated costs.**

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<sup>7(a)</sup>. 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 F. 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**

<b>STAPLEE Worksheet</b>		
<b>Name of Jurisdiction:</b>		
<b>Action or Project</b>		
<b>Action/Project Number:</b>	Insert a unique action number for this action for future tracking purposes. This can be a combination of the jurisdiction name, followed by the goal number and action number (i.e. Joplin1.1)	
<b>Name of Action or Project:</b>		
<b>Mitigation Category:</b>	Prevention; Structure and Infrastructure Projects; Natural Systems Protection; Education and Outreach; Emergency Services	
<b>STAPLEE Criteria</b>		<b>Score</b>
<b>Evaluation Rating</b> Definitely YES = 3      Maybe YES = 2 Probably NO = 1      Definitely NO = 0		
<b>S:</b> Is it <b>Socially</b> Acceptable		
<b>T:</b> Is it <b>Technically</b> feasible and potentially successful?		
<b>A:</b> Does the jurisdiction have the <b>Administrative</b> capacity to execute this action?		
<b>P:</b> Is it <b>Politically</b> acceptable?		
<b>L:</b> Is there <b>Legal</b> authority to implement?		
<b>E:</b> Is it <b>Economically</b> beneficial?		
<b>E:</b> Will the project have either a neutral or positive impact on the natural <b>Environment</b> ?		
Will historic structures be saved or protected?		
Could it be implemented quickly?		
<b>STAPLEE SCORE</b>		
<b>Mitigation Effectiveness Criteria</b>	<b>Evaluation Rating</b>	<b>Score</b>
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.	
<b>MITIGATION EFFECTIVENESS SCORE</b>		
<b>TOTAL SCORE (STAPLEE + Mitigation Effectiveness)</b>		
<input type="checkbox"/> <b>High Priority</b> (30+ points)	<input type="checkbox"/> <b>Medium Priority</b> (25 - 29 points)	<input type="checkbox"/> <b>Low Priority</b> (<25 points)

Completed by  
(Name, Title, Phone Number) \_\_\_\_\_

## SAMPLE ACTION WORKSHEET

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

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Vernon County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding – River and Flash
<b>Problem being Mitigated:</b>	Drainage issues on flooded roadways across the county
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.1
<b>Name of Action or Project:</b>	Drainage Improvements to Prevent Floods
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Repair, upgrade, replace and improvements to bridges, culverts, and ditches to better facilitate drainage on county and township roads.
<b>Estimated Cost:</b>	\$1,000,000+
<b>Benefits:</b>	Better roadway safety and fewer flooding related repairs.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Vernon County Commission and Townships
<b>Supporting Organization/Department:</b>	Vernon County Road & Bridge, MoDOT
<b>Action/Project Priority:</b>	High – 41
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	FHWA Emergency Relief, HMGP, BRIC
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Vernon County Emergency Operations Plan
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing: In-Progress
<b>Report of Progress:</b>	Vernon County Road and Bridge replaced 9 bridges within the last year and installed 80+ new culverts. Some bridges received funding from the Bridge Replacement Program, or BRO, with 2 being replaced in the coming year and one in 2025. The plan is to eliminate all weight restricted bridges in Vernon County by the end of 2025.

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Bronaugh
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought
<b>Problem being Mitigated:</b>	Monitor water supply
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.1
<b>Name of Action or Project:</b>	Drought Monitoring
<b>Mitigation Category:</b>	Local Plans and Regulations
<b>Action or Project Description:</b>	The City of Bronaugh will create and maintain new systems to accurately measure and report water supply during declared droughts.
<b>Estimated Cost:</b>	\$1,000-\$4,000
<b>Benefits:</b>	Keep public informed, and monitor water supply.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Wastewater Operator, City Council
<b>Supporting Organization/Department:</b>	Mayor, County Emergency Operations
<b>Action/Project Priority:</b>	Medium – 26
<b>Timeline for Completion:</b>	2-4 Years
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	None.
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Bronaugh
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Extreme Temperatures
<b>Problem being Mitigated:</b>	Assistance to vulnerable populations
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal 1
<b>Action/Project Number:</b>	1.2
<b>Name of Action or Project:</b>	Temperature Centers
<b>Mitigation Category:</b>	Local Plans and Regulations
<b>Action or Project Description:</b>	The City will establish heating/cooling centers within city limits to allow for vulnerable populations to seek shelter from extreme temperatures, providing supplies and materials that will be good for up to 1 week.
<b>Estimated Cost:</b>	\$50,000.00
<b>Benefits:</b>	Saves lives and protects the health of the community.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City Council and Mayor
<b>Supporting Organization/Department:</b>	Vernon County Emergency Management
<b>Action/Project Priority:</b>	High – 39
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Building Resilient Infrastructure and Communities (BRIC)
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	None.
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Bronaugh
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Winter Weather
<b>Problem being Mitigated:</b>	Ice/Snow on streets
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.3
<b>Name of Action or Project:</b>	Winter Street Preparation
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	The City will coordinate with MoDOT to purchase snow removal materials/machinery to treat and clear snow/ice packed streets in the winter.
<b>Estimated Cost:</b>	\$25,000.00
<b>Benefits:</b>	Safer navigation of city streets to protect human life and safety in the winter.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Bronaugh Administration
<b>Supporting Organization/Department:</b>	MoDOT, Vernon County Emergency Management
<b>Action/Project Priority:</b>	High – 37
<b>Timeline for Completion:</b>	3-6 Years
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	County Recovery Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Bronaugh
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Tornadoes
<b>Problem being Mitigated:</b>	Lack of sufficient emergency alert systems.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.4
<b>Name of Action or Project:</b>	Severe Weather Warning System
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	The City will secure funding to upgrade its emergency alerting system for incoming severe weather, emphasizing tornado warned storms.
<b>Estimated Cost:</b>	\$500,000.00
<b>Benefits:</b>	Public awareness and lives saved.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Bronaugh Administration
<b>Supporting Organization/Department:</b>	Vernon County Emergency Management
<b>Action/Project Priority:</b>	High – 36
<b>Timeline for Completion:</b>	2-5 Years
<b>Potential Fund Sources:</b>	Hazard Mitigation Grant Program
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	County Emergency Operations Plan
<b>Progress Report</b>	
<b>Action Status:</b>	Continue: In-Progress
<b>Report of Progress:</b>	No funding has been secured for this project since its introduction five years ago, therefore it continues on hoping the next five years will see funding for the project.

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Bronaugh
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Wildfire
<b>Problem being Mitigated:</b>	Prevention of wildfires through land-use planning
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.5
<b>Name of Action or Project:</b>	Wildland Zoning and Guidelines
<b>Mitigation Category:</b>	Local Plans and Regulations
<b>Action or Project Description:</b>	The City will develop and implement ordinances designed to mitigate against wildfire risks through land-use planning.
<b>Estimated Cost:</b>	\$0
<b>Benefits:</b>	Protection of human life and safety from wildfires.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Bronaugh Administration
<b>Supporting Organization/Department:</b>	City of Bronaugh Fire Department
<b>Action/Project Priority:</b>	High – 38
<b>Timeline for Completion:</b>	6 Months – 1 Year
<b>Potential Fund Sources:</b>	None
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Local Land-Use Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Bronaugh
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Pandemics
<b>Problem being Mitigated:</b>	Lack of public education on the hazard.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.6
<b>Name of Action or Project:</b>	Contagious Disease Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	The City will host biannual informational meetings/workshops to distribute pamphlets and educate the public about the spread of diseases and other infections and how they may reduce their risk.
<b>Estimated Cost:</b>	\$2,500.00
<b>Benefits:</b>	Better educated citizens and lessen contagious disease spread in the community.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Bronaugh Administration
<b>Supporting Organization/Department:</b>	Vernon County Health Department
<b>Action/Project Priority:</b>	Medium – 28
<b>Timeline for Completion:</b>	2-3 Years
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	None.
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Nevada
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Tornadoes
<b>Problem being Mitigated:</b>	Insufficient Emergency Notification
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.1
<b>Name of Action or Project:</b>	Storm Siren Replacement and Addition
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Replacement of city storm sirens and addition of more as money allows.
<b>Estimated Cost:</b>	\$100,000-\$249,999
<b>Benefits:</b>	Early notification of impending severe weather.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Nevada Emergency Management
<b>Supporting Organization/Department:</b>	City of Nevada Administration
<b>Action/Project Priority:</b>	High – 31
<b>Timeline for Completion:</b>	5+ Years
<b>Potential Fund Sources:</b>	CDBG-MIT Grant
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Local Emergency Operations Plan
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing: Not Started
<b>Report of Progress:</b>	Funding has been an issue with this project.

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Schell City
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes, Extreme Temperatures, Severe Weather, Severe Winter Weather, Tornadoes, Dam Failure, Pandemics, Drought
<b>Problem being Mitigated:</b>	Lack of sufficient emergency notification
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.1
<b>Name of Action or Project:</b>	Local Emergency Alert System
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Secure funding for updated and new notification systems to assist in preventing injuries or death that could be sustained during natural hazard events
<b>Estimated Cost:</b>	\$250,000-\$999,999
<b>Benefits:</b>	Alerts the public of potential hazards and disasters before they happen.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Schell City Administration
<b>Supporting Organization/Department:</b>	Schell City Fire Department
<b>Action/Project Priority:</b>	High – 37
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Other/Not Defined at this Time
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	County Emergency Operations Plan
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing In-Progress
<b>Report of Progress:</b>	Funding has not been secured for this project yet.

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Sheldon
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Extreme Temperatures
<b>Problem being Mitigated:</b>	Residential loss of heating/cooling due to extreme temperatures.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.1
<b>Name of Action or Project:</b>	Heating and Cooling Shelter
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	The City will provide an emergency shelter at the community building for any residents who are affected by a loss of power stemming from extreme temperatures.
<b>Estimated Cost:</b>	\$1,001-\$24,999
<b>Benefits:</b>	Prevents loss of life due to extreme temperatures.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Sheldon Administration
<b>Supporting Organization/Department:</b>	Sheldon Public Works and Fire Department
<b>Action/Project Priority:</b>	High – 36
<b>Timeline for Completion:</b>	0-6 Months
<b>Potential Fund Sources:</b>	Other/Not Defined at this Time
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Local Mitigation Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Sheldon
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes
<b>Problem being Mitigated:</b>	Loss of life due to earthquakes.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.2
<b>Name of Action or Project:</b>	Earthquake Education Program
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate residents on safety techniques during earthquakes as well as after to ensure no loss of life.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Better education of residents to earthquake hazards.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Sheldon Administration
<b>Supporting Organization/Department:</b>	Sheldon Community Betterment Group
<b>Action/Project Priority:</b>	Low – 24
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Local Mitigation Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Sheldon
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Tornadoes
<b>Problem being Mitigated:</b>	Citizen awareness of tornado risks
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.3
<b>Name of Action or Project:</b>	Tornado Awareness Program
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Education of citizens through media channels, location of shelters, and encouragement of purchasing NOAA Weather Radios
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Education of citizens in order to save lives during tornadic events.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Sheldon Administration
<b>Supporting Organization/Department:</b>	City Employees, Sheldon Community Betterment, Fire Department
<b>Action/Project Priority:</b>	High – 37
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined at this Time
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	None.
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Sheldon
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Winter Weather
<b>Problem being Mitigated:</b>	Improve awareness to winter weather hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.4
<b>Name of Action or Project:</b>	Household Severe Winter Weather Awareness
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Provide citizens with severe winter weather vulnerability checklists from <a href="http://www.ready.gov">www.ready.gov</a>
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Increased awareness of severe winter weather hazards.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Sheldon Administration
<b>Supporting Organization/Department:</b>	City Employees, Sheldon Community Betterment, Fire Department
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined at this Time
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Local Mitigation Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Bronaugh R-VII School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding
<b>Problem being Mitigated:</b>	Impassable routes for busses.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.1
<b>Name of Action or Project:</b>	Transportation Updates
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with the bus company for the district to ensure continuity of transportation to and from school even if roads are closed.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Parents will be informed of altered bus routing in case of flooding.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent and Transportation Director
<b>Supporting Organization/Department:</b>	School Board of Education
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Bronaugh R-VII School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Extreme Temperatures, Severe Weather, Severe Winter Weather, Tornadoes
<b>Problem being Mitigated:</b>	Lack of School saferoom
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.2
<b>Name of Action or Project:</b>	All-Purpose Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	To build a FEMA-grade storm shelter for the school and Community to use in case of inclement weather.
<b>Estimated Cost:</b>	\$1,000,000+
<b>Benefits:</b>	The storm shelter will add protection to the school and the community in case of inclement weather.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent of School
<b>Supporting Organization/Department:</b>	School Board and Community Organizations
<b>Action/Project Priority:</b>	High – 40
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Hazard Mitigation Grant Program
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Capital Improvement Plan, School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing: Not Started
<b>Report of Progress:</b>	Funding has not been secured for this project.

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Bronaugh R-VII School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Pandemics
<b>Problem being Mitigated:</b>	Health emergencies and spread of infectious disease
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.3
<b>Name of Action or Project:</b>	Education and School Contingency Plan
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate students and staff on diseases along with ways that mitigate the spread, then develop a plan that could be used so students may continue learning.
<b>Estimated Cost:</b>	\$25,000-\$99,999
<b>Benefits:</b>	Education of infectious diseases will ideally mitigate against spreading it.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Board, Vernon County Health Department
<b>Action/Project Priority:</b>	Medium – 26
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Cottey College
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding – River
<b>Problem being Mitigated:</b>	Education of campus community on safety precautions
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.1
<b>Name of Action or Project:</b>	Travel Safety Program
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Promote awareness of driving precautions when traveling due to flooding situations.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Safer travel for staff and students
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Cottey College
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	High – 30
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NA
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Cottey College
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Dam Failure
<b>Problem being Mitigated:</b>	Lack of education on safety around dams during travel.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.2
<b>Name of Action or Project:</b>	Travel Safe Program
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Promote situational awareness when traveling for college business around dams and appropriately locate them prior to travel.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Increased awareness of dams and knowledge of dam safety
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Cottey College
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	High – 31
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NA
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Cottey College
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes
<b>Problem being Mitigated:</b>	Lack of education on earthquake precautions.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.3
<b>Name of Action or Project:</b>	Earthquake Awareness and Safety Programs
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Add earthquake safety program to annual safety meetings provided for students and staff.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Increased awareness of earthquakes and earthquake safety
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Cottey College
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	High – 31
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NA
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Cottey College
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Extreme Heat/Cold
<b>Problem being Mitigated:</b>	Lack of awareness to extreme temperature risks
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.4
<b>Name of Action or Project:</b>	Extreme Temperature Awareness Program
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Development of an education program for students and staff regarding extreme temperatures and precautions.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Increased awareness of extreme temperatures and their risks.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Cottey College
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NA
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Cottey College
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Winter Weather
<b>Problem being Mitigated:</b>	Lack of safe snow and ice removal from campus
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.5
<b>Name of Action or Project:</b>	Snow/Ice Removal Equipment
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Replacement of existing tractors/equipment for snow and ice removal.
<b>Estimated Cost:</b>	\$100,000-\$249,999
<b>Benefits:</b>	Better snow and ice removal from campus
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Cottey College
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NA
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Cottey College
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Tornadoes
<b>Problem being Mitigated:</b>	Lack of adequate safety measures
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.6
<b>Name of Action or Project:</b>	Emergency Notification System Upgrade
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Replacement of existing emergency notification systems to better keep campus informed and safe during tornado watches and warnings.
<b>Estimated Cost:</b>	\$1,001-\$24,999
<b>Benefits:</b>	More timely alerts of impending or threatening severe weather.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Cottey College
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	High – 31
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NA
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Cottery College
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Tornadoes
<b>Problem being Mitigated:</b>	Lack of safe rooms for campus
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.7
<b>Name of Action or Project:</b>	Campus Safe Rooms
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Construction of safe rooms large enough for campus community.
<b>Estimated Cost:</b>	\$1,000,000+
<b>Benefits:</b>	Increased safety and reduction in loss of life due to tornadoes.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Cottery College
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	High – 32
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NA
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Cottey College
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Pandemics
<b>Problem being Mitigated:</b>	Insufficient student and staff safety during pandemic
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.8
<b>Name of Action or Project:</b>	Pandemic Planning Evaluation
<b>Mitigation Category:</b>	Local Planning and Regulations
<b>Action or Project Description:</b>	Conducting a thorough evaluation of pandemic plans for campus and making improvements where necessary.
<b>Estimated Cost:</b>	\$1,001-\$24,999
<b>Benefits:</b>	Campus will be able to mitigate future pandemics better.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Cottey College
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NA
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Crowder College – Nevada Campus
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Tornadoes
<b>Problem being Mitigated:</b>	Lack of safe rooms for campus
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.1
<b>Name of Action or Project:</b>	Campus Safe Rooms
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Construction of safe rooms large enough for campus community.
<b>Estimated Cost:</b>	\$1,000,000+
<b>Benefits:</b>	Increased safety and reduction in loss of life due to tornadoes.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	College Administration
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	High – 36
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NA
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Missouri Welding Institute
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes
<b>Problem being Mitigated:</b>	Loss of life due to earthquakes
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.1
<b>Name of Action or Project:</b>	Earthquake Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with staff and students to educate everyone on how and where to take cover during an earthquake and develop an emergency plan at home.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	More knowledge of earthquake safety and prevent loss of life.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Administrative Staff
<b>Supporting Organization/Department:</b>	Institution Staff
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Missouri Welding Institute
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Tornadoes
<b>Problem being Mitigated:</b>	Loss of life due to tornadoes
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.2
<b>Name of Action or Project:</b>	Tornado Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with staff and students to educate everyone on how and where to take cover during a tornado and develop an emergency plan at home.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	More knowledge of tornado safety and prevent loss of life.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Administrative Staff
<b>Supporting Organization/Department:</b>	Institution Staff
<b>Action/Project Priority:</b>	High – 34
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Missouri Welding Institute
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Winter Weather
<b>Problem being Mitigated:</b>	Loss of life due to severe winter weather
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.3
<b>Name of Action or Project:</b>	Severe Winter Weather Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with staff and students to educate everyone on the procedure for when severe winter weather is threatening or imminent.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	More knowledge of severe winter weather safety and prevent loss of life.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Administrative Staff
<b>Supporting Organization/Department:</b>	Institution Staff
<b>Action/Project Priority:</b>	Medium – 28
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Missouri Welding Institute
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Extreme Temperatures
<b>Problem being Mitigated:</b>	Lack of education on extreme temperature precautions
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.4
<b>Name of Action or Project:</b>	Extreme Temperature Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with staff and students to educate everyone on the procedure for extreme temperatures and how to avoid bodily harm.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	More knowledge of severe winter weather safety and prevent loss of life.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Administrative Staff
<b>Supporting Organization/Department:</b>	Institution Staff
<b>Action/Project Priority:</b>	High – 34
<b>Timeline for Completion:</b>	0-6 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Missouri Welding Institute
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Pandemics
<b>Problem being Mitigated:</b>	Health emergencies and reduce the spread of disease
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.5
<b>Name of Action or Project:</b>	Pandemic Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate students and staff on infectious disease and how to prevent the spread. A communications plan will also be developed to determine if classes should be canceled and when students may return to safe learning.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Education on infectious disease and minimizing the spread.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Administrative Staff
<b>Supporting Organization/Department:</b>	Institution Staff
<b>Action/Project Priority:</b>	High – 31
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nevada R-V School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding
<b>Problem being Mitigated:</b>	Impassable routes for busses.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.1
<b>Name of Action or Project:</b>	Transportation Updates
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with the bus company for the district to ensure continuity of transportation to and from school even if roads are closed.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Parents will be informed of altered bus routing in case of flooding.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent and Transportation Director
<b>Supporting Organization/Department:</b>	School Board of Education
<b>Action/Project Priority:</b>	High – 31
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nevada R-V School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Extreme Temperatures, Severe Weather, Severe Winter Weather, Tornadoes
<b>Problem being Mitigated:</b>	Lack of School saferoom
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.2
<b>Name of Action or Project:</b>	All-Purpose Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	To build a FEMA-grade storm shelter for the school and Community to use in case of inclement weather.
<b>Estimated Cost:</b>	\$1,000,000+
<b>Benefits:</b>	The storm shelter will add protection to the school and the community in case of inclement weather.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent of School
<b>Supporting Organization/Department:</b>	School Board and Community Organizations
<b>Action/Project Priority:</b>	High – 30
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Hazard Mitigation Grant Program
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Capital Improvement Plan, School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing: Not Started
<b>Report of Progress:</b>	Funding has not been secured for this project.

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nevada R-V School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Pandemics
<b>Problem being Mitigated:</b>	Health emergencies and spread of infectious disease
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.3
<b>Name of Action or Project:</b>	Education and School Contingency Plan
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate students and staff on diseases along with ways that mitigate the spread, then develop a plan that could be used so students may continue learning.
<b>Estimated Cost:</b>	\$25,000-\$99,999
<b>Benefits:</b>	Education of infectious diseases will ideally mitigate against spreading it.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Board, Vernon County Health Department
<b>Action/Project Priority:</b>	Low – 23
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Northeast Vernon County R-I School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding
<b>Problem being Mitigated:</b>	Impassable routes for busses.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.1
<b>Name of Action or Project:</b>	Transportation Updates
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with the bus company for the district to ensure continuity of transportation to and from school even if roads are closed.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Parents will be informed of altered bus routing in case of flooding.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent and Transportation Director
<b>Supporting Organization/Department:</b>	School Board of Education
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Northeast Vernon County R-I School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Extreme Temperatures, Severe Weather, Severe Winter Weather, Tornadoes
<b>Problem being Mitigated:</b>	Lack of School saferoom
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.2
<b>Name of Action or Project:</b>	All-Purpose Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	To build a FEMA-grade storm shelter for the school and Community to use in case of inclement weather.
<b>Estimated Cost:</b>	\$1,000,000+
<b>Benefits:</b>	The storm shelter will add protection to the school and the community in case of inclement weather.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent of School
<b>Supporting Organization/Department:</b>	School Board and Community Organizations
<b>Action/Project Priority:</b>	High – 40
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Hazard Mitigation Grant Program
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Capital Improvement Plan, School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Northeast Vernon County R-I School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Pandemics
<b>Problem being Mitigated:</b>	Health emergencies and spread of infectious disease
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.3
<b>Name of Action or Project:</b>	Education and School Contingency Plan
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate students and staff on diseases along with ways that mitigate the spread, then develop a plan that could be used so students may continue learning.
<b>Estimated Cost:</b>	\$25,000-\$99,999
<b>Benefits:</b>	Education of infectious diseases will ideally mitigate against spreading it.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Board, Vernon County Health Department
<b>Action/Project Priority:</b>	Medium – 26
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Sheldon R-VIII School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding
<b>Problem being Mitigated:</b>	Impassable routes for busses.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.1
<b>Name of Action or Project:</b>	Transportation Updates
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with the bus company for the district to ensure continuity of transportation to and from school even if roads are closed.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Parents will be informed of altered bus routing in case of flooding.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent and Transportation Director
<b>Supporting Organization/Department:</b>	School Board of Education
<b>Action/Project Priority:</b>	High – 30
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Sheldon R-VIII School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Extreme Temperatures, Severe Weather, Severe Winter Weather, Tornadoes
<b>Problem being Mitigated:</b>	Lack of School saferoom
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.2
<b>Name of Action or Project:</b>	All-Purpose Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	To build a FEMA-grade storm shelter for the school and Community to use in case of inclement weather.
<b>Estimated Cost:</b>	\$1,000,000+
<b>Benefits:</b>	The storm shelter will add protection to the school and the community in case of inclement weather.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent of School
<b>Supporting Organization/Department:</b>	School Board and Community Organizations
<b>Action/Project Priority:</b>	High – 32
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Hazard Mitigation Grant Program
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Capital Improvement Plan, School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal 1:** Preserve human life, health, and safety from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Sheldon R-VIII School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Pandemics
<b>Problem being Mitigated:</b>	Health emergencies and spread of infectious disease
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #1
<b>Action/Project Number:</b>	1.3
<b>Name of Action or Project:</b>	Education and School Contingency Plan
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate students and staff on diseases along with ways that mitigate the spread, then develop a plan that could be used so students may continue learning.
<b>Estimated Cost:</b>	\$25,000-\$99,999
<b>Benefits:</b>	Education of infectious diseases will ideally mitigate against spreading it.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Board, Vernon County Health Department
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #2:** Defend the continuity of government and essential services and processes from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Vernon County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding (Riverine and Flash), Dam Failure Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornadoes, Wildfires, Pandemic
<b>Problem being Mitigated:</b>	New Emergency Management Building
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #2
<b>Action/Project Number:</b>	2.1
<b>Name of Action or Project:</b>	Vernon County Emergency Operations Center
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Identification, purchase, and retrofitting of new emergency operations center for the county.
<b>Estimated Cost:</b>	\$250,000-\$999,999
<b>Benefits:</b>	Increased coordination, ability to help mitigate hazards for the county.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Vernon County Commission
<b>Supporting Organization/Department:</b>	Vernon County Emergency Management
<b>Action/Project Priority:</b>	High – 37
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	CDBG-MIT
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Vernon County Emergency Operations Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #2:** Defend the continuity of government and essential services and processes from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Bronaugh
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes
<b>Problem being Mitigated:</b>	Lack of awareness of the hazard
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #2
<b>Action/Project Number:</b>	2.1
<b>Name of Action or Project:</b>	Earthquake Education Program
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	The city will hold semiannual meetings/workshops regarding the threat of earthquakes and how to mitigate the risk against them.
<b>Estimated Cost:</b>	\$5,000-\$6,000
<b>Benefits:</b>	Ensures that government and other essential operations may continue if not hampered by earthquake.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Bronaugh Administration
<b>Supporting Organization/Department:</b>	Vernon County Emergency Management
<b>Action/Project Priority:</b>	High – 33
<b>Timeline for Completion:</b>	1-3 Years
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	None
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #2:** Defend the continuity of government and essential services and processes from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Bronaugh
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Dam Failure
<b>Problem being Mitigated:</b>	Lack of education on hazard
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #2
<b>Action/Project Number:</b>	2.2
<b>Name of Action or Project:</b>	Dam Failure Education
<b>Mitigation Category:</b>	Education and Outreach Programs
<b>Action or Project Description:</b>	The city will host an annual meeting to discuss dam failure and the risk it poses to essential functions including government services.
<b>Estimated Cost:</b>	\$1,000-\$2,000
<b>Benefits:</b>	Enhanced awareness of the hazard and maintains essential functions of the community.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Bronaugh Administration
<b>Supporting Organization/Department:</b>	Local Floodplain Administrator
<b>Action/Project Priority:</b>	Medium – 26
<b>Timeline for Completion:</b>	1-3 Years
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Floodplain Ordinance
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #2:** Defend the continuity of government and essential services and processes from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Bronaugh
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Weather
<b>Problem being Mitigated:</b>	Damage to structures and loss of essential services
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #2
<b>Action/Project Number:</b>	2.3
<b>Name of Action or Project:</b>	Lightning Damage
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	The city will work with the community to educate them on prevention of damages to essential services from severe weather in cooperation with local electric co-ops.
<b>Estimated Cost:</b>	\$250.00
<b>Benefits:</b>	Protection of essential city services in case of severe weather.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Bronaugh Administration
<b>Supporting Organization/Department:</b>	Local Electric Co-Ops, Vernon County EM
<b>Action/Project Priority:</b>	High – 37
<b>Timeline for Completion:</b>	6 Months – 1 Year
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	None
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #2:** Defend the continuity of government and essential services and processes from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Bronaugh
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Weather
<b>Problem being Mitigated:</b>	Lack of sufficient communication systems during severe weather.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #2
<b>Action/Project Number:</b>	2.4
<b>Name of Action or Project:</b>	Communication Upgrades
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	The city will purchase and install communication equipment upgrades for severe weather.
<b>Estimated Cost:</b>	\$17,500.00
<b>Benefits:</b>	Ensures continuity of government during severe weather.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Bronaugh Administration
<b>Supporting Organization/Department:</b>	Vernon County EM
<b>Action/Project Priority:</b>	High – 34
<b>Timeline for Completion:</b>	1-3 Years
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	County Emergency Operations Plan
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing: In-Progress
<b>Report of Progress:</b>	The city is still trying to secure funding for this project.

**Goal #2:** Defend the continuity of government and essential services and processes from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Cottery College
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought
<b>Problem being Mitigated:</b>	Lack of planning
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #2
<b>Action/Project Number:</b>	2.1
<b>Name of Action or Project:</b>	Drought Planning
<b>Mitigation Category:</b>	Local Plans and Regulations
<b>Action or Project Description:</b>	The college will develop a drought emergency plan
<b>Estimated Cost:</b>	\$0
<b>Benefits:</b>	Better handling of droughts by the campus
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Cottery College
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	5+ Years
<b>Potential Fund Sources:</b>	None.
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Campus Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #2:** Defend the continuity of government and essential services and processes from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Crowder College – Nevada Campus
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding (Riverine and Flash), Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornadoes, Wildfires, Pandemic
<b>Problem being Mitigated:</b>	Loss of essential services and processes
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #2
<b>Action/Project Number:</b>	2.1
<b>Name of Action or Project:</b>	Communications Upgrades
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install a communications system to use during a natural disaster.
<b>Estimated Cost:</b>	\$1,001-\$24,999
<b>Benefits:</b>	Better communications during a disaster.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	College Administration
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	High – 38
<b>Timeline for Completion:</b>	5+ Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	None
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #2:** Defend the continuity of government and essential services and processes from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Nevada
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Winter Weather
<b>Problem being Mitigated:</b>	Loss of essential services due to downed trees
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #2
<b>Action/Project Number:</b>	2.1
<b>Name of Action or Project:</b>	Tree Trimming
<b>Mitigation Category:</b>	Natural Systems Protection
<b>Action or Project Description:</b>	Clearing of trees and limbs from roads and powerlines.
<b>Estimated Cost:</b>	\$25,000-\$99,999
<b>Benefits:</b>	Trees are kept away from powerlines and roads, preventing disruptions to essential services.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Nevada EM
<b>Supporting Organization/Department:</b>	City of Nevada Administration
<b>Action/Project Priority:</b>	High – 41
<b>Timeline for Completion:</b>	5+ Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Local Tree Trimming Ordinance, City Code Chapter 35
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing In-Progress
<b>Report of Progress:</b>	This project is done annually, though not all at one time.

**Goal #2:** Defend the continuity of government and essential services and processes from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Schell City
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Wildfires
<b>Problem being Mitigated:</b>	Inadequate communication in the event of a natural disaster
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #2
<b>Action/Project Number:</b>	2.1
<b>Name of Action or Project:</b>	Communication Equipment Upgrades
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Secure funding to purchase and install upgrades for communications systems in the event of a natural disaster, specifically wildfires.
<b>Estimated Cost:</b>	\$1,001-\$24,999
<b>Benefits:</b>	Better communication to defend continuity of operations and essential services.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Schell City Fire Department
<b>Supporting Organization/Department:</b>	City of Schell City Administration
<b>Action/Project Priority:</b>	High – 40
<b>Timeline for Completion:</b>	1-5 years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	County Emergency Operations Plan
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing: In-Progress
<b>Report of Progress:</b>	This is a project done annually but subject to budgetary constraints

**Goal #2:** Defend the continuity of government and essential services and processes from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Sheldon
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding – Flash
<b>Problem being Mitigated:</b>	Flooding in areas at risk due to drainage problems
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #2
<b>Action/Project Number:</b>	2.1
<b>Name of Action or Project:</b>	Flood Drainage
<b>Mitigation Category:</b>	Local Planning and Regulations
<b>Action or Project Description:</b>	Installation/replacement of flood control devices around the city, such as culverts and berms
<b>Estimated Cost:</b>	\$1,001-\$24,999
<b>Benefits:</b>	Prevents the loss of essential services due to flooding
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Sheldon Administration
<b>Supporting Organization/Department:</b>	Sheldon Public Works
<b>Action/Project Priority:</b>	Low – 23
<b>Timeline for Completion:</b>	1-5 years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	None.
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing: Not Started
<b>Report of Progress:</b>	Project was proposed five years ago but no progress made at this time.

**Goal #2:** Defend the continuity of government and essential services and processes from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Sheldon
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought
<b>Problem being Mitigated:</b>	Lack of water
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #2
<b>Action/Project Number:</b>	2.2
<b>Name of Action or Project:</b>	Water Supply Monitoring
<b>Mitigation Category:</b>	Local Planning and Regulations
<b>Action or Project Description:</b>	The city will check for leaks to minimize supply losses and improve monitoring techniques.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Maintenance of active monitoring will reduce losses due to drought.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Sheldon Administration
<b>Supporting Organization/Department:</b>	Sheldon Public Works and Fire Department
<b>Action/Project Priority:</b>	Medium – 28
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	None.
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing: In-Progress
<b>Report of Progress:</b>	The city is trying to acquire funding for this project.

**Goal #2:** Defend the continuity of government and essential services and processes from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Sheldon
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Pandemics
<b>Problem being Mitigated:</b>	Spread of infectious disease
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #2
<b>Action/Project Number:</b>	2.3
<b>Name of Action or Project:</b>	Employee Pandemic Education Program
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate city employees on how diseases spread and how to control it in order to prevent loss of essential services.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Keeps employees safe and prevents disease spread in community.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Sheldon Administration
<b>Supporting Organization/Department:</b>	Vernon County Health Department
<b>Action/Project Priority:</b>	Low – 22
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	None.
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #2:** Defend the continuity of government and essential services and processes from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Sheldon
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Weather
<b>Problem being Mitigated:</b>	Protection of critical facilities from lightning
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #2
<b>Action/Project Number:</b>	2.4
<b>Name of Action or Project:</b>	Lightning Damage Protection
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Installation of lightning detection devices such as lightning rods, ground wires, and surge protectors in critical facilities.
<b>Estimated Cost:</b>	\$1,001-\$24,999
<b>Benefits:</b>	Protection of government services during severe weather.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Sheldon Administration
<b>Supporting Organization/Department:</b>	Sheldon Public Works
<b>Action/Project Priority:</b>	Medium – 27
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	None.
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Vernon County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms
<b>Problem being Mitigated:</b>	Removal of Brush and Trees from Road ROWs
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.1
<b>Name of Action or Project:</b>	Clearing Right-of-Ways
<b>Mitigation Category:</b>	Natural Systems Protections
<b>Action or Project Description:</b>	Removal of woody vegetation along county-owned roads before severe thunderstorms occur.
<b>Estimated Cost:</b>	\$250,000-\$999,999
<b>Benefits:</b>	Reduction in road closures stemming from high winds and tornadoes.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Vernon County Commission
<b>Supporting Organization/Department:</b>	Vernon County Road and Bridge
<b>Action/Project Priority:</b>	High – 36
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	HMGP
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Vernon County Emergency Operations Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Vernon County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding
<b>Problem being Mitigated:</b>	Development in the Floodplain
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.2
<b>Name of Action or Project:</b>	NFIP Compliance
<b>Mitigation Category:</b>	Local Plans and Regulations
<b>Action or Project Description:</b>	Assist in mapping amendment, regulate new construction in SFHA areas.
<b>Estimated Cost:</b>	\$0
<b>Benefits:</b>	Protection of floodplain and restriction of development in SFHA areas.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Vernon County Floodplain Manager
<b>Supporting Organization/Department:</b>	Vernon County Commission
<b>Action/Project Priority:</b>	High – 41
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	None
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	County Floodplain Ordinance
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing In-Progress
<b>Report of Progress:</b>	Floodplain training was complete in 2023, but this is a requirement of NFIP-participating communities.

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Bronaugh
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding
<b>Problem being Mitigated:</b>	Poor drainage systems to divert floodwaters.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.1
<b>Name of Action or Project:</b>	Drainage Improvements
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	The city will replace, repair, and/or upgrade drainage systems with culverts and low water crossings.
<b>Estimated Cost:</b>	\$25,000.00
<b>Benefits:</b>	Safe travels, eliminates frequent repairs
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Bronaugh Administration
<b>Supporting Organization/Department:</b>	Bronaugh Public Works
<b>Action/Project Priority:</b>	High – 32
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Hazard Mitigation Grant Program
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Local Floodplain Ordinance
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing In-Progress
<b>Report of Progress:</b>	This is an ongoing effort from the city as it is not quite complete.

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Bronaugh
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding
<b>Problem being Mitigated:</b>	Development in the floodplain
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.2
<b>Name of Action or Project:</b>	NFIP Compliance
<b>Mitigation Category:</b>	Local Plans and Regulations
<b>Action or Project Description:</b>	The city will continue to participate in the National Flood Insurance Program by enforcing its floodplain ordinance above the minimum standard.
<b>Estimated Cost:</b>	\$0
<b>Benefits:</b>	Qualification for discounted flood insurance for affected properties
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Bronaugh Administration
<b>Supporting Organization/Department:</b>	Local Floodplain Manager
<b>Action/Project Priority:</b>	High – 33
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	None.
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Existing floodplain ordinance
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing In-Progress
<b>Report of Progress:</b>	This is a requirement of communities who are members of the NFIP.

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Nevada
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding (Riverine and Flash), Dam Failure Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornadoes, Wildfires, Pandemic
<b>Problem being Mitigated:</b>	Lack of coordination before, during or after hazard events.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.1
<b>Name of Action or Project:</b>	Emergency Operations Center
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	The city and County are looking to build a new EOC to better help protect citizens of the County and the City from hazards and disasters.
<b>Estimated Cost:</b>	\$250,000-\$999,999
<b>Benefits:</b>	Updated Emergency Operations Center
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Nevada Emergency Management
<b>Supporting Organization/Department:</b>	Vernon County Emergency Management
<b>Action/Project Priority:</b>	High – 32
<b>Timeline for Completion:</b>	5+ Years
<b>Potential Fund Sources:</b>	Community Development Block Grant
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Local Emergency Operations Plan
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing In-Progress
<b>Report of Progress:</b>	The City continues to work to find a suitable location for the new EOC, but nothing has come yet.

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Nevada
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding
<b>Problem being Mitigated:</b>	Development in the Floodplain
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.2
<b>Name of Action or Project:</b>	NFIP Compliance
<b>Mitigation Category:</b>	Local Plans and Regulations
<b>Action or Project Description:</b>	The city will continue to comply with the National Flood Insurance Program through enforcement of floodplain ordinance above minimum standard.
<b>Estimated Cost:</b>	#0
<b>Benefits:</b>	The city complies with NFIP and discounted flood insurance for affected property owners
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Nevada Floodplain Administrator
<b>Supporting Organization/Department:</b>	City of Nevada Emergency Management
<b>Action/Project Priority:</b>	High – 40
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	None.
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	City Code: Article IV 1998-6-51/6-53 Ord. 3510-2
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing In-Progress
<b>Report of Progress:</b>	This is a requirement of NFIP participating communities

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Schell City
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding
<b>Problem being Mitigated:</b>	Improve drainage to prevent flooding
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.1
<b>Name of Action or Project:</b>	Storm and Flood Drainage
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	The city will replace, repair, and/or upgrade drainage systems with culverts and low water crossings.
<b>Estimated Cost:</b>	\$1,001-\$24,999
<b>Benefits:</b>	Safe travels, eliminates frequent repairs
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Schell City Administration
<b>Supporting Organization/Department:</b>	Schell City Public Works
<b>Action/Project Priority:</b>	High – 41
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Local Revenue
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing In-Progress
<b>Report of Progress:</b>	This is an ongoing effort from the city as it is not quite complete.

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Sheldon
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms
<b>Problem being Mitigated:</b>	Education and Disaster Awareness
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.1
<b>Name of Action or Project:</b>	Severe Thunderstorm Awareness Program
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Safety brochures will be mailed out with monthly utility bills and use one month of community betterment meetings as educational programs.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Raised awareness of thunderstorm hazards.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Sheldon Administration
<b>Supporting Organization/Department:</b>	City Employees, Sheldon Community Betterment
<b>Action/Project Priority:</b>	Low – 22
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	None.
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Sheldon
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Wildfires
<b>Problem being Mitigated:</b>	Spread of wildfires
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.2
<b>Name of Action or Project:</b>	Wildfire Maintenance Program
<b>Mitigation Category:</b>	Local Planning and Regulations
<b>Action or Project Description:</b>	Ensure property cleanup to minimize risk and routine inspection of fire hydrants.
<b>Estimated Cost:</b>	\$1,001-\$24,999
<b>Benefits:</b>	Alleviate damages from wildfires.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Sheldon Administration
<b>Supporting Organization/Department:</b>	Sheldon Public Works and Fire Department
<b>Action/Project Priority:</b>	High – 35
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	None.
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Sheldon
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Dam Failure
<b>Problem being Mitigated:</b>	Lack of water and education on the hazard
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.3
<b>Name of Action or Project:</b>	Dam Failure Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate staff on the location of nearby dams and what to do in case a dam does fail.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Educates the public on the hazard and to increase awareness
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Sheldon Administration
<b>Supporting Organization/Department:</b>	City Employees, Sheldon Fire Department
<b>Action/Project Priority:</b>	Low – 23
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	None.
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Bronaugh R-VII School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes
<b>Problem being Mitigated:</b>	Loss of life due to an earthquake
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.1
<b>Name of Action or Project:</b>	Earthquake Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with the staff, students, parents, and community to provide education on earthquake dangers and how to make an emergency plan at home.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	People will be better informed of the hazard and the threat it poses.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Staff, Local Organizations
<b>Action/Project Priority:</b>	Medium – 26
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Bronaugh R-VII School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Dam Failure
<b>Problem being Mitigated:</b>	Loss of life due to a dam failure
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.2
<b>Name of Action or Project:</b>	Dam Failure Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with the staff, students, parents, and community to provide education on dams and their dangers and steps to take if a dam fails.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	People will be better informed of the hazard and the threat it poses.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Board, Bronaugh Fire Department
<b>Action/Project Priority:</b>	High – 30
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Bronaugh R-VII School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Wildfires
<b>Problem being Mitigated:</b>	Damages caused by wildfires and lack of education.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.3
<b>Name of Action or Project:</b>	Wildfire Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate students and staff on the dangers of wildfires and how to prevent them, along with reporting methods.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	People will be better informed of the hazard and the threat it poses.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Board, Bronaugh Fire Department
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Cottey College
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flash Flooding
<b>Problem being Mitigated:</b>	Lack of education on flooding safety
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.1
<b>Name of Action or Project:</b>	Flooding Safety Program
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Promote awareness and preventive actions to take during flash floods such as shelter in place.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Better awareness of flooding hazards.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Cottey College
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	High – 31
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NA
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Cottey College
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes
<b>Problem being Mitigated:</b>	Unsafe buildings further hindered by major earthquake
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.2
<b>Name of Action or Project:</b>	Building Assessment
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Hire engineer to assess buildings for structural integrity in case of major earthquake.
<b>Estimated Cost:</b>	\$100,000-\$249,999
<b>Benefits:</b>	Determines which buildings are unsafe and at risk of damage due to major earthquakes.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Cottey College
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NA
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Cottey College
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Weather
<b>Problem being Mitigated:</b>	Wind damages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.3
<b>Name of Action or Project:</b>	Roof Replacement
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	To replace roofs that have been damaged due to high winds.
<b>Estimated Cost:</b>	\$1,000,000+
<b>Benefits:</b>	Unsafe roofs replaced and increased safety on campus
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Cottey College
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	High – 33
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NA
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Cottey College
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Weather
<b>Problem being Mitigated:</b>	Protection of buildings from tree damage
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.4
<b>Name of Action or Project:</b>	Tree Trimming
<b>Mitigation Category:</b>	Natural Systems Protection
<b>Action or Project Description:</b>	Trimming of trees around campus that are too close to buildings or power lines.
<b>Estimated Cost:</b>	\$250,000-\$999,999
<b>Benefits:</b>	Protection of campus buildings and students and staff from fallen trees
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Cottey College
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NA
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Cottey College
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Wildfires
<b>Problem being Mitigated:</b>	Improve safety and reduce vulnerability
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.5
<b>Name of Action or Project:</b>	Wildfire Vulnerability Assessment
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Conduct a wildfire vulnerability assessment for the campus on new developments that is largely trees.
<b>Estimated Cost:</b>	\$1,001-\$24,999
<b>Benefits:</b>	Identification of wildfire risks to campus property.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Cottey College
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	Medium – 28
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NA
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Missouri Welding Institute
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Wildfires
<b>Problem being Mitigated:</b>	Damages caused by wildfires and lack of education.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.1
<b>Name of Action or Project:</b>	Wildfire Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate students and staff on the dangers of wildfires and how to prevent them, along with reporting methods.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	People will be better informed of the hazard and the threat it poses.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Administration
<b>Supporting Organization/Department:</b>	Nevada Fire Department
<b>Action/Project Priority:</b>	Medium – 28
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Missouri Welding Institute
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Dam Failure
<b>Problem being Mitigated:</b>	Loss of life due to a dam failure
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.2
<b>Name of Action or Project:</b>	Dam Failure Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with the staff, students, parents, and community to provide education on dams and their dangers and steps to take if a dam fails.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	People will be better informed of the hazard and the threat it poses.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Administration
<b>Supporting Organization/Department:</b>	Nevada Fire Department
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Missouri Welding Institute
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding
<b>Problem being Mitigated:</b>	Inability to get to campus due to flooding.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.3
<b>Name of Action or Project:</b>	Flood Education and Transportation Plans
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate students and staff on road closures due to flooding and what will occur if a flooding situation takes place, impacting travel.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Students and staff will know the procedure if flooding occurs.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Administration
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Missouri Welding Institute
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Weather
<b>Problem being Mitigated:</b>	Damages to property and injuries
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.4
<b>Name of Action or Project:</b>	Severe Thunderstorm Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate staff and students on the dangers of severe thunderstorms including hail and straight-line winds and what the procedure is during dangerous storms.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Staff and students will know the procedure to follow during severe thunderstorms.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Administration
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NA
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nevada R-V School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes
<b>Problem being Mitigated:</b>	Loss of life due to an earthquake
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.1
<b>Name of Action or Project:</b>	Earthquake Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with the staff, students, parents, and community to provide education on earthquake dangers and how to make an emergency plan at home.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	People will be better informed of the hazard and the threat it poses.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Staff, Local Organizations
<b>Action/Project Priority:</b>	High – 36
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nevada R-V School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Dam Failure
<b>Problem being Mitigated:</b>	Loss of life due to a dam failure
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.2
<b>Name of Action or Project:</b>	Dam Failure Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with the staff, students, parents, and community to provide education on dams and their dangers and steps to take if a dam fails.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	People will be better informed of the hazard and the threat it poses.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Board, Nevada Fire Department
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nevada R-V School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Wildfires
<b>Problem being Mitigated:</b>	Damages caused by wildfires and lack of education.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.3
<b>Name of Action or Project:</b>	Wildfire Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate students and staff on the dangers of wildfires and how to prevent them, along with reporting methods.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	People will be better informed of the hazard and the threat it poses.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Board, Nevada Fire Department
<b>Action/Project Priority:</b>	Medium – 25
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Northeast Vernon County R-I School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes
<b>Problem being Mitigated:</b>	Loss of life due to an earthquake
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.1
<b>Name of Action or Project:</b>	Earthquake Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with the staff, students, parents, and community to provide education on earthquake dangers and how to make an emergency plan at home.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	People will be better informed of the hazard and the threat it poses.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Staff, Local Organizations
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Northeast Vernon County R-I School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Dam Failure
<b>Problem being Mitigated:</b>	Loss of life due to a dam failure
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.2
<b>Name of Action or Project:</b>	Dam Failure Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with the staff, students, parents, and community to provide education on dams and their dangers and steps to take if a dam fails.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	People will be better informed of the hazard and the threat it poses.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Board, Schell City/Walker Fire Department
<b>Action/Project Priority:</b>	High – 30
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Northeast Vernon County R-I School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Wildfires
<b>Problem being Mitigated:</b>	Damages caused by wildfires and lack of education.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.3
<b>Name of Action or Project:</b>	Wildfire Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate students and staff on the dangers of wildfires and how to prevent them, along with reporting methods.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	People will be better informed of the hazard and the threat it poses.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Board, Schell City/Walker Fire Department
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Sheldon R-VIII School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes
<b>Problem being Mitigated:</b>	Loss of life due to an earthquake
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.1
<b>Name of Action or Project:</b>	Earthquake Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with the staff, students, parents, and community to provide education on earthquake dangers and how to make an emergency plan at home.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	People will be better informed of the hazard and the threat it poses.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Staff, Local Organizations
<b>Action/Project Priority:</b>	High – 30
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Sheldon R-VIII School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Dam Failure
<b>Problem being Mitigated:</b>	Loss of life due to a dam failure
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.2
<b>Name of Action or Project:</b>	Dam Failure Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with the staff, students, parents, and community to provide education on dams and their dangers and steps to take if a dam fails.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	People will be better informed of the hazard and the threat it poses.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Board, Sheldon Fire Department
<b>Action/Project Priority:</b>	Low – 23
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #3:** Protect public and private property from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Sheldon R-VIII School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Wildfires
<b>Problem being Mitigated:</b>	Damages caused by wildfires and lack of education.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #3
<b>Action/Project Number:</b>	3.3
<b>Name of Action or Project:</b>	Wildfire Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate students and staff on the dangers of wildfires and how to prevent them, along with reporting methods.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	People will be better informed of the hazard and the threat it poses.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent
<b>Supporting Organization/Department:</b>	School Board, Sheldon Fire Department
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #4:** Safeguard community tranquility from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Vernon County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Winter Weather, Severe Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Power Outages at the Courthouse
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #4
<b>Action/Project Number:</b>	4.1
<b>Name of Action or Project:</b>	Courthouse Generator
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Installation of a backup generator at the County Courthouse to keep peace of mind during a disaster.
<b>Estimated Cost:</b>	\$100,000.00
<b>Benefits:</b>	Continued county services and communications in case of power outage.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Vernon County Commission
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	High – 38
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	HMGP
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Vernon County Emergency Operations Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #4:** Safeguard community tranquility from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Nevada
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Winter Weather
<b>Problem being Mitigated:</b>	Addressing Buildings
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #4
<b>Action/Project Number:</b>	4.1
<b>Name of Action or Project:</b>	Addressing
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Address all buildings and structures in and around the City of Nevada.
<b>Estimated Cost:</b>	\$25,000-\$99,999
<b>Benefits:</b>	Able to locate buildings more accurately in an emergency.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Nevada Emergency Management
<b>Supporting Organization/Department:</b>	City Mapping Department
<b>Action/Project Priority:</b>	High – 38
<b>Timeline for Completion:</b>	5+ Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Local Building and Fire Codes
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing: In-Progress
<b>Report of Progress:</b>	Most structures have been done, but still a work in progress.

**Goal #4:** Safeguard community tranquility from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Nevada
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flash Flooding
<b>Problem being Mitigated:</b>	Stormwater runoff
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #4
<b>Action/Project Number:</b>	4.2
<b>Name of Action or Project:</b>	Walton Lake Project
<b>Mitigation Category:</b>	Natural Systems Protection
<b>Action or Project Description:</b>	Cleaning and dredging of Izaak Walton Lake.
<b>Estimated Cost:</b>	\$1,000,000+
<b>Benefits:</b>	Allows for better stormwater runoff from the community.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Nevada Parks Department
<b>Supporting Organization/Department:</b>	City of Nevada Administration
<b>Action/Project Priority:</b>	High – 38
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	ARPA Funds/MoDNR Grants
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Local Emergency Operations Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #4:** Safeguard community tranquility from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Nevada
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Wildfires
<b>Problem being Mitigated:</b>	Threats to structures from wildfires
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #4
<b>Action/Project Number:</b>	4.3
<b>Name of Action or Project:</b>	Wildland Fire Reduction
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educate citizens on how to remove yard waste to reduce debris-caused wildfires.
<b>Estimated Cost:</b>	\$1,001-\$24,999
<b>Benefits:</b>	Reduction in wildfires and grass fires.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Nevada EM
<b>Supporting Organization/Department:</b>	Vernon County EM and Rural Fire Departments
<b>Action/Project Priority:</b>	High – 42
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Hazard Mitigation Grant Program Post-Fire
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Local Codes and Standards
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #4:** Safeguard community tranquility from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Nevada
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought
<b>Problem being Mitigated:</b>	Deep water well monitoring
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #4
<b>Action/Project Number:</b>	4.4
<b>Name of Action or Project:</b>	Deep Water Well Monitoring
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Upgrading the wastewater treatment plant and monitoring of wells during drought conditions.
<b>Estimated Cost:</b>	\$1,000,000
<b>Benefits:</b>	Better water service, even during a drought.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Nevada EM
<b>Supporting Organization/Department:</b>	City of Nevada Public Works
<b>Action/Project Priority:</b>	High – 41
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	City Wastewater Ordinance
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #4:** Safeguard community tranquility from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Nevada
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Pandemics
<b>Problem being Mitigated:</b>	Lack of education on the dangers of pandemics
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #4
<b>Action/Project Number:</b>	4.5
<b>Name of Action or Project:</b>	Pandemic Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	To educate the public on dealing with infectious diseases and how to lessen the effects of pandemics.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Better education on pandemic situations.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Nevada EM
<b>Supporting Organization/Department:</b>	Vernon County LEPC, Vernon County Health Department, Nevada Regional Medical Center
<b>Action/Project Priority:</b>	High – 35
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Local Emergency Operations Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #4:** Safeguard community tranquility from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Nevada
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Dam Failure
<b>Problem being Mitigated:</b>	Lack of education on dam failure in the community.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #4
<b>Action/Project Number:</b>	4.6
<b>Name of Action or Project:</b>	Dam Failure Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Educating residents in case of dam failure in the community.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Better education on the threat of dam failure in the community.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Nevada Administration
<b>Supporting Organization/Department:</b>	City Public Works and Parks and Recreation
<b>Action/Project Priority:</b>	High – 45
<b>Timeline for Completion:</b>	5+ Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Local Floodplain Ordinance
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #4:** Safeguard community tranquility from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Schell City
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes, Severe Weather, Tornadoes
<b>Problem being Mitigated:</b>	Lack of education on natural hazards.
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #4
<b>Action/Project Number:</b>	4.1
<b>Name of Action or Project:</b>	Coordinate Disaster Drills
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Coordinate and implement disaster drills for the community.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Reduce loss of life and damage to property.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	City of Schell City Administration
<b>Supporting Organization/Department:</b>	Schell City Fire Department
<b>Action/Project Priority:</b>	High – 38
<b>Timeline for Completion:</b>	5+ Years
<b>Potential Fund Sources:</b>	Other/Not Defined
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	County Emergency Operations Plan
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing In-Progress
<b>Report of Progress:</b>	The City has elected to continue this project annually.

**Goal #4:** Safeguard community tranquility from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Bronaugh R-VII School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought
<b>Problem being Mitigated:</b>	Lack of water
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #4
<b>Action/Project Number:</b>	4.1
<b>Name of Action or Project:</b>	Drought Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with campus kitchen staff on ways to conserve water during a drought and develop a plan for water shortages.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Water conserved during drought conditions.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent and Staff
<b>Supporting Organization/Department:</b>	School Board, Community Organizations
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #4:** Safeguard community tranquility from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Crowder College – Nevada Campus
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Tornadoes, Earthquakes, Severe Weather
<b>Problem being Mitigated:</b>	Lack of education on natural hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #4
<b>Action/Project Number:</b>	4.1
<b>Name of Action or Project:</b>	Disaster Drills
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Coordination of key disaster drills to better understand how to mitigate risks from associated hazards.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Reduction in loss of life and disruptions to campus tranquility.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	College Administration
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	High – 42
<b>Timeline for Completion:</b>	1-5 Years
<b>Potential Fund Sources:</b>	NA
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	None.
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #4:** Safeguard community tranquility from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Missouri Welding Institute
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought
<b>Problem being Mitigated:</b>	Lack of water
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #4
<b>Action/Project Number:</b>	4.1
<b>Name of Action or Project:</b>	Drought Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with campus kitchen staff on ways to conserve water during a drought and develop a plan for water shortages.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Water conserved during drought conditions.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Administration
<b>Supporting Organization/Department:</b>	NA
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #4:** Safeguard community tranquility from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nevada R-V School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought
<b>Problem being Mitigated:</b>	Lack of water
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #4
<b>Action/Project Number:</b>	4.1
<b>Name of Action or Project:</b>	Drought Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with campus kitchen staff on ways to conserve water during a drought and develop a plan for water shortages.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Water conserved during drought conditions.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent and Staff
<b>Supporting Organization/Department:</b>	School Board, Community Organizations
<b>Action/Project Priority:</b>	High - 30
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #4:** Safeguard community tranquility from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Northeast Vernon County R-I School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought
<b>Problem being Mitigated:</b>	Lack of water
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #4
<b>Action/Project Number:</b>	4.1
<b>Name of Action or Project:</b>	Drought Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with campus kitchen staff on ways to conserve water during a drought and develop a plan for water shortages.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Water conserved during drought conditions.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent and Staff
<b>Supporting Organization/Department:</b>	School Board, Community Organizations
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Goal #4:** Safeguard community tranquility from the adverse effects of disasters.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Sheldon R-VIII School District
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought
<b>Problem being Mitigated:</b>	Lack of water
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Goal #4
<b>Action/Project Number:</b>	4.1
<b>Name of Action or Project:</b>	Drought Education
<b>Mitigation Category:</b>	Education and Awareness Programs
<b>Action or Project Description:</b>	Work with campus kitchen staff on ways to conserve water during a drought and develop a plan for water shortages.
<b>Estimated Cost:</b>	\$0-\$1,000
<b>Benefits:</b>	Water conserved during drought conditions.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Superintendent and Staff
<b>Supporting Organization/Department:</b>	School Board, Community Organizations
<b>Action/Project Priority:</b>	Medium – 29
<b>Timeline for Completion:</b>	6-12 Months
<b>Potential Fund Sources:</b>	Local Revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Emergency Plan
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

**Table 4.3. Mitigation Action Matrix**

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
<b>Local Planning and Regulations</b>								
3.2	NFIP Compliance	Vernon County	High	Goal 3	Flooding	Yes	Yes	Yes
1.1	Drought Monitoring	Bronaugh	Medium	Goal 1	Drought	Yes	Yes	No
1.2	Temperature Centers	Bronaugh	High	Goal 1	Extreme Temperatures	No	No	No
1.5	Zoning and Guidelines	Bronaugh	High	Goal 1	Wildfires	Yes	Yes	No
3.2	NFIP Compliance	Bronaugh	High	Goal 3	Flooding	Yes	Yes	Yes
1.8	Pandemic Response Plan	Cottey College	Low	Goal 1	Pandemic	No	Yes	No
2.1	Drought Planning	Cottey College	Low	Goal 2	Drought	Yes	Yes	No
3.5	Vulnerability Assessment	Cottey College	Low	Goal 3	Wildfires	Yes	Yes	No
2.1	Drainage Issues	Sheldon	Low	Goal 2	Flooding	Yes	Yes	No
2.2	Water Supply Monitoring	Sheldon	Medium	Goal 2	Drought	Yes	Yes	No
3.2	NFIP Compliance	Nevada	High	Goal 3	Flooding	Yes	Yes	Yes
3.2	Wildfire Maintenance Program	Sheldon	High	Goal 3	Wildfires	Yes	Yes	No
<b>Structure and Infrastructure Projects</b>								
1.1	Drainage Improvements	Vernon County	High	Goal 1	Flooding	Yes	Yes	No
4.1	Courthouse Generator	Vernon County	High	Goal 4	Severe Winter Weather, Severe Weather, Extreme Temperatures	Yes	Yes	No
1.3	Winter Street Preparation	Bronaugh	High	Goal 1	Severe Winter Weather	Yes	Yes	No
1.4	Tornado Warning System	Bronaugh	High	Goal 1	Tornadoes	Yes	Yes	No
1.7	Safe Room	Cottey College	Medium	Goal 1	Tornadoes	Yes	Yes	No
3.2	Building Assessment	Cottey College	Low	Goal 3	Earthquakes	Yes	Yes	No
3.3	Roof Replacement	Cottey College	Medium	Goal 3	Severe Weather	Yes	Yes	No
1.1	Campus Safe Room	Crowder College	High	Goal 1	Tornadoes	No	Yes	No
1.1	Storm Siren Replacement and Additions	Nevada	High	Goal 1	Tornadoes	Yes	Yes	No

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
1.2	Storm Shelter	Bronaugh R-VII	High	Goal 1	Extreme Temperatures, Severe Winter Weather, Tornadoes	No	Yes	No
1.2	Storm Shelter	Nevada R-V	High	Goal 1	Extreme Temperatures, Severe Winter Weather, Tornadoes	No	Yes	No
1.2	Storm Shelter	Northeast Vernon County R-I	High	Goal 1	Extreme Temperatures, Severe Winter Weather, Tornadoes	No	Yes	No
1.2	Storm Shelter	Sheldon R-VIII	High	Goal 1	Extreme Temperatures, Severe Winter Weather, Tornadoes	No	Yes	No
2.4	Communication Upgrades	Bronaugh	High	Goal 2	Severe Weather	Yes	Yes	No
2.4	Lightning Damage Protection	Sheldon	Medium	Goal 2	Severe Weather	Yes	Yes	No
3.1	Drainage Improvements	Bronaugh	High	Goal 3	Flooding	Yes	Yes	No

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
3.1	Emergency Operations Center	Nevada	High	Goal 3	Flooding (Riverine and Flash) Dam Failure Earthquakes Drought Extreme Temperatures Severe Thunderstorms Severe Winter Weather Tornadoes Wildfires Pandemic	Yes	Yes	No
3.1	Storm and Flood Drainage	Schell City	High	Goal 3	Flooding	Yes	Yes	No
4.3	Deep Water Well Monitoring	Nevada	High	Goal 4	Drought	Yes	Yes	No
<b>Natural Systems Protection</b>								
3.1	Clearing of Roadway ROWs	Vernon County	High	Goal 3	Severe Weather	Yes	Yes	No
3.4	Tree Trimming	Cotley College	Low	Goal 3	Severe Weather	Yes	Yes	No
2.1	Tree Trimming	Nevada	High	Goal 2	Severe Winter Weather	Yes	Yes	No
4.2	Walton Lake Project	Nevada	High	Goal 4	Flooding	Yes	Yes	No

**Emergency Services**

2.1	Vernon County EOC	Vernon County	High	Goal 2	Flooding (Riverine and Flash) Dam Failure Earthquakes Drought Extreme Temperatures Severe Thunderstorms Severe Winter Weather Tornadoes Wildfires Pandemic	Yes	Yes	No
1.5	Snow/Ice Removal Equipment	Cottey College	Medium	Goal 1	Severe Winter Weather	Yes	Yes	No
1.6	Emergency Notification System	Cottey College	Medium	Goal 1	Tornadoes	Yes	Yes	No
2.1	Communications Upgrades	Crowder College	High	Goal 2	Flooding (Riverine and Flash) Dam Failure Earthquakes Drought Extreme Temperatures Severe Thunderstorms Severe Winter Weather Tornadoes Wildfires Pandemic	Yes	Yes	No
1.1	Heating and Cooling Shelter	Sheldon	High	Goal 1	Extreme Temperatures	Yes	Yes	No

1.1	Local Emergency Alert System	Schell City	High	Goal 1	Earthquakes, Extreme Temperatures, Severe Weather, Severe Winter Weather, Tornadoes, Dam Failure, Pandemics, Drought	Yes	Yes	No
2.1	Communication Equipment Upgrades	Schell City	High	Goal 2	Wildfires	Yes	Yes	No
4.1	911 Addressing	Nevada	High	Goal 4	Severe Winter Weather	Yes	Yes	No
<b>Education and Awareness Programs</b>								
1.6	Contagious Disease Education	Bronaugh	Medium	Goal 1	Pandemics	No	No	No
1.1	Transportation Updates	Bronaugh R-VII	Low	Goal 1	Flooding	No	No	No
1.3	Education and School Plan	Bronaugh R-VII	Low	Goal 1	Pandemics	No	No	No
1.1	Travel Safety Program	Cottey College	Medium	Goal 1	Flooding	Yes	Yes	No
1.2	Travel Safety Program	Cottey College	Medium	Goal 1	Dam Failure	Yes	Yes	No
1.3	Earthquake Awareness and Safety	Cottey College	Medium	Goal 1	Earthquakes	Yes	Yes	No
1.4	Extreme Temperature Safety	Cottey College	Low	Goal 1	Extreme Temperatures	Yes	Yes	No
3.1	Flooding Safety Program	Cottey College	Medium	Goal 3	Flooding	Yes	Yes	No
4.1	Disaster Drills	Crowder College	High	Goal 4	Severe Weather. Earthquakes. Tornadoes	Yes	Yes	No
1.1	Earthquake Education	Missouri Welding Institute	Medium	Goal 1	Earthquakes	Yes	Yes	No
1.2	Tornado Education	Missouri Welding Institute	High	Goal 1	Tornadoes	Yes	Yes	No
1.3	Severe Winter Weather Education	Missouri Welding Institute	Medium	Goal 1	Severe Winter Weather	Yes	Yes	No
1.4	Extreme Temperature Education	Missouri Welding Institute	High	Goal 1	Extreme Temperatures	No	No	No
1.5	Pandemic Education	Missouri Welding Institute	High	Goal 1	Pandemics	No	No	No

1.1	Transportation Updates	Nevada R-V	Low	Goal 1	Flooding	No	No	No
1.3	Education and School Plan	Nevada R-V	Low	Goal 1	Pandemics	No	No	No
1.1	Transportation Updates	Northeast Vernon County R-I	Low	Goal 1	Flooding	No	No	No
1.3	Education and School Plan	Northeast Vernon County R-I	Low	Goal 1	Pandemics	No	No	No
1.2	Earthquake Education Program	Sheldon	Low	Goal 1	Earthquakes	Yes	Yes	No
1.3	Tornado Awareness Program	Sheldon	High	Goal 1	Tornadoes	Yes	Yes	No
1.4	Household Disaster Mitigation Program	Sheldon	Medium	Goal 1	Severe Winter Weather	Yes	Yes	No
1.1	Transportation Updates	Sheldon R-VIII	Low	Goal 1	Flooding	No	No	No
1.3	Education and School Plan	Sheldon R-VIII	Low	Goal 1	Pandemics	No	No	No
2.1	Earthquake Informational Meetings	Bronaugh	Medium	Goal 2	Earthquakes	Yes	Yes	No
2.2	Dam Failure Education	Bronaugh	Medium	Goal 2	Dam Failure	Yes	Yes	No
2.3	Lightning Damage Education	Bronaugh	High	Goal 2	Severe Weather	Yes	Yes	No
2.3	Employee Pandemic Education Program	Sheldon	Low	Goal 2	Pandemics	No	No	No
3.1	Earthquake Education	Bronaugh R-VII	Low	Goal 3	Earthquakes	Yes	Yes	No
3.2	Dam Failure Education	Bronaugh R-VII	Low	Goal 3	Dam Failure	Yes	Yes	No
3.3	Wildfire Education	Bronaugh R-VII	Medium	Goal 3	Wildfires	Yes	Yes	No
3.1	Wildfire Education	Missouri Welding Institute	Medium	Goal 3	Wildfires	Yes	Yes	No
3.2	Dam Failure Education	Missouri Welding Institute	Medium	Goal 3	Dam Failure	Yes	Yes	No
3.3	Flooding Education and Transportation Plans	Missouri Welding Institute	Medium	Goal 3	Flooding	Yes	Yes	No
3.4	Severe Thunderstorm Education	Missouri Welding Institute	Medium	Goal 3	Severe Weather	Yes	Yes	No
3.1	Earthquake Education	Nevada R-V	High	Goal 3	Earthquake	Yes	Yes	No
3.2	Dam Failure Education	Nevada R-V	Medium	Goal 3	Dam Failure	Yes	Yes	No
3.3	Wildfire Education	Nevada R-V	Low	Goal 3	Wildfires	Yes	Yes	No
3.1	Earthquake Education	Northeast Vernon County R-I	Medium	Goal 3	Earthquakes	Yes	Yes	No

3.2	Dam Failure Education	Northeast Vernon County R-I	Medium	Goal 3	Dam Failure	Yes	Yes	No
3.3	Wildfire Education	Northeast Vernon County R-I	High	Goal 3	Wildfires	Yes	Yes	No
3.1	Severe Thunderstorm Awareness Program	Sheldon	Low	Goal 3	Severe Weather	Yes	Yes	No
3.3	Dam Failure Education	Sheldon	Low	Goal 3	Dam Failure	Yes	Yes	No
3.1	Earthquake Education	Sheldon R-VIII	Medium	Goal 3	Earthquakes	Yes	Yes	No
3.2	Dam Failure Education	Sheldon R-VIII	Medium	Goal 3	Dam Failure	Yes	Yes	No
3.3	Wildfire Education	Sheldon R-VIII	High	Goal 3	Wildfires	Yes	Yes	No
4.3	Wildland Fire Reduction	Nevada	High	Goal 4	Wildfires	Yes	Yes	No
4.4	Pandemic Education	Nevada	High	Goal 4	Pandemics	No	No	No
4.5	Dam Failure Education	Nevada	High	Goal 4	Dam Failure	Yes	Yes	No
4.1	Disaster Drills	Schell City	High	Goal 4	Severe Weather. Earthquakes. Tornadoes	Yes	Yes	No
4.1	Drought Education	Bronaugh R-VII	Medium	Goal 4	Drought	Yes	Yes	No
4.1	Drought Education	Missouri Welding Institute	Medium	Goal 4	Drought	Yes	Yes	No
4.1	Drought Education	Nevada R-V	Medium	Goal 4	Drought	Yes	Yes	No
4.1	Drought Education	Northeast Vernon County R-I	Medium	Goal 4	Drought	Yes	Yes	No
4.1	Drought Education	Sheldon R-VIII	Medium	Goal 4	Drought	Yes	Yes	No

# 5 PLAN MAINTENANCE PROCESS

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<b>5 PLAN MAINTENANCE PROCESS</b> .....	<b>5.1</b>
<b>5.1 Monitoring, Evaluating, and Updating the Plan</b> .....	<b>5.1</b>
<b>5.1.1 Responsibility for Plan Maintenance</b> .....	<b>5.1</b>
<b>5.1.2 Plan Maintenance Schedule</b> .....	<b>5.1</b>
<b>5.1.3 Plan Maintenance Process</b> .....	<b>5.2</b>
<b>5.2 Incorporation into Existing Planning Mechanisms</b> .....	<b>5.3</b>
<b>5.3 Continued Public Involvement</b> .....	<b>5.7</b>

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<sup>10(a)</sup>

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

### 5.1.1 Responsibility for Plan Maintenance

The (MPC or other designated responsible entity) is an advisory body and can only make recommendations to county, city, town, or district elected officials. Its primary duty is to see the plan successfully carried out and to report to the community governing boards and the public on the status of plan implementation and mitigation opportunities<sup>10(a)</sup>. 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 (or other designated responsible entity) agrees to meet annually<sup>10(b)</sup> and after a state or federally declared hazard event as appropriate to monitor progress and update the mitigation strategy. The Vernon County Emergency Management Director will be responsible for initiating the plan reviews and will invite members of the MPC (or other designated responsible entity) to the meeting.

In coordination with all participating jurisdictions, the Emergency Management Director will be responsible for initiating a five-year written update of the plan to be submitted to the Missouri State Emergency Management Agency (SEMA) and FEMA Region VII per Requirement §201.6(c)(4)(i) of the Disaster Mitigation Act of 2000, unless disaster or other circumstances (e.g., changing regulations) require a change to this schedule.

### 5.1.3 Plan Maintenance Process

Progress on the proposed actions can be monitored by evaluating changes in vulnerabilities identified in the plan. The MPC during the annual<sup>10(b)</sup> meeting should review changes in vulnerability identified as follows:

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

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

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

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

- Each proposed action in the plan identified an individual, office, or agency responsible for action implementation. This entity will track and report on an annual<sup>10(b)</sup> basis to the jurisdictional MPC (or designated responsible entity) member on action status. The entity will provide input on whether the action as implemented meets the defined objectives and is likely to be successful in reducing risk.
- If the action does not meet identified objectives, the jurisdictional MPC (or designated responsible entity) member will determine necessary remedial action, making any required modifications to the plan.

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

## 5.2 Incorporation into Existing Planning Mechanisms

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

Where possible, plan participants, including school and special districts, will use existing plans and/or programs to implement hazard mitigation actions. Those existing plans and programs were described in **Section 2.2** of this plan. Based on the capability assessments of the participating jurisdictions, communities in Vernon 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;
- Vernon 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<sup>10(b)</sup> review of the Hazard Mitigation Plan, the County “A” Emergency Management Director will provide the updated Mitigation Strategy with current status of each mitigation action to the County Commission as well as all Mayors, City Clerks, and School District Superintendents<sup>10(a)</sup>. The Emergency Manager Director will request that the mitigation strategy be incorporated, where appropriate, in other planning mechanisms.

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

**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
Vernon County	<ul style="list-style-type: none"> <li>• County Emergency Operations Plan (2021)</li> <li>• County Debris Management Plan</li> </ul>	<p>The County's emergency operations plan and recovery plan allow for sufficient response and recovery operations throughout the county and should ideally let them mitigate risks and hazards.</p>	<p>Vernon County will update their emergency operations plan to coincide with the new hazard mitigation plan and reach out to surrounding agencies if they have any outstanding resource requests.</p>
Bronaugh	<ul style="list-style-type: none"> <li>• Local Transportation Plan</li> </ul>	<p>Bronaugh's local transportation plan allows for smooth daily operations at the municipal level and should continue to serve the community well.</p>	<p>Engaging the public will be key to maintaining up-to-date plans in Bronaugh and keeping everyone safe during crises and disasters.</p>
Nevada	<ul style="list-style-type: none"> <li>• Local Comprehensive Plan (1984)</li> <li>• Local Capital Improvement Plan (2023)</li> <li>• Local Emergency Operations Plan (2019)</li> <li>• Local Mitigation Plan (2018)</li> <li>• Local Debris Management Plan (2022)</li> <li>• Local Economic Development Plan (2016)</li> <li>• Flood Mitigation Assistance Plan</li> </ul>	<p>Clinton's many vast plans allow for smooth daily operations at the municipal level and should continue to serve the community well.</p>	<p>Engaging the public will be key to maintaining up-to-date plans in Nevada and keeping everyone safe during crises and disasters.</p>

Schell City	<ul style="list-style-type: none"> <li>Local Emergency Operations Plan</li> </ul>	Schell City's local emergency operations plan allows for smooth daily operations at the municipal level and should continue to serve the community well.	Engaging the public will be key to maintaining up-to-date plans in Schell City and keeping everyone safe during crises and disasters.
Sheldon	<ul style="list-style-type: none"> <li>Local Mitigation Plan</li> </ul>	Sheldon's local mitigation plan allows for smooth daily operations at the municipal level and should continue to serve the community well.	Engaging the public will be key to maintaining up-to-date plans in Sheldon and keeping everyone safe during crises and disasters.
Bronaugh R-VII	<ul style="list-style-type: none"> <li>School Master Plan (2023)</li> <li>School Capital Improvement Plan (2023)</li> <li>School Emergency Plan (2023)</li> <li>School Weapons Policy (2023)</li> </ul>	Bronaugh School's resources gives the district peace of mind for safely and securely holding school on a daily basis and should allow them to continue this even if disrupted for a little bit.	Formal adoption of the final FEMA-approved plan took place at the end of the school year in preparation for next school year.
Cotley College	<ul style="list-style-type: none"> <li>Campus Master Plan (2019)</li> <li>Campus Emergency Plan (2023)</li> <li>Campus Weapons Policy (2023)</li> </ul>	Cotley College's resources gives the campus peace of mind for safely and securely holding school on a daily basis and should allow for them to continue this even if disrupted for a little bit.	Formal adoption of the final FEMA-approved plan took place at the end of the school year in preparation for next school year.
Crowder College	<ul style="list-style-type: none"> <li>Campus Emergency Plan (2015)</li> <li>Campus Weapons Policy (2022)</li> </ul>	Crowder College's resources gives the campus peace of mind for safely and securely holding school on a daily basis and should allow for them to continue this even if disrupted for a little bit.	Formal adoption of the final FEMA-approved plan took place at the end of the school year in preparation for next school year.

Missouri Welding Institute	<ul style="list-style-type: none"> <li>• Campus Emergency Plan</li> <li>• Campus Weapons Policy</li> </ul>	Missouri Welding Institute's resources gives the district peace of mind for safely and securely holding school on a daily basis and should allow for them to continue this even if disrupted for a little bit.	Formal adoption of the final FEMA-approved plan took place at the end of the school year in preparation for next school year.
Nevada R-V	<ul style="list-style-type: none"> <li>• School Master Plan</li> <li>• School Capital Improvement Plan</li> <li>• School Emergency Plan</li> <li>• School Weapons Policy</li> </ul>	Nevada School's resources gives the district peace of mind for safely and securely holding school on a daily basis and should allow for them to continue this even if disrupted for a little bit.	Formal adoption of the final FEMA-approved plan took place at the end of the school year in preparation for next school year.
Northeast Vernon County R-I	<ul style="list-style-type: none"> <li>• School Master Plan (2023)</li> <li>• School Emergency Plan (2023)</li> <li>• School Weapons Policy (2023)</li> </ul>	Northeast Vernon County School District resources gives the district peace of mind for safely and securely holding school on a daily basis and should allow for them to continue this even if disrupted for a little bit.	Formal adoption of the final FEMA-approved plan took place at the end of the school year in preparation for next school year.
Sheldon R-VIII	<ul style="list-style-type: none"> <li>• School Master Plan (2023)</li> <li>• School Emergency Plan (2023)</li> <li>• School Weapons Policy (2023)</li> </ul>	Sheldon School's resources gives the district peace of mind for safely and securely holding school on a daily basis and should allow for them to continue this even if disrupted for a little bit.	Formal adoption of the final FEMA-approved plan took place at the end of the school year in preparation for next school year.

## 5.3 Continued Public Involvement

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**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<sup>10(b)</sup> reviews will be posted in the local newspaper, as well as, on the Vernon County website following each annual<sup>10(b)</sup> review of the mitigation plan<sup>10(a)</sup> and will solicit comments from the public based on the annual review. When the MPC reconvenes for the five-year update, it will coordinate with all stakeholders participating in the planning process. Included in this group will be those who joined the MPC after the initial effort, to update and revise the plan. Public notice will be posted, and public participation will be actively solicited, at a minimum, through available website postings and press releases to local media outlets, primarily newspapers.

## **Appendix A: References**

Fujita, T. T. (1971). *Proposed Characterization Of Tornadoes And Hurricanes By Area And Intensity* (No. NASA-CR-125545).

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**Appendix B:  
Meeting Sign-In Sheets**

**VERNON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE  
TOWNSHIP PLANNING MEETING—SIGN-IN SHEET**

**Project:** Vernon County, Missouri  
Multi-Jurisdictional Hazard Mitigation Plan Update  
**Facilitator:** Dillon Harness – Disaster Recovery Coordinator  
Kaysinger Basin Regional Planning Commission

**Meeting Date/Time:** 13 March 2023  
5:00PM  
**Place/Room:** Vernon County Fairgrounds, Centennial Hall  
1488 E. Ashland St., Nevada, MO 64772

Name	Title	Department/Agency	Email	Phone #	Signature	Miles Driven
Cassie Hogan	Clerk	Diner	Cassie.hogan@ymail.com	417-1084-1876		14
Bo Phillips	Treasurer	Richland	Phillipsbo@outlook.com	417-447-1526		15
Caroline Phillips	Clerk	Richland	"	417-321-3589		15
Mike Reasoner	Board and Bridge	Vernon County	"	417-664-5204		14
Hevin Siddani	Taxite	Badger	Hevin.Siddani@MyinMarketingLLC.com	417-835-0878		7
Gracie Parrish	Clerk	Montana	gracie330@yahoo.com	417-246-0237		30
Jeffrey Parrish	Board member	Northville	"	417-296-1263		30
Grant Wood	VCC		"	417-321-6996		17
Frank Wilson	Trustee	Deerfield	frankw@netmail.com	417-667-1600		13
Jeani Longsteth	Clerk	Deerfield	jeanilongsteth@gmail.com	"		13
Mart Assago	Board member	Deerfield	M.H.Assago, Jr@gmail.com	"		11

**VERNON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE  
TOWNSHIP PLANNING MEETING—SIGN-IN SHEET**

**Project:** Vernon County, Missouri  
Multi-Jurisdictional Hazard Mitigation Plan Update

**Facilitator:** Dillon Harless – Disaster Recovery Coordinator  
Kaysinger Basin Regional Planning Commission

**Meeting Date/Time:** 13 March 2023  
5:00PM

**Place/Room:** Vernon County Fairgrounds, Centennial Hall  
1488 E. Ashland St., Nevada, MO 64772

Name	Title	Department/Agency	Email	Phone #	Signature	Miles Driven
David E. Barnes	Board Member	Henry Twp		417-927-3345		25
Harry H. Clark	Trustee	Henry Twp		816-524-3075		26



**VERNON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE  
TOWNSHIP PLANNING MEETING—SIGN-IN SHEET**

**Project:** Vernon County, Missouri  
Multi-Jurisdictional Hazard Mitigation Plan Update

**Facilitator:** Dillon Harness – Disaster Recovery Coordinator  
Kaysinger Basin Regional Planning Commission

**Meeting Date/Time:** 13 March 2023  
5:00PM

**Place/Room:** Vernon County Fairgrounds, Centennial Hall  
1488 E. Ashland St., Nevada, MO 64772

Name	Title	Department/Agency	Email	Phone #	Signature	Miles Driven
- JEFF BOWEN	Board member	Washington Twp	JEFF.BOWEN@ymail.com	417-549-6610		10
- Debbie Allen	Trustee	Washington Twp	rdallen1@yahoo.com	256-440-9985		3
- Dennis Rimmer	Clerk	Washington Twp	Dennis.Rimmer@gmail.com	417-448-7968		4
- Randy Allen	Board member	Washington Twp	rdallen1@yahoo.com	256-440-9985		3
- Sory Lafley	Clerk	Harrison	laflemj@yahoo.com	417-922-2440		14
- Samuel S. Bount	Trustee	Harrison		417-228-1611		25

**VERNON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE  
TOWNSHIP PLANNING MEETING—SIGN-IN SHEET**

**Project:** Vernon County, Missouri  
Multi-Jurisdictional Hazard Mitigation Plan Update

**Facilitator:** Dillon Harness – Disaster Recovery Coordinator  
Kaysinger Basin Regional Planning Commission

**Meeting Date/Time:** 13 March 2023  
5:00PM

**Place/Room:** Vernon County Fairgrounds, Centennial Hall  
1488 E. Ashland St., Nevada, MO 64472

Name	Title	Department/Agency	Email	Phone #	Signature	Miles Driven
Charles Comsted	Trustee	Coal Towns.		417-321-2286		15
Natalie Kismiller	President/ Boardmember	Coal Township		417-321-1343		20
Glenn Wolf	Clark	Coal Township		620-224-0632		20
Andrew Johnson	operator	Coal Feasibility		620-224-6572		20

**VERNON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE  
TOWNSHIP PLANNING MEETING—SIGN-IN SHEET**

**Project:** Vernon County, Missouri Multi-Jurisdictional Hazard Mitigation Plan Update  
**Facilitator:** Dillon Harness – Disaster Recovery Coordinator  
 Kaysinger Basin Regional Planning Commission

**Meeting Date/Time:** 13 March 2023 5:00PM  
**Place/Room:** Vernon County Fairgrounds, Centennial Hall  
 1488 E. Ashland St., Nevada, MO 64772

Name	Title	Department/Agency	Email	Phone #	Signature	Miles Driven
David Duggan	Member	Recreation	oldigsus1964@gs.net	417-321-4357		15
Kevin Ray	Dept	Water	dkrc@rcsd.kansascity.mo.gov	417-684-7882		4
Tammie Ray	Pres.	Walker	t.ray2004@yahoo.com	417-684-2882		4
Shelly Cullberg	Trustee	Walker	shellyc@secondharvest.com	417-448-4098		4
Clay Lyons	Trustee	OSAGE	N/A	N/A		20x2
Reid Noeline	Board Member	Lake trap	reid.noeline@icour.com	417-437-1507		18
Tim Forkner	Trustee	Lake	tf11@kintel.net			18

**VERNON COUNTY MULTIJURISDICTIONAL HAZARD MITIGATION PLAN UPDATE  
KICKOFF MEETING SIGN-IN SHEET**

Project:		Meeting Date/Time:				
Vernon County, Missouri Multi-Jurisdictional Hazard Mitigation Plan Update		6 September 2023				
Facilitator:		Place/Room:				
Dillon Hartness - Regional Planner Kaysinger Basin Regional Planning Commission		Centennial Hall - Vernon County Fairgrounds 1500 E Ashland St, Nevada, MO 64772				
Name	Title	Department/Agency	Email	Phone #	Signature	Miles Driven Round-trip
Beth Sandness	Superintendent	Branch R-7	bsandness@brnough.k12.mo.us	417-922-3511		24
Jessica Sunkler	Executive Director	Nevada/Vernon County Chamber	chamber1@nevada-mo.com	417-667-5300		4
JOE WILSON	COMMISSIONER	V.C.	—	816-804-0915		4
Chris Holcomb	NEVE SUPERINTENDENT	NEVE R-1 School District	cholcomb@neve.k12.mo.us	417-465-2221		16
Everett Wolfe	Seuthern Commissioner	Vernon County	Doesn't Have one	331-6457		28
Dick White	EMD	Vernon County	r.floyd@vernoncounty.mo.org	417-448-9392		28
Roger Floyd	Asst. Director	Vernon County Ambulance Dist	r.floyd@vernoncountyambulance.org	417-667-5079		2
Tary Denney	Fire Chief	Nevada Fire Department	tdenney@nevadafire.org	(417) 448-5105		1
Casey Crain	Police Chief	City of Nevada Police Department	ccrain@nevadamo.gov	417-448-5100		2
Janifer Whiteside	EHS Manager	3M	janifer.whiteside@3m.com	417-883-0295		2

**PLEASE PRINT NAME LEGIBLY, THANK YOU!**

**VERNON COUNTY MULTIJURISDICTIONAL HAZARD MITIGATION PLAN UPDATE  
KICKOFF MEETING SIGN-IN SHEET**

<b>Project:</b> Vernon County, Missouri Multi-Jurisdictional Hazard Mitigation Plan Update		<b>Meeting Date/Time:</b> 6 September 2023				
<b>Facilitator:</b> Dillon Harness - Regional Planner Keysinger Basin Regional Planning Commission		<b>Place/Room:</b> Centennial Hall - Vernon County Fairgrounds 1500 E Ashland St, Nevada, MO 64772				
<b>Name</b>	<b>Title</b>	<b>Department/Agency</b>	<b>Email</b>	<b>Phone #</b>	<b>Signature</b>	<b>Miles Driven Round-trip</b>
Mark West	Cowder Newman Director	Cowder	markwest@pender.ed	417 667 0518		6
Jason Irwin	Superintendent	Sheldon R-8	irwin@shelbva.k12.mo.us	417-498-4031		30
Tyson Beshore	Superintendent	Nevada R-5	tysonbeshore@nevada.k12.mo.us	417-684-1141		2
TODD HERTER	Plant Director	Cortez Courese	therterc@city.edm	417 684 4244		3
Natasha Carnum	Director's Assistant	MWI	natasha.carnum@mwimissouri.com	417-667-5555		2
Jerald Hembree	Vice President	MWI	gerald.hembree@mwimissouri.com	417-820-8816		2
Cindy Thompson	Associate Commissioner	Vernon County Commissioner	vernonty@com.vernonty.mo.org	417-448-2505		4

**PLEASE PRINT NAME LEGIBLY, THANK YOU!**



**VERNON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE  
MEETING #2—SIGN-IN SHEET**

**Project:** Vernon County, Missouri Multi-jurisdictional Hazard Mitigation Plan Update  
**Facilitator:** Dillon Harness, Regional Planner  
 Kaysinger Basin Regional Planning Commission  
**Meeting Date/Time:** October 11th, 2023 1:00 PM  
**Place/Room:** Vernon County Fairgrounds; Centennial Hall  
 1500 E Ashland St, Nevada, MO 64772

Name	Title	Department/Agency	Email	Phone #	Signature	Miles Traveled
Christy Webb	Southern Commissioner	County Commissioner	Don't Have One	417-321- 6451		40
Chris Holcomb	NECV School Superintendent	NEVC R-1 School District	cholcomb@nevc.k12.mo.us	417-998- 7616		15
Beth Sandness	Branch Superintendent	Branch R-7 Schools	bsandness@ branch.k12.mo.us	417-922- 3211		15 830
MURKIN MEIER	Mayor of BRANNAUGH	CITY OF BRANNAUGH	CITY@BRANNAUGH. MO.GOV	636-235- 1526		30
TODD HEFNER	PHYSICAL PLANT DIRECTOR	COTTEY COLLEGE	thefner@ cottey.edu	417- 684-4214		5
Jon Paul	Maintenance <del>Director</del>	Crowder College	jonpaul@crowder.edu	417- 455-6308		154.0
Tyson Beskore	Nevada Supt.	Nevada R-5 School District	Hobstorn@nevada.k12. mo.us	417-684- 1141		3
Jason Irwin	Skelton Supt	Skelton R-8 School District	Jirwin@skelton.k12. mo.us	417-448- 4031		28
Troy Denny	Fire Chief	City of Nuzale	tdenny@nuzalemo.gov	(417)448-5105		3
Natasha Carney	Director's Assistant	Missouri Welding District	Natasha.Carney@ missouriwelding. districte.com	417-310-3761		2



**VERNON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE  
MEETING #3—SIGN-IN SHEET**

Project: <del>Henry County, Missouri</del> Multi-Jurisdictional Hazard Mitigation Plan Update			Meeting Date/Time: November 8th, 2023 - 1:00 P.M.			
Facilitator: Dillon Harness - Regional Planner Kaysinger Basin Regional Planning Commission			Place/Room: Centennial Hall - Vernon County Fairgrounds 1500 E Ashland St., Nevada, MO 64772			
Name	Title	Department/Agency	Email	Phone #	Signature	Miles Driven
Cindy Thompson	Commissioner	VA	commissioner@vernoncountymo.org	816-807-9047		4
Becky Morgan	Mayor	City of Sheldon	cityofsheldon@gmail.com	417-884-2621		13
Natasha Carney	Deputy Assistant	MU1	Natasha.Carney@missouriwestern.edu	417-310-3741		4
Beth Sandness	Superintendent	Bronaugh R7	b.sandness@bronaugh.k12.mo.us	417-982-3811		30
Laura Meier	Mayor	City of Brookfield	lmeier@brookfieldmo.com	681-235-1520		36
Ervin Lee	City Clerk	City of Schell City	city065@centurytel.net	417-438-3222		25
TODD HEFNER	Physician PLANT DR.	COTTEY COLLEGE	thefner@cottey.edu	417-684-4244		5
Tyson Beskore	Superintendent	Nevada R-5	theshore@nevada.k12.mo.us	417-684-1141		5
Jason Trwin	Superintendent	Sheldon R-8	jtrwin@sheldon.k12.mo.us	417-448-4031		26
Troy Dunning	Fire Chief	Nevada Northeast Vernon County R-1	tdunning@nevadamo.gov	(417)448-5105		3
Chris Holcomb	Superintendent		cholcomb@nevadamo.gov	417-465-2221		25

PLEASE PRINT NAME LEGIBLY... THANK YOU ☺



**Appendix C:  
Planning Process Documentation**



22 August 2023

Dear stakeholders and residents of Vernon County,

Vernon County and many of its entities within the county participate in a Natural Hazard Mitigation Plan (NHMP). The purpose of the Natural Hazard Mitigation Plan is to identify all costs and hazards associated with natural disasters. This plan opens opportunities to become eligible for funding from the Federal Emergency Management Agency both before and after a disaster event impacts your community. This plan is updated on a five-year annual basis, and the last plan for Vernon County was updated and approved on September 12<sup>th</sup>, 2019.

The NHMP for Vernon County is designed to assist communities, school districts, and other entities to become more resilient towards natural hazards and make the most effective mitigation decisions before a disaster strikes.

Kaysinger Basin Regional Planning Commission, in collaboration with the Vernon County Commission, will be hosting a kickoff meeting to start the planning process on **September 6<sup>th</sup> at the Centennial Hall at the Vernon County Fairgrounds located at 1500 E Ashland St, Nevada, MO 64772 from 1:00 PM until approximately 4:00 PM.** For this first meeting, we will discuss the significance of this plan, steps to ensure participation requirements are met, a discussion of natural hazards, and the data collection process.

**The following entities are encouraged to attend: City and Village Clerks, Emergency Management Staff, City/Village Staff, City Administrators, Superintendents of Schools, Representatives from other Educational Institutions, Major Employers such as 3M and Walmart, Chamber of Commerce Director, Red Cross Representatives, Floodplain Management, First Responders, Public Works Directors, and anyone else you feel has an important role to play in improving resilience to pertinent natural hazards in your community.** We encourage everyone to be part of the planning process so as to create the most comprehensive, far-reaching plan for Vernon County.

**Please remember that to be eligible for funding from FEMA and the state for mitigation projects, participation is mandatory.**

If you have any questions or would like to speak to me about this project, please feel free to reach out to me, I can meet with you either by phone or in person. I am available by phone at (660) 885-3393 or by email at [dharness@kaysinger.com](mailto:dharness@kaysinger.com). You may also contact the Vernon County Commission, who can get ahold of me if needed.

Sincerely,

A handwritten signature in black ink that reads "Dillon J. Harness".

Dillon J. Harness  
Regional Planner

221 NORTH 2ND STREET | CLINTON, MISSOURI | KAYSINGER.COM | 660.885.3393



Dillon Harness <dharness@kaysinger.com>

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## Friendly Reminder - Vernon County Hazard Mitigation Plan Meeting

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Dillon Harness <dharness@kaysinger.com>

Thu, Oct 5, 2023 at 9:19 AM

To: commission@vernoncountymo.org, Derik White <vcemd@vernoncountymo.org>, Troy Denney <tddenney@nevadamo.gov>, Tyson Beshore <tbeshore@nevada.k12.mo.us>, Monte Padgett <MontePadgett@crowder.edu>, Beth Sandness <bsandness@bronaugh.k12.mo.us>, Chris Holcomb <cholcomb@nevc.k12.mo.us>, Jason Irwin <jirwin@sheldon.k12.mo.us>, Natasha Carney <natasha.carney@missouriweldinginstitute.com>, thefner@cottey.edu, deerfieldmovillage@yahoo.com, City of Bronaugh <cityofbronaugh@gmail.com>, Sherry Brown <sbrown8930@gmail.com>, jerad.hembree@missouriweldinginstitute.com, cityofsheldon@gmail.com, cpst\_3@yahoo.com, city065@centurytel.net, pbott81@gmail.com, steve.dumell@lpha.dhss.mo.gov, villageofmetzmo@gmail.com, r.floyd@vernoncountymbalancedistrict.com

Good morning all,

I just want to remind you of our upcoming Vernon County Hazard Mitigation Planning meeting that will take place next **Wednesday, October 11th at 1 p.m.** in Nevada at Centennial Hall at the Vernon County Fairgrounds. Some of you may be receiving an email like this from me for the first time, my sincere apologies if you have not heard from me but want to be part of this planning process. If you are getting this notice from me for the first time, I will take time at the meeting to catch up with anyone who has not talked to me about this new plan, and then we will all be on the same page. Your participation means the opportunity to be eligible for FEMA money after a disaster.

The purpose of this meeting is to review the risk assessment that is in progress and then to develop new mitigation goals. This guides the direction for the plan and leads into the mitigation actions, which will be the focus of the third meeting we have later.

Please feel free to invite additional stakeholders from throughout Vernon County, including villages that I do not have contact information for, nonprofit representatives (such as the United Way), first responders, planning and zoning, housing, floodplain management, etc.

If you have any questions, please feel free to contact me by phone at (660) 885-3393 or email at any time leading up to the 11th, otherwise, I will see everyone at Centennial Hall on Wednesday.

Have a great day,  
Dillon Harness

—



**Dillon J. Harness**  
Regional Planner

Office Phone: 660.885.3393 x15

Cell: 636.484.3468

[www.kaysinger.com](http://www.kaysinger.com)

*"Progress is the law of life."*

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## Friendly Reminder - Vernon County HMP Meeting #3 (Long Email)

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Dillon Harness <dharness@kaysinger.com>

Wed, Nov 1, 2023 at 4:13 PM

To: commission@vernoncountymo.org, Derik White <vcemd@vernoncountymo.org>, Troy Denney <tdenney@nevadamo.gov>, Tyson Beshore <tbeshore@nevada.k12.mo.us>, Monte Padgett <MontePadgett@crowder.edu>, Beth Sandness <bsandness@bronaugh.k12.mo.us>, Chris Holcomb <cholcomb@nevc.k12.mo.us>, jerad.hembree@missouriweldinginstitute.com, Jason Irwin <jirwin@sheldon.k12.mo.us>, Natasha Carney <natasha.carney@missouriweldinginstitute.com>, Todd Hefner <thefner@cottey.edu>, TJ Angel <tjangel@crowder.edu>, Erin Lee <city065@centurytel.net>, City of Bronaugh <cityofbronaugh@gmail.com>, villageofmetzmo@gmail.com, deerfieldmovillage@yahoo.com, cityofsheldon@gmail.com, Chris Gaut <chris.gaut@sema.dps.mo.gov>, Sherry Brown <sbrown8930@gmail.com>

Good afternoon constituents of Vernon County,

This is a friendly reminder that we have our **third and final hazard mitigation planning meeting** for the county, its schools, and its communities coming up on **November 8th at 1:00 p.m.** in Nevada at Centennial Hall at the Vernon County Fairgrounds. Many of you have not submitted mitigation action status reports to me, I need those as soon as possible. Only a few entities are missing a data collection questionnaire, so if you need one or need to turn it in, please let me know either way.

For this meeting, we will be developing mitigation actions to coincide with the goals that we adopted from the State at the last meeting. The important thing to remember is that for each identified hazard in the risk assessment portion of this plan, there must be at least one mitigation action that explains how your entity will mitigate the risk from that hazard. It's cumbersome, I understand, but FEMA guidance is different now vs. 5 years ago, so I'm sorry for that. The hazards that have been identified as potential risks to Vernon County include the following: **flooding - flash and river, dam failure, earthquakes, drought, extreme temperatures, severe thunderstorms, severe winter weather, tornadoes, wildfires, and pandemics.**

Not to worry, as I will have FEMA guidance for you to refer to during the meeting, of note, this guidance does not mention pandemics as it was written in 2013, so you may have to get creative with that one. I will do my best to assist with this too.

Will there be anyone who would like to do their action worksheets and STAPLEEs (the forms we'll be doing at the meeting) in a digital format? Please let me know so I can have those ready for you before Wednesday, and bring a laptop if you're doing the paperwork this way. Eventually, they are typed into the plan, I just am looking to see who wants to do it that way beforehand.

If there is anyone that I missed in letting everyone know about this meeting that should be there, please invite them, I don't have contact info for everyone, sorry.

Should you have any questions, comments, or concerns regarding this meeting, please feel free to give me a call or send me an email, I am here to assist you.

Have a great evening and I hope to see you all on Wednesday the 8th at 1 p.m.,  
Dillon Harness

P.S. Sorry for the long email, it's just a lot to discuss before we meet.

-



**Dillon J. Harness**

**Regional Planner**

Office Phone: 660.885.3393 x15

Cell: 636.484.3468

[www.kaysinger.com](http://www.kaysinger.com)

*"Progress is the law of life, man is not Man as yet." - Robert Browning*



Dillon Harness <diharness@kaysinger.com>

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## Vernon County Hazard Mitigation Update January 2024

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Dillon Harness <diharness@kaysinger.com> Tue, Jan 2, 2024 at 9:11 AM  
To: commission@vernoncountymo.org, Derik White <vcemd@vernoncountymo.org>, Lauren Meier <LMeier.Music@gmail.com>, Beth Sandness <bsandness@bronaugh.k12.mo.us>, Troy Denney <tdenney@nevadamo.gov>, Tyson Beshore <tbesshore@nevada.k12.mo.us>, Erin Lee <city065@centurytel.net>, Todd Hefner <thefner@cottey.edu>, TJ Angel <tjangel@crowder.edu>, Natasha Carney <natasha.carney@missouriweldinginstitute.com>, Chris Holcomb <cholcomb@nevc.k12.mo.us>, Tammy Goodwin <cityofsheldon@gmail.com>, Jason Irwin <jirwin@sheldon.k12.mo.us>

Good morning everyone,

I hope you all had a great holiday season and are ready to get going again in the new year. I just wanted you all to know where we are at with the new Vernon County Hazard Mitigation Plan so you can plan your final steps accordingly. First, I need to address the elephant in the room, adoption of the plan will have to wait until *February*. Yes, many of you have submitted all the necessary paperwork up to this point, so do not be discouraged when I say that (in fact give yourself kudos if you have), but the reason it is pushed back one month is that others have not yet turned in their paperwork. I will not name names. To be fair and give everyone an equitable chance to get the paperwork to me, I made this executive decision after much thought and consideration. Next, we will have our required 1-month comment period, which will overlap with the plan adoption process, this is common during planning efforts. This will be an opportunity for everyone, not just this group, to provide feedback on the plan. I will have more information on that next month. Finally, we are nearing the end of the planning process in Vernon County, so thank you all for your hard work and if you have any questions, comments, or concerns, please do not hesitate to reach out to me either by phone or email.

Have a nice day,  
Dillon



**Dillon J. Harness**  
**Regional Planner**

Office Phone: 660.885.3393 x15

Cell: 636.484.3468

[www.kaysinger.com](http://www.kaysinger.com)

*"Progress is the law of life, man is not Man as yet." - Robert Browning*



Dillon Harness <dharness@kaysinger.com>

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## Final Vernon County HMP Notes 1/24

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Dillon Harness <dharness@kaysinger.com> Wed, Jan 24, 2024 at 10:00 AM  
To: commission@vernoncountymo.org, City of Bronaugh <cityofbronaugh@gmail.com>, Beth Sandness <bsandness@bronaugh.k12.mo.us>, Troy Denney <tdenney@nevadamo.gov>, Tyson Beshore <tbeshore@nevada.k12.mo.us>, Chris Holcomb <cholcomb@nevc.k12.mo.us>, Erin Lee <city085@centurytel.net>, Tammy Goodwin <cityofsheldon@gmail.com>, Jason Irwin <jirwin@sheldon.k12.mo.us>, Natasha Carney <natasha.carney@missouriweldinginstitute.com>, Todd Hefner <thefner@cottey.edu>, TJ Angel <tjangel@crowder.edu>

Good morning everyone,

I just wanted to reach out to everyone to let you all know where things stand with the Vernon County Hazard Mitigation Plan as of this morning. Right now, we are in really good shape with the plan, the paperwork is coming to me timely and correctly, which is great, and it shows you all know exactly what is expected of you, some of you have done it previously, which helps. I still need a little bit more paperwork from a couple of people, but it should be making its way to me by the end of the week. We are on pace to have our public comment period for the plan beginning at the start of February, February 1st to be exact. That will last for 30 days, ending on March 1st. During the comment period, anyone can view and comment on the plan and suggest edits, not just our core planning group. There will be invitations to neighboring counties as well, so for example those in Barton County to the south of us can view it as a neighboring jurisdiction. While the comment period is ongoing, please utilize that opportunity to adopt the plan at your county commission meeting, city council meeting, or school board meeting. A resolution template, if you need it, is included with this email. I will have some instructions for the resolution if you need assistance preparing it for your meeting in a follow-up email. Some have already gotten their resolution ready, kudos, all you will have to do is get it approved and signed by the appropriate parties.

Thank you all for your hard work, I expect it to pay off when this plan goes for its review, but if something comes up, we will address it at that time.

Have a great day,  
Dillon



**Dillon J. Harness**  
**Regional Planner**

Office Phone: 660.885.3393 x15

Cell: 636.484.3468

[www.kaysinger.com](http://www.kaysinger.com)

*"Progress is the law of life, man is not Man as yet." - Robert Browning*

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 **Model Resolution.docx**  
28K

The **2024 Vernon County National Hazard Mitigation Plan** is out for public comment until March 1. Please submit any questions and/or comments to Regional Planner Dillon Harness at (660) 885-3393 or via email at [dharness@kaysinger.com](mailto:dharness@kaysinger.com).



221 N 2nd Street  
Clinton, Missouri 64735



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**Development**

**Appendix D:  
Completed/Deleted/Inserted Mitigation Actions**

## **Completed Actions Since 2019 Plan**

- City of Bronaugh – 4.2: Local disaster drills
- City of Sheldon – 4.2: Local disaster drills
- Bronaugh R-VII School District – 4.2: School Disaster Drills
- Nevada R-V School District – 2.3: Protection of Critical Facilities
  - “” – 3.2: Equipment Upgrades
  - “” – 4.2: School Emergency Drills
- Sheldon R-VIII School District – 3.2: Communication Upgrades

## **Deleted Actions from 2019 Plan**

- Vernon County – 1.1: Emergency Alert Systems
  - “” – 3.1: Flood signage on low water crossings
  - “” – 4.1: Implementation of disaster plans throughout the county

## Inserted Actions for 2024 Plan

- **Vernon County – None, all continuing or deleted.**
- **City of Bronaugh – 1.1: Drought Monitoring**
  - “” – 1.2: Temperature Centers
  - “” – 1.3: Winter Street Preparation
  - “” – 1.5: Wildland Zoning and Guidelines
  - “” – 1.6: Contagious Disease Education
  - “” – 2.1: Earthquake Education Program
  - “” – 2.2: Dam Failure Education
  - “” – 2.3: Lightning Damage
- **City of Nevada – 4.2: Walton Lake Stormwater Runoff Project**
  - “” – 4.3: Wildland Fire Reduction
  - “” – 4.4: Deep Water Well Monitoring
  - “” – 4.5: Pandemic Education
  - “” – 4.6: Dam Failure Education
- **City of Schell City – None, all continuing or deleted.**
- **City of Sheldon – 1.1: Heating and Cooling Shelter**
  - “” – 1.2: Earthquake Education Program
  - “” – 1.3: Tornado Awareness Program
  - “” – 1.4: Household Severe Winter Weather Awareness
  - “” – 2.3: Employee Pandemic Education Program
  - “” – 2.4: Lightning Damage Protection
  - “” – 3.1: Severe Thunderstorm Awareness Program
  - “” – 3.2: Wildfire Maintenance Program
  - “” – 3.3: Dam Failure Education
- **Bronaugh R-VII School District – 1.1: Transportation Updates**
  - “” – 1.3: Education and School Contingency Plan
  - “” – 3.1: Earthquake Education
  - “” – 3.2: Dam Failure Education
  - “” – 3.3: Wildfire Education
  - “” – 4.1: Drought Education

- **Cottey College – 1.1: Travel Safety Program**
  - **“” – 1.2: Travel Safe Program**
  - **“” – 1.3: Earthquake Awareness and Safety Programs**
  - **“” – 1.4: Extreme Temperature Awareness Program**
  - **“” – 1.5: Snow/Ice Removal Equipment**
  - **“” – 1.6: Emergency Notification System Upgrade**
  - **“” – 1.7: Campus Safe Rooms**
  - **“” – 1.8: Pandemic Planning Evaluation**
  - **“” – 2.1: Drought Planning**
  - **“” – 3.1: Flooding Safety Program**
  - **“” – 3.2: Building Assessment**
  - **“” – 3.3: Roof Replacement**
  - **“” – 3.4: Tree Trimming**
  - **“” – 3.5: Wildfire Vulnerability Assessment**
- **Crowder College – 1.1: Campus Safe Room**
  - **“” – 2.1: Communications Upgrade**
  - **“” – 4.1: Disaster Drills**

- **Missouri Welding Institute – 1.1: Earthquake Education**
  - “” – 1.2: Tornado Education
  - “” – 1.3: Severe Winter Weather Education
  - “” – 1.4: Extreme Temperature Education
  - “” – 1.5: Pandemic Education
  - “” – 3.1: Wildfire Education
  - “” – 3.2: Dam Failure Education
  - “” – 3.3: Flood Education and Transportation Plans
  - “” – 3.4: Severe Thunderstorm Education
  - “” – 4.1: Drought Education
- **Nevada R-V School District – 1.1: Transportation Updates**
  - “” – 1.3: Education and School Contingency Plan
  - “” – 3.1: Earthquake Education
  - “” – 3.2: Dam Failure Education
  - “” – 3.3: Wildfire Education
  - “” – 4.1: Drought Education
- **Northeast Vernon County R-I School District – 1.1: Transportation Updates**
  - “” – 1.3: Education and School Contingency Plan
  - “” – 3.1: Earthquake Education
  - “” – 3.2: Dam Failure Education
  - “” – 3.3: Wildfire Education
  - “” – 4.1: Drought Education
- **Sheldon R-VIII School District – 1.1: Transportation Updates**
  - “” – 1.3: Education and School Contingency Plan
  - “” – 3.1: Earthquake Education
  - “” – 3.2: Dam Failure Education
  - “” – 3.3: Wildfire Education
  - “” – 4.1: Drought Education

**Appendix E:  
Adoption Resolutions of ALL Participating Entities**

**Reserved for:  
Vernon County Resolution**

**Reserved for:  
Bronaugh Resolution**

**Reserved for:  
Nevada Resolution**

Resolution 2024-01

A RESOLUTION OF THE CITY OF SCHELL CITY, MISSOURI ADOPTING THE COUNTY MULTIJURISDICTIONAL NATURAL HAZARD MITIGATION PLAN

WHEREAS the City of Schell City, Missouri recognizes the threat that natural hazards pose to people and property within the City of Schell City, Missouri; and

WHEREAS the City of Schell City, Missouri has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the County Multijurisdictional Natural 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 Schell City, Missouri from the impacts of future hazards and disasters; and

WHEREAS the City of Schell City, Missouri recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the City of Schell City, Missouri will endeavor to integrate the *Plan* into the comprehensive planning process; and

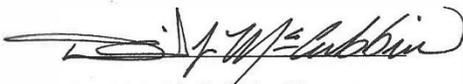
WHEREAS adoption by the City of Schell City, Missouri demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY THE CITY OF SCHELL CITY BOARD OF ALDERMEN in the State of Missouri, THAT:

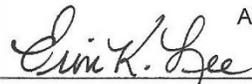
The City of Schell City, Missouri adopts the final *FEMA-approved Plan*.

ADOPTED by a vote of  4  in favor and  0  against, and  0  abstaining,

READ ONE TIME; PASSED AND APPROVED THE 7<sup>th</sup> DAY OF FEBRUARY, 2024.

  
David J. McCubbin, Mayor



ATTEST:  
  
Erin K. Lee, City Clerk

**Reserved for:  
Sheldon Resolution**

BRONAUGH R-7 SCHOOL DISTRICT

527 E. 6<sup>th</sup> Street

Bronaugh, MO 64728

Mrs. Beth Sandness, Superintendent

Mr. Austin Gripka, Principal

Bronaugh R7 School District, Missouri RESOLUTION NO. 202401

A RESOLUTION OF THE Bronaugh R7 School District ADOPTING THE COUNTY MULTI-JURISDICTIONAL NATURAL HAZARD MITIGATION PLAN

WHEREAS the Bronaugh R7 School District recognizes the threat that natural hazards pose to people and property within the Bronaugh R7 School District and

WHEREAS the Bronaugh R7 School District has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the County Multijurisdictional Natural 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 Bronaugh R7 School District from the impacts of future hazards and disasters; and

WHEREAS the Bronaugh R7 School District recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Bronaugh R7 School District will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the Bronaugh R7 School District demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY THE Bronaugh R7 School District, in the State of Missouri, THAT:

In accordance with board policy, Bronaugh R7 School District adopts the final *FEMA-approved Plan*.

ADOPTED by a vote of 7 in favor and 0 against, and 0 abstaining, this 8<sup>th</sup> day of February, 2024.

By (Sig): Ashley J. Banes  
Print name: Ashley J. Banes

ATTEST:  
By (Sig.): Ryan Lipp  
Print name: Ryan Lipp

-County/Jurisdiction/Educational Institution Letterhead-

Nevada R-V School District, Missouri RESOLUTION NO. 21424

A RESOLUTION OF THE NEVADA R-V SCHOOL DISTRICT ADOPTING THE COUNTY MULTIJURISDICTIONAL NATURAL HAZARD MITIGATION PLAN

WHEREAS the Nevada R-V School District recognizes the threat that natural hazards pose to people and property within the Nevada R-V School District; and

WHEREAS the Nevada R-V School District has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the County Multijurisdictional Natural 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 Nevada R-V School District from the impacts of future hazards and disasters; and

WHEREAS the Nevada R-V School District recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Nevada R-V School District will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the Nevada R-V School District demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY THE Nevada R-V School District, in the State of Missouri, THAT:

In accordance with Board of Education of Nevada R-V School District, the Nevada R-V School District adopts the final *FEMA-approved Plan*.

ADOPTED by a vote of 6 in favor and 0 against, and 0 abstaining, this 14 day of February 2024

By (Sig): Tyson Beshore  
Print name: Tyson Beshore

ATTEST:  
By (Sig.): Joy Hawks  
Print name: Joy Hawks

APPROVED AS TO FORM:  
By (Sig.): Melissa Hendrix  
Print name: MELISSA Hendrix

**Reserved for:  
Northeast Vernon County R-I  
Resolution**

Sheldon R-VIII School District

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

A RESOLUTION OF THE SHELDON R-VIII SCHOOL DISTRICT ADOPTING THE VERNON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN (UPDATED 2024)

WHEREAS the Sheldon R-VIII School District recognizes the threat that natural hazards pose to people and property within the Sheldon R-VIII School District, and

WHEREAS the Sheldon R-VIII School District has participated in the preparation of a multi-hazard mitigation plan, hereby known as the *Vernon County Multi-Jurisdictional Hazard Mitigation Plan (Updated 2024)*, 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 Sheldon R-VIII School District from the impacts of future hazards and disasters; and

WHEREAS the Sheldon R-VIII School District recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Sheldon R-VIII School District will endeavor to integrate the *Plan* into the comprehensive planning process and

WHEREAS adoption by the Sheldon R-VIII School District demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY THE SHELDON R-VIII SCHOOL DISTRICT, in the State of Missouri, THAT:

Section 1, In accordance with the Board of Education of Sheldon R-VIII School District, the Sheldon R-VIII School District adopts the final FEMA-approved plan.

ADOPTED by a vote of 7 in favor and 0 against, and \_\_\_ abstaining, this 7<sup>th</sup> day of February.

By (Sig.): [Signature]

Print name: JERAD LAMB

ATTEST:

By (Sig.): [Signature]

Print Name: Synthia Young

APPROVED AS TO FORM:

By (Sig.): [Signature]

Print Name: Jason Irwin

**Reserved for:  
Cottey College Resolution**

**Reserved for:  
Crowder College Resolution**

**Reserved for:  
Missouri Welding Institute  
Resolution**

**Appendix F:**  
**Data Collection Questionnaires from ALL Participating  
Entities (+Supporting Documents When Provided)**

*Communities first, then educational institutions.*

**Multi-Jurisdictional Hazard Mitigation Plan  
Data Collection Questionnaire  
For Local Governments**

County: VERNON  
 Jurisdiction: VERNON COUNTY  
 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. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: JOE WILSON  
 Phone: 417-448-2505  
 Email: COMMISSION@VERNONCOUNTYMO.ORG  
 Date: 10-04-2023

**Please return questionnaires by mail, email, or fax to:**

Name: Dillon Harness  
 Address: 221 N 2<sup>nd</sup> Street  
 Email: dharness@kaysinger.com  
 Fax: 660-885-4166

<p><b>REQUIRED</b> (For match purposes)</p> <p>Approximate time spent on data collection Questionnaires. (hrs./mins.):</p> <p>_____</p> <p>_____</p> <p align="center">Date Completed</p> <p>_____</p> <p>_____</p>
---

## CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
<b>Planning Capabilities</b>		
<b><u>Comprehensive Plan</u></b>	Date: <i>NONE</i>	
Builder's Plan	Date: <i>NONE</i>	
Capital Improvement Plan	Date: <i>NONE</i>	
City Emergency Operations Plan	<i>YES</i> Date:	
County Emergency Operations Plan	Date: <i>2021</i>	
Local Recovery Plan	Date: <i>NONE</i>	
County Recovery Plan	Date: <i>NONE</i>	
City Mitigation Plan	Date:	
County Mitigation Plan	Date: <i>NONE</i>	
Debris Management Plan	<i>2018-UPDATING NOW</i> Date: <i>NONE</i>	<i>UPDATING NOW</i>
<b><u>Economic Development Plan</u></b>	Date:	
Transportation Plan	<i>IN PROGRESS</i> Date:	<i>WCCAA/KAYSINGER</i>
Land-use Plan	<i>NONE</i> Date:	
Flood Mitigation Assistance (FMA) Plan	Date:	
<b><u>Watershed Plan</u></b>	Date:	
Firewise or other fire mitigation plan	Date: <i>NONE</i>	
Critical Facilities Plan (Mitigation/Response/Recovery)	Date: <i>NONE</i>	

Element	Yes, No, N/A	Comments and/or Weblink
<b>Policies/Ordinance</b>		
Zoning Ordinance	N/A	
Building Code	Version: N/A	
Floodplain Ordinance	N/A	FLOODPLAIN MANAGER
Subdivision Ordinance	N/A	
Tree Trimming Ordinance	N/A	
Nuisance Ordinance	N/A	
Stormwater Ordinance	N/A	
Drainage Ordinance	N/A	
Site Plan Review Requirements	N/A	
Historic Preservation Ordinance	N/A	
Landscape Ordinance	N/A	
<b>Program</b>		
Zoning/Land Use Restrictions	No	
Codes Building Site/Design	No	
Hazard Awareness Program		
National Flood Insurance Program (NFIP)	YES	
NFIP Community Rating System (CRS) program	N/A	If so, what is your current level rating?
National Weather Service (NWS) Storm Ready Certification	YES 2004	2023 RENEWAL
Firewise Community Certification	NO	
Building Code Effectiveness Grading (BCEGs)	No	
ISO Fire Rating	Rating: 3-9	DEPENDENT ON LOCATION
Economic Development Program	YES	
Land Use Program	? KAYSINGER	
Public Education/Awareness	YES	
Property Acquisition	NO	
Planning/Zoning Boards		ENHANCED ENTERPRISE ZONING
Stream Maintenance Program	NO	
Tree Trimming Program	NO	
<b>Engineering Studies for Streams (Local/County/Regional)</b>	NO	

Element	Yes, No, N/A	Comments and/or Weblink
Mutual Aid Agreements	YES - FIRE & RESCUE	
<b>Studies/Reports/Maps</b>		
<u>Hazard Analysis/Risk Assessment (City)</u>	Date:	
<u>Hazard Analysis/Risk Assessment (County)</u>	<del>NO</del> Date: 2018	PART OF MITIGATION PLAN
Evacuation Route Map	NO Date:	
<u>Critical Facilities Inventory</u> →	Date: 2021	CITY EMERGENCY OPS PLAN
<u>Vulnerable Population Inventory</u>	NO Date:	
<u>Land Use Map</u>	NO Date:	
<b>Staff/Department</b>		
		<b>Full Time or Part Time?</b>
Building Code Official	NO	
Building Inspector	NO	
Mapping Specialist (GIS) —	YES	
Engineer	NO	
Development Planner	NO	
Public Works Official	YES ROAD & BRIDGE FOREMAN	
Emergency Management Coordinator	YES - GREAT GUY!	
NFIP Floodplain Administrator	YES	PART-TIME
Emergency Response Team	YES	BOTH
Hazardous Materials Expert	SEVERAL HAZ MAT TECHNICIANS	
Local Emergency Planning Committee	YES	MEETS QUARTLY
County Emergency Management Commission	NO	
Sanitation Department	NO	
Transportation Department	NO	
Economic Development Department	COORDINATE WITH CITY OF NEVADA	
Housing Department	NO	
Historic Preservation	NO	
<b>Non-Governmental Organizations (NGOs)</b>		
	Is there a local chapter? Yes or No	
American Red Cross	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Salvation Army	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Veterans Groups	<input checked="" type="radio"/> Yes <input type="radio"/> No	VFW, OTHERS

Element	Yes, No, N/A	Comments and/or Weblink
Local Environmental Organization	No	
Homeowner Associations	YES	
Neighborhood Associations	No	
Chamber of Commerce	YES - IN CONJUNCTION w/ CITY OF NEVADA	
Community Organizations (Lions, Kiwanis, etc.)		
Financial Resources		Is your jurisdiction able to? Yes or No
Apply for Community Development Block Grants	<input checked="" type="radio"/> Yes	No
Fund projects thru Capital Improvements funding	<input checked="" type="radio"/> Yes	No
Authority to levy taxes for specific purposes	<input checked="" type="radio"/> Yes	No
Fees for water, sewer, gas, or electric services	Yes	<input checked="" type="radio"/> No
Impact fees for new development	<input checked="" type="radio"/> Yes	No
Incur debt through general obligation bonds	<input checked="" type="radio"/> Yes	No
Incur debt through special tax bonds	<input checked="" type="radio"/> Yes	No
Incur debt through private activities	<input checked="" type="radio"/> Yes	No
Withhold spending in hazard prone areas	Yes	<input checked="" type="radio"/> No

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive Plan	EMERGENCY OPERATIONS PLAN
Builder's Plan	
Capital Improvement Plan	
Local Recovery Plan	LEOP
County Recovery Plan	LEOP
Debris Management Plan	<del>LEOP</del> HAS IT.
Economic Development Plan	COUNTY
Transportation Plan	SOME ELEMENTS
Land-use Plan	HAZARD MITIGATION 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)

3 COMMISSIONERS

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

EXTENSION, HEALTH DEPT, EMERGENCY MANAGER.  
RED CROSS, PATHWAYS, UNITED WAY, ON MY OWN.

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.

ROAD & BRIDGE IMPROVEMENTS  
KATY ALLEN LAKE IMPROVEMENTS

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.

ANY MAJOR NATURAL DISASTER

5. How many outdoor warning sirens are in your community?

YES IN MUNICIPALITIES.

How are they activated (indicate responsible department/personnel)?

MUNICIPALITIES SET STANDARDS & PROCESS

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe.

CELL PHONE ALERTS, TATS, SOCIAL MEDIA.  
STORM SIRENS

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.

RESIDENTIAL - SINGLE FAMILY CONSTRUCTION  
COMMERCIAL - PEERLESS, FREDDY'S, TWO COFFEE SHOPS.

9. Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.

NO FLOOD PLAIN DEVELOPMENT.

COMM'L GROWTH IS SCHEDULED ON EAST PORTION OF NEVADA. RESIDENTIAL GROWTH OCCURRING SOUTH OF NEVADA + PLANNED IN NORTH PORTION OF NEVADA

10. Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

1. VA - NEVADA  
TRUCK STOP ON K HWY

11. Please list major employers in your jurisdiction with an estimated number of employees.

ADM - 100	JONES TWINE 35	3M - 700
FARMERS AG - 30	MURPHY FARMS 60	NRMC - 500
HERITAGE TRACTOR - 30	XPO 40	
HEARTLAND TRACTOR - 25	MID WEST FERTILIZER - METZ HARWOOD SHELDON CO	60
NOW TRUSS - 15	RURAL WATER DIST. - 12	

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?

SAME PROCESS AS 2018 THRU KAYSINGER.

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

WE ARE REGISTERED W/ THE STATE.

## VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - RF	Drought - D
Levee Failure - LF	Extreme Temperature - ET
Dam Failure - DF	Severe Thunderstorm (incl. winds, hail, lightning) - ST
Earthquake - EQ	Severe Winter Weather (incl. snow, ice, severe cold) - SWW
Land Subsidence / Sinkholes - LSS	Tornadoes - T
Drought - D	Wildfire - WF

### Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

#### Essential Facilities

Hospitals and other *N/A*  
 medical facilities *N/A*  
 Police stations *N/A*  
 Fire station *VOLUNTEER*  
 Emergency Operations Centers

#### High Potential Loss Facilities

Power plants - *N/A*  
 Dams/levees - *MDC. OR PRIVATE*  
 Military installations - *CAMP CLARK*  
 Hazardous material sites - *N/A*  
 Schools - *SHELDON, BROWNIGH, WALKER, SHELL*  
 Shelters - *SHELDON, BROWNIGH, WALKER*  
 Day care centers - *NONE OF SIZE SHELL CITY*  
 Nursing homes - *NONE IN COUNTY*  
 Main government buildings

#### Transportation and Lifeline

Highways, bridges, and tunnels  
 Railroads and facilities  
 Bus facilities  
 Airports  
 Water treatment facilities  
 Natural gas facilities and pipelines  
 Oil facilities and pipelines  
 Communications facilities

### Economic Assets

Economic assets at risk may include major employers or primary economic sectors, such as agriculture, whose losses or inoperability would have severe impacts on the community and its ability to recover from disaster.

**Asset Inventory**

Please list critical facilities and other community assets, the square feet, values, and occupancy/capacity. If not applicable, enter "N/A". In the last column, use the codes from the previous page to indicate hazards to which the asset is vulnerable. Add as many rows as needed. If this information is available in GIS format, please provide.

**Critical Facilities**

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
<u>Essential Facilities</u> such as hospitals and other medical facilities, police and fire stations, Emergency Operations Centers						
FIRE STATIONS - COMPTON Jct		1270				
WALKER		800				
BROWARICH						
MILD						
SHeldon						
SHELL CITY						
EMER MGMT BLDG						
NRMC						
---						
AIRPORT						
CPWSD #1						
3M						

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
High Potential Loss Facilities such as power plants, dams/levees, 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)						
CAMP CLARR						
COUNTY COURTHOUSE						
BUSHWACKER DAM MDC						
SHELL LAKE MDC						
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities, bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						
I-49						
Hwy 54						
Hwy 43						
KC SOUTHERN RR						
N ARK & MO RR						
KATY RR						
TWO PIPELINE	SE PORTION OF CO.					

\*If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.

**Economic Assets (Major Employers, etc)**

Asset	Address	Product/Service	Value (if known)	Number of Employees	Hazards
ADM					
FARMERS AG					
HERITAGE TRACTOR					
HEARLAND TRACTOR					
JONES TWINE					
MURPHY FARMS					
MIDWEST FERTILIZER					

XPO

NSW TRUSS

RURAL WATER DIST.

3M

PEERLESS

## HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

<b>Jurisdiction</b>	
<b>Type of event</b>	
<b>Nature and magnitude of event</b>	
<b>Location</b>	
<b>Date of event</b>	
<b>Injuries</b>	
<b>Deaths</b>	
<b>Property damage</b>	
<b>Infrastructure damage</b>	
<b>Crop damage</b>	
<b>Business/economic impacts</b>	
<b>Road/school/other closures</b>	
<b>Other damage</b>	
<b>Insured losses</b>	
<b>Federal/state disaster relief funding</b>	
<b>Source of information</b>	
<b>Comments</b>	

### HISTORIC HAZARD EVENTS (continued)

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

<b>Jurisdiction</b>	
<b>Type of event</b>	
<b>Nature and magnitude of event</b>	
<b>Location</b>	
<b>Date of event</b>	
<b>Injuries</b>	
<b>Deaths</b>	
<b>Property damage</b>	
<b>Infrastructure damage</b>	
<b>Crop damage</b>	
<b>Business/economic impacts</b>	
<b>Road/school/other closures</b>	
<b>Other damage</b>	
<b>Insured losses</b>	
<b>Federal/state disaster relief funding</b>	
<b>Source of information</b>	
<b>Comments</b>	

## ASSESSMENT OF PREVIOUSLY PROPOSED ACTIONS

Jurisdiction: VERNON COUNTY

The contractor/plan development facilitator 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:

- For **completed actions** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- Some of the actions might have been **ongoing** in nature, such public information and education programs. When this is the case, 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.
- 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		
	EDUCATION ON PREPAREDNESS		X		PROVIDE TALKS TO GROUPS IN THE COUNTY ESPECIALLY YOUTH & SCHOOL AGE RESIDENTS	X



*As Required*

**Multi-Jurisdictional Hazard Mitigation Plan  
Data Collection Questionnaire  
For Local Governments**

County: VERNON

Jurisdiction: CITY OF BRONAUGH

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. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: LAUREN MEIER

Phone: 417-922-0606 OR 636-235-1526

Email: CITYOFBRONAUGH@GMAIL.COM

Date: \_\_\_\_\_

**Please return questionnaires by mail, email, or fax to:**

Name: Dillon Harness

Address: 221 N 2<sup>nd</sup> Street

Email: dharness@kaysinger.com

Fax: 660-885-4166

<p><b>REQUIRED</b> (For match purposes)</p> <p>Approximate time spent on data collection Questionnaires. (hrs./mins.):</p> <p><u>5 hrs.</u></p> <p>Date Completed</p> <p><u>11/8/2023</u></p>
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## CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
<b>Planning Capabilities</b>		
<b><u>Comprehensive Plan</u></b>	NO Date:	
Builder's Plan	NO Date:	
Capital Improvement Plan	NO Date:	
City Emergency Operations Plan	NO Date:	
County Emergency Operations Plan	Yes Date: 1/2018	
Local Recovery Plan	NO Date:	
County Recovery Plan	Yes Date: 1/2013	
City Mitigation Plan	NO Date:	
County Mitigation Plan	Yes Date: 1/2013	
Debris Management Plan	NO Date:	
<b><u>Economic Development Plan</u></b>	NO Date:	
Transportation Plan	NO Date:	
Land-use Plan	Yes Date: 1/2015	
Flood Mitigation Assistance (FMA) Plan	NO Date:	
<b><u>Watershed Plan</u></b>	NO Date:	
Firewise or other fire mitigation plan	NO Date:	
Critical Facilities Plan (Mitigation/Response/Recovery)	NO Date:	

Element	Yes, No, N/A	Comments and/or Weblink
<b>Policies/Ordinance</b>		
Zoning Ordinance	NO	
Building Code	Version: YES	
Floodplain Ordinance	YES 2014	
Subdivision Ordinance	NO	
Tree Trimming Ordinance	NO	
Nuisance Ordinance	NO	
Stormwater Ordinance	NO	
Drainage Ordinance	NO	
Site Plan Review Requirements	NO	
Historic Preservation Ordinance	NO	
Landscape Ordinance	NO	
<b>Program</b>		
Zoning/Land Use Restrictions	YES	
Codes Building Site/Design	NO	
Hazard Awareness Program	NO	
National Flood Insurance Program (NFIP)	YES	
NFIP Community Rating System (CRS) program	N/A	If so, what is your current level rating?
National Weather Service (NWS) Storm Ready Certification	NO	
Firewise Community Certification	NO	
Building Code Effectiveness Grading (BCEGs)	NO	
ISO Fire Rating	Rating: 7	
Economic Development Program	YES 2016	
Land Use Program	NO	
Public Education/Awareness	NO	
Property Acquisition	NO	
Planning/Zoning Boards	NO	
Stream Maintenance Program	NO	
Tree Trimming Program	NO	
<b>Engineering Studies for Streams (Local/County/Regional)</b>	NO	

Element	Yes, No, N/A	Comments and/or Weblink
Mutual Aid Agreements	Date:	
<b>Studies/Reports/Maps</b>		
<u>Hazard Analysis/Risk Assessment (City)</u>	YES Date: UNKNOWN	
<u>Hazard Analysis/Risk Assessment (County)</u>	NO Date:	
Evacuation Route Map	NO Date:	
<u>Critical Facilities Inventory</u>	Yes Date:	
<u>Vulnerable Population Inventory</u>	NO Date:	
<u>Land Use Map</u>	NO Date:	
Staff/Department		Full Time or Part Time?
Building Code Official	: NO	
Building Inspector	NO	
Mapping Specialist (GIS)	NO	
Engineer	NO	
Development Planner	NO	
Public Works Official	NO	
Emergency Management Coordinator	LAUREN MEIER, MAYOR	PART TIME
NFIP Floodplain Administrator	SHERRY BROWN, COUNCIL MEMBER	PART TIME
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)	Is there a local chapter? Yes or No	
American Red Cross	Yes No	
Salvation Army	Yes No	
Veterans Groups	Yes No	

Element	Yes, No, N/A	Comments and/or Weblink
Local Environmental Organization	NO	
Homeowner Associations	NO	
Neighborhood Associations	NO	
Chamber of Commerce	YES	COUNTY
Community Organizations (Lions, Kiwanis, etc.)	YES	COUNTY
Financial Resources		Is your jurisdiction able to? Yes or No
Apply for Community Development Block Grants		<input checked="" type="radio"/> Yes <input type="radio"/> No
Fund projects thru Capital Improvements funding		Yes <input type="radio"/> No
Authority to levy taxes for specific purposes		Yes <input checked="" type="radio"/> No
Fees for water, sewer, gas, or electric services		<input checked="" type="radio"/> Yes <input type="radio"/> No
Impact fees for new development		Yes <input checked="" type="radio"/> No
Incur debt through general obligation bonds		Yes <input checked="" type="radio"/> No
Incur debt through special tax bonds		Yes <input checked="" type="radio"/> No
Incur debt through private activities		Yes <input checked="" type="radio"/> No
Withhold spending in hazard prone areas		Yes <input checked="" type="radio"/> No

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive Plan	<i>No INCORPORATION DUE TO LIMITED FINANCES AND MAN POWER.</i>
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, WITH 4 COUNCIL POSITIONS.  
WE ALSO HAVE A CITY CLERK AND CITY TREASURER.

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

THE FIRE DEPARTMENT GOES TO THE SCHOOL TO SPEAK WITH STUDENTS DURING FIRE SAFETY WEEK.

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.

IMPROVED DRAINAGE ON CITY STREETS.

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.

AT LEAST 50% OF OUR COMMUNITY IS CLASSIFIED AS LOW INCOME, DISABLED, ELDERLY, OR HAS NO MODE OF TRANSPORTATION.

5. How many outdoor warning sirens are in your community?

ZERO

How are they activated (indicate responsible department/personnel)?

N/A

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe.

NONE

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:

N/A

8. List residential, commercial and industrial development in your jurisdiction since last plan update.

WE HAVE A NEW COMMUNITY BUILDING LOCATED  
IN THE PARK

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.

~~NOM NOM CAFE - 4 EMPLOYEES~~  
PERCY'S PLACE - 12 EMPLOYEES

12. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

NFIP IN PLACE - NO CONSTRUCTION ALLOWED IN THE  
FLOOD PLAIN.

## VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - <b>RF</b>	Drought - <b>D</b>
Levee Failure - <b>LF</b>	Extreme Temperature - <b>ET</b>
Dam Failure - <b>DF</b>	Severe Thunderstorm (incl. winds, hail, lightning) - <b>ST</b>
Earthquake - <b>EQ</b>	Severe Winter Weather (incl. snow, ice, severe cold) - <b>SWW</b>
Land Subsidence / Sinkholes - <b>LSS</b>	Tornadoes - <b>T</b>
Drought - <b>D</b>	Wildfire - <b>WF</b>

### Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

#### Essential Facilities

Hospitals and other  
medical facilities  
Police stations  
Fire station  
Emergency Operations  
Centers

#### High Potential Loss Facilities

Power plants  
Dams/levees  
Military installations  
Hazardous material sites  
Schools  
Shelters  
Day care centers  
Nursing homes  
Main government buildings

#### Transportation and Lifeline

Highways, bridges, and tunnels  
Railroads and facilities  
Bus facilities  
Airports  
Water treatment facilities  
Natural gas facilities and  
pipelines  
Oil facilities and pipelines  
Communications facilities

### 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.



Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/Capacity (#)	Natural Hazards
High Potential Loss Facilities such as power plants, dams/levees, 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</i>	<i>178 E. 4<sup>th</sup> STREET</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, oil facilities and pipelines, communications facilities						
<i>Water Tower</i>	<i>329 N. MAPLE</i>				<i>Ø</i>	
<i>CLEAR WELL</i>	<i>"</i>				<i>Ø</i>	
<i>PUMP HOUSE</i>	<i>"</i>				<i>Ø</i>	

\*If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.

**Economic Assets (Major Employers, etc)**

Asset	Address	Product/ Service	Value (if known)	Number of Employees	Hazards

LAST 5 YRS

## HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	CITY OF BRONAUGH
Type of event	NONE
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

## HISTORIC HAZARD EVENTS (continued)

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

<b>Jurisdiction</b>	
<b>Type of event</b>	
<b>Nature and magnitude of event</b>	
<b>Location</b>	
<b>Date of event</b>	
<b>Injuries</b>	
<b>Deaths</b>	
<b>Property damage</b>	
<b>Infrastructure damage</b>	
<b>Crop damage</b>	
<b>Business/economic impacts</b>	
<b>Road/school/other closures</b>	
<b>Other damage</b>	
<b>Insured losses</b>	
<b>Federal/state disaster relief funding</b>	
<b>Source of information</b>	
<b>Comments</b>	

## ASSESSMENT OF PREVIOUSLY PROPOSED ACTIONS

Jurisdiction: CITY OF BRONAUGH

The contractor/plan development facilitator 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:

- For **completed actions** provide a description of the implementation process. This may be a success story you would like to publicize in your community.

- Some of the actions might have been **ongoing** in nature, such public information and education programs. When this is the case, 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.

- 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 Local Governments**

County: Vernon

Jurisdiction: City of Nevada

Return by: September 22, 2023

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: Troy Denney & Mary Wilson

Phone: 4 1 7 - 4 4 8 - 5 1 0 5 / 4 1 7 - 4 4 8 - 5 1 1 5

Email: tddenney@nevadamo.gov / mwilson@nevadamo.gov

Date: \_\_\_\_\_

**Please return questionnaires by mail, email, or fax to:**

Name: Dillon Harness

Address:

221 N 2<sup>nd</sup> Street

Email: dharness@kaysinger.com

Fax: 660-885-4166

**REQUIRED**

(For match purposes)

Approximate time spent on data  
collection Questionnaires.  
(hrs./mins.): **5 hours**

\_\_\_\_\_  
\_\_\_\_\_

Date Completed

9/20/2023

## 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 comment's column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comment's column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
<b>Planning Capabilities</b>		
<b><u>Comprehensive Plan</u></b>	Date: 1984	
Builder's Plan	Date:	
Capital Improvement Plan	Date:2023	<b>Done every year by the city</b>
City Emergency Operations Plan	Date: 2019	<b>Part of the LEOP</b>
County Emergency Operations Plan	Date: 2019	<b>Vernon Co. LEOP</b>
Local Recovery Plan	Date:	
County Recovery Plan	Date:	
City Mitigation Plan	Date: 2018	
County Mitigation Plan	Date: 2018	
Debris Management Plan	Date: 2019	<b>Vernon Co. LEOP</b>
<b><u>Economic Development Plan</u></b>	Date: 2022	<b>City plan</b>
Transportation Plan	Date: 2016	
Land-use Plan	Date:	
Flood Mitigation Assistance (FMA) Plan	Date:	
<b><u>Watershed Plan</u></b>	Date:	<b>Marmaton Watershed #10290104</b>
Firewise or other fire mitigation plan	Date:	
Critical Facilities Plan (Mitigation/Response/Recovery)	Date:	

Element	Yes, No, N/A	Comments and/or Weblink
<b>Policies/Ordinance</b>		
Zoning Ordinance	YES	CITY CODE CHAPTER 37
Building Code	<b>Version: IBC 2018 / NEC 2017</b>	
Floodplain Ordinance	YES 4/7/2020	
Subdivision Ordinance	YES	CITY CODE CHAPTER 34
Tree Trimming Ordinance	YES	CITY CODE CHAPTER 35
Nuisance Ordinance	YES	CITY CODE CHAPTER 21
Stormwater Ordinance	YES	CITY CODE SEVERAL CHAPTERS
Drainage Ordinance	YES	CITY CODE SECTION 28-43
Site Plan Review Requirements	YES	CITY CODE BUILDING/FIRE
Historic Preservation Ordinance	NO	
Landscape Ordinance	NO	
<b>Program</b>		
Zoning/Land Use Restrictions	YES	PLANNING COMMISSION
Codes Building Site/Design	YES	BUILDING /FIRE CODES
Hazard Awareness Program	YES	
National Flood Insurance Program (NFIP)	YES	
NFIP Community Rating System (CRS) program		<b>If so, what is your current level rating?</b>
National Weather Service (NWS) Storm Ready Certification	NO	
Firewise Community Certification	NO	
Building Code Effectiveness Grading (BCEGs)	5-RESIDENTIAL 5-COMMERCIAL/INDUSTRIAL	
ISO Fire Rating	<b>Rating:3</b>	EFFECTIVE 2/1/2018
Economic Development Program	YES	
Land Use Program	YES	
Public Education/Awareness	FIRE/POLICE	
Property Acquisition	NO	
Planning/Zoning Boards	YES	MEETS MONTHLY
Stream Maintenance Program	NO	
Tree Trimming Program	NO	
<b>Engineering Studies for Streams (Local/County/Regional)</b>		

Element	Yes, No, N/A	Comments and/or Weblink
Mutual Aid Agreements	YES	STATEWIDE
Studies/Reports/Maps		
<u>Hazard Analysis/Risk Assessment (City)</u>	Date:	2018 LEOP
<u>Hazard Analysis/Risk Assessment (County)</u>	Date:	2018 LEOP
Evacuation Route Map	Date:	2018 LEOP
<u>Critical Facilities Inventory</u>	Date:	2018 LEOP
<u>Vulnerable Population Inventory</u>	Date:	2018 LEOP
<u>Land Use Map</u>	Date:	YES, UPDATED PERIODICALLY
Staff/Department		Full Time or Part Time?
Building Code Official	YES	FULL
Building Inspector	YES	FULL
Mapping Specialist (GIS)	YES	PART TIME
Engineer	YES	CONTRACTED
Development Planner	NO	
Public Works Official	YES	FULL
Emergency Management Coordinator	YES	PART TIME
NFIP Floodplain Administrator	YES	FULL TIME
Emergency Response Team	YES	REGION D
Hazardous Materials Expert	YES	REGION D
Local Emergency Planning Committee	YES	PART TIME
County Emergency Management Commission	YES	PART TIME
Sanitation Department	NO	
Transportation Department	YES	FULL TIME
Economic Development Department	YES	CONTRACTED
Housing Department	YES	FULL TIME
Historic Preservation	NO	
Non-Governmental Organizations (NGOs)	Is there a local chapter? Yes or No	
American Red Cross	Yes	No
Salvation Army	Yes	No
Veterans Groups	Yes	No

Element	Yes, No, N/A	Comments and/or Weblink
Local Environmental Organization	NO	
Homeowner Associations	YES	
Neighborhood Associations	NO	
Chamber of Commerce	YES	FULL TIME
Community Organizations (Lions, Kiwanis, etc.)	YES	
Financial Resources		Is your jurisdiction able to? Yes or No
Apply for Community Development Block Grants	Yes	No
Fund projects thru Capital Improvements funding	Yes	No
Authority to levy taxes for specific purposes	Yes	No
Fees for water, sewer, gas, or electric services	Yes	No
Impact fees for new development	Yes	No
Incur debt through general obligation bonds	Yes	No
Incur debt through special tax bonds	Yes	No
Incur debt through private activities	Yes	No
Withhold spending in hazard prone areas	Yes	No

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive Plan	N/A
Builder's Plan	N/A
Capital Improvement Plan	UPDATED EVERY YEAR – 5 YEAR PLAN
Local Recovery Plan	N/A
County Recovery Plan	N/A
Debris Management Plan	LEOP
Economic Development Plan	N/A
Transportation Plan	UPDATED YEARLY
Land-use Plan	N/A
Watershed Plan	N/A
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	NO PLAN IN PLACE FOR THIS WITH IN CITY

### Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members)  
**HOME RULE CHARTER, 5 MEMBER COUNCIL, MAYOR APPOINTED BY 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.  
**PUBLIC SAFETY CONDUCTS YEARLY SAFETY TRAININGS FOR ADULTS AND CHILDREN**
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.  
**GENERATOR POWER AT CRITICAL INFRASTRUCTURES  
JULY 30, 2023 STORM DAMAGE UNDER SEMA/FEMA REVIEW**
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?

**6**

How are they activated (indicate responsible department/personnel)?

**RADIO TONES FROM VERNON CO. DISPATCH**

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?

**NO**

Please provide address locations:

8. List residential, commercial, and industrial development in your jurisdiction since last plan update.

**84- residential  
8 - Commercial  
1 - industrial**

9. Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.

**NO**

10. Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

**WATER PLANT UPGRADE 1300 W CHERRY  
WASTEWATER LIFTSTATION LINE UPGRADE-NORTH OF TOWN**

11. Please list major employers in your jurisdiction with an estimated number of employees.

**3M-700 NRMC- 200 WALMART-200 CITY OF NEVADA-100 PEERLESS-100**

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?

**William P. Thornton Jr, Fire Chief at time**

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

**Yes we do**

## VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - <b>RF</b>	Drought - <b>D</b>
Levee Failure - <b>LF</b>	Extreme Temperature - <b>ET</b>
Dam Failure - <b>DF</b>	Severe Thunderstorm (incl. winds, hail, lightning) - <b>ST</b>
Earthquake - <b>EQ</b>	Severe Winter Weather (incl. snow, ice, severe cold) - <b>SWW</b>
Land Subsidence / Sinkholes - <b>LSS</b>	Tornadoes - <b>T</b>
Drought - <b>D</b>	Wildfire - <b>WF</b>

### Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

#### Essential Facilities

Hospitals and other medical facilities  
Police stations  
Fire station  
Emergency Operations Centers

#### High Potential Loss Facilities

Power plants  
Dams/levees  
Military installations  
Hazardous material sites  
Schools  
Shelters  
Day care centers  
Nursing homes  
Main government buildings

#### Transportation and Lifeline

Highways, bridges, and tunnels  
Railroads and facilities  
Bus facilities  
Airports  
Water treatment facilities  
Natural gas facilities and pipelines  
Oil facilities and pipelines  
Communications facilities

### 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.



Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
High Potential Loss Facilities such as power plants, dams/levees, 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)						
MOORE-FEW						
JOE CLARK						
CLARK CARE						
THE BUNGALOWS						
MEDICALODGE						
BRISTOL MANOR						
CITY HALL	110 S ASH					
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities; bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						
WATER TREATMENT PLAN	1300 W CHERRY					
WASTEWATER TREATMENT PLANT	16517 S 1338 Rd					

**\*If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.**

**Economic Assets (Major Employers, etc)**

Asset	Address	Product/ Service	Value (if known)	Number of Employees	Hazards

## HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

<b>Jurisdiction</b>	
<b>Type of event</b>	
<b>Nature and magnitude of event</b>	
<b>Location</b>	
<b>Date of event</b>	
<b>Injuries</b>	
<b>Deaths</b>	
<b>Property damage</b>	
<b>Infrastructure damage</b>	
<b>Crop damage</b>	
<b>Business/economic impacts</b>	
<b>Road/school/other closures</b>	
<b>Other damage</b>	
<b>Insured losses</b>	
<b>Federal/state disaster relief funding</b>	
<b>Source of information</b>	
<b>Comments</b>	

## HISTORIC HAZARD EVENTS (continued)

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

<b>Jurisdiction</b>	
<b>Type of event</b>	
<b>Nature and magnitude of event</b>	
<b>Location</b>	
<b>Date of event</b>	
<b>Injuries</b>	
<b>Deaths</b>	
<b>Property damage</b>	
<b>Infrastructure damage</b>	
<b>Crop damage</b>	
<b>Business/economic impacts</b>	
<b>Road/school/other closures</b>	
<b>Other damage</b>	
<b>Insured losses</b>	
<b>Federal/state disaster relief funding</b>	
<b>Source of information</b>	
<b>Comments</b>	

## ASSESSMENT OF PREVIOUSLY PROPOSED ACTIONS

**Jurisdiction:** \_\_\_\_\_

The contractor/plan development facilitator 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:

- For **completed actions** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- Some of the actions might have been **ongoing** in nature, such public information and education programs. When this is the case, 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.
- 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		



*Journal  
11-13-2023*

**Multi-Jurisdictional Hazard Mitigation Plan**  
**Data Collection Questionnaire**  
**For Local Governments**

County: Vernon

Jurisdiction: City of Schell City

Return by: Kaysinger Basin Regional Planning Commission

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: Erin Lee

Phone: 417-432-3222

Email: city065@centurytel.net

Date: 11-07-2023

**Please return questionnaires by mail, email, or fax to:**

Name: Dillon Harness

Address: 221 N 2<sup>nd</sup> Street, Clinton, Mo 64735

Email: dharness@kaysinger.com

Fax: 660-885-4166

<b>REQUIRED</b> (For match purposes)
Approximate time spent on data collection Questionnaires. (hrs./mins.):
<u>3 hrs</u>
Date Completed
<u>11-07-2023</u>

## CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
<b>Planning Capabilities</b>		
<b><u>Comprehensive Plan</u></b>	No <input type="checkbox"/> Date:	
Builder's Plan	No <input type="checkbox"/> Date:	
Capital Improvement Plan	No <input type="checkbox"/> Date:	
City Emergency Operations Plan	Yes <input type="checkbox"/> Date:	Use Vernon County plan.
County Emergency Operations Plan	Yes <input type="checkbox"/> Date:	Use Vernon County plan.
Local Recovery Plan	No <input type="checkbox"/> Date:	
County Recovery Plan	N/A <input type="checkbox"/> Date:	
City Mitigation Plan	No <input type="checkbox"/> Date:	
County Mitigation Plan	N/A <input type="checkbox"/> Date:	
Debris Management Plan	No <input type="checkbox"/> Date:	
<b><u>Economic Development Plan</u></b>	Yes <input type="checkbox"/> Date:	
Transportation Plan	No <input type="checkbox"/> Date:	
Land-use Plan	No <input type="checkbox"/> Date:	
Flood Mitigation Assistance (FMA) Plan	No <input type="checkbox"/> Date:	
<b><u>Watershed Plan</u></b>	No <input type="checkbox"/> Date:	
Firewise or other fire mitigation plan	No <input type="checkbox"/> Date:	
Critical Facilities Plan (Mitigation/Response/Recovery)	No <input type="checkbox"/> Date:	

Element	Yes, No, N/A	Comments and/or Weblink
<b>Policies/Ordinance</b>		
Zoning Ordinance	No <input type="checkbox"/>	
Building Code	Version: No <input type="checkbox"/>	
Floodplain Ordinance	No <input type="checkbox"/>	
Subdivision Ordinance	N/A <input type="checkbox"/>	
Tree Trimming Ordinance	No <input type="checkbox"/>	
Nuisance Ordinance	Yes	
Stormwater Ordinance	No <input type="checkbox"/>	
Drainage Ordinance	No <input type="checkbox"/>	
Site Plan Review Requirements	No <input type="checkbox"/>	
Historic Preservation Ordinance	No <input type="checkbox"/>	
Landscape Ordinance	No <input type="checkbox"/>	
<b>Program</b>		
Zoning/Land Use Restrictions	No <input type="checkbox"/>	
Codes Building Site/Design	No <input type="checkbox"/>	
Hazard Awareness Program	Yes	
National Flood Insurance Program (NFIP)	Yes	
NFIP Community Rating System (CRS) program	Rating: N/A <input type="checkbox"/>	
National Weather Service (NWS) Storm Ready Certification	No <input type="checkbox"/>	
Firewise Community Certification	No <input type="checkbox"/>	
Building Code Effectiveness Grading (BCEGs)	No <input type="checkbox"/>	
ISO Fire Rating	Rating:8 Yes	
Economic Development Program	Yes <input type="checkbox"/>	
Land Use Program	No <input type="checkbox"/>	
Public Education/Awareness	No <input type="checkbox"/>	
Property Acquisition	No <input type="checkbox"/>	
Planning/Zoning Boards	No <input type="checkbox"/>	
Stream Maintenance Program	No <input type="checkbox"/>	
Tree Trimming Program	No <input type="checkbox"/>	
<b>Engineering Studies for Streams (Local/County/Regional)</b>	Yes	Use County plan.

Element	Yes, No, N/A	Comments and/or Weblink
Mutual Aid Agreements	Yes Date: 2021	
<b>Studies/Reports/Maps</b>		
<u>Hazard Analysis/Risk Assessment (City)</u>	No <input type="checkbox"/> Date:	
<u>Hazard Analysis/Risk Assessment (County)</u>	Yes Date:	County
Evacuation Route Map	No <input type="checkbox"/> Date:	
<u>Critical Facilities Inventory</u>	No <input type="checkbox"/> Date:	
<u>Vulnerable Population Inventory</u>	No <input type="checkbox"/> Date:	
<u>Land Use Map</u>	No <input type="checkbox"/> Date:	
Staff/Department		Full Time or Part Time?
Building Code Official	:	N/A <input type="checkbox"/>
Building Inspector		N/A <input type="checkbox"/>
Mapping Specialist (GIS)		N/A <input type="checkbox"/>
Engineer		N/A <input type="checkbox"/>
Development Planner		N/A <input type="checkbox"/>
Public Works Official		N/A <input type="checkbox"/>
Emergency Management Coordinator		N/A <input type="checkbox"/>
NFIP Floodplain Administrator		N/A <input type="checkbox"/>
Emergency Response Team		N/A <input type="checkbox"/>
Hazardous Materials Expert		N/A <input type="checkbox"/>
Local Emergency Planning Committee		N/A <input type="checkbox"/>
County Emergency Management Commission		N/A <input type="checkbox"/>
Sanitation Department		N/A <input type="checkbox"/>
Transportation Department		N/A <input type="checkbox"/>
Economic Development Department		N/A <input type="checkbox"/>
Housing Department		N/A <input type="checkbox"/>
Historic Preservation		N/A <input type="checkbox"/>
Non-Governmental Organizations (NGOs)	Is there a local chapter? Yes or No	
American Red Cross	No <input type="checkbox"/>	
Salvation Army	No <input type="checkbox"/>	
Veterans Groups	No <input type="checkbox"/>	

Element	Yes, No, N/A	Comments and/or Weblink
Local Environmental Organization	No <input type="checkbox"/>	
Homeowner Associations	No <input type="checkbox"/>	
Neighborhood Associations	No <input type="checkbox"/>	
Chamber of Commerce	Yes	Vernon County
Community Organizations (Lions, Kiwanis, etc.)	No <input type="checkbox"/>	
Financial Resources		Is your jurisdiction able to? Yes or No
Apply for Community Development Block Grants		Yes
Fund projects thru Capital Improvements funding		Yes
Authority to levy taxes for specific purposes		Yes
Fees for water, sewer, gas, or electric services		Yes
Impact fees for new development		Yes
Incur debt through general obligation bonds		Yes
Incur debt through special tax bonds		Yes
Incur debt through private activities		Yes
Withhold spending in hazard prone areas		N/A <input type="checkbox"/>

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive Plan	N/A
Builder's Plan	N/A
Capital Improvement Plan	N/A
Local Recovery Plan	N/A
County Recovery Plan	N/A
Debris Management Plan	N/A
Economic Development Plan	N/A
Transportation Plan	N/A
Land-use Plan	N/A
Watershed Plan	N/A
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	N/A

### Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members)

A Mayor and 4 Council 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.

N/A

3. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

N/A

4. Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers.

N/A

5. How many outdoor warning sirens are in your community?

1

How are they activated (indicate responsible department/personnel)?

Fire Department

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?

No



N/A



Please provide address locations:

8. List residential, commercial and industrial development in your jurisdiction since last plan update.

N/A

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.

N/A

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.

N/A

11. Please list major employers in your jurisdiction with an estimated number of employees.

NEVC Elementary Scholl - approx. 30

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?

N/A

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 (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - <b>RF</b>	Drought - <b>D</b>
Levee Failure - <b>LF</b>	Extreme Temperature - <b>ET</b>
Dam Failure - <b>DF</b>	Severe Thunderstorm (incl. winds, hail, lightning) - <b>ST</b>
Earthquake - <b>EQ</b>	Severe Winter Weather (incl. snow, ice, severe cold) - <b>SWW</b>
Land Subsidence / Sinkholes - <b>LSS</b>	Tornadoes - <b>T</b>
Drought - <b>D</b>	Wildfire - <b>WF</b>

### Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

#### Essential Facilities

Hospitals and other medical facilities  
Police stations  
Fire station  
Emergency Operations Centers

#### High Potential Loss Facilities

Power plants  
Dams/levees  
Military installations  
Hazardous material sites  
Schools  
Shelters  
Day care centers  
Nursing homes  
Main government buildings

#### Transportation and Lifeline

Highways, bridges, and tunnels  
Railroads and facilities  
Bus facilities  
Airports  
Water treatment facilities  
Natural gas facilities and pipelines  
Oil facilities and pipelines  
Communications facilities

### 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.



Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
High Potential Loss Facilities such as power plants, dams/levees, 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)						
Community Bldg - City Hall	140 S. Main St.		310,000	25,000		
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities, bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						

\*If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.

**Economic Assets (Major Employers, etc)**

Asset	Address	Product/ Service	Value (if known)	Number of Employees	Hazards

## HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

<b>Jurisdiction</b>	
<b>Type of event</b>	
<b>Nature and magnitude of event</b>	
<b>Location</b>	
<b>Date of event</b>	
<b>Injuries</b>	
<b>Deaths</b>	
<b>Property damage</b>	
<b>Infrastructure damage</b>	
<b>Crop damage</b>	
<b>Business/economic impacts</b>	
<b>Road/school/other closures</b>	
<b>Other damage</b>	
<b>Insured losses</b>	
<b>Federal/state disaster relief funding</b>	
<b>Source of information</b>	
<b>Comments</b>	

## HISTORIC HAZARD EVENTS (continued)

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

<b>Jurisdiction</b>	
<b>Type of event</b>	
<b>Nature and magnitude of event</b>	
<b>Location</b>	
<b>Date of event</b>	
<b>Injuries</b>	
<b>Deaths</b>	
<b>Property damage</b>	
<b>Infrastructure damage</b>	
<b>Crop damage</b>	
<b>Business/economic impacts</b>	
<b>Road/school/other closures</b>	
<b>Other damage</b>	
<b>Insured losses</b>	
<b>Federal/state disaster relief funding</b>	
<b>Source of information</b>	
<b>Comments</b>	

## ASSESSMENT OF PREVIOUSLY PROPOSED ACTIONS

**Jurisdiction:** City of Schell City

The contractor/plan development facilitator 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:

- For **completed actions** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- Some of the actions might have been **ongoing** in nature, such public information and education programs. When this is the case, 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.
- 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		
1	Emergency Alert Systems	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Current warning siren deemed sufficient.	Delete
2	Storm Drainage	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Some ditch and culvert work has been done as needed. Lack of funding slows progress.	Keep
3	Equipment Upgrades	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Fire Dept has purchased new communication equipment as needed. Ongoing need.	Keep

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		
4	Coordinate Drills	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Lack of funding.	Keep
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		Keep
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		Keep
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		Keep
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		Keep
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		Keep
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		Keep
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		Keep
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		Keep
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		Keep

11-23-23

**Multi-Jurisdictional Hazard Mitigation Plan  
Data Collection Questionnaire  
For Local Governments**

County: Vernon  
Jurisdiction: Sheldon  
Return by: K

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: Tammy Goodwin  
Phone: 417-884-2621  
Email: Cityofsheldon@gmail.com  
Date: 10/18/23

**Please return questionnaires by mail, email, or fax to:**

Name: Dillon Harness  
Address: 221 N 2<sup>nd</sup> Street  
Email: dharness@kaysinger.com  
Fax: 660-885-4166

<b>REQUIRED</b> (For match purposes)
Approximate time spent on data collection Questionnaires. (hrs./mins.):
<u>4 HRS</u>
Date Completed
<u>10/17/23</u>

## CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
<b>Planning Capabilities</b>		
<b><u>Comprehensive Plan</u></b>	Date:	
Builder's Plan	Date:	
Capital Improvement Plan	Date:	
City Emergency Operations Plan	Date:	
County Emergency Operations Plan	Date:	
Local Recovery Plan	Date:	
County Recovery Plan	Date:	
City Mitigation Plan	Date:	
County Mitigation Plan	Date: <sup>↑</sup> 2022 up updated yearly	
Debris Management Plan	Date:	
<b><u>Economic Development Plan</u></b>	Date:	
Transportation Plan	Date:	
Land-use Plan	Date:	
Flood Mitigation Assistance (FMA) Plan	Date:	
<b><u>Watershed Plan</u></b>	Date:	
Firewise or other fire mitigation plan	Date:	
Critical Facilities Plan (Mitigation/Response/Recovery)	Date:	

Element	Yes, No, N/A	Comments and/or Weblink
<b>Policies/Ordinance</b>		
Zoning Ordinance	4	Board of Aldermen are Zoning Board.
Building Code	Version: 2015-01	
Floodplain Ordinance		
Subdivision Ordinance		
Tree Trimming Ordinance		
Nuisance Ordinance	4-2006	
Stormwater Ordinance		
Drainage Ordinance		
Site Plan Review Requirements		
Historic Preservation Ordinance		
Landscape Ordinance		
<b>Program</b>		
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 Certification		
Firewise Community Certification		
Building Code Effectiveness Grading (BCEGs)		
ISO Fire Rating	Rating: 86	
Economic Development Program	4	
Land Use Program		
Public Education/Awareness		
Property Acquisition		
Planning/Zoning Boards	4	
Stream Maintenance Program		
Tree Trimming Program		
<b><u>Engineering Studies for Streams (Local/County/Regional)</u></b>		

Element	Yes, No, N/A	Date:	Comments and/or Weblink
Mutual Aid Agreements	up		w/ other fire Dep'ts.
Studies/Reports/Maps			
<u>Hazard Analysis/Risk Assessment (City)</u>	✓	Date:	
<u>Hazard Analysis/Risk Assessment (County)</u>	N	Date:	
Evacuation Route Map	N	Date:	
<u>Critical Facilities Inventory</u>	up	Date:	
<u>Vulnerable Population Inventory</u>	N	Date:	
<u>Land Use Map</u>	N	Date:	
Staff/Department			Full Time or Part Time?
Building Code Official	:	N	
Building Inspector		N	
Mapping Specialist (GIS)		N	
Engineer		N	
Development Planner		N	
Public Works Official		Y	Full time
Emergency Management Coordinator		Y	<del>Allison Powell</del> Parttime
NFIP Floodplain Administrator		N	
Emergency Response Team		N	
Hazardous Materials Expert		N	
Local Emergency Planning Committee		N	
County Emergency Management Commission		Y	
Sanitation Department		N	
Transportation Department		N	
Economic Development Department		N	
Housing Department		N	
Historic Preservation		N	
Non-Governmental Organizations (NGOs)	Is there a local chapter? Yes or No		
American Red Cross	Yes	No	
Salvation Army	Yes	No	
Veterans Groups	Yes	No	

Element	Yes, No, N/A	Comments and/or Weblink
Local Environmental Organization	N	
Homeowner Associations	N	
Neighborhood Associations	N	
Chamber of Commerce	N	
Community Organizations (Lions, Kiwanis, etc.)	Y	
Financial Resources		Is your jurisdiction able to? Yes or No
Apply for Community Development Block Grants		<input checked="" type="radio"/> Yes      No
Fund projects thru Capital Improvements funding		<input checked="" type="radio"/> Yes      No
Authority to levy taxes for specific purposes		<input checked="" type="radio"/> Yes      No
Fees for water, sewer, <del>gas</del> , or electric services	trash also	<input checked="" type="radio"/> Yes      No
Impact fees for new development		<input checked="" type="radio"/> Yes      No
Incur debt through general obligation bonds		<input checked="" type="radio"/> Yes      No
Incur debt through special tax bonds		<input checked="" type="radio"/> Yes      No
Incur debt through private activities		<input checked="" type="radio"/> Yes      No
Withhold spending in hazard prone areas		<input checked="" type="radio"/> Yes      No

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive Plan	
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)

4 Board 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.

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? 1 @ the City Park Key Switch

by Fire Dept

How are they activated (indicate responsible department/personnel)? Key Switch by Fire Dept

or City Clerk

working on wifi capable

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? yes + Probably not

Please provide address locations:

1002 Gene Lathrop Drive  
Sheldon School

109 W Second - Methodist Church

8. List residential, commercial and industrial development in your jurisdiction since last plan update.

New Commercial Property Business Dollar General

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.

11. Please list major employers in your jurisdiction with an estimated number of employees.

Sheldon School - 40-50

Sones Boots + Twine - total 25-30

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.

Do not Participate

Not in a Flood Zone

## VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - <b>RF</b>	Drought - <b>D</b>
Levee Failure - <b>LF</b>	Extreme Temperature - <b>ET</b>
Dam Failure - <b>DF</b>	Severe Thunderstorm (incl. winds, hail, lightning) - <b>ST</b>
Earthquake - <b>EQ</b>	Severe Winter Weather (incl. snow, ice, severe cold) - <b>SWW</b>
Land Subsidence / Sinkholes - <b>LSS</b>	Tornadoes - <b>T</b>
Drought - <b>D</b>	Wildfire - <b>WF</b>

### Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

#### Essential Facilities

Hospitals and other  
medical facilities  
Police stations  
Fire station  
Emergency Operations  
Centers

#### High Potential Loss Facilities

Power plants  
Dams/levees  
Military installations  
Hazardous material sites  
Schools ~  
Shelters ~  
Day care centers  
Nursing homes  
Main government buildings ~

#### Transportation and Lifeline

Highways, bridges, and tunnels ~  
Railroads and facilities ~  
Bus facilities  
Airports  
Water treatment facilities ~  
Natural gas facilities and  
pipelines  
Oil facilities and pipelines  
Communications facilities

### 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.



Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
High Potential Loss Facilities such as power plants, dams/levees, military installations, hazardous materials sites, shelters, day care centers, nursing homes, main government buildings (Do not include schools—they will be reported by the school districts)						
			See	Page 2		
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities, bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						

\*If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.

**Economic Assets (Major Employers, etc)**

Asset	Address	Product/ Service	Value (if known)	Number of Employees	Hazards

## HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

<b>Jurisdiction</b>	
<b>Type of event</b>	
<b>Nature and magnitude of event</b>	
<b>Location</b>	
<b>Date of event</b>	
<b>Injuries</b>	
<b>Deaths</b>	
<b>Property damage</b>	
<b>Infrastructure damage</b>	
<b>Crop damage</b>	
<b>Business/economic impacts</b>	
<b>Road/school/other closures</b>	
<b>Other damage</b>	
<b>Insured losses</b>	
<b>Federal/state disaster relief funding</b>	
<b>Source of information</b>	
<b>Comments</b>	

## HISTORIC HAZARD EVENTS (continued)

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	City of Sheldon
Type of event	80+ mph winds Storm Dist
Nature and magnitude of event	80+ mph winds
Location	City of Sheldon.
Date of event	August 2013
Injuries	None
Deaths	None
Property damage	Several Roofs, Siding, fences.
Infrastructure damage	Power lines + Poles down
Crop damage	
Business/economic impacts	Clean up + Crew Expenses.
Road/school/other closures	Several Roads closed down
Other damage	
Insured losses	
Federal/state disaster relief funding	Snow Storm - Funding
Source of information	
Comments	

## ASSESSMENT OF PREVIOUSLY PROPOSED ACTIONS

Jurisdiction: City of Sudon

The contractor/plan development facilitator 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:

- For **completed actions** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- Some of the actions might have been **ongoing** in nature, such public information and education programs. When this is the case, 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.
- 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 School Districts**  
**and Educational Institutions**

County: Vernon

School District /  
Educational Institution Name: Bronaugh R7

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: Beth Sandness

Phone: 417-922-3211

Email: bsandness@bronaugh.k12.mo.us

Date: 9-19-23

**Please return questionnaires by mail, email, or fax to:**

Name: Dillon Harness

Address: 221 N 2<sup>nd</sup> Street, Clinton, Mo 64735

Email: dharness@kaysinger.com

Fax: 660-885-4166

<b><u>REQUIRED</u></b> (For match purposes)
Approximate time spent on data collection Questionnaires. (hrs./mins.):
<u>3</u>
Date Completed
_____

## CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with "N/A". If applicable, please provide a completion date for the element. If your school district / institution has any of the **underlined and bolded** elements, please provide a copy of the document to the contact indicated on the front of this questionnaire and indicate method in the comments column (i.e. available on the web, will email or mail).

Planning Elements	Yes/No	Date of Latest Version	Comments
Master Plan	Yes	6-2023	
Capital Improvement Plan	Yes	6-2023	
<b>School Emergency Plan</b> Shelter in place protocols Evacuation protocols	Yes	8-2023	
Weapons Policy	Yes	8-2023	

### Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Personnel Resources	Yes/No	Department/Position	Comments
Full-time building official (i.e. Principal)	Yes	Superintendent and Principal	
Emergency Manager	No		
Grant Writer	No		
Public Information Officer	No	Superintendent	

### Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible/Eligible to Use (Y/N)	Comments
Capital improvements project funding	Yes	
Local funds	Yes	
General obligation bonds	No	
Special tax bonds	No	
Private activities/donations	Yes	
State and federal funds	Yes	

### Additional Capabilities Questions

1. Are your buildings equipped with a public address (PA) system or other emergency alert system? Please describe.  
Yes, all rooms have speakers or phones that we use for announcements.
2. Does your school buildings' have NOAA Weather Radios?  
We have 2 weather radios.
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 do drills on fire and tornado safety.
4. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities.
5. Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?  
Yes No
6. Did your school district / institution make any additions to buildings or construction new buildings since the last plan update (2010)? 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?  
Not that we plan to do as of now.
8. What percentage is your projected enrollment expected to increase or decrease in the next five years?  
Approximately 5%
9. Do you have your own campus police? Please explain your police department or who you rely on for security needs.  
No, we would have to call the Vernon County Sheriff's office.





## HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district / institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

## HISTORIC HAZARD EVENTS (continued)

Please fill out one sheet for each significant hazard event that affected **your school district /institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

*Scanned*

### Multi-Jurisdictional Hazard Mitigation Plan

### Data Collection Questionnaire

### For School Districts and Educational Institutions

County: VERNON

School District /  
Educational Institution Name: COTTEY COLLEGE

Return by: 9/22/23

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: TODD HEFNER

Phone: 417-667-8181

Email: thefner@cottey.edu

Date: 9/11/23

**Please return questionnaires by mail, email, or fax to:**

Name: Dillon Harness

Address: 221 N 2<sup>nd</sup> Street, Clinton, Mo 64735

Email: dharness@kaysinger.com

Fax: 660-885-4166

<b>REQUIRED</b> (For match purposes)
Approximate time spent on data collection Questionnaires. (hrs./mins.):
<u>3</u>
Date Completed
_____
_____

## CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with "N/A". If applicable, please provide a completion date for the element. If your school district / institution has any of the **underlined and bolded** elements, please provide a copy of the document to the contact indicated on the front of this questionnaire and indicate method in the comments column (i.e. available on the web, will email or mail).

Planning Elements	Yes/No	Date of Latest Version	Comments
Master Plan	YES	2019	
Capital Improvement Plan	NO		
<b><u>School Emergency Plan</u></b>			
Shelter in place protocols	YES	08/23	
Evacuation protocols	YES	08/23	
Weapons Policy	YES	08/23	

### Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Personnel Resources	Yes/No	Department/Position	Comments
Full-time building official (i.e. Principal)	YES	PHYSICAL PLANT	
Emergency Manager	NO		
Grant Writer	NO		
Public Information Officer	YES	MARKETING	

### Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible/Eligible to Use (Y/N)	Comments
Capital improvements project funding	Y	
Local funds	N	
General obligation bonds	N	
Special tax bonds	N	
Private activities/donations	Y	
State and federal funds	<del>N</del> Y	

### Additional Capabilities Questions

1. Are your buildings equipped with a public address (PA) system or other emergency alert system? Please describe.  
*YES*
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.
  - *INSTALLED MULTIPLE GENERATORS*
  - *PREVENTATIVE MAINT. PROGRAMS FOR ALL MAJOR EQUIPMENT & SYSTEMS*
  - *ANNUAL UPDATE TO EMERGENCY PLAN*
4. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities.
  - *ANNUAL TRAINING*
5. Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?  
*YES; BASEMENTS CONSTRUCTED AS SHELTERS IN MULTIPLE BUILDINGS*
6. Did your school district / institution make any additions to buildings or construction new buildings since the last plan update (2010)? Please list the buildings and the improvement.  
*FINE ARTS BUILDING (NEW) IN 2015. 2 STORY ACADEMIC BUILDING 24,359 S.F.*
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?  
*POTENTIAL NEW SAFEROOM/GYM TO CONNECT TO EXISTING GYMNASIUM. NO KNOWN HAZARDS*
8. What percentage is your projected enrollment expected to increase or decrease in the next five years?  
*INCREASE 20-25% PROJECTED*
9. Do you have your own campus police? Please explain your police department or who you rely on for security needs.  
*IN-HOUSE, 24-HR SECURITY. OBSERVE/REPORT, BUILDING SECURITY, MECHANICAL SYSTEM ~~DE~~ MONITORING.*

3

## VULNERABILITY ASSESSMENT

### Asset Inventory

The purpose of this worksheet is to assist in the assessment of the vulnerable populations and facilities owned by your school district / institution. Use the table below to compile a detailed inventory of specific assets at risk. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - RF	Drought - D
Levee Failure - LF	Extreme Temperature - ET
Dam Failure - DF	Severe Thunderstorm (incl. winds, hail, lightning) - ST
Earthquake - EQ	Severe Winter Weather (incl. snow, ice, severe cold) - SWW
Land Subsidence / Sinkholes - LSS	Tornadoes - T
Drought - D	Wildfire - WF

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	Area (sq.ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
MAIN HALL		39,561	9,600,000	600,000	100	ET ST <sup>T</sup> <sub>SWW</sub>
NEALE HALL		10,800	2,805,000	225,000	150	
FINE ARTS BUILDING		24,359	12,250,000	1,850,000	400	
PEO HALL		39,160	7,755,000	775,000	120	
POWER PLANT		9,500	12,560,000	757,000	50	
REEVES HALL		<del>43,080</del>	7,750,000	550,000	150	
CHAPEL		12,000 <del>10,709</del>	3,450,000	450,000	250	↓

\* ALL OF CAMPUS @ 1000 W. AUSTIN BLVD UNLESS OTHERWISE NOTED

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/Capacity (#)	Natural Hazards
ROBERTSON HALL		60,104	15,410	1,000,000	190	ET ST SW T
LIBRARY		26,000	7,070,000	1,100,000	150	
RBAC		42,000	17,600,000	2,300,000	400	
HINKHOUSE		50,000	14,050,000	2,650,000	200	
COTTEYHOUSE	424 W. CHERRY	3,000	540,000	50,000	10	
PRESIDENT'S HOUSE	738 W. CHERRY	5,000	1,055,000	70,000	10	
B.I.L. LODGE		2,250	310,000	20,000	50	
AUDITORIUM		30,000	11,100,000	1,775,000	350	
CIVIL		6,000	1,450,000	100,000	20	
WAREHOUSE	1102 S. CHERRY	1,800	145,000	30,000	50	
GARAGE (2)		480	251,000	11,000	2	
SOFTBALL FIELD		11,000	190,460	51,000	100	
WELNESS CENTER	1315 N. AUGUSTIN	2,500	370,000	35,000	30	
TRITEX		2,500	350,000	5,000	8	
GIBSON HOUSE	1701 W. ARCH	1,100	170,000	5,000	4	
TOWNHOMES		4,650	585,000	20,000	18	

## HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district / institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	COVID
Nature and magnitude of event	
Location	CAMPUS
Date of event	MARCH <del>2019</del> 2020
Injuries	NONE
Deaths	NONE
Property damage	NONE
Infrastructure damage	NONE
Crop damage	N/A
Business/economic impacts	NONE
Road/school/other closures	CLOSED CAMPUS FOR SEVERAL MONTHS
Other damage	NONE
Insured losses	NONE
Federal/state disaster relief funding	UNKNOWN
Source of information	
Comments	Campus closed; went to remote learning; campus opened again in Aug. <del>2019</del> 2020

## HISTORIC HAZARD EVENTS (continued)

Please fill out one sheet for each significant hazard event that affected **your school district /institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	SEVERE STORMS TORNADOS
Nature and magnitude of event	
Location	CAMPUS
Date of event	<del>FEB</del> 7/8/19
Injuries	NONE
Deaths	NONE
Property damage	MINOR WIND DAMAGE
Infrastructure damage	NONE
Crop damage	N/A
Business/economic impacts	NONE
Road/school/other closures	NONE
Other damage	NONE
Insured losses	NONE
Federal/state disaster relief funding	
Source of information	
Comments	

**Multi-Jurisdictional Hazard Mitigation Plan**  
**Data Collection Questionnaire**  
**For School Districts**  
**and Educational Institutions**

County: Vernon County

School District /  
Educational Institution Name: Crowder College- Nevada Instructional Site

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: TJ Angel

Phone: 417-455-5544

Email: tjangel@crowder.edu

Date: 9/14/2023

**Please return questionnaires by mail, email, or fax to:**

Name: Dillon Harness

Address: 221 N 2<sup>nd</sup> Street, Clinton, Mo 64735

Email: dharness@kaysinger.com

Fax: 660-885-4166

<b><u>REQUIRED</u></b> (For match purposes)
Approximate time spent on data collection Questionnaires. (hrs./mins.):
_____
_____
Date Completed
_____
_____

## CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with "N/A". If applicable, please provide a completion date for the element. If your school district / institution has any of the **underlined and bolded** elements, please provide a copy of the document to the contact indicated on the front of this questionnaire and indicate method in the comments column (i.e. available on the web, will email or mail).

Planning Elements	Yes/No	Date of Latest Version	Comments
Master Plan	No		
Capital Improvement Plan	No		
<b><u>School Emergency Plan</u></b>			
Shelter in place protocols	Yes	2015	
Evacuation protocols			
Weapons Policy	Yes	2022	

### Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Personnel Resources	Yes/No	Department/Position	Comments
Full-time building official (i.e. Principal)	Yes	Instructional Site Director	
Emergency Manager	Yes	Chief of Police	
Grant Writer	No	Grants Director	
Public Information Officer	Yes	Director of Public Information	

### Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible/Eligible to Use (Y/N)	Comments
Capital improvements project funding	No	
Local funds	No	
General obligation bonds	No	
Special tax bonds	No	
Private activities/donations	No	
State and federal funds	No	

2

### Additional Capabilities Questions

1. Are your buildings equipped with a public address (PA) system or other emergency alert system? Please describe.  
Yes
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.  
No
4. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities.  
N/A
5. Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?  
No
6. Did your school district / institution make any additions to buildings or construction new buildings since the last plan update (2010)? 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?  
Flat. No increase.
9. Do you have your own campus police? Please explain your police department or who you rely on for security needs.  
Crowder College has its own Police Department located at the Neosho Campus. This Department will oversee the safe/security at the Nevada location. They will work in conjunction with local law enforcement should the need arise.

## VULNERABILITY ASSESSMENT

### Asset Inventory

The purpose of this worksheet is to assist in the assessment of the vulnerable populations and facilities owned by your school district / institution. Use the table below to compile a detailed inventory of specific assets at risk. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - RF	Drought - D
Levee Failure - LF	Extreme Temperature - ET
Dam Failure - DF	Severe Thunderstorm (incl. winds, hail, lightning) - ST
Earthquake - EQ	Severe Winter Weather (incl. snow, ice, severe cold) - SWW
Land Subsidence / Sinkholes - LSS	Tornadoes - T
Drought - D	Wildfire - WF

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	Area (sq.ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
Crowder College Moss Center-Nevada	600 W Edwards	24,000	\$3,889,183	\$237,320		



## HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district / institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	N/A
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

## HISTORIC HAZARD EVENTS (continued)

Please fill out one sheet for each significant hazard event that affected **your school district /institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

*Scanned*

**Multi-Jurisdictional Hazard Mitigation Plan  
Data Collection Questionnaire**

**For School Districts  
and Educational Institutions**

County: Vernon  
School District /  
Educational Institution Name: Missouri Welding Institute  
Return by: Sept 22, 2023

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: Natasha Carney  
Phone: 417-667-5800  
Email: natasha.carney@missouriweldinginstitute.com  
Date: \_\_\_\_\_

**Please return questionnaires by mail, email, or fax to:**

Name: Dillon Harness  
Address: 221 N 2<sup>nd</sup> Street, Clinton, Mo 64735  
Email: dharness@kaysinger.com  
Fax: 660-885-4166

<b>REQUIRED</b> (For match purposes)
Approximate time spent on data collection Questionnaires. (hrs./mins.):
_____
<u>1 hr.</u>
Date Completed
_____
<u>9/22/23</u>

## CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with "N/A". If applicable, please provide a completion date for the element. If your school district / institution has any of the **underlined and bolded** elements, please provide a copy of the document to the contact indicated on the front of this questionnaire and indicate method in the comments column (i.e. available on the web, will email or mail).

Planning Elements	Yes/No	Date of Latest Version	Comments
Master Plan	No		
Capital Improvement Plan	No		
<b><u>School Emergency Plan</u></b>			
Shelter in place protocols	Yes		
Evacuation protocols	Yes		
Weapons Policy	Yes		

### Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Personnel Resources	Yes/No	Department/Position	Comments
Full-time building official (i.e. Principal)	Yes	Director of Training	
Emergency Manager	N/A		
Grant Writer	N/A		
Public Information Officer	N/A		

### Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible/Eligible to Use (Y/N)	Comments
Capital improvements project funding	N	
Local funds	N	
General obligation bonds	N	
Special tax bonds	N	
Private activities/donations	Y	
State and federal funds	N	

2

### Additional Capabilities Questions

1. Are your buildings equipped with a public address (PA) system or other emergency alert system? Please describe.  
*Yes, building and outside speakers are all wired to PA system*
2. Does your school buildings' have NOAA Weather Radios?  
*Yes, all buildings have NOAA Weather Radios*
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.  
*No*
4. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities.  
*No*
5. Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?  
*Yes, unsure if they are in accordance with FEMA standards, we have a large basement for tornado shelter.*
6. Did your school district / institution make any additions to buildings or construction new buildings since the last plan update (2010)? 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?  
*Yes, we are building a new building for pipe welding. They are not known to be in hazard areas.*
8. What percentage is your projected enrollment expected to increase or decrease in the next five years?  
*Increase 50%*
9. Do you have your own campus police? Please explain your police department or who you rely on for security needs.  
*No, we use local county and city police.*

## VULNERABILITY ASSESSMENT

### Asset Inventory

The purpose of this worksheet is to assist in the assessment of the vulnerable populations and facilities owned by your school district / institution. Use the table below to compile a detailed inventory of specific assets at risk. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - RF	Drought - D
Levee Failure - LF	Extreme Temperature - ET
Dam Failure - DF	Severe Thunderstorm (incl. winds, hail, lightning) - ST
Earthquake - EQ	Severe Winter Weather (incl. snow, ice, severe cold) - SWW
Land Subsidence / Sinkholes - LSS	Tornadoes - T
Drought - D	Wildfire - WF

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	Area (sq.ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
Office Building	3300 Industrial Pkwy Alameda MO 64472	4300	665,414	118,557	information unavailable	EQ, ET, ST, SSW, T, WF
Classroom / Pipe Lab	3300 Industrial Pkwy Alameda MO 64472	6000	1,341,508	91,855	information unavailable	EQ, ET, ST, SSW, T, WF
Shop Building	3300 Industrial Pkwy Alameda MO 64472	8150	1,184,501	780,766	information unavailable	EQ, ET, ST, SSW, T, WF
Warehouse	3300 Industrial Pkwy Alameda MO 64472	3400	507,338	132,442	information unavailable	EQ, ET, ST, SSW, T, WF



## HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district / institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

## HISTORIC HAZARD EVENTS (continued)

Please fill out one sheet for each significant hazard event that affected **your school district /institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

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11-11-23

**Multi-Jurisdictional Hazard Mitigation Plan**  
**Data Collection Questionnaire**  
**For School Districts**  
**and Educational Institutions**

County: Vernon County

School District /  
Educational Institution Name: Nevada R-5 School District

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: Tyson Beshore

Phone: 417-448-2000

Email: tbeshore@nevada.k12.mo.us

Date: 9/11/23

**Please return questionnaires by mail, email, or fax to:**

Name: Dillon Harness

Address: 221 N 2<sup>nd</sup> Street, Clinton, Mo 64735

Email: dharness@kaysinger.com

Fax: 660-885-4166

<p><b><u>REQUIRED</u></b> (For match purposes)</p> <p>Approximate time spent on data collection Questionnaires. (hrs./mins.):</p> <p><u>2.5 hours</u></p> <p>Date Completed</p> <p><u>9/11/23</u></p>
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## CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with "N/A". If applicable, please provide a completion date for the element. If your school district / institution has any of the **underlined and bolded** elements, please provide a copy of the document to the contact indicated on the front of this questionnaire and indicate method in the comments column (i.e. available on the web, will email or mail).

Planning Elements	Yes/No	Date of Latest Version	Comments
Master Plan	yes		
Capital Improvement Plan	yes		
<b><u>School Emergency Plan</u></b>			
Shelter in place protocols			
Evacuation protocols	yes		
Weapons Policy	yes		

### Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Personnel Resources	Yes/No	Department/Position	Comments
Full-time building official (i.e. Principal)	yes	Superintendent	
Emergency Manager	yes	Asst. Superintendent	
Grant Writer	No		
Public Information Officer	No		

### Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible/Eligible to Use (Y/N)	Comments
Capital improvements project funding	Y	
Local funds	Y	
General obligation bonds	Y	
Special tax bonds	N/A	
Private activities/donations		
State and federal funds	Y	

2

### Additional Capabilities Questions

1. Are your buildings equipped with a public address (PA) system or other emergency alert system? Please describe.

Yes, we have intercoms in all buildings.

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.

No

4. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities.

No

5. Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?

No

6. Did your school district / institution make any additions to buildings or construction new buildings since the last plan update (2010)? Please list the buildings and the improvement.

Yes, we built a performing arts center and multi-purpose gym at the high school. We are currently building a PreK-2 elementary building scheduled for completion fall 2024.

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?

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 have a school resource officer (sheriff's office) on site we use the Vernon County Sheriff as well as the City of Nevada police department.

3





## HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district / institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

### HISTORIC HAZARD EVENTS (continued)

Please fill out one sheet for each significant hazard event that affected **your school district /institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	





**Multi-Jurisdictional Hazard Mitigation Plan**  
**Data Collection Questionnaire**  
**For School Districts**  
**and Educational Institutions**

County: Vernon  
School District /  
Educational Institution Name: Northeast Vernon County R-1  
Return by: 9-22-23

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: Chris Holcomb  
Phone: 417-465-2221  
Email: cholcomb@nevc.k12.mo.us  
Date: 9-6-23

**Please return questionnaires by mail, email, or fax to:**

Name: Dillon Harness  
Address: 221 N 2<sup>nd</sup> Street, Clinton, Mo 64735  
Email: dharness@kaysinger.com  
Fax: 660-885-4166

<b>REQUIRED</b> (For match purposes)
Approximate time spent on data collection Questionnaires. (hrs./mins.):
<u>1 hour</u>
Date Completed
<u>9-15-23</u>

## CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with "N/A". If applicable, please provide a completion date for the element. If your school district / institution has any of the **underlined and bolded** elements, please provide a copy of the document to the contact indicated on the front of this questionnaire and indicate method in the comments column (i.e. available on the web, will email or mail).

Planning Elements	Yes/No	Date of Latest Version	Comments
Master Plan	Yes	8-1-23	
Capital Improvement Plan	No		
<b><u>School Emergency Plan</u></b>			
Shelter in place protocols	Yes	8-1-23	
Evacuation protocols			
Weapons Policy	Yes	8-1-23	

### Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Personnel Resources	Yes/No	Department/Position	Comments
Full-time building official (i.e. Principal)	Yes	Principal	2 principals
Emergency Manager	No		
Grant Writer	No		
Public Information Officer	No		

### Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible/Eligible to Use (Y/N)	Comments
Capital improvements project funding	Y	
Local funds	Y	
General obligation bonds	N	
Special tax bonds	N	
Private activities/donations	Y	
State and federal funds	Y	

**Additional Capabilities Questions**

1. Are your buildings equipped with a public address (PA) system or other emergency alert system? Please describe. *Yes, we have building intercoms.*
  
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.  
*None*
  
4. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities.  
*None*
  
5. Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?  
*No*
  
6. Did your school district / institution make any additions to buildings or construction new buildings since the last plan update (2010)? 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?  
*1%*
  
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 the Vernon County*  
*~~Sheriff's Office~~ Sheriff's Office*

## VULNERABILITY ASSESSMENT

### Asset Inventory

The purpose of this worksheet is to assist in the assessment of the vulnerable populations and facilities owned by your school district / institution. Use the table below to compile a detailed inventory of specific assets at risk. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - RF	Drought - D
Levee Failure - LF	Extreme Temperature - ET
Dam Failure - DF	Severe Thunderstorm (incl. winds, hail, lightning) - ST
Earthquake - EQ	Severe Winter Weather (incl. snow, ice, severe cold) - SWW
Land Subsidence / Sinkholes - LSS	Tornadoes - T
Drought - D	Wildfire - WF

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	Area (sq.ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
NEUC High School	216 East Leslie Avenue Walker, MO 64780	14,000	6,782,258	976,716	140	N/A
NEUC Elementary School	150 North Hickory Street Senell City, MO 64783	10,000	3,598,982	559,202	140	N/A



## HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected your **school district / institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	<i>N/A</i>
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

## HISTORIC HAZARD EVENTS (continued)

Please fill out one sheet for each significant hazard event that affected **your school district /institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	N/A
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 School Districts**  
**and Educational Institutions**

County: Vernon

School District /  
Educational Institution Name: Sheldon R-VIII

Return by: 9/22/23

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: Jason Irwin

Phone: 417-884-5111

Email: jirwin@sheldon.k12.mo.us

Date: \_\_\_\_\_

**Please return questionnaires by mail, email, or fax to:**

Name: Dillon Harness

Address: 221 N 2<sup>nd</sup> Street, Clinton, Mo 64735

Email: dharness@kaysinger.com

Fax: 660-885-4166

<b>REQUIRED</b> (For match purposes)
Approximate time spent on data collection Questionnaires. (hrs./mins.):
<u>2 hrs. 30 min</u>
Date Completed
<u>9/19/23</u>

## CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with "N/A". If applicable, please provide a completion date for the element. If your school district / institution has any of the **underlined and bolded** elements, please provide a copy of the document to the contact indicated on the front of this questionnaire and indicate method in the comments column (i.e. available on the web, will email or mail).

Planning Elements	Yes/No	Date of Latest Version	Comments
Master Plan	Yes	Ongoing	
Capital Improvement Plan	NO		
<b><u>School Emergency Plan</u></b>			
Shelter in place protocols	Yes	Ongoing	
Evacuation protocols			
Weapons Policy	Yes	Ongoing	

### Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Personnel Resources	Yes/No	Department/Position	Comments
Full-time building official (i.e. Principal)	Yes	Superintendent/Principal	
Emergency Manager	Yes	Superintendent	
Grant Writer	NO		
Public Information Officer	Yes	Superintendent	

### Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible/Eligible to Use (Y/N)	Comments
Capital improvements project funding	Y	
Local funds	Y	
General obligation bonds	N	
Special tax bonds	N	
Private activities/donations	Y	
State and federal funds	Y	

2

### Additional Capabilities Questions

1. Are your buildings equipped with a public address (PA) system or other emergency alert system?  
Please describe. *Yes*  
*Intercom, tornado/fire alarms*
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.  
*NA*
4. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities.  
*NA*
5. Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?  
*NO, we use the basement locker rooms for tornado shelter.*
6. Did your school district / institution make any additions to buildings or construction new buildings since the last plan update (2010)? 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?  
*We remain steady.*
9. Do you have your own campus police? Please explain your police department or who you rely on for security needs.  
*No, Vernon County responds*

## VULNERABILITY ASSESSMENT

### Asset Inventory

The purpose of this worksheet is to assist in the assessment of the vulnerable populations and facilities owned by your school district / institution. Use the table below to compile a detailed inventory of specific assets at risk. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - RF	Drought - D
Levee Failure - LF	Extreme Temperature - ET
Dam Failure - DF	Severe Thunderstorm (incl. winds, hail, lightning) - ST
Earthquake - EQ	Severe Winter Weather (incl. snow, ice, severe cold) - SWW
Land Subsidence / Sinkholes - LSS	Tornadoes - T
Drought - D	Wildfire - WF

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	Area (sq.ft.)	Replacement Value (insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
Main Building	100 E Gene Lethrop Dr	38,517	6,894,790	1,112,046	500	FL, EQ, ST SWW, T
Preschool	Sheldon, mo 64784	1152	95,729	41,256		
Ag Building		7200	1,125,359	190,636		
Old High School/Storage		10,833	850,780	89704		
Recycle Trailer			9,344			



## HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district / institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

## HISTORIC HAZARD EVENTS (continued)

Please fill out one sheet for each significant hazard event that affected **your school district /institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

**Appendix G:  
Presentations Given at Meetings**

# Vernon County Multi-jurisdictional Hazard Mitigation Plan

## Plan Update Kick-off Meeting September 6<sup>th</sup> – 1:00 PM

**Project Planner:** Dillon Harness, Regional Planner  
Kaysinger Basin Regional Planning Commission



# Vernon County Multi-jurisdictional Hazard Mitigation Plan

## Agenda

- Hazard Mitigation Planning Purpose
- Grant Programs Linked to Approved Plan
- Planning Tasks / Multi-jurisdictional Approach
- Participation Requirements
- Public Involvement
- Data Collection Questionnaires
- Discussion of Hazards
- Critical Facility Inventory
- Next Steps in the Planning Process

## What Is Mitigation?

- Sustained action taken to reduce or eliminate long-term risk to human life and property from hazard events
- Mitigation planning is a process for communities to:
  - Identify the hazards to which they are at risk;
  - Assess the potential impacts of those hazards;
  - Develop goals, objectives, and actions to reduce impacts; and
  - Prioritize and implement mitigation actions.

# Vernon County Multi-jurisdictional Hazard Mitigation Plan

## New Guidance to be Aware of



### Local Mitigation Planning Policy Guide

FP 206-21-0002

Released April 19, 2022, Effective April 19, 2023

OMB Collection #1660-0062



### Local Mitigation Planning Handbook

May 2023



# Vernon County Multi-jurisdictional Hazard Mitigation Plan

## Disaster Mitigation Act of 2000 (DMA 2K)

- Requires local governments to adopt a natural hazard mitigation plan to maintain eligibility for FEMA mitigation funds.
- Plan must be updated and approved by FEMA every 5 years.
- This is an update to the existing **2019 Vernon County Multijurisdictional Hazard Mitigation Plan**.



# Vernon County Multi-jurisdictional Hazard Mitigation Plan

## Presidential Major Disaster/Emergency Declarations including Vernon County Since 1976

DR/EM Number	Date	Cause of the Declaration
EM-3017	09/24/1976	Drought
DR-779	10/14/1986	Flood
DR-995	07/09/1993	Flood
DR-1023	04/21/1994	Severe Storms, Flooding, Tornadoes
DR-1054	06/02/1995	Severe Storms, Flooding, Hail, Tornadoes
DR-1403	02/06/2002	Severe Winter Ice Storm
DR-1412	05/06/2002	Severe Storms, Flooding, Tornadoes
DR-1463	05/06/2003	Severe Storms, Flooding, Tornadoes
DR-1524	06/11/2004	Severe Storms, Flooding, Tornadoes
EM-3232	09/10/2005	Hurricane Katrina Evacuation
DR-1631	03/16/2006	Severe Storms, Flooding, Tornadoes

# Vernon County Multi-jurisdictional Hazard Mitigation Plan

## Emergency/Disaster Declarations Continued

DR/EM Number	Date	Cause of Declaration
EM-3281	12/12/2007	Severe Winter Storms
DR-1749	03/19/2008	Severe Storms and Flooding
DR-1773	06/25/2008	Severe Storms and Flooding
EM-3303	01/30/2009	Severe Winter Storms
DR-1847	06/19/2009	Severe Storms, Flooding, Tornadoes
EM-3317	02/03/2011	Severe Winter Storms
DR-1961	03/23/2011	Severe Winter Storm and Snowstorm
EM-3374	01/02/2016	Severe Storms, Tornadoes, Straight-Line Winds and Flooding
DR-4451	07/09/2019	Severe Storms, Flooding, Tornadoes
EM-3482	03/13/2020	COVID-19
DR-4490	03/26/2020	COVID-19

## Vernon County Multi-jurisdictional Hazard Mitigation Plan

### Approved Hazard Mitigation Plan Establishes Eligibility for FEMA HMA Grants

- Hazard Mitigation Grant Program
- Pre-Disaster Mitigation Program
- Flood Mitigation Assistance Program
  - Repetitive Loss Program
  - Severe Repetitive Loss Program
- Building Resilient Communities and Infrastructure



## Hazard Mitigation Grant Program

- The Hazard Mitigation Grant Program (HMGP) provides grants to States and local governments to implement long-term hazard mitigation measures after a major disaster declaration.
- Equal to 15 percent (20 percent for Enhanced Plan State) of the first \$2 billion of estimated aggregate amounts of disaster assistance—based on a sliding scale formula after the first \$2 billion.
- Eligible applicants are state agencies, local governments, private non-profit organizations, or Indian tribal governments.
- **An approved local mitigation plan is required.**

## Flood Mitigation Assistance Program

- Annual Appropriation
- Sub-applicant must participate in National Flood Insurance Program (NFIP)
- NFIP insured property
- 75% federal & 25% non-federal match
- **An approved local mitigation plan is required.**

## Vernon County Multi-jurisdictional Hazard Mitigation Plan

### Building Resilient Infrastructure and Communities (BRIC)

- Newer FEMA grant program was established in 2018 under the Disaster Recovery Reform Act.
- Usually, funding is available post-disaster.
- 75% Federal/25% Local Match
  - Sometimes it's 90/10 in Rural Communities
- **An approved local mitigation plan is required.**

## Vernon County Multi-jurisdictional Hazard Mitigation Plan

### Hazard Mitigation Assistance Grants Awarded in **Vernon** County

- DR-1809: Funded the Vernon County HMP in 2010 for \$46,195.25
- DR-4250: Funded the Vernon County HMP in 2017 for \$158,574.50

**\$204,769.75**

**Having an Approved  
Hazard Mitigation  
Plan Has Paid Off!**

## **9 Tasks to Complete the Plan Update**

- Task 1: Determine the Planning Area and Resources
- Task 2: Build the Planning Team
- Task 3: Create an Outreach Strategy
- Task 4: Review Community Capabilities
- Task 5: Conduct a Risk Assessment
- Task 6: Develop a Mitigation Strategy
- Task 7: Review and Adopt the Plan
- Task 8: Keep the Plan Current
- Task 9: Create a Safe and Resilient Community

# Vernon County Multi-jurisdictional Hazard Mitigation Plan

## Multi-Jurisdictional Plan Approach Task 1: Determine the Planning Area

- Vernon County
- Bronaugh
- Deerfield
- Harwood
- Metz
- Milo
- Moundville
- Nevada
- Richards
- Schell City
- Sheldon
- Walker
- Bronaugh R-VII
- Nevada R-V
- Northeast Vernon County R-I
- Sheldon R-VIII
- Cottey College

# Vernon County Multi-jurisdictional Hazard Mitigation Plan

## Hazard Mitigation Planning Committee

### Task 2: Build the Planning Team

#### Jurisdictions

- Emergency Responders
- County Clerks
- City Clerks
- Elected Officials
- Public Works Directors
- Floodplain Managers
- Stormwater Mangers
- County And City Planners
- Economic Development Directors
- GIS Staff
- School Principals
- School Facilities Directors
- School Superintendents

#### Stakeholders

- Business Partners
- Private-non-profits
- State Agencies
  - SEMA
  - Missouri Department of Natural Resources
  - Missouri Department of Transportation
- Federal Agencies
  - Federal Emergency Management Agency
- Academia
- Local/Regional Agencies

## Vernon County Multi-jurisdictional Hazard Mitigation Plan

### Benefits of Participating in a Multi-jurisdictional Plan

- Enables comprehensive approach to mitigate hazards that affect multiple jurisdictions;
- Shares costs and resources;
- Avoids duplication of efforts;
- Improves coordination/communication among local jurisdictions; and
- Imposes external framework/schedule on process.

## Requirements for Each Participating Jurisdiction

1. Designate a representative to serve on the Hazard Mitigation Planning Committee, which will meet three times during the planning process;
2. Provide data for and assist in the development of the updated risk assessment that describes how various hazards impact your jurisdiction;
3. Provide data to describe current capabilities;
4. Develop/update mitigation actions (at least one) specific to your jurisdiction;
5. Provide comments on plan drafts as requested;
6. Inform the public, local officials, and other interested parties about the planning process and provide opportunities for them to comment on the plan; and
7. Formally adopt the mitigation plan.

## What Happens if My Jurisdiction Chooses Not to Participate in the Plan?

Jurisdictions (including public school districts) that have not participated in a FEMA-approved mitigation plan **WILL NOT BE ELIGIBLE APPLICANTS** for FEMA Hazard Mitigation Assistance grants.

## Vernon County Multi-jurisdictional Hazard Mitigation Plan

### Public Involvement Requirements

#### Task 3: Creating an Outreach Strategy

- 1. During Drafting Stage
  - Public Survey—sample survey in your packet!
    - Survey Monkey
    - Hard Copies—City Halls/Libraries/Post Offices?
    - Link on County Website/Other Websites?
- 2. Prior to approval
  - Draft Available via County Website
  - Hard Copies—at least two public locations
- Other Ideas/Events to Inform the Public?

# Vernon County Multi-jurisdictional Hazard Mitigation Plan

## Data Collection Questionnaires

Task 4: Reviewing Community Capabilities

Task 5: Conduct Risk Assessment

- Separate forms for local govts. and schools
- Due to **Dillon Harness** by \_\_\_\_\_
- Capability Assessment Section
  - Existing Plans/Policies/Ordinances;
  - Administrative/Technical Capabilities; and
  - Fiscal Resources.
- Additional Questions
- Historic Hazard Events
- Electronic copy will be provided in MS Word or PDF

## **15 Minute Break**

- Look through Data Collection Guide
- Complete what you can
- Write down any questions
- Questions will be answered after break

# Vernon County Multi-jurisdictional Hazard Mitigation Plan

## Hazard Identification and Risk Assessment

- Hazard Profile
  - Hazard Description
  - Geographic Location
  - Severity/Magnitude/Extent
  - Previous Occurrences
  - Probability of Future Occurrence
- Vulnerability Assessment
  - Vulnerability Overview
  - Potential Losses to Existing Development
  - Future Development
  - Hazard Summary by Jurisdiction
- Problem Statement

**Based on existing plan, additional information from planning committee, additional research/analysis**

## Natural Hazards for Consideration

- Natural Flood-Related Hazards
  - Flooding
  - Dam Failure
- Natural Geologic Hazards
  - Earthquake
  - Land Subsidence / Sinkholes
- Natural Meteorological Hazards
  - Drought
  - Extreme Temperature
  - Severe Thunderstorms
  - Severe Winter Weather
  - Tornadoes
- Natural Other Hazard
  - Wildfire

## Flooding (Flash and River)

- Nearly all flood reports come from the National Centers for Environmental Information or NCEI
- Since 2000, there have been a combined **89** events, impacting multiple jurisdictions.
- Since 2013, we've had **\$913,654.24** in USDA Crop Insurance payouts due to floods.
- **13** disaster declarations due to flooding

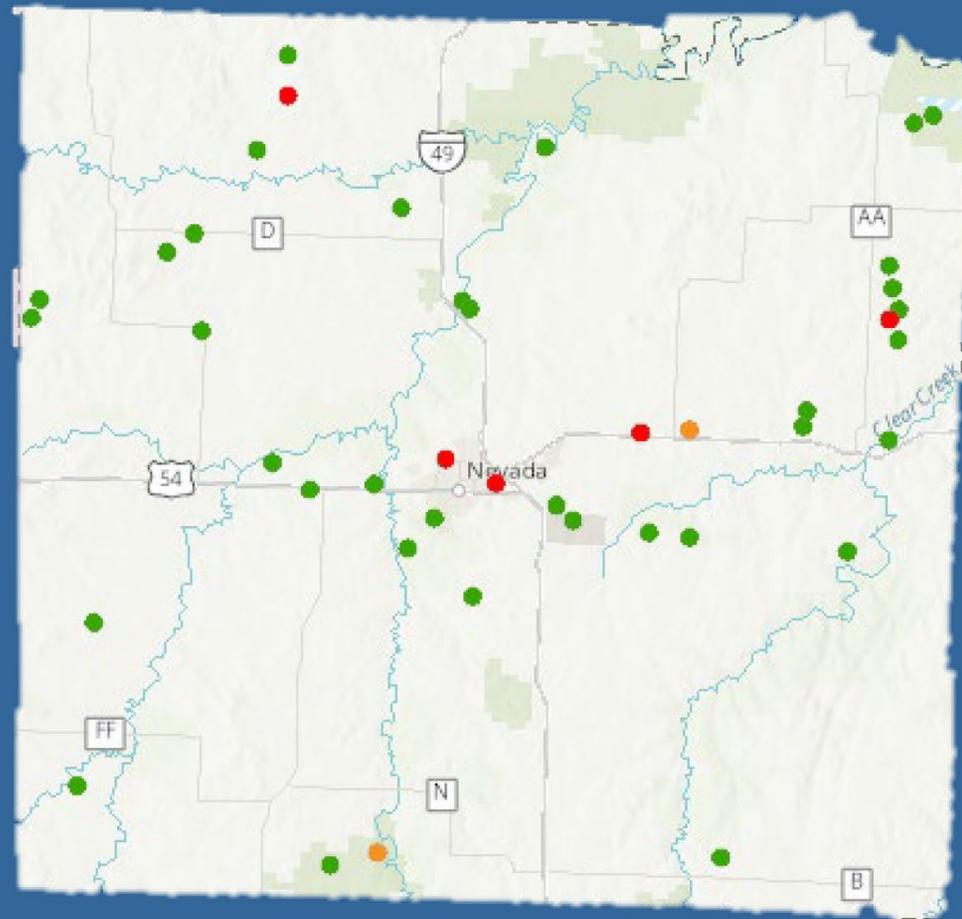
## Dam Failure

- Vernon County has 43 Dams
- No history of Dam Failure
- 5 High Hazard Dams in County
  - 1 Owned by County (Katy Allen Lake)
- 2 Significant Hazard Dams
  - 1 Owned by MoDNR (Bushwacker)

# Vernon County Multi-jurisdictional Hazard Mitigation Plan

## Map of Dams in Vernon County

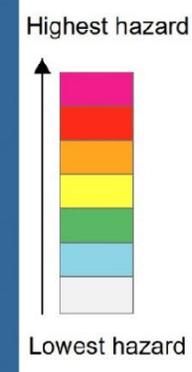
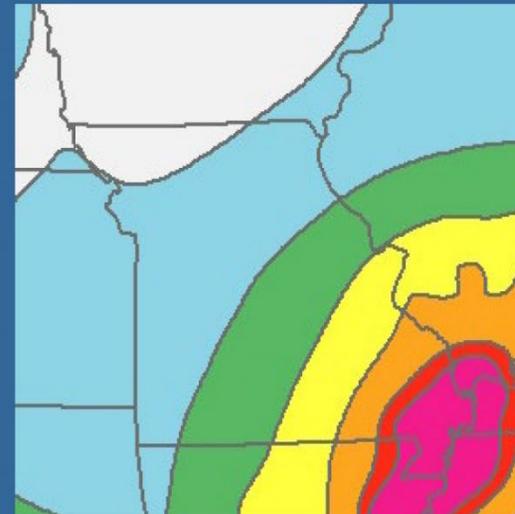
- Low
- Significant
- High



# Vernon County Multi-jurisdictional Hazard Mitigation Plan

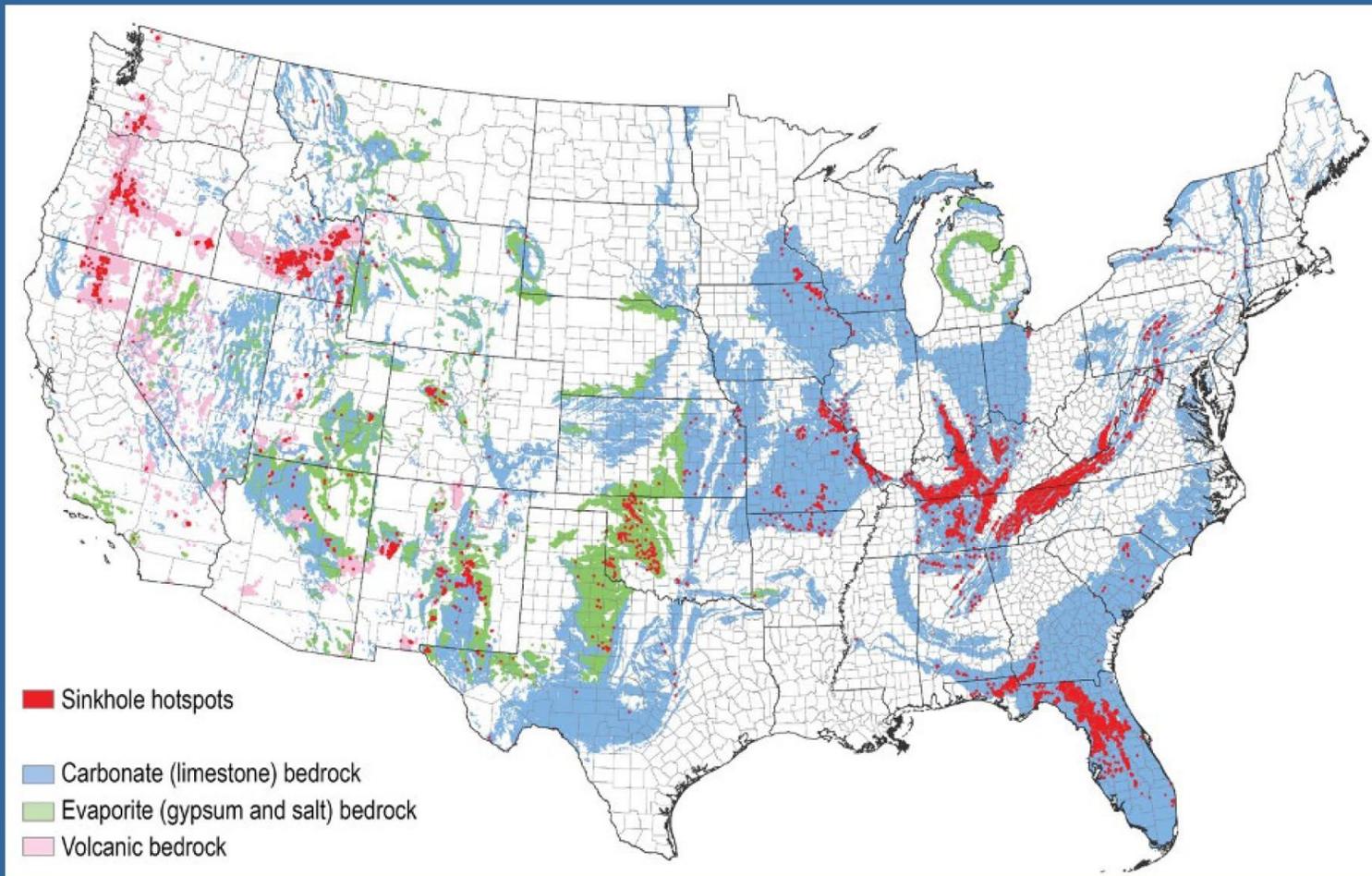
## Earthquake

- Due to New Madrid Fault in Missouri Bootheel, Vernon County is vulnerable to an earthquake.
- Recall 1811 and 1812 as major quakes.
- Potential Impacts



# Vernon County Multi-jurisdictional Hazard Mitigation Plan

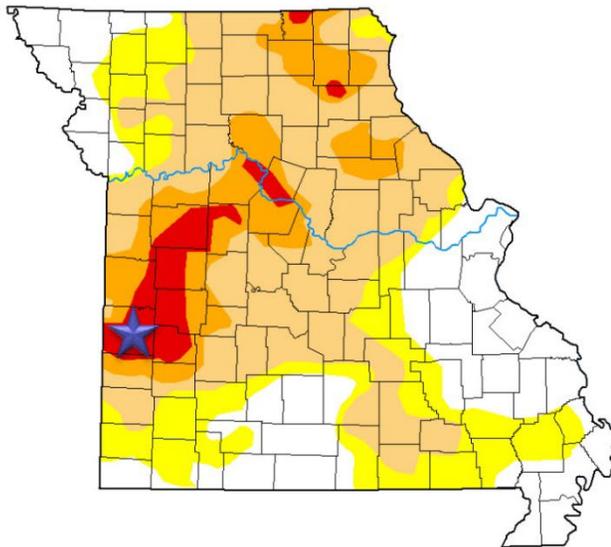
## Land Subsidence/Sinkholes



## Drought

- Droughts are usually prolonged periods of dryness and can sometimes lead to enhanced wildfire risk.

Drought in  
Missouri as of  
August 29<sup>th</sup>



## Extreme Temperatures

- Since January 2000, Vernon County has only experienced 3 extreme temperature events...
  - Winter 2000
  - Winter 2001
  - Winter 2021
- Crop losses since 2013 for temperature extremes have amounted to **\$25,551,237.53**

## Severe Thunderstorms

- Historically, Vernon County has had **12** presidential disaster declarations due to severe storms.
- First declaration: 1994 (DR-1023)
- Latest declaration: 2019 (DR-4451)
- USDA Crop Losses: **\$52,001,047.36**

## Severe Winter Weather

- Four recent previous disaster/emergency declarations for severe winter weather
  - DR-1403 – 2002
  - EM-3281 – 2007
  - EM-3303 – 2009
  - DR-1961 – 2011

## Tornado

- **Nine** recent presidential disaster declarations due to tornadoes.
- Watch vs. Warning
  - **Tornado Watch** means conditions are favorable for severe weather including tornadoes, you usually have hours to prepare.
  - **Tornado Warning** means a tornado has been spotted or confirmed by radar, you usually have minutes to prepare.
- **30 Total Events Since 1950**
- **Most Destructive:**
  - 1982
  - 1995

## Wildfire

- There have been 253 reported wildfires since 2013 in Vernon County stemming from a variety of causes.
- **WUI**, or *Wildland Urban Interface*, provides a map of the entire state that showcases wildfire potential. The latest map was released in 2020.



# Vernon County Multi-jurisdictional Hazard Mitigation Plan

## Missouri

2020

### Wildland-Urban Interface (WUI)

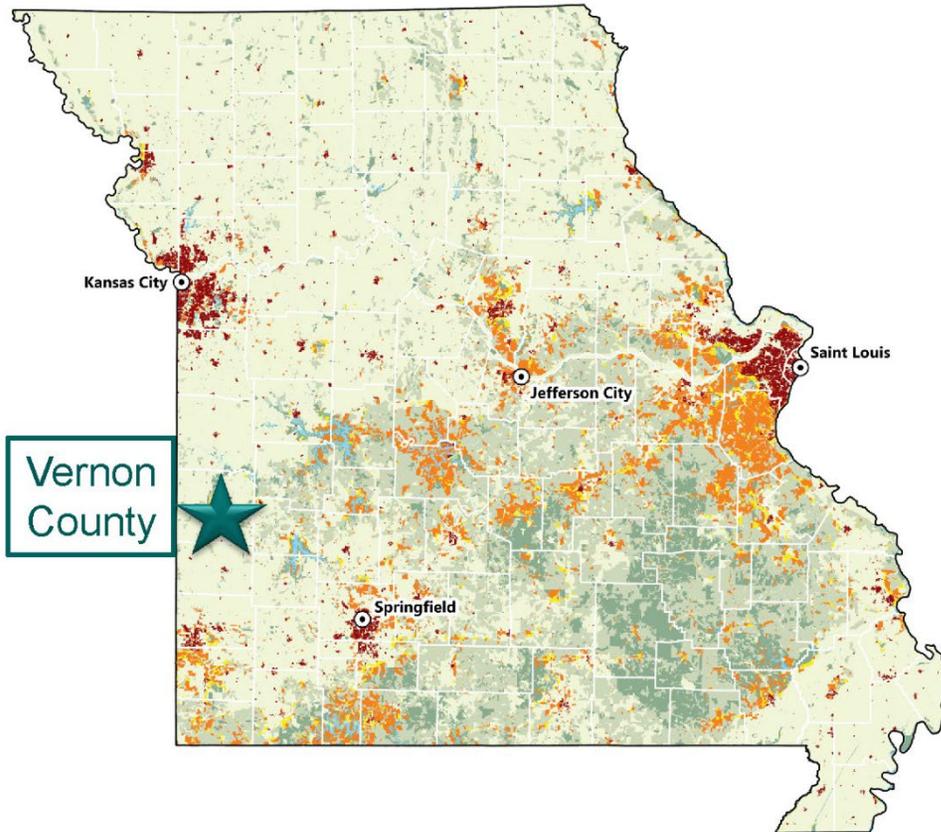
- Interface
- Intermix

### Non-WUI Vegetated

- No housing
- Very low housing density

### Non-Vegetated or Agriculture

- Low and very low housing density
- Medium and high housing density
- Water



Vernon  
County

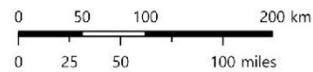


### Data Sources

2020 block geography (US Census Bureau)  
2019 National Land Cover Dataset (MRLC)

### Contacts

Miranda H. Mockrin	Volker C. Radeloff
USDA Forest Service	University of Wisconsin-Madison
mhmockrin@fs.fed.us	radeloff@wisc.edu



## Critical Facilities

- Critical Facility—essential in providing utility or direction either during the response to an emergency or during the recovery operation.
  - Essential Facility—if damaged would have devastating impacts on disaster response and/or recovery.
  - High Potential Loss Facility—if damaged would have a high loss or impact on the community.
  - Transportation/Lifeline Facility—assets critical for transport and provision of necessary utilities

# Vernon County Multi-jurisdictional Hazard Mitigation Plan

## Critical Facility Examples

Essential Facilities	High Potential Loss Facilities	Transportation and Lifeline
<ul style="list-style-type: none"> <li>•Hospitals and other medical facilities</li> <li>•Police stations</li> <li>•Fire station</li> <li>•Emergency Operations Centers</li> </ul>	<ul style="list-style-type: none"> <li>•Power plants</li> <li>•Dams/levees</li> <li>•Military installations</li> <li>•Hazardous material sites</li> <li>•Schools</li> <li>•Shelters</li> <li>•Day care centers</li> <li>•Nursing homes</li> <li>•Main government buildings</li> </ul>	<ul style="list-style-type: none"> <li>•Highways, bridges, and tunnels</li> <li>•Railroads and facilities</li> <li>•Bus facilities</li> <li>•Airports</li> <li>•Water treatment facilities</li> <li>•Natural gas facilities and pipelines</li> <li>•Oil facilities and pipelines</li> <li>•Communications facilities</li> </ul>

## Analysis of Critical Facilities

- Impacts of some hazards will be considered for critical facilities
  - Ex. River Flood—critical facilities in a floodplain

# Vernon County Multi-jurisdictional Hazard Mitigation Plan

## Next Steps in the Planning Process

- Data Collection Questionnaires Due → September 22<sup>nd</sup>
- 2<sup>nd</sup> Planning Meeting → **October 11<sup>th</sup> – 1:00 PM**
  - Risk Assessment Update Results
    - Critical Facility Analysis Results
  - Review/Update Mitigation Goals
  - Begin Status Updates for Previous Mitigation Actions
- 3<sup>rd</sup>/Final Planning Meeting → **November 8<sup>th</sup> – 1:00 PM**
  - Status Update Summary of Previous Mitigation Actions
  - Brainstorm / Discuss Potential New Mitigation Actions
  - Mitigation Action Implementation Plans for Continuing and New Actions
  - Discuss Plan Maintenance

# Vernon County Multi-Jurisdictional Hazard Mitigation Plan

**Meeting 2:  
Risk Assessment Results  
Updating Mitigation Goals  
October 11<sup>th</sup> – 1:00 PM**

**Project Planner: Dillon Harness, Regional  
Planner, KBRPC**



## Meeting Purpose

- Brief Review of Meeting #1
- Discuss Participation Requirements/Status
- Plan Update Format
- Results of Countywide Risk Assessment
- Update Mitigation Goals
- Discuss Mitigation Action Updates
- Next Steps

# Vernon County Multi-Jurisdictional Hazard Mitigation Plan

## Disaster Mitigation Act of 2000

- Requires local governments to adopt a natural hazard mitigation plan to maintain eligibility for FEMA Hazard Mitigation Assistance funds
- This Plan Update is for a Multi-jurisdictional Hazard Mitigation Plan covering the Unincorporated County, participating Incorporated Cities, and Public School Districts



## 9 Tasks to Complete the Plan Update

- Task 1: Determine the Planning Area and Resources
- Task 2: Build the Planning Team
- Task 3: Create an Outreach Strategy
- Task 4: Review Community Capabilities
- Task 5: Conduct a Risk Assessment
- Task 6: Develop a Mitigation Strategy
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- Task 8: Keep the Plan Current
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# Vernon County Multi-Jurisdictional Hazard Mitigation Plan

## Requirements for Each Participating Jurisdiction

- Designate a representative to serve on the Hazard Mitigation Planning Committee, which will meet three times during the planning process,
- Provide data for and assist in the development of the updated risk assessment that describes how various hazards impact your jurisdiction,
- Provide data to describe current capabilities,
- Develop/update mitigation actions (at least one) specific to your jurisdiction,
- Provide comments on plan drafts as requested,
- Inform the public, local officials, and other interested parties about the planning process and provide opportunities for them to comment on the plan, and
- Formally adopt the mitigation plan.

## Vernon County Multi-Jurisdictional Hazard Mitigation Plan

# Status of Participation Requirements

Jurisdictions	Meeting Attendance	Data Collection Guide
Vernon County	X	X
Bronaugh	X	X
Bronaugh R-VII	X	X
Cotley College	X	X
Crowder College	X	X
Deerfield	-	-
Metz	-	-
Milo	-	-
Missouri Welding Institute	X	X
Moundville	-	-
Nevada	X	X
Nevada R-V	X	X
Northeast Vernon County R-I	X	X
Richards	-	-
Schell City	X	X
Sheldon	X	X
Sheldon R-VIII	X	X
Walker	-	-

## Plan Update Format

- Executive Summary
- Chapter 1—Planning Process
- Chapter 2—Jurisdiction Profiles
- **Chapter 3—Risk Assessment**
- Chapter 4—Mitigation Strategy
- Chapter 5—Plan Maintenance
- Appendices

# Vernon County Multi-Jurisdictional Hazard Mitigation Plan

## Chapter 3 Includes the Following for EACH Hazard

- Hazard Profile
  - Hazard Description
  - Geographic Location
  - Severity/Magnitude/Extent
  - Previous Occurrences
  - Probability of Future Occurrence
- Vulnerability Assessment
  - Vulnerability Overview
  - Potential Losses to Existing Development
  - Future Development
  - Hazard Summary by Jurisdiction
- Problem Statement

# **Risk Assessment Update**

## Flooding (Flash & River)

- **89 Events since 2000**
  - 60 Flash Floods
  - 29 River Floods
- **Most impacted jurisdictions:**
  - Stotesbury: 18 combined events
  - Nevada and Nevada Airport: 19 combined events
- **Probability of Future Events: >100%**

## Dam Failure

- No previous occurrences; however, with **43** dams in the county and **5** high-hazard dams, it is a possibility.
- Probability of future occurrence: **UNKNOWN**

## Earthquakes

- No earthquakes in recent history.
- New Madrid and Nemaha Ridge are the most likely threats in the future.
- Probability of future events: **UNKNOWN**

## Drought

- Most prevalent and ongoing hazard we have in Vernon County.
- Crop losses equate to nearly **\$26 million**
- Probability of future occurrence: **50-75%**

## Extreme Temperatures

- 3 instances of extreme cold since 2000.
- More losses associated with crops throughout Vernon County as previously discussed.
- Probability of future occurrence: ~13%

## Severe Winter Weather

- 37 events since 2000  
(event = heavy snow, blizzard, ice storm, etc.)
- Damages amount to \$1,020,000.00
- Probability of future occurrence: >100%

## Tornadoes

- 11 Tornadoes since 2003, 2 with moderate to major damages:
  - 2006 → \$700,000
  - 2008 → \$150,000
- Probability of future events: **100%**

## Wildfire

- Most frequently occurring hazard in Henry County, **270** total instances in the last 10 years.
- Probability of future occurrence: **>100%**

**Mitigation Strategy Update  
Mitigation Goals and Actions**

## Mitigation Strategy: Goals and Actions

---

- **Goals:** Describe the overall direction of the plan
- **Actions:** Describe specific activities or projects designed to achieve goals

**Vernon County  
Multi-Jurisdictional Hazard Mitigation Plan**

**Update Collective Goals for the  
Vernon County Multi-jurisdictional  
Hazard Mitigation Plan**

## **Common Categories of Mitigation Goals**

- **Public Education**
- **Policies/Planning/Training/Communication**
- **Reduce Risk to Life and Property**
- **Protection of Critical/Essential Facilities**

## **State Goals**

### **2023 Missouri State Hazard Mitigation Plan**

- Goal 1: Preserve human life, health, and safety from the adverse effects of disasters.
- Goal 2: Defend the continuity of government and essential services and processes from the adverse effects of disasters.
- Goal 3: Protect public and private property from the adverse effects of disasters.
- Goal 4: Safeguard community tranquility from the adverse effects of disasters.

## 2019 Plan Goals (Review/Revise)

1. Protect the lives and livelihoods of all citizens.
2. Mitigate the effects of future natural hazards in the County.
3. Strengthen communication and awareness to coordinate participation between public agencies, citizens, non-profit organizations, business, and industry.
4. Develop written policies and procedures for preparedness and mitigation response to natural disasters.

## Small Group Discussions

- Create groups of 3 or 4
- Review goal statements (handout)
- Remember
  - Goals should be broad
  - Mitigation vs. Preparedness/Response
- Report to group with suggested revisions
  - Combine
  - Remove
  - Re-word
  - Add new

**Update Mitigation Actions for the  
Vernon County Multi-jurisdictional  
Hazard Mitigation Plan**

# Vernon County Multi-Jurisdictional Hazard Mitigation Plan

## Mitigation Actions

- See Handout
- Update actions that apply to your jurisdiction
  - Completed – provide the date completed and funding amount if applicable
  - Delete – provide a reason for deleting
  - Continue In-Progress – provide details on progress made to date
  - Continue Not Started – provide details on any plans made to initiate action
- Discuss with other representatives from your jurisdiction.
- Be careful to distinguish between response actions (actions after an event) and mitigation actions (actions before an event that reduce or eliminate the need for a response)
- Actions should be SMART: specific, measurable, achievable, relevant, time-bound

**S**pecific  
**M**easurable  
**A**chievable  
**R**elevant  
**T**ime-bound

## Mitigation Actions

- Final Meeting on November 8th will focus on the development of new mitigation actions.
- As you review the risk assessment/problem statements, consider what mitigation actions could reduce/eliminate damages.
- Discuss with other representatives from your jurisdiction.
- Each jurisdiction must have AT LEAST one action, per hazard (**New Guidance Requirement**).
- Communities that participate in the National Flood Insurance Program must have an ADDITIONAL action that relates to continued compliance.

## Next Steps

- **November 8<sup>th</sup> at 1:00 PM** – Final Meeting, Updating/Developing Mitigation Actions
- **January – February:** Jurisdictions Adopt Plan
- **Early March:** Submit Plan to SEMA

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