



**Nodaway County  
Multi-jurisdictional  
Natural Hazard  
Mitigation Plan**

**Approved  
September 27, 2023**



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**TABLE OF CONTENTS**

*TABLE OF CONTENTS* ..... *i*

*CONTRIBUTORS*..... *ii*

    Nodaway County Hazard Mitigation Planning Committee ..... *ii*

    Stakeholder Representatives..... *ii*

*EXECUTIVE SUMMARY*..... *iii*

*PREREQUISITES*..... *viii*

    Model Resolution..... *ix*

1 *INTRODUCTION AND PLANNING PROCESS* ..... 1.1

2 *PLANNING AREA PROFILE AND CAPABILITIES*..... 2.1

3 *RISK ASSESSMENT* ..... 3.1

4 *MITIGATION STRATEGY* ..... 4.1

5 *PLAN MAINTENANCE PROCESS* ..... 5.1

    Appendix A: Reference

    Appendix B: Planning Process

    Appendix C: STAPLEE Review Documents

    Appendix D: Resolutions of Adoption

## CONTRIBUTORS

### Nodaway County Hazard Mitigation Planning Committee

#### Jurisdictional Representatives

Name	Title	Department	Jurisdiction/Agency/Organization
Teresa Coleman	City Clerk	City	City of Barnard
JoAnna Mariott	City Clerk	City	City of Burlington Junction
Cletus Lager	Mayor	City	City of Conception Junction
Holly Holmes	City Clerk	City	City of Graham
Jerry Lager	Chief Operator	City	City of Ravenwood
Darrell Cronk	Mayor	City	Town of Arkoe
Joyce Cronk	Treasurer	City	Town of Arkoe
Byron Clark	Mayor	City	City of Clearmont
Norma Bragg	City Clerk	City	City of Elmo
Chris Bird	Chief Operator	City	City of Hopkins
Christy Forney	Public Safety	City	City of Maryville
Heather Burns	City Clerk	City	City of Parnell
Milton Sovereign	City Clerk	City	City of Pickering
Meagan Morrow	City Clerk	City	City of Skidmore
Les Linville	Chief Operator	City	City Of Skidmore
Danyell Wiederholt	Budget Officer	Village	Village of Guilford
Scott Walk	Floodplain Administrator	County	Unincorporated Nodaway County
Tim Jermain	Superintendent	School	Jefferson C-123 School District
Logan Lightfoot	Superintendent	School	Maryville R-II School District
Jeff Blackford	Superintendent	School	Nodaway-Holt R-VII School District
Chris Turpin	Superintendent	School	North Nodaway County R-VI School
Brenda Dougan	Superintendent	School	Northeast Nodaway County R-V
Amanda Cullen	Interim Police Chief	School	Northwest Missouri State University
Dustin Skoglund	Superintendent	School	South Nodaway R-IV School District
Mitch Barnes	Superintendent	School	West Nodaway County R-1 School

#### Stakeholder Representatives

Name	Title	Department	Agency/Organization
Wayne Pierson	Safety, Health & Environmental Coordinator, retired	Industry	Community, at large
Jace Pine	Lieutenant	Fire	City of Maryville
Phil Rickabaugh	Fire Chief	Fire	City of Maryville
Jared McQueen	Assistant Director	Ambulance	Nodaway County Ambulance District
Tom Patterson	Administrator	Health	Nodaway County Health Center

## 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. Nodaway 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 January 9, 2014. The plan and the update were prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 to result in eligibility for the Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance Grant Programs.

The County Multi-Hazard Mitigation Plan is a multi-jurisdictional plan that covers the following twenty-three (23) jurisdictions that participated in the planning process:

- Unincorporated Nodaway County
- Town of Arkoe
- City of Barnard
- City of Burlington Junction
- City of Clearmont
- City of Conception Junction
- City of Elmo
- City of Graham
- Village of Guilford
- City of Hopkins
- City of Maryville
- City of Parnell
- City of Pickering
- City of Ravenwood
- City of Skidmore
- Jefferson C-123 School District
- Maryville R-II School District
- Nodaway-Holt R-VII School District
- North Nodaway County R-VI School District
- Northeast Nodaway County R-V School District
- South Nodaway County R-IV School District
- West Nodaway County R-1 School District
- Northwest Missouri State University

Nodaway County, and the entities listed above, plus the Village of Clyde, developed a Multi-Jurisdictional Hazard Mitigation Plan that was approved by FEMA on September 12, 2018 (hereafter referred to as the *2018 Hazard Mitigation Plan*). Pickering was incorporated as a village in 2018 but is now listed as the City of Pickering for this update. This current planning effort serves to update that previously approved plan.

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

thunderstorms/hail/lightning/high winds, and tornadoes are among the hazards that historically have had a significant impact.

Based upon the risk assessment, the MPC accepted the goals for reducing risk from hazards as presented in the 2018 plan. To streamline the updating process, the previously stated objectives for each goal were not referenced in this update. The goals are listed below:

1. **Goal 1:** Protect the lives, property, and livelihoods of all citizens.
2. **Goal 2:** Manage growth in designated hazard areas through sustainable policies, principles, and practices.
3. **Goal 3:** Ensure continued operation of government and emergency functions in a disaster.
4. **Goal 4:** Maintain economic activities essential to the survival and recovery from natural hazards.

To advance the identified goals, the MPC developed recommended mitigation actions, which are detailed in Chapter 4 of this plan. The MPC developed an implementation plan for each action, which identifies priority level, background information, ideas for implementation, responsible agency, timeline, cost estimate, and potential funding sources as shown on the Action Item Worksheets. A summary action matrix from Chapter 4 has been provided on the next three pages following the key to abbreviations of the jurisdiction names.

**Table 0.1 Key to Jurisdiction Abbreviations**

Jurisdiction	Abbreviation	Jurisdiction	Abbreviation
Arkoe	AR	Maryville R-II School District	MV2
Barnard	BA	Nodaway-Holt R-VII School District	NH7
Burlington Junction	BJ	North Nodaway R-VI School District	NN6
Clearmont	CM	Northeast Nodaway R-IV School District	NE5
Conception Junction	CJ	Northwest Missouri State University	NW
Elmo	EL	Parnell	PA
Graham	GM	Pickering	PK
Guilford	GL	Ravenwood	RV
Hopkins	HP	Skidmore	SK
Jefferson 123 School District	J123	South Nodaway R-IV School District	SN4
Maryville	MV	Unincorporated Nodaway County	UNC
		West Nodaway R-I School District	WN1

**Table 0.2 Mitigation Action Matrix**

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
<b>Prevention Public Education</b>								
1.4	Enhance and expand methods of public notification during disasters. Purchasing software, equipment.	J123, NH7, NN6, NW, SN4, WN1	High	1	All	yes	yes	
2.3	Provide an effective warning system to alert citizens in flood prone areas and on low-lying roadways when flash flooding is imminent.	BA, EL, GM, GL, RV	High	2	Flooding	yes	yes	yes
2.3-1	Achieve and maintain “Storm Ready” Certification through the National Weather Service.	UNC	High	2, 1	Severe Thunderstorms, Severe Winter Weather, Flooding, Tornado, Extreme Temperatures, Wildfire	yes		
<b>Structure and Infrastructure Projects</b>								
2.4	Install storm shelter in an acceptable site.	AR, BA, BJ, CJ, CM, EL, GM, GL, HP, MV, PA, PK, RV, SK, UNC, J123, NN6, NE5, NW, SN4, WN1	High	1, 2	Tornado, Severe Thunderstorms, Severe Winter Weather, Flooding	yes		
3.2	Develop agreement for secondary water sources that may be used during drought conditions.	BA, CM, GM, MV, UNC, MV2	High	3	Drought	yes		
3.4	Inspect critical buildings and infrastructure for needed upgrades or retrofits	GM, GL, HP, PA, SK, J123, NH7, NE5	High	3	Earthquake, Severe Thunderstorm, Flooding	yes	yes	
3.5	Elevate roads and bridges as necessary... stabilization or armoring of vulnerable shoulders or embankments.	AR, EL, GM, HP, UNC	High	3, 4	Flooding	yes		
<b>Natural Systems Protection</b>								
2.2	... ensure compliance with local floodplain management ordinances.	BJ, HP, MV, PK, RV, UNC	High	1, 2	Flooding	yes	yes	yes

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
	<b>Emergency Services</b>							
1.1	Minimize the number of people on the roadways during periods of hazards	BJ, EL	High	1	All	yes	yes	
1.3	Purchase &/or upgrade siren systems, synch activation	AR, BA, CM, CJ, EL, GM, GL, PK, UNC	High	1	Severe Thunderstorms, Tornado	yes	yes	
1.5	Develop a coordinated response and accommodation schematic for disaster sheltering based on federal guidelines in cooperation with local and state agencies.	CM, GM, MV2, WN1	Med	1	All	yes	yes	
1.6	Inventory made of available generator-equipped shelters	CM	High	1	Severe Winter Weather, Extreme Temperatures	yes		
2.5	Develop an ordinance to restrict the use of public water resources for non-essential usage	GM, HP, PA	High	2	Drought	yes	yes	
3.0	Execute and maintain written mutual aid agreements with all relevant agencies.	MV, UNC	High	3	All	yes	yes	
3.0-1	Continually update and monitor the Local Emergency Operation Plan (LEOP) for the county or community. As part of this process the local HMP will be reviewed quarterly or as needed.	MV, UNC	High	1, 2, 3, 4	All	yes	yes	yes
3.1	Purchase necessary equipment to participate in MOSWIN to maintain communication within community, county, and region during emergencies	BA, BJ, CM, EL, GM, GL, HP, MV, PA, RV, SK, UNC	High	3	All	yes	yes	
3.3	Purchase equipment or subscriptions necessary to ensure the preservation of essential records	BJ, CM, GM, GL, HP, PA, PK, RV, J123, NN6, WN1	High	3, 4	Tornado, Wildfire, Flooding	yes	yes	



#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
3.7	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.	CJ, EL, GM, GL, HP, MV, PA, PK, RV, SK, UNC, J123, MV2, NH7, NN6, NE5, NW, SN4	High	3	Severe Thunderstorms, Severe Winter Weather, Flooding, Earthquake	yes		
<b>Education and Outreach</b>								
1.2	Determine “safe” areas of public spaces & inform visitors by signage and other means	NH7	High	1	Severe Thunderstorms, Tornado	yes		
1.7	Develop and implement an ongoing campaign to educate the community about seasonal hazards.	CJ, CM, EL, HP, PA, SK	High	1	All seasonal hazards	yes	yes	
2.1	Inform citizens who reside in the floodplain about flood insurance and reduce their risk through mitigation actions such as structure elevation.	BA, BJ, HP, RV	High	2	Flooding	yes	yes	yes
3.6	Assess publicly held facilities, distribution systems, etc. for vulnerability to natural hazards. If necessary, providers should make improvements to ensure continued service during a disaster when possible. Improvements may include equipment elevation, backup generators for power, and other infrastructure changes.	MV, RV, UNC, WN1	High	3	Flooding, Levee Failure, Dam Failure, Earthquake, Severe Winter Weather	yes	yes	
4.1	Provide resources for the development and maintenance of disaster plans for local businesses, schools, hospitals, and other entities as necessary that are coordinated with community disaster plans.	GM, SK, WN1	Med	4	All	yes	yes	
4.2	All area schools should practice disaster plans with employees and students. Employers should facilitate programs that ensure employees understand their roles and responsibilities in a natural hazard.	MV2, SN4	Med	4	All	yes		

## 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 of adoption by all participating jurisdictions and school districts. Representatives from special districts participated as stakeholders. The documentation of each adoption is included in Appendix D, and a model resolution is included on the following page.

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

- Unincorporated Nodaway County
- Town of Arkoe
- City of Barnard
- City of Burlington Junction
- City of Clearmont
- City of Conception Junction
- City of Elmo
- City of Graham
- Village of Guilford
- City of Hopkins
- City of Maryville
- City of Parnell
- City of Pickering
- City of Ravenwood
- City of Skidmore
- Jefferson C-123 School District
- Maryville R-II School District
- Nodaway-Holt R-VII School District
- North Nodaway County R-VI School District
- Northeast Nodaway County R-V School District
- South Nodaway County R-IV School District
- West Nodaway County R-I School District
- Northwest Missouri State University

**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: \_\_\_\_\_

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# 1 INTRODUCTION AND PLANNING PROCESS

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1	INTRODUCTION AND PLANNING PROCESS.....	1.1
1.1	Purpose.....	1.1
1.2	Background and Scope.....	1.1
1.3	Plan Organization.....	1.2
1.4	Planning Process.....	1.3
1.4.1	Multi-Jurisdictional Participation.....	1.5
1.4.2	The Planning Steps.....	1.9

## 1.1 PURPOSE

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The purpose of hazard mitigation is to reduce or eliminate long-term risk to people and property from hazards. Nodaway County, participating jurisdictions and the school districts developed this multi-jurisdictional local hazard mitigation plan update to reduce future losses from hazard events to the County, its communities, and the school districts. This plan is an update of the plan update that was approved on September 12, 2018. 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. Communities that choose not to be part of the multi-jurisdictional plan will not qualify for FEMA hazard mitigation grant funds when there is a declared disaster based on the following legislation: The Disaster Mitigation Act of 2000 (Public Law 106-390) and the implementing regulations set forth by the Interim Final Rule published in the *Federal Register* on February 26, 2002, (44 CFR §201.6) and finalized on October 31, 2007. (Hereafter, these requirements and regulations will be referred to collectively as the Disaster Mitigation Act or DMA). The regulations establishing the requirements for local hazard mitigation plans are in the Robert T. Stafford Disaster Relief and Emergency Act (Public Law 93-288).

## 1.2 BACKGROUND AND SCOPE

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The 2018 Nodaway County Multi-jurisdictional Hazard Mitigation Plan was approved on September 12, 2018. FEMA requires a plan update every five years. The current plan developed in this update will constitute the 2023 Nodaway County Multi-jurisdictional Hazard Mitigation Plan to continue to guide hazard mitigation for the next five years to better protect people and property of this multi-jurisdictional planning area from the effects of natural hazards.

The fifteen jurisdictions, one university and seven school districts listed below participated in the previously approved plan as well as the update.

- Town of Arkoe
- City of Barnard
- City of Burlington Junction
- City of Clearmont
- Village of Clyde\*(not participating in this update)

- City of Conception Junction
- City of Elmo
- City of Graham
- Village of Guilford
- City of Hopkins
- City of Maryville
- City of Parnell
- City of Pickering (participated as the Village of Pickering in previous updates)
- City of Ravenwood
- City of Skidmore
- Unincorporated Nodaway County
- Jefferson C-123 School District
- Maryville R-II School District (includes the Northwest Missouri Technical School)
- Nodaway-Holt R-VII School District
- North Nodaway County R-VI School District
- Northeast Nodaway County R-V School District
- Northwest Missouri State University
- South Nodaway County R-IV School District
- West Nodaway County R-1 School District

\*Information in this update will be used to help guide and coordinate mitigation activities and decisions for local land use policies in the future.

Northwest Technical School (NTS) is located on the campus of Maryville R-II High School. In addition to NTS programs with regional public schools, North Central Missouri College and Northwest Missouri State University have programs associated with NTS. For the purposes of this update to this plan, Northwest Technical School will be included as part of the Maryville R-II School District. Nodaway-Holt R-VII School District has assets in both Nodaway and Holt Counties. Only the high school assets located in Nodaway County, in the City of Graham, will be addressed in this plan. Northeast Nodaway County R-V School District crosses over the border into Worth County, but all school assets are in Nodaway County in the City of Ravenwood, so it will be addressed as such in the plan. There are no other Special Districts participating in the plan, although input was received through representation at public meetings.

## 1.3 PLAN ORGANIZATION

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The Nodaway County Multi-Jurisdictional Plan update is organized as follows (listed below). There have been changes in the organization of the materials since the 2018 Plan, most notably; Section 5 is a new section containing information that was previously contained in Section 4. See Table 1.1 below for summary of Changes Made in Plan Update.

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

In the summer of 2016, the Missouri State Emergency Management Agency directed the regional planning commissions to utilize a new format for all future updates. This change

required that much of the Nodaway County Multi-jurisdictional Hazard Mitigation Plan be reformatted and reorganized, but for the most part the content remained unchanged. Table 1.1 below identifies significant changes in the 2023 update.

**Table 1.1. Changes Made in this 2023 update.**

Plan Section	Update Review and Analysis
Executive Summary	<ul style="list-style-type: none"> <li>• Added Mitigation Action Matrix Table</li> <li>• Revised the executive summary and resolution to match order of template</li> </ul>
Chapter 1: Introduction and Planning Process	<ul style="list-style-type: none"> <li>• Updated members of the Mitigation Planning Committee (MPC) and participating jurisdictions formally adopted the MPC.</li> </ul>
Chapter 2: Planning Area Profile and Capabilities	<ul style="list-style-type: none"> <li>• Reviewed 2018 updated plan and updated demographic data using Census 2020 and American Community Survey information</li> <li>• Updated charts, graphs, maps and information, where necessary</li> </ul>
Section 3: Risk Assessment	<ul style="list-style-type: none"> <li>• Hazards revisited; no new hazards added but combined extreme heat and extreme cold into one hazard: extreme temperatures.</li> <li>• Previous events updated for each hazard</li> <li>• Discussion of each hazard's impact updated to include "Changing Future Conditions Considerations"</li> </ul>
Section 4: Mitigation Strategy	<ul style="list-style-type: none"> <li>• 2018 mitigation goals and strategies reviewed by planning committee and updated</li> <li>• The mitigation category of each action was added to the action worksheets.</li> </ul>
Section 5: Plan Maintenance Process	<ul style="list-style-type: none"> <li>• Updated MPC meetings for evaluating and updating the plan to quarterly.</li> </ul>

## 1.4 PLANNING PROCESS

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

This plan was developed prior to the release of *FEMA's Local Mitigation Planning Policy Guide, Effective April 19, 2023*. Future hazard mitigation plan update cycles will include outreach to non-profits for underserved communities as required under 44 CFR 201.6(b)(2)."

The Northwest Missouri Regional Council of Governments, in conjunction with SEMA and FEMA, produced this document. Participants providing the data for this project included the county commission, emergency management director, and interested members of the public from within Nodaway County. In addition, officials from each municipality and school district within Nodaway County were directly invited to participate in these meetings.

The Regional Council's responsibilities under this scope of work include the following:

- Assist in establishing a Mitigation Planning Committee (MPC) as defined by the Disaster Mitigation Act (DMA);
- Assess adherence to the process set forth in the previously approved plan for maintenance, explain how adherence occurred, and/or why it did not occur;
- Ensure the updated plan meets the DMA requirements as established by federal regulations and follows the most current planning guidance of the Federal Emergency Management Agency (FEMA);
- Facilitate the entire plan development process;
- Identify the data that MPC participants could provide and conduct the research and documentation necessary to augment that data;
- Assist in soliciting public input; and
- Produce the draft and final plan update in a FEMA-approvable document and
- Coordinate the Missouri State Emergency Management Agency (SEMA) and (FEMA) plan reviews.

Active participation in the plan development effort is of paramount importance. All jurisdictional representatives met with Regional Council staff at a public meeting or in a special meeting to update the Questionnaire and Action Worksheets. All Nodaway County jurisdictions including the schools met their responsibilities: attend at least one meeting; complete the MOU; complete data Questionnaire; review and return the Action Worksheets. All jurisdictions returned the Adoption Resolutions found in Appendix D.

**Table 1.2. Representatives of the Nodaway County Mitigation Planning Committee**

Name	Title	Department	Jurisdiction/Agency/Organization
Teresa Coleman	City Clerk	City Admin	City of Barnard
JoAnna Marriott	City Clerk	City Admin	City of Burlington Junction
Cletus Lager	Mayor	City Admin	City of Conception Junction
Holly Holmes	City Clerk	City Admin	City of Graham
Jerry Lager	Chief Operator	City Works	City of Ravenwood
Darrell Cronk	Mayor	City Admin	Town of Arkoe
Joyce Cronk	Treasurer	City Admin	Town of Arkoe
Byron Clark	Mayor	City Admin	City of Clearmont
Norma Bragg	City Clerk	City Admin	City of Elmo
Chris Bird	Chief Operator	City Works	City of Hopkins
Christy Forney	Administrative Officer Emergency Manager	Public Safety County Admin	City of Maryville County of Nodaway
Heather Burns	City Clerk	City Admin	City of Parnell
Milton Sovereign	City Clerk	City Admin	City of Pickering
Meagan Morrow	City Clerk	City Admin	City of Skidmore
Les Linville	Chief Operator	City Admin	City Of Skidmore
Danyell Wiederholt	Budget Officer	Village Admin	Village of Guilford
Scott Walk	Commissioner/Flood- plain Administrator	County Admin	Unincorporated Nodaway County



Name	Title	Department	Jurisdiction/Agency/Organization
Tim Jermain	Superintendent	School Admin	Jefferson C-123 School District
Logan Lightfoot	Superintendent	School Admin	Maryville R-II School District
Jeff Blackford	Superintendent	School Admin	Nodaway-Holt R-VII School District
Chris Turpin	Superintendent	School Admin	North Nodaway County R-VI School
Brenda Dougan	Superintendent	School Admin	Northeast Nodaway County R-V
Amanda Cullen	Interim Police Chief	Campus Police	Northwest Missouri State University
Dustin Skoglund	Superintendent	School Admin	South Nodaway R-IV School
Mitch Barnes	Superintendent	School Admin	West Nodaway County R-1 School
Wayne Pierson	Coordinator, retired	Safety, Health, Environmental	Local Industry
Jace Pine	Lieutenant	Fire & Rescue	City of Maryville
Phil Rickabaugh	Fire Chief	Fire & Rescue	City of Maryville
Jared McQueen	Assistant Director	Ambulance	Nodaway County Ambulance District
Tom Patterson	Administrator	Public Health	Nodaway County Health Center

### 1.4.1 Multi-Jurisdictional Participation

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

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

- Designation of a representative to serve on the MPC;
- Participation in at least one meeting, including planning, MPC meetings, by either direct participation or authorized representation, or one-on-one with planning staff;
- Provision of sufficient information to support plan development by completion and return of Data Collection Questionnaires and validating/correcting critical facility inventories;
- Provision of progress reports on mitigation actions from the previously approved plan and identify additional mitigation actions for the plan;
- Eliminate from further consideration those actions from the previously approved plan that were not implemented because they were impractical, inappropriate, not cost-effective, or were otherwise not feasible;
- Review and comment on plan drafts;
- Actively solicit input from the public, local officials, and other interested parties about the planning process and provide an opportunity for them to comment on the plan;
- Provide documentation to show time donated to the planning effort; and
- Formally adopt the mitigation plan.

Data for this plan was gathered in part through a series of public meetings held within Nodaway County. The planning process for the Nodaway County Hazard Mitigation Plan began during the

winter of 2022, with discussions involving elected officials, community members, and other interested parties, and the planning committee was formed. (See above Table 1.2 and Table 1.3 below) These individuals were invited to attend these meetings, with a special effort to invite participants representing various business and service interests throughout Nodaway County communities. Those that could not attend the meetings submitted required worksheets for their respective jurisdiction. Participants were asked to identify critical infrastructure, rank the likelihood of disaster occurrence, perform a susceptibility analysis based on these factors, and determine appropriate mitigation strategies for each individual disaster. This data was recorded and assimilated into this plan by Regional Council staff. The MPC membership showed a range of knowledge and abilities to address the mitigation categories shown in Table 1.3.

**Table 1.3. MPC Capability with Six Mitigation Categories**

Community Department/Office	Preventive Measures	Structure and Infrastructure Projects		Natural Resource Protection	Public Information	Emergency Services
		Property Protection	Structural Flood Control Projects			
Mayor/City Clerk	✓				✓	✓
County Floodplain Manager	✓	✓	✓	✓	✓	
County EMD	✓	✓	✓	✓	✓	✓
Fire Dept.	✓	✓			✓	✓
Ambulance Dept.	✓				✓	✓
Health Dept.	✓				✓	✓
Police Dept/Public Safety	✓				✓	✓
Public Works		✓	✓	✓		
School Administrators	✓	✓			✓	✓
Industrial Safety	✓	✓	✓		✓	

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

- Town of Arkoe
- City of Barnard
- City of Burlington Junction
- City of Clearmont
- City of Conception Junction
- City of Elmo
- City of Graham
- Village of Guilford
- City of Hopkins

- City of Maryville
- City of Parnell
- City of Pickering
- City of Ravenwood
- City of Skidmore
- Unincorporated Nodaway County

Finally, city and county officials were encouraged to invite others from any county, state or federal agency as well as local businesses that had interest in contributing to the planning process. Input from the public was solicited through reminders at public gatherings, press releases and a Public Survey, the Regional Council of Governments website and other local jurisdiction locations. Surrounding jurisdictions were invited to review the county's plan draft via the Regional Council website. Numerous citizens, public organizations, and elected officials have participated in this process. Implementation, monitoring, and evaluation will be sustainable over the long-term because it enjoys a grassroots support that stems from a sense of county.

Table 1.4 below shows the representation of each participating jurisdiction at the planning meetings, the provision of responses to the Data Collection Questionnaire, and update or development of mitigation actions. Sign-in sheets and other documentation for participation is in *Appendix B*.

**Table 1.4. Jurisdictional Participation in Planning Process**

Jurisdiction	Kick-off Meeting	Small Groups Meetings	School Group Meeting	Meeting #2	Virtual Meeting	Data Collection Questionnaire Response	Update/Develop Mitigation Actions
City of Barnard	No	Yes	No	No	No	Yes	Yes
City of Burlington Junction	No	Yes	No	No	No	Yes	Yes
City of Clearmont	No	Yes	No	No	No	Yes	Yes
City of Conception Junction	No	Yes	No	No	No	Yes	Yes
City of Elmo	No	Yes	No	No	No	Yes	Yes
City of Graham	No	Yes	No	No	No	Yes	Yes
City of Hopkins	No	Yes	No	Yes	No	Yes	Yes
City of Maryville	Yes	Yes	No	Yes	No	Yes	Yes
City of Parnell	No	Yes	No	No	No	Yes	Yes
City of Pickering	No	Yes	No	Yes	No	Yes	Yes
City of Ravenwood	No	Yes	No	No	No	Yes	Yes
City of Skidmore	No	Yes	No	Yes	No	Yes	Yes
Town of Arkoe	Yes	Yes	No	Yes	No	Yes	Yes
Unincorporated Nodaway	Yes	Yes	No	Yes	No	Yes	Yes
Village of Guilford	No	No	No	No	Yes	Yes	Yes
Jefferson C-123 School District	No	No	No	No	No	Yes	Yes
Maryville R-II School District	Yes	No	Yes	Yes	No	Yes	Yes
Nodaway-Holt R-VII School	No	No	Yes	No	No	Yes	Yes
North Nodaway County R-VI	No	No	Yes	No	No	Yes	Yes
Northeast Nodaway County R-V	Yes	No	Yes	No	No	Yes	Yes
Northwest Missouri State	Yes	No	Yes	Yes	No	Yes	Yes
South Nodaway R-IV School	Yes	No	Yes	No	No	Yes	Yes
West Nodaway County R-1	Yes	No	Yes	No	No	Yes	Yes

Public participation was also encouraged through press releases in two local newspapers, the *Maryville Forum* that serves Maryville and *Nodaway News Leader*, which serves all of Nodaway County. Sample emails, letters and press releases are included at the end of this document as part of *Appendix B*.

## 1.4.2 The Planning Steps

Background and statistical data for this plan were collected from a variety of sources, including the United States Census Bureau, the United States Geological Society, the United States Army Corps of Engineers, the Missouri Department of Natural Resources, the Missouri Department of Conservation, the Center for Agricultural, Resources and Environmental Systems at the University of Missouri-Columbia, Nodaway County HAZUS data, and the National Climatic Data Center. The Missouri State Hazard Mitigation Plan was last updated in 2018 and provided information regarding severe thunderstorm and winter weather, wildfire, tornado, earthquake, and flood hazards affecting Nodaway County. Limited data was available from the State 2023 update, in progress. Other documents utilized as guidance during the update include *FEMA’s Local Mitigation Planning Policy Guide* (April 2022), *Local Mitigation Planning Review Guide* (October 1, 2011), *Integrating Hazard Mitigation Into Local Planning: Case Studies and Tools for Community Officials* (March 1, 2013), and *FEMA’s Local Mitigation Planning Handbook* (May 2023). Other sources utilized for applicability to this plan are included in Section 3.

The development of this plan update followed the 10-step planning process adapted from FEMA’s Community Rating System (CRS) and Flood Mitigation Assistance programs, so to ensure funding eligibility requirements for the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, Community Rating System, and Flood Mitigation Assistance Program. Table 1.5 illustrates this process.

**Table 1.5. County Mitigation Plan Update Process**

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

### **Organize the Planning Team**

The initial public meeting for the Nodaway County Multi-jurisdictional 2023 plan update was on March 1, 2023. Before the actual meeting date, the Regional Council staff contacted the City of Maryville requesting use of the Public Safety Conference Room for the two public planning meetings. The meetings were scheduled for Kickoff Meeting/Risk Assessment Meeting, March 1, 2023; and the second and final public meeting Mitigation Strategies, March 29, 2023. Invitations were sent to all jurisdictions by email or letter for each meeting. A stakeholders list was developed, and invitations were sent to them for meeting #2. Press

releases were sent to the local newspapers serving Maryville and the northwest Missouri region.

**Table 1.6. Summary of MPC Meetings**

Meeting	Topics	Date
Informational Meetings	The first meeting was with the County EMD followed the next day by general discussions between Nodaway County Commissioners and Northwest Missouri Regional Council of Governments about match and general timeline requirements for the 2023 plan update. Work has begun on updating the data in the Risk Assessment during the last quarter of 2022.	January 11, 2023 January 12, 2023
Kick-off Meeting	The presentation began with an introduction on the purpose of hazard mitigation planning, grant programs linked to an approved plan, and the benefits of a multi-jurisdictional approach. The hazard mitigation planning process was reviewed to include requirements for participation and public involvement and the use of data collection questionnaires. The planning committee was shown highlights of the updated Risk Assessment, including a link to an online draft. The meeting concluded with a discussion of the next steps in the planning process.	March 1, 2023
Small Group Workshops	These meetings were designed to help the smaller communities to fill out the Questionnaires and update their Action Worksheets. Six separate workshops were held, five in-person and one virtual conference. One workshop was attended by representatives of all the public schools and the university participating in this update. We reviewed the Hazard Mitigation requirements, reviewed the Questionnaires with each jurisdiction representative individually and gave assistance on completing the Action Worksheets for the update.	Four on March 15, One each on March 22, and March 27
Planning Meeting #2	This meeting began with a brief review of the purpose of a Hazard Mitigation Plan. The public survey update was reviewed along with, participation requirements and the status of each jurisdiction, revisiting of mitigation goals, discussion of status updates for previous mitigation actions, checking for gaps in the plan's actions, along with a discussion of whether any new actions were needed. Input was requested on prioritization of actions. The next steps in the process were discussed: review the draft, present to jurisdictional boards and complete adoption resolutions to be included with the updated plan to SEMA. The importance of reviewing the plan at least quarterly and linking the plan to other existing jurisdictional planning mechanisms was stressed.	March 29, 2023
Prioritization of Actions	NWMORCOG staff and the County EMD met to review and update the STAPLEE sheets for actions included in the update. Prior input from jurisdictional and school representatives along with feedback from public meetings and questionnaires were considered in this process.	April 12, 2023

Meeting sign-in sheets and handouts can be found in Appendix B.

## ***Plan for Public Involvement***

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

Members of the NWMORCOG staff had conversations with the Nodaway County EMD on encouraging public involvement in the plan update. A list of email addresses was generated to add to the list used for previous plans. The EMD shared the meeting dates with the county Emergency Planning Committee at their quarterly meeting. This group includes local emergency managers, law enforcement, hazmat, fire, ambulance, local leadership, utilities, volunteer organizations, church leaders, nursing homes, public health, and hospital leaders. A web page devoted to information concerning the plan update was added to the [nwmorcog.org](http://nwmorcog.org) website. Public notices of the press release of each meeting with options to connect the MPC were published in the local newspaper. The EMD also shared comments gathered from the residents of nursing homes and group homes, where presentations on weather awareness and preparedness are given. A workshop meeting was planned for the leaders of all participating school districts and the local university to discuss the plan update and brainstorm actions to mitigate the effects of natural hazards on those institutions.

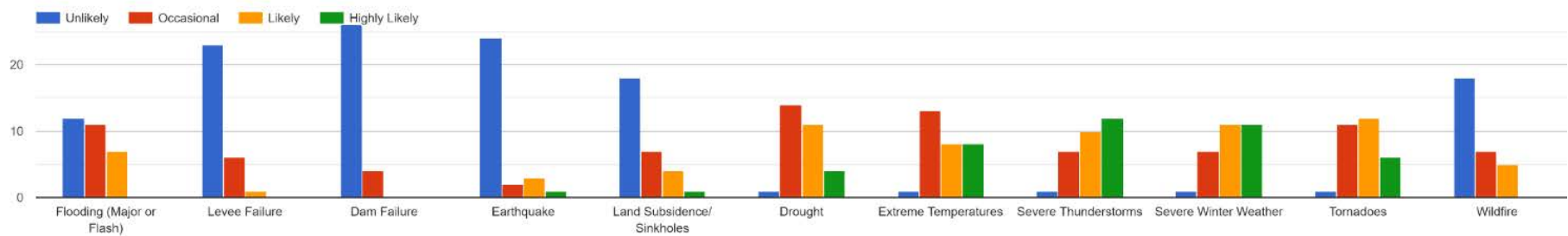
A Public Survey link was posted on the Regional Council website using Google. It was introduced at the Kickoff meeting in March. Press releases were sent out and jurisdictions encouraged to relay the message to their residents. The link was posted on the Regional Council website and Facebook page and an article was included in the monthly *Newsflash*, produced by the Regional Council.

Appendix B contains documentation of the MPC's public involvement efforts.

The Public Survey was closed on April 1, 2023. The thirty (30) responses were recorded and analyzed. There is a very close correlation between public opinion and the data collected for the plan update. The first question of the survey was used to indicate the respondent's jurisdiction. The following chart Figure 1.1, shows the results of Question 2, the likelihood for impact of each hazard.

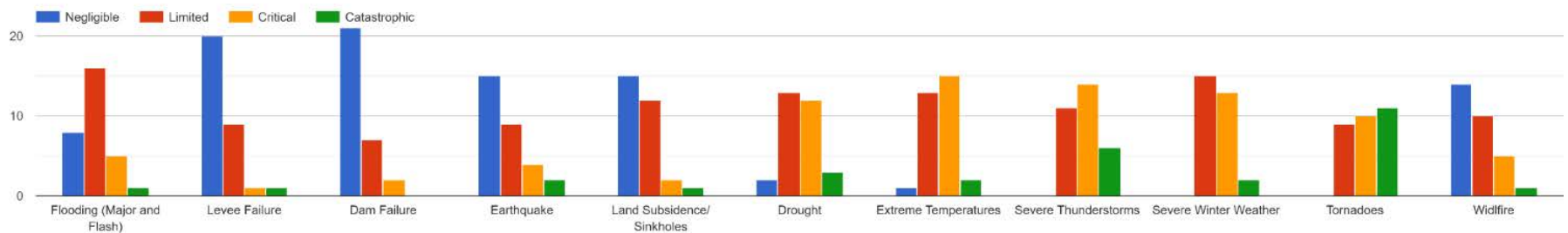
**Figure 1.1. Public Survey Question 2 Likelihood of each Hazard**

The hazards addressed in the Multi-jurisdictional Hazard Mitigation Plan Update are listed below. Please indicate your opinion on the likelihood for each hazard to impact YOUR JURISDICTION. Please rate EACH hazard as Unlikely, Occasional, Likely, or Highly Likely.



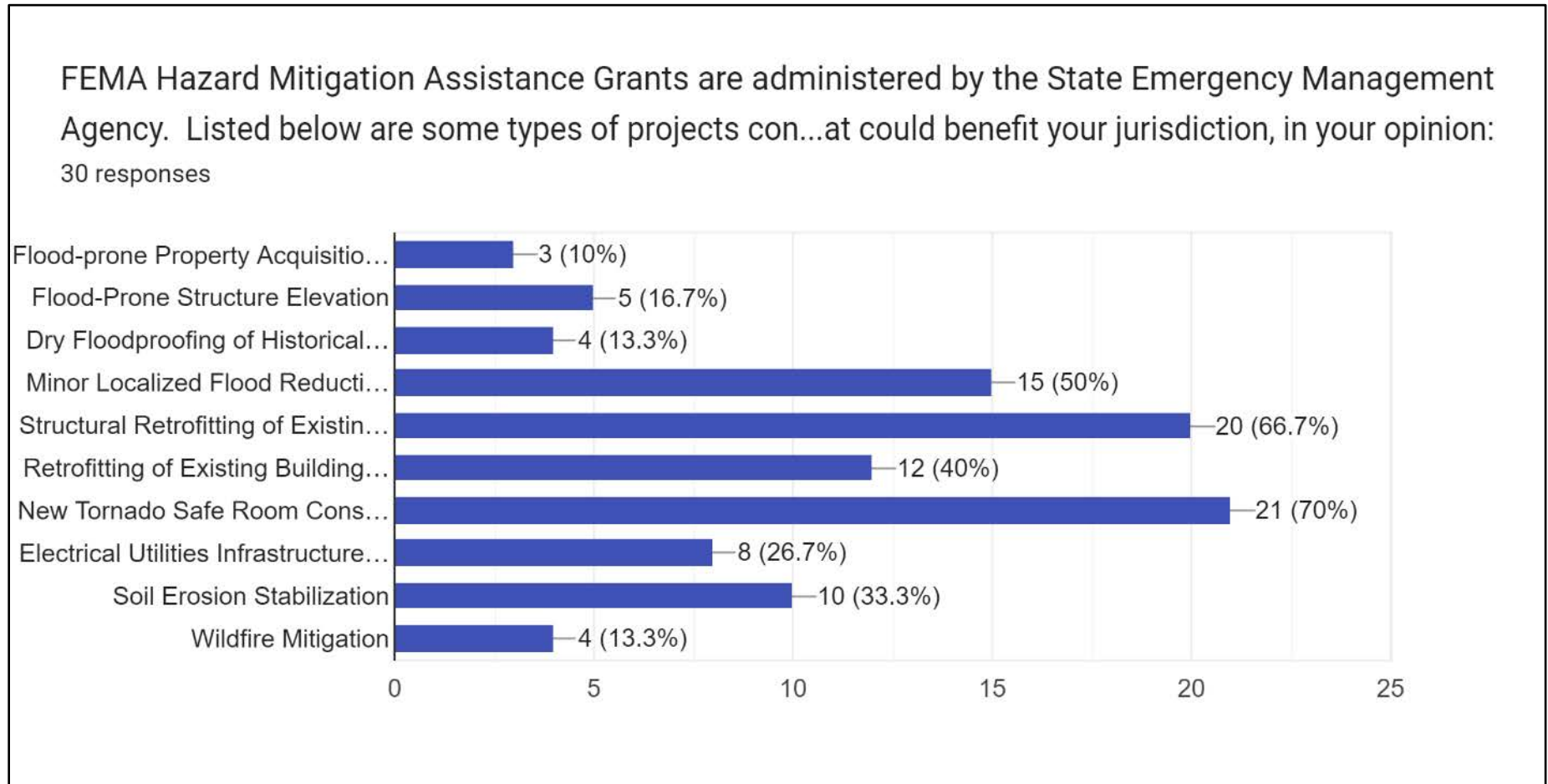
**Figure 1.2. Public Survey Question 3 Impact of the Hazard on your Jurisdiction**

Please indicate your opinion on the potential magnitude of each hazard's impact on YOUR JURISDICTION (identified above). Please rate EACH Hazard as Negligible, Limited, Critical, or Catastrophic.





**Figure 1.3. Beneficial Grants Preferences**



## ***Coordinate with Other Departments and Agencies and Incorporate Existing Information***

**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.**

At the plan's kick off meeting on March 1, 2023, attendees continued to determine how public input could be solicited from the public. City and county officials were encouraged to invite others from any county, state, or federal agency as well as local businesses that had interest in contributing to the planning process. Input from the public was solicited through reminders at public gatherings and press releases. Citizens, public organizations, and elected officials have participated in this process.

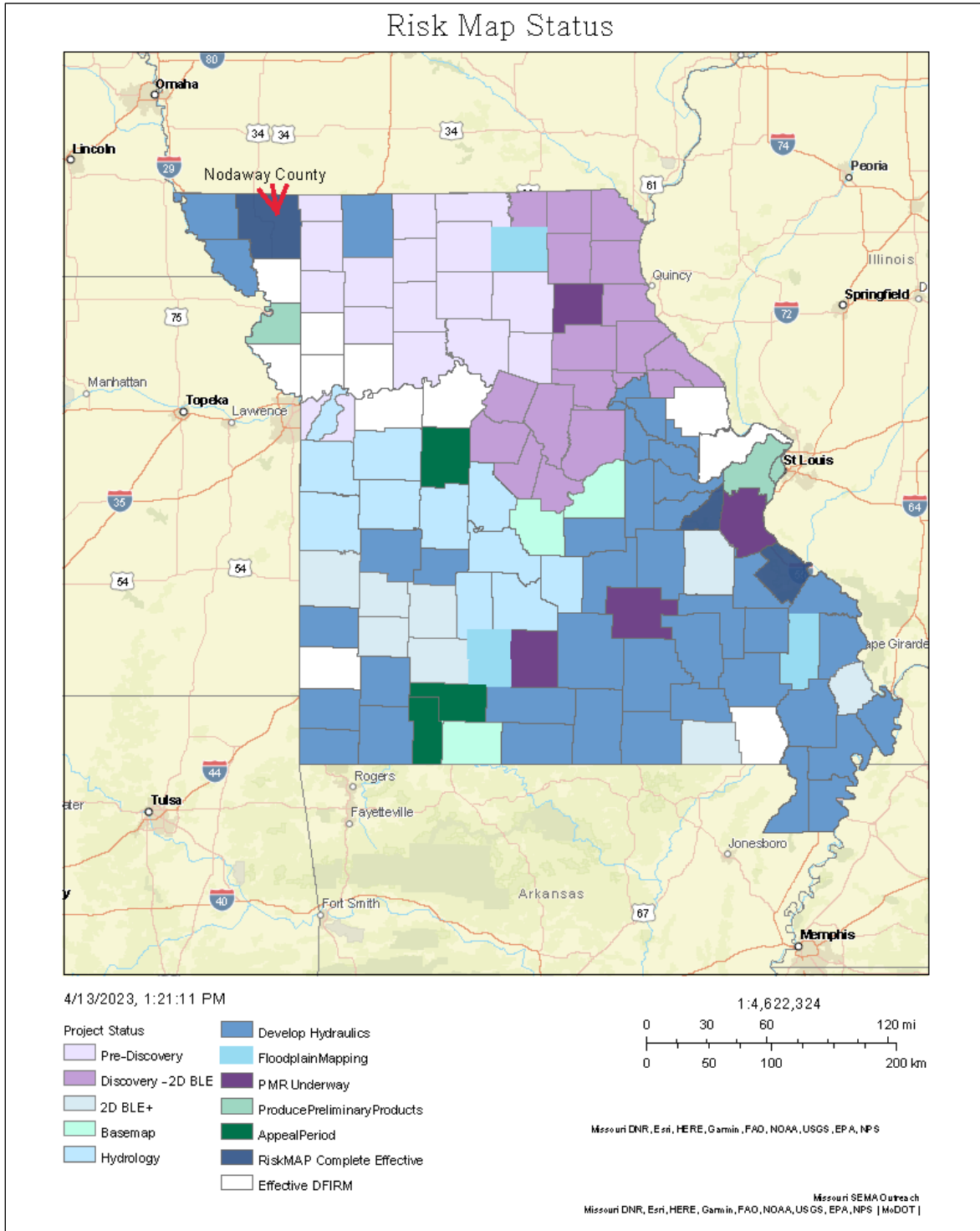
Once a draft of the plan update was complete it was posted on the Regional Council website where surrounding jurisdictions, stakeholders and the public were invited to review the plan's contents. Individual emails and letters were sent to the jurisdictions and stakeholders to invite them to review and comment on the plan. A press release was sent to the local newspapers to announce the availability of the plan for review and comment. A complete list of agencies solicited is available in *Appendix B*.

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

For FY2016 Nodaway County was one of the Missouri counties that received FEMA funding as a Post Preliminary Risk MAP (Mapping, Assessment and Planning) project. As part of this funding the Base Map for the county was developed using LiDAR (light detection and ranging) data, additional topographical data was collected through field surveys, and hydrologic and hydraulic data was compiled so that digital flood insurance maps could be produced. Nodaway County commissioners and representatives from Arkoe, Clearmont, Elmo, Hopkins, Maryville, Parnell and Ravenwood attended the Project Initiation Kickoff meeting on November 1, 2016 to learn about and contribute to the project. The Flood Study Review meeting was held on August 23, 2017. At this time, a review of the data that had been collected was presented and an opportunity was provided to challenge any findings or to add additional information. At the Consultation Coordination Officer Meeting held March 6, 2018, the preliminary DFIRM maps were shown, and the formal due process review of the new maps was initiated.

Figure 1.4 on the following page shows the current FEMA Risk MAP projects across the state. Nodaway County is now completed and in effect. Nodaway County residents now have more accurate flood maps, risk assessment tools and a more robust outreach support because of this project.

**Figure 1.4. Map of Risk MAP projects**



Source: SEMA <http://bit.ly/MOSEMAOutreach>

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

Northwest Regional Council staff further used several other documents and plans while compiling information for this update, including the mitigation plans of the state and adjacent

counties, Flood Insurance Studies (FIS), Flood Insurance Rate Maps (FIRMs), State Department of Natural Resources (DNR) dam information, the National Inventory of Dams (NID), dam inspection reports, state fire reports, Wildland/Urban Interface and Intermix areas from the SILVIS Lab-Department of Forest Ecology and Management-University of Wisconsin, local comprehensive plans, economic development plans, Maryville Capital Improvement Plan, and US Department of Agriculture's (USDA) Risk Management Agency Crop Insurance Statistics.

### ***Assess the Hazard: Identify and Profile Hazards***

Attendees at the Kick-off/Risk Assessment meeting reviewed the hazards identified in the 2018 Hazard Mitigation Plan. After reviewing the declared disasters over the last five years, as well as the information provided in the data questionnaires from each of the participating jurisdictions, it was confirmed that they should remain unchanged in the 2023 update. The Northwest Regional Council's planning staff shared summaries of the first draft of the Risk Assessment of the existing hazards at this meeting with the draft document posted online. Further information about the Risk Assessment and the problems identified are detailed in Chapter 3.

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

To adequately assess the issues, resources available on the Internet, existing reports and plans, information provided by jurisdictions on their Data Questionnaires, and HAZUS data was utilized to compile information about each identified hazard. Each of the hazards was revised to include the most recent location data, previous occurrences, probability of future occurrence, and magnitude/severity. Losses were estimated using a combination of resources, including HAZUS data, information available from local resources such as the Emergency Management Director and County Assessor. In cases where vulnerability estimates were unavailable, data from the 2018 State Hazard Mitigation Plan was utilized as the best and most recent data available. SEMA was also able to share some preliminary data from the 2023 State Plan update.

At meeting #1, the first draft of the Risk Assessment was available. A visual presentation of the Problem Statements identified for each hazard to assist with the evaluation of the goals and the upcoming review of actions. During the meeting, it was discussed how important it is to have continuity of knowledge of procedures to follow in the event of a disaster. Tools and policies put in place are not effective if the staff on duty have not been trained in their use. It was decided that this concern was not a candidate for a new action but needs to be incorporated into each jurisdiction's policies and training schedules.

### ***Set Goals***

Attendees at the first planning meeting held on March 1, 2023, reviewed the goals from the 2018 plan and after discussion determined that the existing goals are still relevant and should remain unchanged. These goals include:

- GOAL 1: Protect the lives, property, and livelihoods of all citizens.
- GOAL 2: Manage growth in designated hazard areas through sustainable policies, principles, and practices.
- GOAL 3: Ensure continued operation of government and emergency functions in a disaster.
- GOAL 4: Maintain economic activities essential to the survival and recovery from natural hazards.

Attendees at the Small Groups Meetings began the process of reviewing the existing mitigation Action Worksheets. Each jurisdiction received a list of the 2018 Action items to review. The staff met with the Nodaway County Emergency Manager to establish a county baseline for the review prior to these public meetings.

### ***Review of Mitigation Actions and Activities to Draft an Action Plan***

At the Mitigation Priorities meeting #2, attendees were shown the status of the review of the 2018 mitigation Action Worksheets that are under consideration for continuance into the 2023 plan. A concern of the health and safety risks of untethered propane and anhydrous ammonia tanks during flooding events was raised. Another concern was sewage lagoons with inadequate berms to prevent breaching during high water events. These were taken into consideration when considering new Actions for 2023.

The STAPLEE review from a meeting of Staff and the Nodaway County Emergency Management Director provided a baseline for each jurisdiction to consider the priority for their jurisdiction. There will be one STAPLEE Worksheet in the plan with a block at the top to indicate which jurisdictions are participants in that action. The STAPLEE scores were discussed, and participants gained insight into how the evaluation system worked.

The FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)* was used as a reference to provide some suggested action projects. Participants were encouraged to focus on long-term mitigation solutions and consideration was given to the potential cost of each project in relation to the anticipated future cost savings.

### ***Adopt the Plan***

The Nodaway County Multi-jurisdictional Hazard Mitigation Plan was completed in April of 2023 and submitted to the planning committee members for final review via email with the link to the plan posted on the Regional Council website (mail upon request). The public was also provided the opportunity to comment on the plan's contents by visiting the Regional Council's website at [www.nwmorcog.org](http://www.nwmorcog.org) or requesting to view a copy available at the Nodaway County Administration Building in Maryville. Before the first draft was sent to FEMA for review, Resolutions were sent to all participating jurisdictions. Copies of the resolutions of adoption are found in Appendix D.

### ***Implement, Evaluate, and Revise the Plan***

At the final planning meeting held on March 29, 2023, the planning committee developed and agreed upon an overall strategy for implementing, monitoring and maintaining the Nodaway County Hazard Mitigation Plan. A complete explanation of this process can be found in Section 5. Many of the following recommendations in this plan should not be considered final solutions, but rather short-term efforts that will ultimately have long-term strategic implications.

To be sure, this process should be an ongoing effort that is periodically reviewed to ensure that information is still relevant and appropriate for the region. The goals and recommendations in the plan include broad implementation strategies, possible partners, and time frames for completion. Under the direction of the Nodaway County Emergency Management Director, the mitigation strategy will be forwarded for integration into other appropriate planning mechanisms.

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## 2 PLANNING AREA PROFILE AND CAPABILITIES

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<b>2</b>	<b>PLANNING AREA PROFILE AND CAPABILITIES.....</b>	<b>2.1</b>
<b>2.1</b>	<b><i>Nodaway County Planning Area Profile.....</i></b>	<b>2.2</b>
2.1.2	Geography, Geology and Topography .....	2.3
2.1.3	Climate.....	2.5
2.1.4	Population/Demographics .....	2.5
2.1.5	History.....	2.7
2.1.6	Occupations .....	2.8
2.1.7	Agriculture.....	2.8
2.1.8	FEMA Hazard Mitigation Assistance Grants in Planning Area.....	2.8
<b>2.2</b>	<b><i>Jurisdictional Profiles and Mitigation Capabilities.....</i></b>	<b>2.9</b>
2.2.1	Unincorporated Nodaway County .....	2.9
2.2.2	Town of Arkoe .....	2.12
2.2.3	City of Barnard .....	2.15
2.2.4	City of Burlington Junction.....	2.17
2.2.5	City of Clearmont.....	2.18
2.2.6	Village of Clyde* .....	2.21
2.2.7	City of Conception Junction.....	2.23
2.2.8	City of Elmo.....	2.25
2.2.9	City of Graham .....	2.27
2.2.10	Village of Guilford.....	2.28
2.2.11	City of Hopkins .....	2.31
2.2.12	City of Maryville .....	2.34
2.2.13	City of Parnell.....	2.37
2.2.14	City of Pickering .....	2.39
2.2.15	City of Ravenwood .....	2.41
2.2.16	City of Skidmore.....	2.43
2.2.17	Special Districts .....	2.54
2.2.18	Public School District Profiles and Mitigation Capabilities .....	2.57

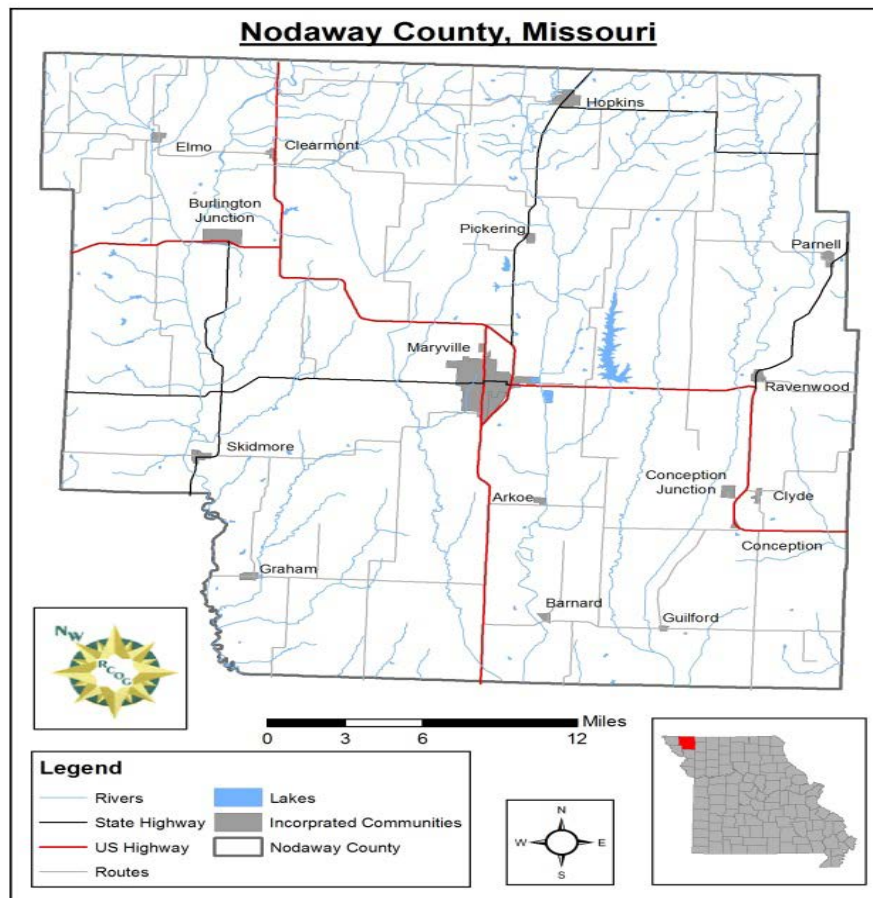
\*The Village of Clyde is choosing not to participate in this plan's update but may be included in some descriptions to provide a better understanding of the county's plans and capabilities.

## 2.1 Nodaway County Planning Area Profile

Nodaway County is in the northwestern corner of Missouri and is bound by the Iowa border to the north, Atchison County and Holt County to the west, Worth County and Gentry County to the east, and Andrew County to the south. Within Nodaway County are the Town of Arkoe, City of Barnard, City of Burlington Junction, City of Clearmont, Village of Clyde, City of Conception Junction, City of Elmo, City of Graham, Village of Guilford, City of Hopkins, City of Maryville, City of Parnell, City of Pickering, City of Ravenwood, and City of Skidmore. The school districts in Nodaway County are Jefferson C-123 School District, Maryville R-II School District, Nodaway-Holt R-VII School District, North Nodaway County R-VI School District, Northeast Nodaway County R-V School District, South Nodaway County R-IV School District, and West Nodaway County R-I School District. Northwest Missouri State University is in Maryville.

Figure 2.1 provides a map of the Nodaway County planning area, indicating the boundaries of unincorporated Nodaway County, and the communities located within.

**Figure 2.1. Map of Nodaway County**



According to the 2020 Census, Nodaway County has a population of 21,241 individuals. Since 2010, Nodaway County's population has decreased 9.1 percent; its population growth remains behind the statewide population increase of 2.1 percent and the nationwide increase of 7.4 percent. Table 2.1 displays the population change for Nodaway County and its jurisdictions, Missouri, and the United States from 2010 to 2020.



**Table 2.1. Nodaway County Population 2010-2020 by Jurisdiction**

Jurisdiction	2010 Population	2020 Population	2010-2020 # Change	2010-2020 % Change
United States	308,745,538	331,449,281	22,703,743	7.4%
Missouri	5,988,927	6,154,913	165,986	2.8%
Nodaway County	23,370	21,241	(2,129)	-9.1%
Arkoe	68	56	(12)	-17.6%
Barnard	221	201	(20)	-9.0%
Burlington Junction	537	521	(16)	-3.0%
Clearmont	170	158	(12)	-7.1%
Conception Junction	198	177	(21)	-10.6%
Elmo	168	114	(54)	-32.1%
Graham	171	147	(24)	-14.0%
Guilford	85	60	(25)	-29.4%
Hopkins	532	472	(60)	-11.3%
Maryville	11,972	10,633	(1,339)	-11.2%
Parnell	191	135	(56)	-29.3%
Pickering	160	149	(11)	-6.9%
Ravenwood	440	439	(1)	-0.2%
Skidmore	284	245	(39)	-13.7%
Unincorporated	8,091	7,679	(412)	-5.1%

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

Nodaway County's median household income is slightly below the statewide and nationwide averages. With Nodaway County's median household income topping off at \$67,521 in 2020, Nodaway County has experienced a 74.2 percent increase since 2010. From 2010-2020, Missouri's average median household income has increased 23.8 percent, and the United States' median household income has increased 30.1 percent. Information regarding Nodaway County's median household income is found in Table 2.2.

**Table 2.2. Median Household Income Comparison**

Community	2010	2020	Percentage of Change
United States	\$51,914	\$67,521	30.1%
Missouri	\$46,262	\$57,290	23.8%
Nodaway County	\$38,621	\$67,279	74.2%

Source: U.S. Census

Additionally, the median house value percentage growth in Nodaway County is also below the statewide and nationwide values. In 2010, the median house value was \$94,900, but in 2020 the median house value was \$126,600. Within a decade, there has only been a 33.4 percent growth in the median house values in Nodaway County. Missouri's median house value has increased 19 percent, and the median house value in the United States has increased 21.9 percent. Table 2.3 compares the median house value between Nodaway County, Missouri, and the United States.

**Table 2.3. Median Housing Value Comparison**

Community	2010	2020	Percent of Change
United States	\$188,400	\$229,800	21.9%
Missouri	\$137,700	\$163,600	19%
Nodaway County	\$94,900	\$126,600	33.4%

Source: U.S. Census

## 2.1.2 Geography, Geology and Topography

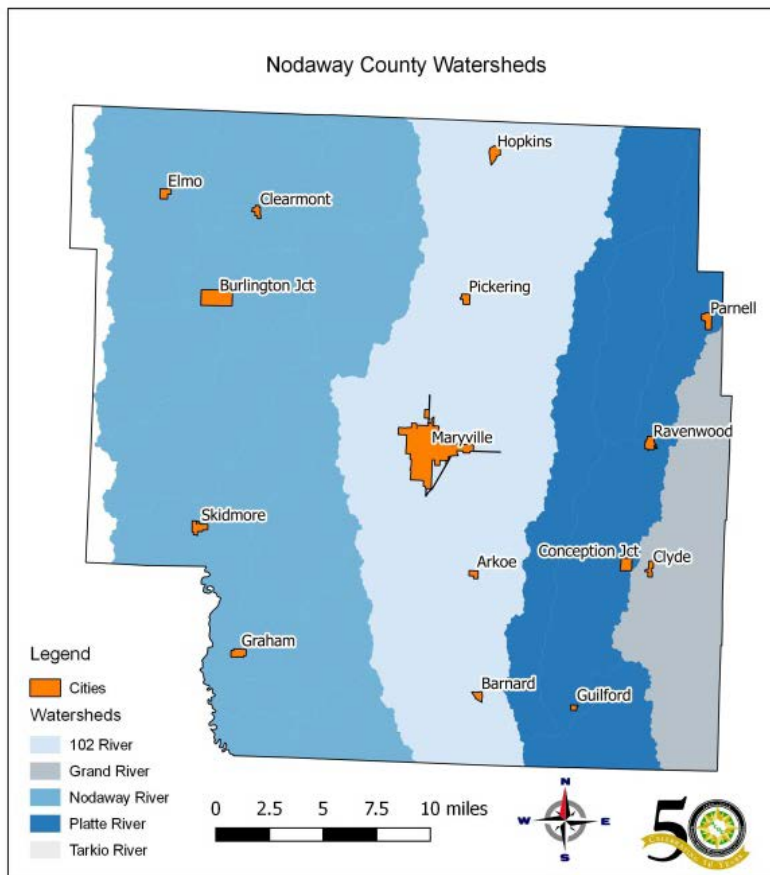
Nodaway County consists of 876.964 square miles of land and 1.13 square miles of water. Due

to the population, location, and the use of land in Nodaway County, Nodaway County is rural in nature. Its economy thrives on agriculture. The primary use of land in Nodaway County is for growing crops, such as soybeans and corn. Most livestock in the area are cattle, comprising nearly twice the population of Nodaway County.

Nodaway County has experienced a population decrease in all of its communities. Maryville has decreased the largest amount in terms of quantity of individuals, losing 1,339 individuals from 2010 to 2020; however, Conception Junction has had the highest percentage of population decrease at 32.9 percent. Nodaway County has experienced a decrease in population from 23,370 individuals in 2010 to 21,241 individuals in 2020.

There are five watersheds located in Nodaway County: Tarkio-Wolf, Nodaway, Platte, One Hundred and Two, and Upper Grand. Figure 2.2 depicts the location of watersheds in Nodaway County.

**Figure 2.2 Watersheds in Nodaway County**



Source: Missouri Spatial Data Information Service

Nodaway County is located in the rolling prairie region of Missouri’s northwestern corner, so several hills can be found in the county. The soils in Nodaway County have a moderately thick, dark surface layer, which indicates that the soils formed under transitional prairie-timber vegetation. Moreover, there are multiple streams in the area that drain into the following rivers: the Nodaway, the One Hundred and Two, and the Platte River, each flow from North to South.

### 2.1.3 Climate

Nodaway County’s climate is continental. The county experiences cold winters due to the dry-cold air sweeping in from the northern plains and Canada. The summers are hot and humid as warm air masses from the Gulf of Mexico travel north and produce rain for the region. During summer, it is more likely for the region to experience extended periods of drought because of the high-pressure systems that form over the area. In January, the average low temperature is 14.3 degrees Fahrenheit. Moreover, in July, the average high temperature is 86.9 degrees Fahrenheit. For Nodaway County, the average annual temperature is 51.2 degrees Fahrenheit. Precipitation is common in all seasons for Nodaway County. The average annual precipitation in Nodaway County is 37.25 inches. Seventy percent of the rainfall usually falls between April and September. During the spring and summer, damaging tornadoes, hailstorms, and thunderstorms occur locally and are usually short in duration. Nodaway County’s average annual inches of snow is 15 inches. During winter, Nodaway County faces blizzards, snow, freezing rain, sleet, and ice.

### 2.1.4 Population/Demographics

Table 2.4 represents the population under the age of 5 and over the age of 65 in Nodaway County. The percentage of county population under the age of 5 in Nodaway County is below the statewide and nationwide values. According to the 2020 Census, the population under age 5 in Nodaway County is 4.8 percent of the county’s population. The population under age 5, in both Missouri and the United States, makes up 6 percent of the population. Furthermore, Nodaway County’s percentage of the population over age 65 is similar to the statewide and nationwide percentages. In Nodaway County, 15 percent of the population is over the age of 65. Only 16.9 percent of the population in Missouri and 16 percent of the population in the United States is over the age of 65.

Additionally, there are 9,780 households in Nodaway County. Nodaway County’s average household size of 2.23 persons per household (PPH) is close to the statewide 2.44 PPH and nationwide 2.6 PPH figures.

**Table 2.4. Nodaway County Under Age 5 & Over Age 65 Population Comparisons**

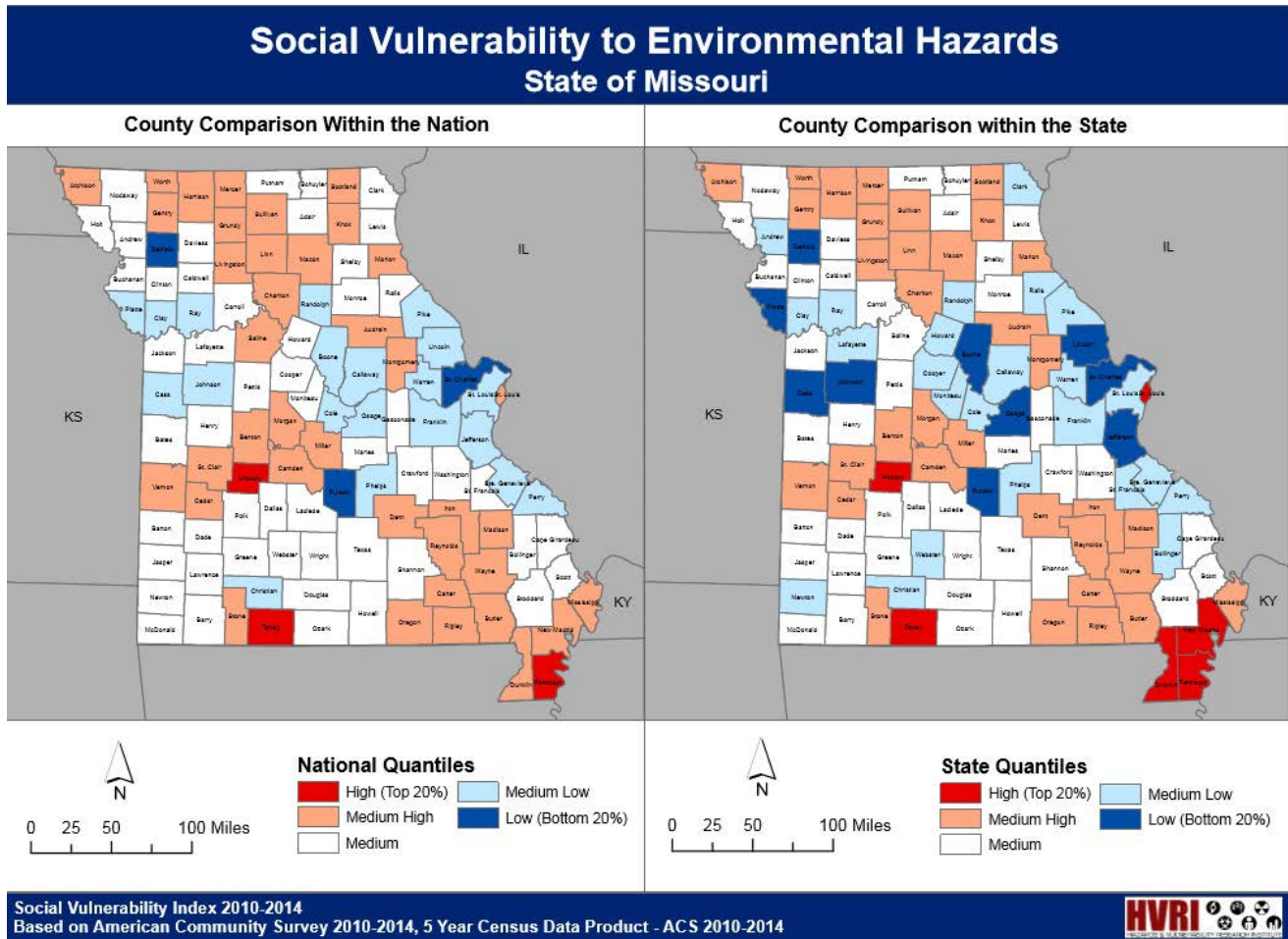
Population	Total Population	Under the age of 5	Over the age 65
United States	326,569,312	19,650,192	52,362,816
Missouri	6,124,160	371,046	1,033,384
Nodaway County	22,199	1,056	3,334

Source: 2016-2020 5 Year ACS Profile

The University of South Carolina developed an index to evaluate and rank the ability to respond to, cope with, recover from, and adapt to disasters. The index synthesizes 30 socioeconomic variables which research literature suggests contributing to reduction in a community’s ability to prepare for, respond to, and recover from hazards. SoVI ® data sources include primarily those from the United States Census Bureau.

As listed on the Social Vulnerability Index (SoVI ®), Nodaway County received a 0.49000001 score, ranking among the 58.7 national percentile. Compared to the other counties in Missouri, Nodaway County has a medium social vulnerability to environmental hazards. The county in Missouri with the highest vulnerability to environmental hazards is Pemiscot with a score of 4.840000153. On the other side of the spectrum, DeKalb is the least vulnerable county in Missouri with a score of -5.940000057. Figure 2.3 compares Nodaway County’s social vulnerability to environmental hazards with other counties in the United States and Missouri.

Figure 2.3. Nodaway County's Social Vulnerability to Environmental Hazards



University of South Carolina Social Vulnerability Index Map 2014

A comparison of selected demographics between the jurisdictions of Nodaway County and with the State and nation are shown in Table 2.5.

**Table 2.5 Unemployment, Poverty, Education, and Language Percentage Demographics, Nodaway 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 population (spoken language other than English)
United States	162,902,832	5.4%	9.1%	88.5%	32.9%	20.3%
Missouri	3,090,253	4.5%	8.9%	90.6%	29.9%	5.9%
Nodaway County	11,287	2.6%	9.8%	93.3%	27.4%	2.5%
Arkoe	40	0%	10%	86.1%	5.6%	0%
Barnard	128	2.3%	6.1%	93.9%	10.5%	3.2%
Burlington Junction	214	5.1%	22%	85.2%	4.7%	13.7%
Clearmont	88	3.4%	7.4%	93.8%	26.6%	1.9%
Clyde*	23	0%	6.2%	93.1%	13.8%	0%
Conception Junction	91	1.1%	18.3%	91.9%	24.4%	0.5%
Elmo	65	3.1%	0%	0%	17.3%	0%
Graham	81	3.7%	14.3%	94.3%	17.0%	0%
Guilford	48	0%	15.6%	82.4%	20.6%	0%
Hopkins	224	0.9%	18%	93.8%	9.3%	2.5%
Maryville	6,106	2.6%	14.3%	94.8%	36.2%	2.3%
Parnell	56	0%	10.4%	89.6%	9.6%	2.3%
Pickering	82	4.9%	20.9%	97.6	23.8%	0.6%
Ravenwood	204	2.5%	6.6%	96.4%	16.1%	0.4%
Skidmore	85	3.5%	6.7%	92.6%	14.7%	2.1%

Source: U.S. Census, 2016-2020 American Community Survey, 5-year Estimates. \*The Village of Clyde is choosing not to participate in this plan's update but may be included in some descriptions to provide a better understanding of the county's plans and capabilities.

## 2.1.5 History

Before the establishment of Nodaway County, the area was once reserved to the Native Americans. The fertile land was desirable to add on to the State of Missouri, and the issue became controversial when settlers began pushing for the Native Americans, assigned by treaty to the Northwest Missouri region, to relocate. By 1836, the United States government purchased the land from the Native Americans, and the agreement became known as the Platte Purchase. The Sac, Fox, and Iowa Native Americans renounced their rights to the land and relocated west of the Missouri River into Kansas and Nebraska territories. Today's Nodaway County derived out of the Platte Purchase and was officially established in 1845.

Today, Nodaway County is in the northwest region of Missouri with a population of 21,199. The county consists of fifteen incorporated communities and eight school districts and is classified as a Third-Class County Township Government. Nodaway's economy is largely based on agricultural and industrial businesses. Within Nodaway County are the Nodaway County Ambulance District and the Nodaway County Fire District. Each district serves the county to save lives and to reduce the impact of a disaster.

## 2.1.6 Occupations

Table 2.6 provides occupation statistics in Nodaway County.

**Table 2.6. Occupation Statistics, Nodaway County, Missouri**

Place	Management, Business, Science, and Arts Occupations	Service Occupations	Sales and Office Occupations	Farming, fishing, and forestry occupations	Construction, extraction, installation, maintenance, and repair occupations	Production, transportation, and material moving occupations
United States	39.5%	17.4%	21.3%	0.6	8.1	13.1
Missouri	37.9%	16.8%	21.9%	0.5	8.2	14.7
Nodaway County	33.9%	19.2%	20.5	1.2	8.3	17
Arkoe	5%	37.5%	5%		30%	22.5%
Barnard	18.4%	18.4%	18.4	3.2%	14.4%	27.2%
Burlington Junction	20.2%	14.8%	24.6%	7.4%	4.4%	28.6
Clearmont	34.1%	8.2%	8.2%	3.5%	17.6%	28.2
Clyde*	30.4%	17.4%	21.7%	0%	17.4%	13%
Conception Junction	30%	23.3%	11.1%	0%	5.6%	30%
Elmo	20.6%	6.3%	14.3%	0%	25.4%	33.3%
Graham	28.6%	16.7%	15.4%	1.3%	20.5%	17.9%
Guilford	22.9%	25%	10.4%	10.4%	10.4%	20.8%
Hopkins	26.6%	20.3%	15.3%	0.9%	9%	27.9%
Maryville	33.9%	21.7%	22.4%	1%	6.3%	14.7%
Parnell	16.1%	30.4%	3.6%	3.6%	1.8%	44.6%
Pickering	24.4%	12.8%	5.1%	0%	15.4%	42.3%
Ravenwood	24.6%	20.6%	19.6%	0%	2.5%	32.7%
Skidmore	19.5%	26.8%	25.6%	0%	3.7%	24.2%

Source: U.S. Census, 2016-2020 American Community Survey, 5-year Estimates. \*The Village of Clyde is choosing not to participate in this plan's update but may be included in some descriptions to provide a better understanding of the county's plans and capabilities.

## 2.1.7 Agriculture

According to the 2017 Census of Agriculture, Nodaway County consists of 1,133 farms that cover 439,787 acres of land. The average farm size in Nodaway County is 388 acres, and the average sales per farm constitute \$134,308. The top crops in the county are soybeans, corn, forage-land used for hay, and wheat. Most livestock in the county are cattle, ranking 29 out of the 113 counties in Missouri; however, sheep and lambs rank 19 in the state. In Nodaway County, there are 608 farm jobs. This makes up 5.5 percent of the workforce in Nodaway County.

## 2.1.8 FEMA Hazard Mitigation Assistance Grants in Planning Area

Table 2.7 depicts the total amount of FEMA Hazard Mitigation Assistance Grants that Nodaway County has received from 1993 to 2020.

**Table 2.7. FEMA HMA Grants in County from 1993-2020**

<b>Project Type</b>	<b>Sub applicant</b>	<b>Award Date</b>	<b>Project Total</b>
200.1: Acquisition of Private Real Property (Structures and Land) - Riverine	Maryville	06/29/1994	\$33,610
206.2: Safe Room (Tornado and Severe Wind Shelter) - Public Structures	Maryville Senior High School	12/31/2015	\$1,532,226
<b>Total</b>			<b>\$1,565,836</b>

Source: Missouri State Emergency Management Agency

## **2.2 Jurisdictional Profiles and Mitigation Capabilities**

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

### **2.2.1 Unincorporated Nodaway County**

Nodaway County utilizes a traditional commissioner form of government, whose jurisdiction includes all unincorporated areas within its boundaries. The county is divided into two geographic districts, North District and South District, each represented by a district commissioner. The two district commissioners are joined by a presiding commissioner to create a three-member commission.

Nodaway County is designated as a Third-Class County Township Government in Missouri. The unincorporated county does not have building regulations, with the exception of Polk Township. Construction within Polk Township, which surrounds the city of Maryville, is subject to planning and zoning regulations. The County's government includes the following offices and departments:

- Circuit Judge
- Associate Circuit Judge
- Circuit Clerk
- Prosecuting Attorney
- Board of Commissioners
- County Clerk
- Collector-Treasurer Assessor
- Emergency Management Director
- Recorder of Deeds
- Sheriff
- Public Administrator
- Coroner

#### **Mitigation Initiatives/Capabilities**

Unincorporated Nodaway County has the following staff: full-time mapping specialist (GIS) in the Assessor's Office, full-time public works official, part-time emergency management coordinator, part-time NFIP Floodplain Administrator, and full-time transportation and economic development

departments. Within Nodaway County is an Emergency Response Team; Northwest Missouri State University has a Campus Community Emergency Response Team (C-CERT). Furthermore, the Local Emergency Planning Committee in Nodaway County meets quarterly.

The County's fire services consist of 13 area departments and ambulance services with 5 area departments. Law Enforcement in Nodaway County includes the Nodaway County Sheriff's Department, Maryville Public Safety, Northwest Missouri State University Police Department, and Missouri State Highway Patrol. There are multiple sources of water and sewer services in the county, including Municipal Water Service, PWSD #1 of Nodaway County, and Southwest Regional Water (Iowa). Furthermore, Evergy, United Electric, Empire Gas and MFA are the sources of electricity, natural gas and propane fuel in Nodaway County.

Nodaway County's Emergency Management Director is employed part-time. The director establishes relationships with the surrounding communities and ensures emergency management related efforts are in place within the county. The County updates its Emergency Operations Plan annually. A floodplain ordinance (#290821) was also created in April 2007. Moreover, Nodaway County participates in the National Flood Insurance Program.

Nodaway County has several other roles and responsibilities regarding mitigation initiatives and capabilities. There are 18 outdoor warning sirens in Nodaway County. Seven sirens are activated by the respective community. Eleven sirens are activated through the Nodaway County Sheriff's Office or Maryville Public Safety. The City of Maryville uses Cable Override (plans to discontinue in 2023), and TextCaster is available to all Nodaway County residents free of charge. Every city and school in Nodaway County have a NOAA weather radio. Within Nodaway County, Maryville R-II High School has a FEMA approved shelter that the public can go to in the time of severe weather.

While the County government and the City of Maryville have the resources to manage and the tax base to fund improvements in existing or possible expansion of capabilities, the remaining participating jurisdictions are understaffed and often struggle to maintain current capabilities. As shown in Table 2.1, many towns have experienced double-digit percentage declines in population as well as an increase in the portion of the population that is over 65 years old. Aging buildings and infrastructure also are a part of the situation for these jurisdictions. These communities have found themselves relying on grant programs to maintain their mitigation capabilities.

Table 2.8 depicts Unincorporated Nodaway County's mitigation capabilities.

**Table 2.8. Unincorporated Nodaway County Mitigation Capabilities**

Element	Yes, No, N/A	Comments
Planning Capabilities		
Comprehensive Plan	No	
Capital Improvement Plan	No	
County Emergency Operations Plan	Yes.	The County EOP is updated annually. Date: 2021 No changes in 2022.
County Recovery Plan	No	
County Mitigation Plan	Yes	Completed by RCOG 2019.
Debris Management Plan	No	
Economic Development Plan	Yes	2018-2023 RCOG website



Transportation Plan/Highway Dept	No	Reg Trans Plan updated yearly
Firewise or other fire mitigation plan	No	
Policies/Ordinance		
Zoning Ordinance	No	
Building Code	No	Version:
Floodplain Ordinance	Yes	Date: 04/2007 #290821
Storm Water/Drainage Ordinance	No	
Site Plan Review Requirements	No	
Historic Preservation Ordinance	No	
Program		
National Flood Insurance Program	Yes	
Community Rating System (CRS) program under the National Flood Insurance Program (NFIP)?	No	
National Weather Service (NWS) Storm Ready Certification	Yes	Renewed in 2020
Firewise Community Certification	No	
Building Code Effectiveness Grading (BCEGs)	No	
ISO Fire Rating	Rating: 6/9	
Economic Development Program	No	
Land Use Program	No	
Public Education/Awareness	Yes	Ongoing. Focus is Ready in 3 and Severe Weather.
Mutual Aid Agreements	Yes	
Studies/Reports/Maps		
<b>Hazard Analysis/Risk Assessment (City)</b>	N/A	
<b>Hazard Analysis/Risk Assessment (County)</b>	Yes	Natural disaster only – RCOG. Regional Homeland Security Oversight Committee for Region H (RHSOC) has a Threat and Hazard Identification and Risk Assessment (THIRA)
Evacuation Route Map	Yes	Part of Emergency Op Plan
<b>Critical Facilities Inventory</b>	Yes	Part of Hazard Mitigation Plan
<b>Vulnerable Population Inventory</b>	No	
<b>Land Use Map</b>	No	
Watershed Report	East edge of County	Date:2014 Upper Grand by FEMA
FEMA FIS Report	Yes	Date: 2020 RCOG has copy
Staff/Department		Full Time or Part Time?
Building Code Official/Building Inspector	No	
Mapping Specialist (GIS)	Yes	Assessor's Office. Full-time.
Engineer	No	
Development Planner	No	

Public Works Official	Yes	Full-time
Emergency Management Coordinator	Yes	Part-time.
NFIP Floodplain Administrator	Yes	Part-time
Emergency Response Team	Yes	NWMSU has a C-CERT.
Local Emergency Planning Committee	Yes	Meet quarterly.
County Emergency Management Commission	No	
Sanitation Department	No	
Transportation Department	Yes	Full-time
Economic Development Department	Yes	Full-time
Housing Department	No	
Historic Preservation	No	
Non-Governmental Organizations (NGOs)	Is there a local chapter? Yes or No	
American Red Cross	Yes	Midland Empire Chapter serves Region H.
Salvation Army	Yes	SA funding pass through for Nodaway is through Comm. Services
Veterans Groups	Yes	
Local Environmental Organization	No	
Homeowner Associations	No	
Neighborhood Associations	No	
Chamber of Commerce	Yes	
Community Organizations (Lions, Kiwanis, etc.	Yes	
Financial Resources	Is your jurisdiction able to? Yes or No	
Apply for Community Development Block Grants	Yes	
Fund projects thru Capital Improvements funding	No	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	No	
Impact fees for new development	No	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Incur debt through private activities	No	
Withhold spending in hazard prone areas	No	

Source: Data Collection Questionnaire, 2023

## 2.2.2 Town of Arkoe

The Town of Arkoe is located in southcentral Nodaway County along the west side of the One Hundred and Two River. Arkoe has a Mayor/Council form of government with five members. According to the U.S. Census, the population of Arkoe was at 68 in 2010 but decreased to 56 in

2020, thus causing a 17.6% decrease.

The water supplier for Arkoe is PWSD#1 of Nodaway County, and EVERGY and United Electric are the sources of electricity. The Town of Arkoe’s sewer service is made up of individual septic systems. Arkoe is part of the Tri-C Rescue Squad and the Tri-C Fire Department. Law enforcement is provided by the Nodaway County Sheriff’s Department. There is not a formal warning system in the Town of Arkoe. In times of severe weather, the mayor calls the residents to notify them to take shelter.

According to the 2020 Census, 10 percent of families in Arkoe are living below the poverty level. English is the only spoken language among the population.

The mitigation capability for the Town of Arkoe is detailed in Table 2.9.

**Table 2.9. Town of Arkoe Mitigation Capabilities**

<b>Capabilities</b>	<b>Status Including Date of Document or Policy</b>
Planning Capabilities	
<b><u>Comprehensive Plan</u></b>	No
Capital Improvement Plan	No
City Emergency Operations Plan	No
Local Recovery Plan	No
County Recovery Plan	No
Debris Management Plan	No
<b><u>Economic Development Plan</u></b>	Yes, CEDS
Transportation Plan	Yes, 2022 Regional
<b><u>Watershed Plan</u></b>	No
Firewise or other fire mitigation plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
Policies/Ordinance	
Zoning/Land Use Ordinance	No
Building Code	No
Floodplain Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	No
Storm Water/Drainage Ordinance	No
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
Program	
National Flood Insurance Program	No
Community Rating System (CRS) program	No
National Weather Service (NWS) Storm Ready Certification	No

<b>Capabilities</b>	<b>Status Including Date of Document or Policy</b>
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	No
Public Education/Awareness	No
Mutual Aid Agreements	No
<b>Studies/Reports/Maps</b>	
<b><u>Critical Facilities Inventory</u></b>	No
<b><u>Vulnerable Population Inventory</u></b>	No
<b>Staff/Department</b>	
Building Code/Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	No
Emergency Management Coordinator	No
NFIP Floodplain Administrator	No
Local Emergency Planning Committee	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 (St. Joseph)
Salvation Army	Yes (St. Joseph)
Veterans Groups	No
Local Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.	No
<b>Financial Resources</b>	
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	No
Impact fees for new development	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No

Capabilities	Status Including Date of Document or Policy
Withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire, 2023

### 2.2.3 City of Barnard

The City of Barnard is in southern Nodaway County along the east side of the One Hundred and Two River. Barnard has a Mayor/Council form of government consisting of four members. Located in Barnard is South Nodaway High School. According to the U.S. Census, the population of Barnard was at 221 in 2010 but decreased to 201 in 2020, thus causing a 9 percent population decline.

The City of Barnard supplies its own water and sewer service, and EVERGY and United Electric are the sources of electricity. The City of Barnard is part of the Tri-C Rescue Squad and the Barnard Fire Department. Law enforcement is provided by the Nodaway County Sheriff’s Department. The City of Barnard has one warning system which the County is responsible for activating.

According to the 2020 Census, 6.1 percent of families in Barnard are living below the poverty level, and 16.5 percent of the population has a disability. Only 3.2 percent of the population speaks a language other than English.

The mitigation capability for the City of Barnard is detailed in Table 2.10.

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

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
<b><u>Comprehensive Plan</u></b>	No
Capital Improvement Plan	No
City Emergency Operations Plan	Yes June 2017
Local Recovery Plan	No
County Recovery Plan	Yes, 2023
Debris Management Plan	No
<b><u>Economic Development Plan</u></b>	Yes, CEDS
Transportation Plan	Yes, 2022
<b><u>Watershed Plan</u></b>	No
Firewise or other fire mitigation plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
Policies/Ordinance	
Zoning/Land Use Ordinance	No
Building Code	No
Floodplain Ordinance	Yes
Tree Trimming Ordinance	No
Nuisance Ordinance	Yes
Storm Water/Drainage Ordinance	Yes
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
Program	

National Flood Insurance Program	Yes
Community Rating System (CRS) program	No
National Weather Service (NWS) Storm Ready Certification	Yes, as part of the county
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	
Public Education/Awareness	No
Mutual Aid Agreements	No
Studies/Reports/Maps	
<b><u>Critical Facilities Inventory</u></b>	No
<b><u>Vulnerable Population Inventory</u></b>	No
Staff/Department	
Building Code/Building Inspector	Yes
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	Yes
Emergency Management Coordinator	No
NFIP Floodplain Administrator	Yes, Mayor
Local Emergency Planning Committee	No
Sanitation Department	No
Transportation Department	No
Economic Development Department	No
Housing Department	No
Historic Preservation	No
Non-Governmental Organizations (NGOs)	
American Red Cross	Yes
Salvation Army	Yes
Veterans Groups	No
Local Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.)	No
Financial Resources	
Apply for Community Development Block Grants	Yes
Fund projects thru Capital Improvements funding	No
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	Yes, Water and sewer
Impact fees for new development	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No

Without spending in hazard prone areas	No
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Source: Data Collection Questionnaire, 2023

## 2.2.4 City of Burlington Junction

Burlington Junction is located in northwestern Nodaway County along the intersection of Highway 136 and Highway 113. Burlington Junction has a Mayor/Council form of government. Located in Burlington Junction is West Nodaway R-1 School District. According to the U.S. Census, the population of Burlington Junction was at 537 in 2010 but decreased to 521 in 2020, thus causing a 3 percent population decline.

The City of Burlington Junction supplies its own water and sewer service, and EVERGY and United Electric are the sources of electricity. The City of Burlington Junction is part of Burlington Junction Rescue Squad and West Nodaway Fire Department. Law enforcement is provided by the Nodaway County Sheriff's Department. The City of Burlington Junction contains one outdoor warning system that the County and Fire Department are responsible for activating.

**Table 2.11. City of Burlington Junction Mitigation Capabilities**

Capabilities	Status Including Date of Document or Policy
<b>Planning Capabilities</b>	
<b>Comprehensive Plan</b>	No
Capital Improvement Plan	No
City Emergency Operations Plan	Yes June 2017
Local Recovery Plan	No
County Recovery Plan	No
Debris Management Plan	No
<b>Economic Development Plan</b>	No
Transportation Plan	Yes, 2017
<b>Watershed Plan</b>	No
Firewise or other fire mitigation plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
<b>Policies/Ordinance</b>	
Zoning/Land Use Ordinance	No
Building Code	No
Floodplain Ordinance	Yes
Tree Trimming Ordinance	No
Nuisance Ordinance	No
Storm Water/Drainage Ordinance	No
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
<b>Program</b>	
National Flood Insurance Program	Yes
Community Rating System (CRS) program	No
National Weather Service (NWS) Storm Ready Certification	No
Firewise Community Certification	No

Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	
Public Education/Awareness	No
Mutual Aid Agreements	No
Studies/Reports/Maps	
<b><u>Critical Facilities Inventory</u></b>	No
<b><u>Vulnerable Population Inventory</u></b>	No
Staff/Department	
Building Code/Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	No
Emergency Management Coordinator	No
NFIP Floodplain Administrator	Yes
Local Emergency Planning Committee	No
Sanitation Department	Yes
Transportation Department	No
Economic Development Department	No
Housing Department	No
Historic Preservation	No
Non-Governmental Organizations (NGOs)	
American Red Cross	Yes
Salvation Army	Yes
Veterans Groups	No
Local Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.	No
Financial Resources	
Apply for Community Development Block Grants	Yes
Fund projects thru Capital Improvements funding	No
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire, 2023

## 2.2.5 City of Clearmont



The City of Clearmont is located in northwestern Nodaway County along Highway 71, east of the Nodaway River. Clearmont has a Mayor/Council form of government with four aldermen and a city clerk. according to the U.S. Census, the population of Clearmont was at 170 in 2010 but decreased to 158 in 2010, thus causing a 7.1 percent population decline.

The City of Clearmont provides its own water service, and its sewer service is part of Clearmont Lagoons. EVERGY and United Electric are the sources of electricity. The City of Clearmont is part of Burlington Junction Rescue Squad and the Clearmont Fire Protection District. Law enforcement is provided by the Nodaway County Sheriff’s Department. The City of Clearmont has one outdoor warning siren that is manually activated by the fire department or storm spotters. For extra precaution, fire trucks are driven around streets with sirens on in the time of severe weather. The City of Clearmont has also held Fire Safety Week and has held seminars on smoke detectors for rural housing.

According to the 2020 Census, 7.4 percent of families in Clearmont are living below the poverty level and 20.5 percent of the population has a disability. Only 1.9 percent of the population speaks a language other than English.

The mitigation capability for the City of Clearmont is detailed in Table 2.12.

**Table 2.12. City of Clearmont Mitigation Capabilities**

<b>Capabilities</b>	<b>Status Including Date of Document or Policy</b>
<b>Planning Capabilities</b>	
<b><u>Comprehensive Plan</u></b>	No
Capital Improvement Plan	No
City Emergency Operations Plan	No
Local Recovery Plan	No
County Recovery Plan	No
Debris Management Plan	No
<b><u>Economic Development Plan</u></b>	No
Transportation Plan	Yes, 2017
<b><u>Watershed Plan</u></b>	No
Firewise or other fire mitigation plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
<b>Policies/Ordinance</b>	
Zoning/Land Use Ordinance	No
Building Code	No
Floodplain Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	Yes, Weed Ordinance
Storm Water/Drainage Ordinance	No
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
<b>Program</b>	
National Flood Insurance Program	No
Community Rating System (CRS) program	No

National Weather Service (NWS) Storm Ready Certification	No (County)
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	
Public Education/Awareness	No
Mutual Aid Agreements	No
Studies/Reports/Maps	
<b><u>Critical Facilities Inventory</u></b>	No
<b><u>Vulnerable Population Inventory</u></b>	No
Staff/Department	
Building Code/Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	No
Emergency Management Coordinator	No
NFIP Floodplain Administrator	No
Local Emergency Planning Committee	No
Sanitation Department	No
Transportation Department	No
Economic Development Department	No
Housing Department	No
Historic Preservation	No
Non-Governmental Organizations (NGOs)	
American Red Cross	Yes
Salvation Army	Yes
Veterans Groups	No
Local Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.)	Yes Community Club
Financial Resources	
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	No
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	No

Source: Data Collection Questionnaire, 2023

## 2.2.6 Village of Clyde\*

The Village of Clyde is located in southeastern Nodaway County along the east side of Highway 136. Clyde has a Chairman/Board of Trustees form of government consisting of five members. According to the U.S. Census, the population of Clyde was at 82 in 2000 but decreased to 55 in 2020, thus causing a 32.9 percent population decline.

The water supplier for Clyde is PWSD#1 of Nodaway County, and the Village of Clyde provides its own sewer service. EVERGY and United Electric are the sources of electricity. Clyde is part of the Tri-C Rescue Squad and the Tri-C Fire Department. Law enforcement is provided by the Nodaway County Sheriff's Department. There is one outdoor warning system in the Village of Clyde.

According to the 2020 Census, 6.2 percent of families in Clyde are living below the poverty level. English is the only spoken language among the population.

*\*The Village of Clyde decided against participation in this 2023 update. The mitigation capability for the Village of Clyde detailed in Table 2.13 has not been updated for this plan but is being retained for county-wide evaluation of capabilities.*

**Table 2.13. Village of Clyde\* Mitigation Capabilities**

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
<b><u>Comprehensive Plan</u></b>	No
Capital Improvement Plan	No
Village Emergency Operations Plan	No
Local Recovery Plan	No
County Recovery Plan	No
Debris Management Plan	No
<b><u>Economic Development Plan</u></b>	No
Transportation Plan	Yes, 2017
<b><u>Watershed Plan</u></b>	No
Firewise or other fire mitigation plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
Policies/Ordinance	
Zoning/Land Use Ordinance	No
Building Code	No
Floodplain Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	No
Storm Water/Drainage Ordinance	No
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
Program	
National Flood Insurance Program	No
Community Rating System (CRS) program	No

National Weather Service (NWS) Storm Ready Certification	No
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	
Public Education/Awareness	No
Mutual Aid Agreements	No
Studies/Reports/Maps	
<b><u>Critical Facilities Inventory</u></b>	No
<b><u>Vulnerable Population Inventory</u></b>	No
Staff/Department	
Building Code/Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	No
Emergency Management Coordinator	No
NFIP Floodplain Administrator	No
Local Emergency Planning Committee	No
Sanitation Department	Yes
Transportation Department	No
Economic Development Department	No
Housing Department	No
Historic Preservation	No
Non-Governmental Organizations (NGOs)	
American Red Cross	Yes St. Joseph
Salvation Army	Yes St. Joseph
Veterans Groups	No
Local Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.)	No
Financial Resources	
Apply for Community Development Block Grants	Yes
Fund projects thru Capital Improvements funding	No
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire, 2018 \*The Village of Clyde is choosing not to participate in this plan's update but may be included in some descriptions to provide a better understanding of the county's plans and capabilities.

## 2.2.7 City of Conception Junction

The City of Conception Junction is located in southeastern Nodaway County along Highway 136, east of the Platte River. Conception Junction has a Mayor/Council form of government with four members. Located in Conception Junction is Jefferson C-123 School District. According to the U.S. Census, the population of Conception Junction was at 198 in 2010 but decreased to 177 in 2020, thus causing a 10.6 percent population decline.

The City of Conception Junction provides its own water and sewer service. EVERGY and United Electric are the sources of electricity. The City of Conception Junction is part of Tri-C Rescue Squad and the Tri-C Fire Department. Law enforcement is provided by the Nodaway County Sheriff's Department. The City of Conception Junction has one outdoor warning siren that is activated through the Nodaway County Sheriff's Department.

According to the 2020 Census, 18.3 percent of families in Conception Junction are living below the poverty level. Only 0.5 percent of the population speaks a language other than English. The mitigation capability for the City of Conception Junction is detailed in Table 2.14.

**Table 2.14. City of Conception Junction Mitigation Capabilities**

Capabilities	Status Including Date of Document or Policy
<b>Planning Capabilities</b>	
<b>Comprehensive Plan</b>	No
Capital Improvement Plan	No
City Emergency Operations Plan	Yes 2023 (county)
Local Recovery Plan	No
County Recovery Plan	No
Debris Management Plan	No
<b>Economic Development Plan</b>	Yes CEDS
Transportation Plan	Yes, 2022 RTP
<b>Watershed Plan</b>	No
Firewise or other fire mitigation plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
<b>Policies/Ordinance</b>	
Zoning/Land Use Ordinance	No
Building Code	No
Floodplain Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	No
Storm Water/Drainage Ordinance	No
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
<b>Program</b>	
National Flood Insurance Program	No

Community Rating System (CRS) program	No
National Weather Service (NWS) Storm Ready Certification	No
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	NA
Public Education/Awareness	No
Mutual Aid Agreements	Yes, Fire Dept
<b>Studies/Reports/Maps</b>	
<b><u>Critical Facilities Inventory</u></b>	No
<b><u>Vulnerable Population Inventory</u></b>	No
<b>Staff/Department</b>	
Building Code/Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	No
Emergency Management Coordinator	No
NFIP Floodplain Administrator	No
Local Emergency Planning Committee	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 St. Joseph
Salvation Army	Yes St. Joseph
Veterans Groups	Yes American Legion
Local Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.)	Yes, Knights of Columbus
<b>Financial Resources</b>	
Apply for Community Development Block Grants	Yes
Fund projects thru Capital Improvements funding	No
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	Yes, water and sewer
Impact fees for new development	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

## 2.2.8 City of Elmo

The City of Elmo is located in northwestern Nodaway County west of the Nodaway River. Elmo has a Mayor/Council form of government consisting of four members. According to the U.S. Census, the population of Elmo was at 168 in 2010 but increased to 114 in 2020, thus causing a 32.1 percent population decline.

The City of Elmo provides its own water and sewer service. EVERGY and United Electric are the sources of electricity. The City of Elmo is part of Burlington Junction Rescue Squad and the Elmo Fire Department. Law enforcement is provided by the Nodaway County Sheriff’s Department. Elmo has one warning system, but it does not work. To warn the community, the fire department goes through the town with sirens and makes announcements to go to safety.

According to the 2020 Census, 0% percent of families in Elmo are living below the poverty level. Only 4.3 percent of the population speaks a language other than English.

The mitigation capability for the City of Elmo is detailed in Table 2.15.

**Table 2.15. City of Elmo Mitigation Capabilities**

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
<b><u>Comprehensive Plan</u></b>	No
Capital Improvement Plan	No
City Emergency Operations Plan	Yes June 2017
Local Recovery Plan	No
County Recovery Plan	No
Debris Management Plan	No
<b><u>Economic Development Plan</u></b>	Yes
Transportation Plan	Yes, 2017
<b><u>Watershed Plan</u></b>	No
Firewise or other fire mitigation plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
Policies/Ordinance	
Zoning/Land Use Ordinance	No
Building Code	No
Floodplain Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	No
Storm Water/Drainage Ordinance	No
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
Program	
National Flood Insurance Program	No
Community Rating System (CRS) program	No
National Weather Service (NWS) Storm Ready	Yes

Certification	
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	NA
Public Education/Awareness	No
Mutual Aid Agreements	Yes, fire and water
<b>Studies/Reports/Maps</b>	
<b><u>Critical Facilities Inventory</u></b>	No
<b><u>Vulnerable Population Inventory</u></b>	No
<b>Staff/Department</b>	
Building Code/Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	No
Emergency Management Coordinator	No
NFIP Floodplain Administrator	No
Local Emergency Planning Committee	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
Local Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.)	No
<b>Financial Resources</b>	
Apply for Community Development Block Grants	Yes
Fund projects thru Capital Improvements funding	No
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire, 2023



## 2.2.9 City of Graham

The City of Graham is located in southwestern Nodaway County, east of the Nodaway River. Graham has a Mayor/Council form of government. Located in Graham is the Nodaway-Holt High School. According to the U.S. Census, the population of Graham was at 171 in 2010 but decreased to 147 in 2020, thus causing a 14 percent population decline.

The City of Graham provides its own water and sewer service. EVERGY and United Electric are the sources of electricity. The City of Graham is part of Maryville Rescue Squad and the Graham Fire Department. Law enforcement is provided by the Nodaway County Sheriff's Department. Graham has one warning system, which the fire department is responsible for activating.

According to the 2020 Census, 14.3 percent of families in Graham are living below the poverty level. English is the only spoken language among the population.

The mitigation capability for the City of Graham is detailed in Table 2.16.

**Table 2.16. City of Graham Mitigation Capabilities**

Capabilities	Status Including Date of Document or Policy
<b>Planning Capabilities</b>	
<b><u>Comprehensive Plan</u></b>	No
Capital Improvement Plan	No
City Emergency Operations Plan	No
Local Recovery Plan	No
County Recovery Plan	Yes
Debris Management Plan	No
<b><u>Economic Development Plan</u></b>	No
Transportation Plan	Yes, 2017
<b><u>Watershed Plan</u></b>	No
Firewise or other fire mitigation plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
<b>Policies/Ordinance</b>	
Zoning/Land Use Ordinance	No
Building Code	No
Floodplain Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	No
Storm Water/Drainage Ordinance	No
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
<b>Program</b>	
National Flood Insurance Program	No
Community Rating System (CRS) program	No
National Weather Service (NWS) Storm Ready Certification	No
Firewise Community Certification	No

Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	NA
Public Education/Awareness	No
Mutual Aid Agreements	No
Studies/Reports/Maps	
<b><u>Critical Facilities Inventory</u></b>	No
<b><u>Vulnerable Population Inventory</u></b>	No
Staff/Department	
Building Code/Building Inspector	Yes, City of Maryville's inspector is hired as needed
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	Yes
Emergency Management Coordinator	No
NFIP Floodplain Administrator	No
Local Emergency Planning Committee	No
Sanitation Department	No
Transportation Department	No
Economic Development Department	No
Housing Department	No
Historic Preservation	No
Non-Governmental Organizations (NGOs)	
American Red Cross	Yes
Salvation Army	Yes
Veterans Groups	No
Local Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.)	No
Financial Resources	
Apply for Community Development Block Grants	Yes
Fund projects thru Capital Improvements funding	No
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire, 2020

## 2.2.10 Village of Guilford

The City of Guilford is located in southeastern Nodaway County, east of the Platte River on Highway M. Guilford has a Board of Directors made up of five members. Located in Guilford is the South Nodaway Elementary School. According to the U.S. Census, the population of Guilford was at 85 in 2010 but decreased to 60 in 2020, thus causing a 29.4 percent population decline.

The City of Guilford provides its own sewer service, and PWS#1 of Nodaway County provides water for Guilford. Evergy and United Electric are the sources of electricity. The City of Guilford is part of Tri-C Rescue Squad and the Barnard Fire District. Law enforcement is provided by the Nodaway County Sheriff’s Department. There is one warning system in the Village of Guilford, and it is activated by village board members.

According to the 2020 Census, 15.6 percent of families in Guilford are living below the poverty level. English is the only spoken language among the population.

The mitigation capability for the City of Guilford is detailed in Table 2.17.

**Table 2.17. Village of Guilford Mitigation Capabilities**

Element	Yes, No, N/A	Comments
Planning Capabilities		
*Comprehensive or Land-Use Plan	NO	
Capital Improvement Plan	NO	
Transportation Plan / Highway Department	NO	
Emergency Operations Plan	NO	
Local Recovery Plan	NO	
Debris Management Plan	NO	
Firewise or other fire mitigation plan	NO	
*Economic Development Plan	NO	
Policies/Ordinance		
Zoning Ordinance	NO	
Building Code	NO	
Floodplain Ordinance	NO	:
Nuisance Ordinance	Yes	
Storm Water Ordinance	NO	
Drainage Ordinance	Yes	
Site Plan Review Requirements	NO	
Historic Preservation Ordinance	NO	
Program		
Codes Building Site/Design	Yes	
Hazard Awareness Program	NO	
National Flood Insurance Program	NO	
Community Rating System (CRS) program under the National Flood Insurance Program (NFIP)?	If so, what is your current level rating? NA	

National Weather Service (NWS) Storm Ready Certification	NO	Nodaway County
Firewise Community Certification	NO	
Building Code Effectiveness Grading (BCEGs)	NO	
ISO Fire Rating	NA	
Public Education/Awareness	NO	
Mutual Aid Agreements	NO	
Studies/Reports/Maps		
<b>*Critical Facilities Inventory</b>	NO	
<b>*Vulnerable Population Inventory</b>	NO	
Staff/Department		Full Time or Part Time?
Building Code Official Building Inspector	NO	
Mapping Specialist (GIS)	NO	
Engineer	NO	
Development Planner	NO	
Public Works Official	NO	
Emergency Management Coordinator	NO	
NFIP Floodplain Administrator	NO	
Local Emergency Planning Committee	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	Comments
American Red Cross	NO	St. Joseph Red Cross
Salvation Army	NO	
Veterans Groups	NO	
Local Environmental Organization	NO	
Homeowner Associations	NO	
Neighborhood Associations	NO	
Chamber of Commerce	NO	
Community Organizations (Lions, Kiwanis, etc.	NO	
Financial Resources	Is your jurisdiction able to? Yes or No	
Apply for Community Development Block Grants	Yes	
Fund projects thru Capital Improvements funding	NO	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	

Impact fees for new development	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No
<b>Planning Capabilities</b>	<b>Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation</b>
Comprehensive Plan	No, small village
Builder's Plan	No. small village
Capital Improvement Plan	No. small village
Local Recovery Plan	No. small village
County Recovery Plan	No. small village
Debris Management Plan	No. small village
Economic Development Plan	No. small village
Transportation Plan	No. small village
Land-use Plan	No. small village
Watershed Plan	No. small village
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	No. small village

Source: Data Collection Questionnaire, 2020

### 2.2.11 City of Hopkins

The City of Hopkins is in north Nodaway County, on Highway 148 east of the One Hundred and Two River. Hopkins has a Mayor/Council form of government with one mayor and four aldermen. Located in Hopkins is North Nodaway High School. According to the U.S. Census, the population of Hopkins was at 532 in 2010 but decreased to 472 in 2020, thus causing an 8.1 percent population decline.

The City of Hopkins provides its own water and sewer service. CP&L and United Electric are the sources of electricity. The City of Hopkins is part of Hopkins Rescue Squad and Hopkins Fire Department. Law enforcement is provided by the Nodaway County Sheriff's Department. The City Hopkins has sent notices to its residents regarding the responsible use of the sanitary sewer system, educating residents in the proper disposal of baby wipes, sanitary napkins, etc. Hopkins has one warning system, and the Hopkins Fire Department volunteers to activate it remotely. The latest City Emergency Operations Plan was established in May 2017.

According to the 2020 Census, 18 percent of families in Hopkins are living below the poverty level. Only 2.5 percent of the population speaks a language other than English.

The mitigation capability for the City of Hopkins is detailed in Table 2.18.

**Table 2.18. City of Hopkins Mitigation Capabilities**

Element	Yes, No, N/A	Comments and/or Weblink
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<b>Planning Capabilities</b>		
*Comprehensive or Land-Use Plan	no	
Capital Improvement Plan	No	
Transportation Plan / Highway Department	No	
Emergency Operations Plan	yes	Date: May 2017
Local Recovery Plan	No	
Debris Management Plan	No	
Firewise or other fire mitigation plan	No	
*Economic Development Plan	No	
<b>Policies/Ordinance</b>		
Zoning Ordinance	Yes	Business district defined
Building Code	No	
Floodplain Ordinance	Yes	Date: 4-1-86
Drainage/Stormwater Ordinance	No	
Site Plan Review Requirements	No	
Historic Preservation Ordinance	No	
<b>Program</b>		
National Flood Insurance Program (NFIP)	Yes	Ordinance #339
NFIP Community Rating System (CRS) program	No	
National Weather Service (NWS) Storm Ready Certification	Yes	As part of the county
Firewise Community Certification	No	
Building Code Effectiveness Grading (BCEGs)	No	
ISO Fire Rating	Yes	Rating:8
Public Education or information programs (i.e., responsible water use, fire safety, household preparedness, or environmental education)	No	
Mutual Aid Agreements	Yes	
<b>Studies/Reports/Maps</b>		
*Critical Facilities Inventory	No	
*Vulnerable Population Inventory	No	

<b>Staff/Department</b>		<b>Full Time or Part Time?</b>
Building Code Official / Building Inspector	No	
Engineer	No	
Development Planner	No	
NFIP Floodplain Administrator	Yes	Part
Mapping Specialist (GIS)	No	
Public Works Official	Yes	Full
Emergency Management Coordinator	Yes	Part
Local Emergency Planning Committee	No	
Sanitation Department	No	
Highway/Transportation Department	No	
Economic Development Department	No	
Housing Department	No	
Historic Preservation	No	
<b>Non-Governmental Organizations (NGOs)</b>	<b>Is there a local chapter? Yes or No</b>	
American Red Cross	No	
Salvation Army	No	
Veterans Groups	No	
Local Environmental Organization	No	
Homeowner Associations	No	
Neighborhood Associations	No	
Chamber of Commerce	No	
Community Organizations (Lions, Kiwanis, etc.	Yes	
<b>Financial Resources</b>		<b>Is your jurisdiction able to? Yes or No</b>
Apply for Community Development Block Grants		Yes
Fund projects thru Capital Improvements funding		No
Authority to levy taxes for specific purposes		Yes
Fees for water, sewer, gas, or electric services		Yes
Impact fees for new development		No
Incur debt through general obligation bonds		Yes

Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire, 2020

## 2.2.12 City of Maryville

The City of Maryville is located in central Nodaway County on Highway 136 and Highway 71. Maryville has a Mayor/Council form of government with five members total, including the mayor. Located in Maryville are Maryville R-II School District, St. Gregory Barbarigo, and Northwest Missouri State University. According to the U.S. Census, the population of Maryville was at 11,972 in 2010 but increased to 10,633 in 2020, thus causing a 11.2 percent population decrease.

The City of Maryville provides its own water and sewer service. EVERGY and United Electric are the sources of electricity. The City of Maryville is part of Nodaway County Ambulance District and Maryville Public Safety. There are three prominent law enforcement agencies located in Maryville: Northwest Missouri State University Police Department, Maryville Public Safety, and Nodaway County Sheriff's Department. The departments are served by fully-staffed 911 Emergency systems, 24 hours a day, 7 days a week, 365 days a year. This system allows those living anywhere in Nodaway County to quickly summon emergency services such as fire, police, or ambulance personnel. There are seven warning systems located within Maryville, and both the Nodaway County Sheriff's Office and Maryville Public Safety are responsible for activating them. Currently, the City of Maryville is the only city in Nodaway County with comprehensive and disaster plans. All other cities rely on the Nodaway County's Emergency Operations Plan (EOP). The following are past or ongoing public education or information programs that the City of Maryville has conducted: Storm Ready, Smoke Alarm/Battery Campaign, Ready in 3, NOAA weather radio program, bi-annual storm spotter class, and seasonal media saturation (severe weather, winter weather, excessive heat). The City has a FEMA approved shelter located in Maryville R-II High School that is open to the public.

According to the 2020 Census, 14.3 percent of families in Maryville are living below the poverty level. Only 2.5 percent of the population speaks a language other than English.

The mitigation capability for the City of Maryville is detailed in Table 2.19.

**Table 2.19. City of Maryville Mitigation Capabilities**

Element	Yes, No, N/A	Comments
Planning Capabilities		
<b>Comprehensive Plan</b>	Yes	Date: 12/19/2012, Updating in 2023
Capital Improvement Plan	Yes	Date: 3/24/2018,
City Emergency Operations Plan	Yes	City EOP Updated Annually. Updated in 2021. No changes in 2022
County Emergency Operations Plan	Yes	County EOP Updated Annually. Updated in 2021. No changes in 2022.



Local Recovery Plan	No	
City Mitigation Plan	Yes	Date: 1/27/2014,
County Mitigation Plan	Yes	Date:2014,
Debris Management Plan	no	Nothing in writing
<b>Economic Development Plan</b>	Yes	Date: 2018-2023 RCOG website
Transportation Plan	No	Reg Trans Plan Date: updated yearly
<b>Watershed Plan</b>	: No	Moizingo Date – in progress
Firewise or other fire mitigation plan	No	
<b>Policies/Ordinance</b>		
Zoning Ordinance	Yes	
Building Code	Version: 2018	International Building Code
Floodplain Ordinance	yes	Date: 1/13/2020
Subdivision Ordinance	Yes	
Tree Trimming Ordinance	Yes	
Nuisance Ordinance	Yes	
Drainage/storm Water Ordinance	Yes	
Site Plan Review Requirements	Yes	
Historic Preservation Ordinance	Yes	
Landscape Ordinance	Yes	
<b>Program</b>		
Zoning/Land Use Restrictions	Yes	
Codes Building Site/Design	Yes	
National Flood Insurance Program	Yes	
Community Rating System (CRS) program under the National Flood Insurance Program (NFIP)?	Not in CRS Program	
National Weather Service (NWS) Storm Ready Certification	Yes	Renewed in 2020
Firewise Community Certification	No	
Building Code Effectiveness Grading (BCEGs)	Class 4- Residential Class 3- Commercial	
ISO Fire Rating	yes	Rating: 6/9
Economic Development Program	Yes	
Land Use Program	Yes	
Public Education/Awareness	Yes	
Planning/Zoning Boards	Yes	
Tree Trimming Program	Yes	
Mutual Aid Agreements	Yes	
<b>Studies/Reports/Maps</b>		
<b>Hazard Analysis/Risk Assessment (City)</b>	Yes	

<b>Hazard Analysis/Risk Assessment (County)</b>	Yes	Natural disaster only- RCOG RHSOC has a THIRA
Evacuation Route Map	Yes	
<b>Critical Facilities Inventory</b>	Yes, City Owned Facilities	Property schedule of all bldgs. City owned and equipment schedule of all city owned vehicles and equipment
<b>Vulnerable Population Inventory</b>	No	
<b>Land Use Map</b>	Yes	
<b>Staff/Department</b>		<b>Full Time or Part Time?</b>
Building Code Official	Yes	Full Time
Building Inspector	Yes	Full Time
Mapping Specialist (GIS)	Yes	Full Time
Engineer	No	
Development Planner	No	
Public Works Official	Yes	Full Time
Emergency Management Coordinator	Yes	Full Time
NFIP Floodplain Administrator	Yes	Full Time
Emergency Response Team	Yes	NWMSU has a C-Cert
Local Emergency Planning Committee	Yes	Full Time
Sanitation Department	No	
Transportation Department	Yes	Full Time
Economic Development Department	Yes	Full Time
Housing Department	Yes	Full Time
Historic Preservation	No	
<b>Non-Governmental Organizations (NGOs)</b>	<b>Is there a local chapter? Yes or No</b>	
American Red Cross	Yes	
Salvation Army	Yes	
Veterans Groups	Yes	
Local Environmental Organization	No	
Homeowner Associations	No	
Neighborhood Associations	No	
Chamber of Commerce	Yes	
Community Organizations (Lions, Kiwanis, etc.)	Yes	
<b>Financial Resources</b>	<b>Is your jurisdiction able to? Yes or No</b>	
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	Water & Sewer Only
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	No	
Withhold spending in hazard prone areas	No	
<b>Planning Capabilities</b>	<b>Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation</b>	
Comprehensive Plan	City Comp Plan adopted 12/19/2012	
Capital Improvement Plan	Effective 3/24/2018	
Local Recovery Plan	no	
Debris Management Plan	no	
Economic Development Plan	Rep on Reg. CEDS Comm.	
Transportation Plan	Rep on Reg. Trans Advisory Comm.	
Emergency Operations Plan	yes	
Land-use Plan	Part of Comprehensive Plan adopted 12/19/2012	
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	no	

Source: Data Collection Questionnaire, 2020

### 2.2.13 City of Parnell

The City of Parnell is located in eastern Nodaway County, east of the Platte River. Parnell has a Mayor/Council form of government with four members. Located in Parnell is Northeast Nodaway Parnell Elementary School. According to the U.S. Census, the population of Parnell was at 191 in 2010 but decreased to 135 in 2020, thus displaying a 29.3 percent population decline.

The City of Parnell provides its own water and sewer service. EVERGY and United Electric are the sources of electricity. The City of Parnell is part of Ravenwood Rescue Squad and Parnell Fire Department. Law enforcement is provided by the Nodaway County Sheriff's Department. The City has one warning system, which is announced via telephone, and has certified storm watchers to relay the information.

According to the 2020 Census, 10.4 percent of families in Parnell are living below the poverty level. 2.2 percent of the population speak a language other than English. The City of Parnell is detailed in Table 2.20.

**Table 2.20. City of Parnell Mitigation Capabilities**

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
<b>Comprehensive Plan</b>	No
Capital Improvement Plan	No
City Emergency Operations Plan	No
Local Recovery Plan	No
County Mitigation Plan	Yes, 2014
Debris Management Plan	No
<b>Economic Development Plan</b>	No

Transportation Plan	Yes, 2017
<b><u>Watershed Plan</u></b>	No
Firewise or other fire mitigation plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
<b>Policies/Ordinance</b>	
Zoning/Land Use Ordinance	No
Building Code	No
Floodplain Ordinance	No
Tree Trimming Ordinance	Yes 1990
Nuisance Ordinance	Yes 2004
Storm Water/Drainage Ordinance	No
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
<b>Program</b>	
National Flood Insurance Program	No
Community Rating System (CRS) program	No
National Weather Service (NWS) Storm Ready Certification	No
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	
Public Education/Awareness	No
Mutual Aid Agreements	No
<b>Studies/Reports/Maps</b>	
<b><u>Critical Facilities Inventory</u></b>	No
<b><u>Vulnerable Population Inventory</u></b>	No
<b>Staff/Department</b>	
Building Code/Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	No
Emergency Management Coordinator	No
NFIP Floodplain Administrator	No
Local Emergency Planning Committee	N/A
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

Local Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.	No
<b>Financial Resources</b>	
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 2017
Impact fees for new development	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire, 2023

## 2.2.14 City of Pickering

The City of Pickering is located in northcentral Nodaway County, on Highway 148 west of the One Hundred and Two River. Since the last update of this plan, the classification of Pickering has changed from village to city. This city has a Mayor/Council form of government with five members including the mayor. Located in Pickering is North Nodaway Elementary School. According to the U.S. Census, the population of Pickering was at 160 in 2010 but decreased to 149 in 2010, resulting in a 6.9 percent population decline.

Pickering provides their own sewer service, and their water service comes from PWSD#1 of Nodaway County. EVERGY and United Electric are the sources of electricity. The is part of Hopkins Rescue Squad and Union Township Fire Protection District. Law enforcement is provided by the Nodaway County Sheriff's Department. Pickering has two outdoor warning systems that are activated by the Sheriff's Department as needed.

According to the 2020 Census, 20.9 percent of families in Pickering are living below the poverty level, the highest percentage in Nodaway County. Only 0.6 percent of the population speaks a language other than English.

The mitigation capability for City of Pickering is detailed in Table 2.21.

**Table 2.21. Mitigation Capabilities**

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
<b>Comprehensive Plan</b>	No
Capital Improvement Plan	No
City Emergency Operations Plan	No
Local Recovery Plan	No
County Recovery Plan	Yes

Debris Management Plan	No
<b><u>Economic Development Plan</u></b>	No
Transportation Plan	Yes, 2017
<b><u>Watershed Plan</u></b>	No
Firewise or other fire mitigation plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
<b>Policies/Ordinance</b>	
Zoning/Land Use Ordinance	No
Building Code	No
Floodplain Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	Yes 2004
Storm Water/Drainage Ordinance	No
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
<b>Program</b>	
National Flood Insurance Program	Yes
Community Rating System (CRS) program	N/A
National Weather Service (NWS) Storm Ready Certification	Yes
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	
Public Education/Awareness	No
Mutual Aid Agreements	Yes
<b>Studies/Reports/Maps</b>	
<b><u>Critical Facilities Inventory</u></b>	No
<b><u>Vulnerable Population Inventory</u></b>	No
<b>Staff/Department</b>	
Building Code/Building Inspector	Yes
Mapping Specialist (GIS)	No
Engineer	Yes
Development Planner	No
Public Works Official	No
Emergency Management Coordinator	No
NFIP Floodplain Administrator	No
Local Emergency Planning Committee	No
Sanitation Department	Yes
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
Local Environmental Organization	No
Homeowner Associations	Yes
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.	No
<b>Financial Resources</b>	
Apply for Community Development Block Grants	No
Fund projects thru Capital Improvements funding	Yes
Authority to levy taxes for specific purposes	No
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire, 2020

## 2.2.15 City of Ravenwood

The City of Ravenwood is in eastern Nodaway County, east of the Platte River. Ravenwood has a Mayor/Council form of government with one mayor and four city council members. Located in Ravenwood is Northeast Nodaway High School. According to the U.S. Census, the population of Ravenwood was at 440 in 2010 but decreased to 439 in 2020, thus causing a 0.2 percent population decline.

The City of Ravenwood provides its own water and sewer service. EVERGY and United Electric are the sources of electricity. The City of Ravenwood is part of Ravenwood Rescue Squad and Jackson Township Fire Department. Law enforcement is provided by the Nodaway County Sheriff's Department. The City of Ravenwood has one warning system activated by the County Fire Department, and the city.

According to the 2020 Census, 6.6 percent of families in Ravenwood are living below the poverty level. Only 0.4 percent of the population speaks a language other than English.

The mitigation capability for the City of Ravenwood is detailed in Table 2.22.

**Table 2.22. City of Ravenwood Mitigation Capabilities**

Element	Yes, No, N/A	Comments and/or Weblink
<b>Planning Capabilities</b>		
*Comprehensive or Land-Use Plan	no	
Capital Improvement Plan	No	
Transportation Plan / Highway Department	Yes, regional	<a href="#">Chapter 1 (wordpress.com)</a>

Emergency Operations Plan (local)	Yes	
Local Recovery Plan	No	
Debris Management Plan	yes	
Firewise or other fire mitigation plan	No	
*Economic Development Plan	Yes, regional	<a href="#">ceds-master-copy.pdf (wordpress.com)</a>
<b>Policies/Ordinance</b>		
Zoning Ordinance	no	
Building Code	No	
Floodplain Ordinance	Yes	Date: 1/22/2020
Drainage/Stormwater Ordinance	No	
Site Plan Review Requirements	No	
Historic Preservation Ordinance	No	
<b>Program</b>		
National Flood Insurance Program (NFIP)	Yes	Ordinance #339
NFIP Community Rating System (CRS) program	No	If so, what is your current level rating?
National Weather Service (NWS) Storm Ready Certification	Yes	County
Firewise Community Certification	No	
Building Code Effectiveness Grading (BCEGs)	No	
ISO Fire Rating	yes	Rating:7
Public Education or information programs (i.e., responsible water use, fire safety, household preparedness, or environmental education)	Yes	Fire safety
Mutual Aid Agreements	Yes	Fire
<b>Studies/Reports/Maps</b>		
*Critical Facilities Inventory	yes	Water Plant & tower, Jackson Township Fire Dept, GRM Networks, Nodaway County Rescue Squad, Water and sewer systems, electric, gas
*Vulnerable Population Inventory	yes	Ravenwood Sr. Housing, Daycare facilities, Mobile home park
<b>Staff/Department</b>		<b>Full Time or Part Time?</b>
Building Code Official / Building Inspector	No	
Engineer	No	
Development Planner	No	
NFIP Floodplain Administrator	Yes	part
Mapping Specialist (GIS)	No	
Public Works Official	Yes	full
Emergency Management Coordinator	No	
Local Emergency Planning Committee	No	
Sanitation Department	No	
Highway/Transportation Department	No	



Economic Development Department	No	
Housing Department	No	
Historic Preservation	No	
<b>Non-Governmental Organizations (NGOs)</b>	<b>Is there a local chapter? Yes or No</b>	
American Red Cross	Yes	St. Joseph Red Cross serves our area
Salvation Army	No	Community Services in Maryville have funds from the Salvation Army for our area
Veterans Groups	No	
Local Environmental Organization	No	
Homeowner Associations	No	
Neighborhood Associations	No	
Chamber of Commerce	No	
Community Organizations (Lions, Kiwanis, etc.)	Yes	
<b>Financial Resources</b>		<b>Is your jurisdiction able to? Yes or No</b>
Apply for Community Development Block Grants		Yes
Fund projects thru Capital Improvements funding		No
Authority to levy taxes for specific purposes		Yes
Fees for water, sewer, gas, or electric services		Yes
Impact fees for new development		No
Incur debt through general obligation bonds		Yes
Incur debt through special tax bonds		No
Incur debt through private activities		No
Withhold spending in hazard prone areas		No
<b>Planning Capabilities</b>	<b>Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation</b>	
Comprehensive or Land-Use Plan	no	
Capital Improvement Plan	no	
Transportation Plan / Highway Department	<a href="#">Rep on Reg. Trans Advisory Comm.</a>	
Emergency Operations Plan	no	
Local Recovery Plan	no	
Debris Management Plan	<a href="#">Resources. Day to day management plan. Have a designated location to dispose of debris. No written plan in place.</a>	
Firewise or other fire mitigation plan	no	
Economic Development Plan	<a href="#">Rep on Reg. CEDS Comm.</a>	

Source: Data Collection Questionnaire, 2020

## 2.2.16 City of Skidmore

The City of Skidmore is located in southwest Nodaway County, on Highway 113 east of the Nodaway River. Skidmore has a Mayor/Council form of government with four city council members. According to the U.S. Census, the population of Skidmore was at 284 in 2010 but decreased to 245 in 2020, thus causing a 13.7 percent population decline.

The City of Skidmore provides its own water and sewer service. EVERGY and United Electric are the sources of electricity. The City of Skidmore is part of Maryville Rescue or Burlington Junction Rescue and Skidmore Fire Department. Law enforcement is provided by the Nodaway County Sheriff's Department. There are two outdoor warning sirens in the community. Outdoor Warning Consulting, LLC is responsible for the warning system.

According to the 2020 Census, 6.7 percent of families in Skidmore are living below the poverty level. Only 2.6 percent of the population speaks a language other than English.

The mitigation capability for the City of Skidmore is detailed in Table 2.23.

**Table 2.23. City of Skidmore Mitigation Capabilities**

<b>Capabilities</b>	<b>Status Including Date of Document or Policy</b>
<b>Planning Capabilities</b>	
<b><u>Comprehensive Plan</u></b>	No
Capital Improvement Plan	No
City Emergency Operations Plan	No
Local Recovery Plan	No
County Recovery Plan	No
County Mitigation Plan	Yes, 2014
Debris Management Plan	No
<b><u>Economic Development Plan</u></b>	No
Transportation Plan	Yes, 2017
<b><u>Watershed Plan</u></b>	No
Firewise or other fire mitigation plan	N/A
Critical Facilities Plan (Mitigation/Response/Recovery)	N/A
<b>Policies/Ordinance</b>	
Zoning/Land Use Ordinance	Yes, Junkyards only
Building Code	No
Floodplain Ordinance	No
Tree Trimming Ordinance	Yes
Nuisance Ordinance	Yes
Storm Water/Drainage Ordinance	No
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
<b>Program</b>	
National Flood Insurance Program	No
Community Rating System (CRS) program	N/A
National Weather Service (NWS) Storm Ready Certification	No
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	8B
Public Education/Awareness	No
Mutual Aid Agreements	Yes, Fire Departments

Studies/Reports/Maps	
<b>Critical Facilities Inventory</b>	No
<b>Vulnerable Population Inventory</b>	No
<b>Staff/Department</b>	
Building Code/Building Inspector	Yes, when needed; appointed by Council
Mapping Specialist (GIS)	No
Engineer	Yes
Development Planner	No
Public Works Official	N/A
Emergency Management Coordinator	N/A
NFIP Floodplain Administrator	No
Local Emergency Planning Committee	N/A
Sanitation Department	Yes, Porters (contracted)
Transportation Department	N/A
Economic Development Department	N/A
Housing Department	N/A
Historic Preservation	N/A
<b>Non-Governmental Organizations (NGOs)</b>	
American Red Cross	Yes
Salvation Army	Yes
Veterans Groups	No
Local Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.	No
<b>Financial Resources</b>	
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	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activities	No
Withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire, 2023

The following table summarizes the mitigation capabilities of the county and Arkoe, Barnard, Burlington Junction, Clearmont, Clyde, Conception Junction, and Elmo. Graham, Guilford, Hopkins, Maryville, Parnell, Pickering, Ravenwood, Skidmore begin at p. 2.50.

**Table 2.24. Mitigation Capabilities Summary Table**

CAPABILITIES	Unincorporated Nodaway County	Arkoe	Barnard	Burlington Junction	Clearmont	Clyde*	Conception Junction	Elmo
<b>Planning Capabilities</b>								
Comprehensive Plan	No	No	No	No	No	No	No	No
Builder's Plan	No	No	No	No	No	No	No	No
Capital Improvement Plan	No	No	No	No	No	No	No	No
Local Emergency Plan	N/A	No	No	No	No	No	No	Yes, June 2017
County Emergency Plan	Yes, 2017	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Local Recovery Plan	No	No	No	No	No	No	No	No
County Recovery Plan	No	No	No	No	No	No	No	No
Local Mitigation Plan	N/A	No	No	No	No	No	No	No
County Mitigation Plan	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014
Local Mitigation Plan (PDM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
County Mitigation Plan (PDM)	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014
Debris Management Plan	No	No	No	No	No	No	No	No
Economic Development Plan	Yes	No	No	No	No	No	No	No
Transportation Plan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Land-use Plan	No	No	No	No	No	No	No	No
Flood Mitigation Assistance (FMA) Plan	No	No	No	No	No	No	No	No
Watershed Plan	No	No	No	No	No	No	No	No
Firewise or other fire mitigation plan	No	No	No	No	No	No	No	No
School Mitigation Plan	N/A	No	Yes	Yes	No	No	Yes	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No	No	No	No	No	No	No	No
<b>Policies/Ordinance</b>								
Zoning Ordinance	No	No	No	No	No	No	No	No
Building Code	No	No	No	No	No	No	No	No
Floodplain Ordinance	Yes, 04/2007	No	Yes	Yes	No	No	No	No
Subdivision Ordinance	No	No	No	No	No	No	No	No

CAPABILITIES	Unincorporated Nodaway County	Arkoe	Barnard	Burlington Junction	Clearmont	Clyde*	Conception Junction	Elmo
Tree Trimming Ordinance	No	No	No	No	No	No	No	No
Nuisance Ordinance	No	No	Yes	No	No	No	No	No
Storm Water Ordinance	No	No	No	No	No	No	No	No
Drainage Ordinance	No	No	No	No	No	No	No	No
Site Plan Review Requirements	No	No	No	No	No	No	No	No
Historic Preservation Ordinance	No	No	No	No	No	No	No	No
Landscape Ordinance	No	No	No	No	Yes	No	No	No
Iowa Wetlands and Riparian Areas Conservation Plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Program</b>								
Zoning/Land Use Restrictions	No	No	No	No	No	No	No	No
Codes Building Site/Design	No	No	No	No	No	No	No	No
National Flood Insurance Program (NFIP) Participant	Yes	No	Yes	Yes	No	No	No	No
NFIP Community Rating System (CRS) Participating Community	N/A	No	N/A	No	No	N/A	No	N/A
Hazard Awareness Program	No	No	No	No	No	No	No	No
National Weather Service (NWS) Storm Ready	Yes	No	Yes	No	No	No	No	No
Building Code Effectiveness Grading (BCEGs)	No	No	No	No	No	No	No	No
ISO Fire Rating	6/9	No	N/A	N/A	N/A	N/A	N/A	N/A
Economic Development Program	No	No	No	No	No	No	No	No
Land Use Program	No	No	No	No	No	No	No	No
Public Education/Awareness	Yes, Ongoing	No	No	No	No	No	No	No
Property Acquisition	No	No	No	No	No	No	No	No
Planning/Zoning Boards	No	No	No	No	No	No	No	No
Stream Maintenance Program	No	No	No	No	No	No	No	No
Tree Trimming Program	No	No	No	No	No	No	No	No

CAPABILITIES	Unincorporated Nodaway County	Arkoe	Barnard	Burlington Junction	Clearmont	Clyde*	Conception Junction	Elmo
Engineering Studies for Streams (Local/County/Regional)	No	No	No	No	No	No	No	No
Mutual Aid Agreements	Yes	No	No	No	No	No	Yes	No
<b>Studies/Reports/Maps</b>								
Hazard Analysis/Risk Assessment (Local)	N/A	No	No	No	No	No	No	No
Hazard Analysis/Risk Assessment (County)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Flood Insurance Maps	Yes	No	Yes	Yes	No	No	No	No
FEMA Flood Insurance Study (Detailed)	Yes	No	Yes	Yes	No	No	No	No
Evacuation Route Map	Yes	No	No	No	No	No	No	No
Critical Facilities Inventory	No	No	No	No	No	No	No	No
Vulnerable Population Inventory	No	No	No	No	No	No	No	No
Land Use Map	No	No	No	No	No	No	No	No
<b>Staff/Department</b>								
Building Code Official	No	No	Yes	No	No	No	No	No
Building Inspector	No	No	No	No	No	No	No	No
Mapping Specialist (GIS)	Yes	No	No	No	No	No	No	No
Engineer	No	No	No	No	No	No	No	No
Development Planner	No	No	No	No	No	No	No	No
Public Works Official	Yes	No	Yes	No	No	No	No	No
Emergency Management Coordinator	Yes	No	No	No	No	No	No	No
NFIP Floodplain Administrator	Yes	No	Yes	Yes	No	No	No	No
Bomb and/or Arson Squad	No	No	No	No	No	No	No	No
Emergency Response Team	Yes	No	No	No	No	No	No	No
Hazardous Materials Expert	No	No	No	No	No	No	No	No
Local Emergency Planning Committee	Yes	No	No	No	No	No	No	No
County Emergency Management Commission	No	No	No	No	No	No	No	No
Sanitation Department	No	No	No	No	No	Yes	No	No
Transportation Department	Yes	No	No	No	No	No	No	No

CAPABILITIES	Unincorporated Nodaway County	Arkoe	Barnard	Burlington Junction	Clearmont	Clyde*	Conception Junction	Elmo
Economic Development Department	Yes	No	No	No	No	No	No	No
Housing Department	No	No	No	No	No	No	No	No
Planning Consultant	No	No	No	No	No	No	No	No
Regional Planning Agencies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Historic Preservation	No	No	No	No	No	No	No	No
<b>Non-Governmental Organizations (NGOs)</b>								
American Red Cross	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Salvation Army	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Veterans Groups	Yes	Yes	No	No	No	No	Yes	No
Environmental Organization	Yes	No	No	No	No	No	No	No
Homeowner Associations	No	No	No	No	No	No	No	No
Neighborhood Associations	No	No	No	No	No	No	No	No
Chamber of Commerce	Yes	No	No	No	No	No	No	No
Community Organizations (Lions, Kiwanis, etc.)	Yes	Yes	No	No	Yes	No	No	No
<b>Financial Resources</b>								
Apply for Community Development Block Grants	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Fund projects through Capital Improvements funding	No	Yes	No	No	Yes	No	No	N/A
Authority to levy taxes for specific purposes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fees for water, sewer, gas, or electric services	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Impact fees for new development	No	No	No	No	No	No	No	N/A
Incur debt through general obligation bonds	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Incur debt through special tax bonds	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Incur debt through private activities	No	No	No	No	Yes	No	No	N/A
Withhold spending in hazard prone areas	No	No	N/A	No	N/A	No	No	N/A

CAPABILITIES	Graham	Guilford	Hopkins	Maryville	Parnell	Pickering	Ravenwood	Skidmore
<b>Planning Capabilities</b>								
Comprehensive Plan	No	No	No	Yes, 12/19/2012	No	No	No	No
Builder's Plan	No	No	No	No	No	No	No	No
Capital Improvement Plan	No	No	No	Yes, 03/24/2018	No	No	No	No
Local Emergency Plan	No	No	Yes, May 2017	Yes, 2018	No	No	No	No
County Emergency Plan	Yes, 2017	Yes, 2017	Yes, 2017	Yes, 2017	Yes, 2017	Yes, 2017	Yes, 2017	Yes, 2017
Local Recovery Plan	No	No	No	No	No	No	No	No
County Recovery Plan	No	No	No	No	No	No	No	No
Local Mitigation Plan	No	No	No	Yes, 01/27/2014	No	No	Yes	No
County Mitigation Plan	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014
Local Mitigation Plan (PDM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
County Mitigation Plan (PDM)	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014	Yes, 2014
Debris Management Plan	No	No	No	N/A	No	No	Yes	No
Economic Development Plan	No	No	No	Yes	No	No	No	No
Transportation Plan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Land-use Plan	No	No	No	No	No	No	No	No
Flood Mitigation Assistance (FMA) Plan	No	No	No	No	No	No	No	No
Watershed Plan	No	No	No	No	No	No	No	No
Firewise or other fire mitigation plan	No	No	No	No	No	No	N/A	N/A
School Mitigation Plan	Yes	No	Yes	Yes	No	Yes	Yes	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No	No	No	No	No	No	N/A	N/A
<b>Policies/Ordinance</b>								
Zoning Ordinance	No	No	Yes	Yes	No	No	N/A	Yes
Building Code	No	No	No	Yes, 2012	No	No	N/A	No
Floodplain Ordinance	No	No	Yes, 04/01/1986	Yes, 04/12/2010	No	No	No	No
Subdivision Ordinance	No	No	No	Yes	No	No	No	No
Tree Trimming Ordinance	No	No	No	Yes	Yes, 1990	No	No	Yes
Nuisance Ordinance	No	Yes	Yes, 03/06/2001	Yes	Yes, 2004	Yes, 2004	Yes	Yes
Storm Water Ordinance	No	No	No	Yes	No	No	No	No
Drainage Ordinance	No	Yes	No	Yes	Yes, 2007; size of tubes	No	No	No
Site Plan Review Requirements	No	No	No	Yes	No	No	No	No
Historic Preservation Ordinance	No	No	No	Yes	No	No	No	No



<b>CAPABILITIES</b>	<b>Graham</b>	<b>Guilford</b>	<b>Hopkins</b>	<b>Maryville</b>	<b>Parnell</b>	<b>Pickering</b>	<b>Ravenwood</b>	<b>Skidmore</b>
Landscape Ordinance	No	No	No	Yes	No	No	No	No
Iowa Wetlands and Riparian Areas Conservation Plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Program</b>								
Zoning/Land Use Restrictions	No	No	No	Yes	No	No	N/A	Yes
Codes Building Site/Design	No	Yes	No	Yes	No	No	N/A	No
National Flood Insurance Program (NFIP) Participant	No	No	Yes, Ord. #339	Yes	No	No	No	No
NFIP Community Rating System (CRS) Participating Community	No	N/A	N/A	N/A	N/A	No	N/A	N/A
Hazard Awareness Program	No	No	No	No	No	No	No	No
National Weather Service (NWS) Storm Ready	No	No	Yes	Yes	No	No	Yes	No
Building Code Effectiveness Grading (BCEGs)	No	No	No	Yes; Class 4-Residential, Class 3-Commerical	No	No	No	No
ISO Fire Rating	N/A	N/A	8	N/A	N/A	N/A	7	8B
Economic Development Program	No	No	No	Yes	No	No	No	No
Land Use Program	No	No	No	Yes	No	No	No	No
Public Education/Awareness	No	No	No	Yes	No	No	No	No
Property Acquisition	No	No	No	No	No	No	No	No
Planning/Zoning Boards	No	No	No	Yes	No	No	No	No
Stream Maintenance Program	No	No	No	No	No	No	No	No
Tree Trimming Program	No	No	No	Yes	No	No	No	No
Engineering Studies for Streams (Local/County/Regional)	No	No	No	No	No	No	No	No
Mutual Aid Agreements	No	No	No	Yes	No	No	No	Yes
<b>Studies/Reports/Maps</b>								
Hazard Analysis/Risk Assessment (Local)	No	No	No	Yes	No	No	No	No
Hazard Analysis/Risk Assessment (County)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Flood Insurance Maps	No	No	Yes	Yes	No	No	No	No
FEMA Flood Insurance Study (Detailed)	No	No	Yes	Yes	No	No	No	No

<b>CAPABILITIES</b>	<b>Graham</b>	<b>Guilford</b>	<b>Hopkins</b>	<b>Maryville</b>	<b>Parnell</b>	<b>Pickering</b>	<b>Ravenwood</b>	<b>Skidmore</b>
Evacuation Route Map	No	No	No	Yes	No	No	No	No
Critical Facilities Inventory	No	No	No	Yes	No	No	Yes	No
Vulnerable Population Inventory	No	No	No	No	No	No	Yes	No
Land Use Map	No	No	No	Yes	No	No	No	No
<b>Staff/Department</b>								
Building Code Official	Yes	No	N/A	Yes, Full Time	No	No	No	No
Building Inspector	Yes	No	No	Yes, Full Time	No	No	No	Yes
Mapping Specialist (GIS)	N/A	No	No	Yes, Full Time	No	No	No	No
Engineer	N/A	No	No	No	No	No	No	Yes
Development Planner	N/A	No	No	No	No	No	No	No
Public Works Official	Yes	No	Yes	Yes, Full Time	No	No	Yes	N/A
Emergency Management Coordinator	N/A	No	Yes	Yes, Full Time	No	No	No	N/A
NFIP Floodplain Administrator	N/A	No	Yes	Yes, Full Time	No	No	No	No
Bomb and/or Arson Squad	N/A	No	No	No	No	No	No	No
Emergency Response Team	N/A	No	No	Yes, NWMSU has C-CERT	No	No	Yes	N/A
Hazardous Materials Expert	N/A	No	No	No	No	No	No	N/A
Local Emergency Planning Committee	N/A	No	No	Yes, Full Time	No	No	No	N/A
County Emergency Management Commission	No	No	No	No	No	No	No	No
Sanitation Department	N/A	No	No	No	No	Yes	No	Yes, Porters
Transportation Department	N/A	No	No	Yes, Full Time	No	No	No	N/A
Economic Development Department	N/A	No	No	Yes, Full Time	No	No	No	N/A
Housing Department	N/A	No	No	Yes, Full Time	No	No	No	N/A
Planning Consultant	No	No	No	No	No	No	No	No
Regional Planning Agencies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Historic Preservation	N/A	No	No	No	No	No	No	N/A
<b>Non-Governmental Organizations (NGOs)</b>								
American Red Cross	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Salvation Army	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Veterans Groups	No	No	No	Yes	No	No	No	No
Environmental Organization	No	No	No	No	No	No	No	No
Homeowner Associations	No	No	No	No	No	No	No	No
Neighborhood Associations	No	No	No	No	No	No	No	No

<b>CAPABILITIES</b>	<b>Graham</b>	<b>Guilford</b>	<b>Hopkins</b>	<b>Maryville</b>	<b>Parnell</b>	<b>Pickering</b>	<b>Ravenwood</b>	<b>Skidmore</b>
Chamber of Commerce	No	No	No	Yes	No	No	No	No
Community Organizations (Lions, Kiwanis, etc.)	Yes	No	Yes	Yes	No	No	Yes	No
<b>Financial Resources</b>								
Apply for Community Development Block Grants	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Fund projects through Capital Improvements funding	No	No	No	Yes	Yes	No	N/A	Yes
Authority to levy taxes for specific purposes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Fees for water, sewer, gas, or electric services	Yes	Yes	Yes	Yes, Water & Sewer Only	Yes, 2017	Yes	Yes	Yes
Impact fees for new development	No	No	No	Yes	No	No	No	No
Incur debt through general obligation bonds	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Incur debt through special tax bonds	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Incur debt through private activities	No	No	No	No	No	No	No	No
Withhold spending in hazard prone areas	No	No	No	No	No	No	No	No

Source: Data Collection Questionnaires, 2023

## 2.2.17 Special Districts

Nodaway County is served with the Nodaway County Ambulance District and the Nodaway County Fire District, both districts are created to save lives across the county.

### Ambulance Districts

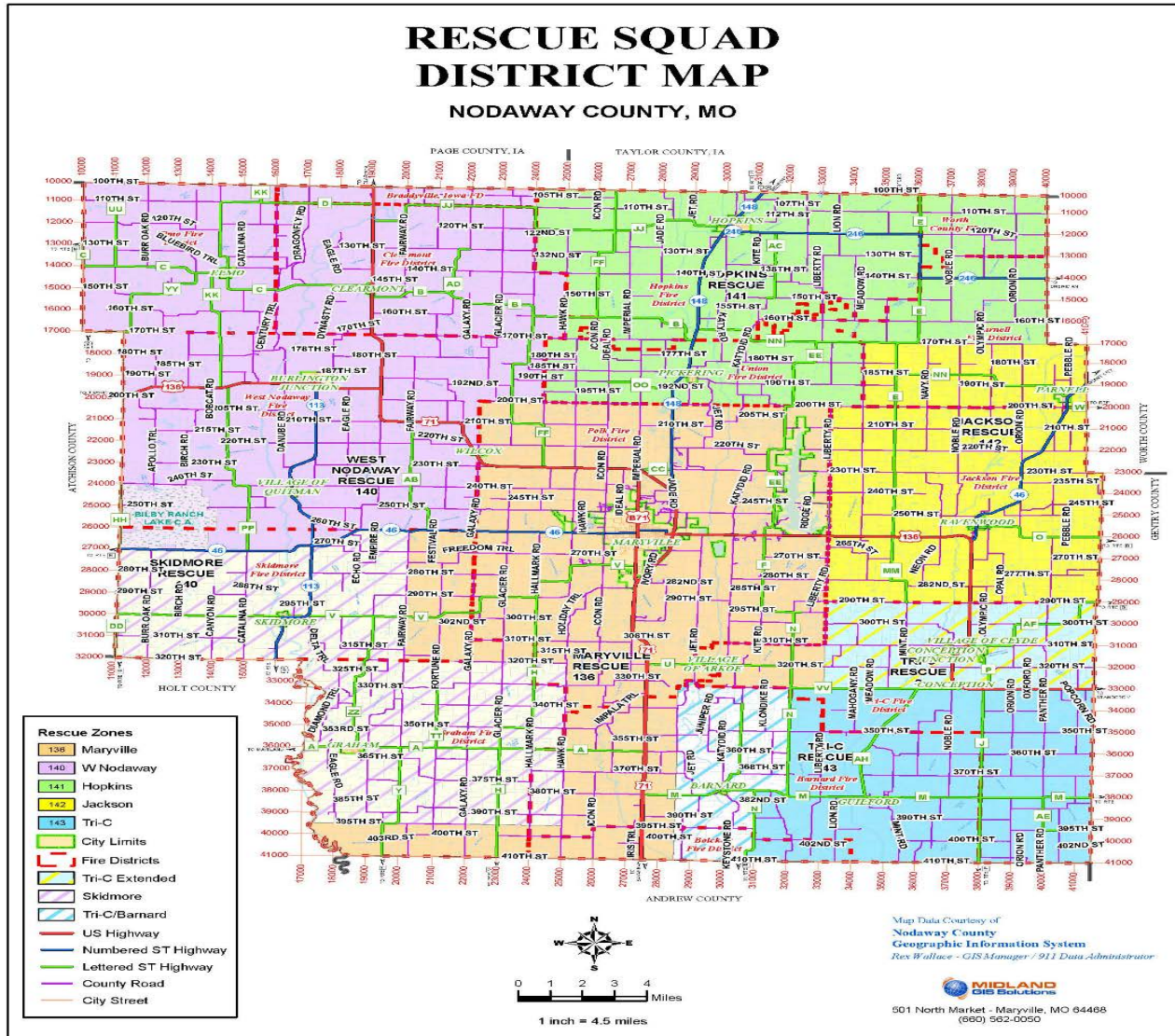
The Nodaway County Ambulance District is a public entity that is governed by a six-member Board of Directors. It is a subdivision of Nodaway County and the State of Missouri. With voter approval, the ambulance district can levy taxes. The district currently operates on sales tax but is also funded through user fees and grants when available. The ambulance district holds training for its members to mitigate the impact of an impending disaster on the county. The district is set up to mitigate mass casualties and provide additional ambulances and light rescue that can respond to surges in the county.

The Nodaway County Ambulance District contains five squads:

- Maryville Rescue Squad
- Burlington Junction Rescue Squad
- Hopkins Rescue Squad
- Ravenwood Rescue Squad
- Tri-C Rescue Squad

Figure 2.4 illustrates the jurisdictions of each squad in Nodaway County

Figure 2.4 Rescue Squad District Map



Source: Nodaway County Ambulance District

Nodaway County Ambulance District staffs two full-time ambulances, with more than 100 volunteer members serving the county as well. The district also consists of six ambulances, five light rescue trucks, a mass casualty squad, and two wheelchair accessible vans. Lastly, the ambulance district has weather radios/pagers, mutual aid agreements, and an inventory of critical facilities.

## Fire Districts

The fire districts in Nodaway County hold training and meetings for its members to mitigate the impact of an impending disaster on the county. For example, most fire districts in Nodaway County train its members to be the county's storm spotters. Members from the Nodaway County Fire Association meet once a month at the ambulance barn. The district is a public entity. The county fire districts are governed by a three to five-member board of directors who are elected by the citizens in their districts. Each fire district has the power to levy taxes, and its equipment/buildings are all supported by public tax money. The fire districts are funded by property tax and supplemented by

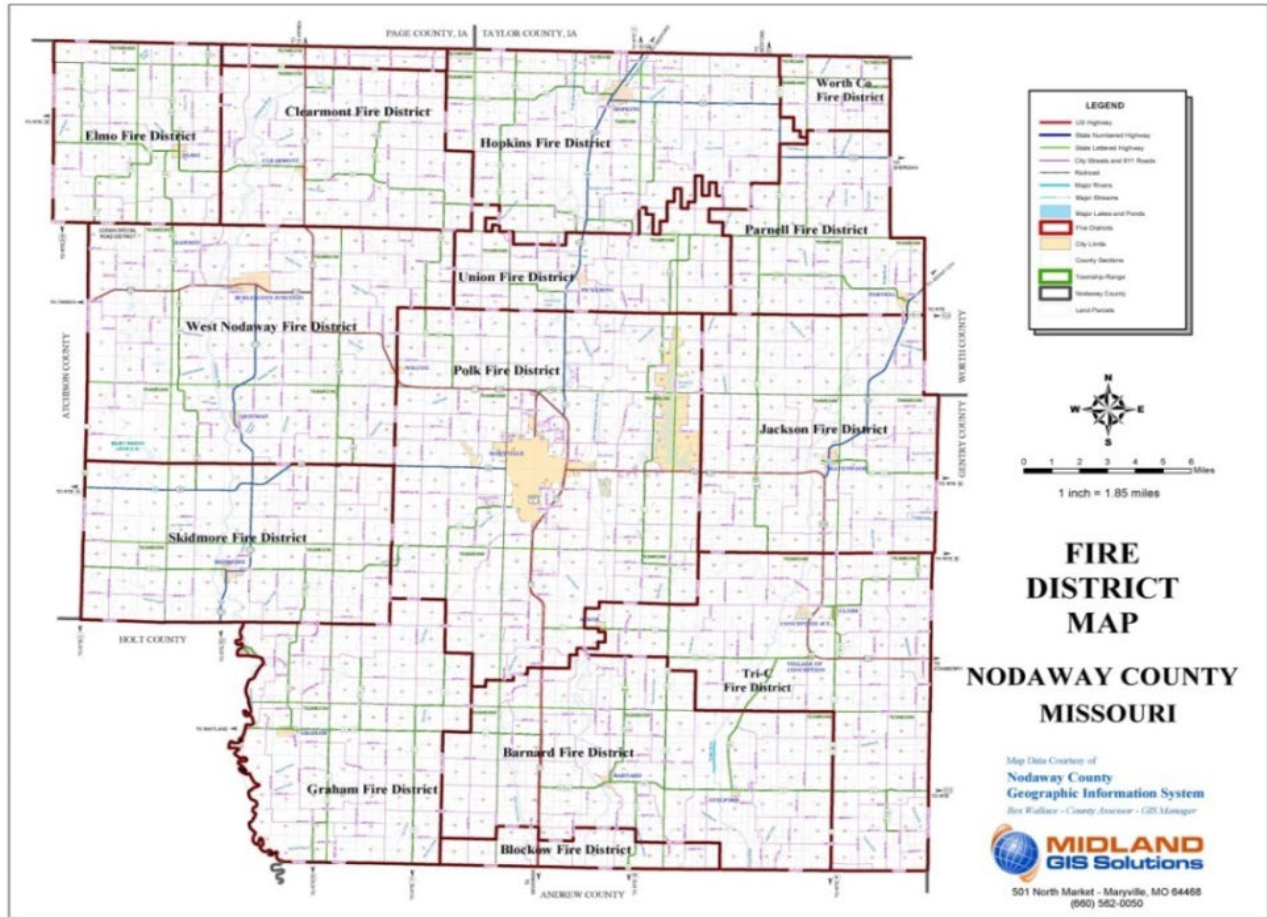
donations and fundraisers. Fire district firefighters have direct contact with the Nodaway County Emergency Management Director and County 911. Mutual aid agreements do exist however they need to be renewed or revised. Currently, the fire districts are developing an automatic mutual aid agreement for structure fires.

There are thirteen fire districts serving Nodaway County, Missouri. Small portions of the county are also served by the Worth County Fire District and Bolckow Fire Protections District, located in Worth and Andrew counties respectively. The following departments serve portions of Nodaway County:

- Barnard Fire District
- Clearmont Fire Protection District
- Elmo Fire Protection District
- Graham Fire Department
- Hopkins Fire Protection District, Inc.
- Jackson Township Fire Protection District
- Maryville D.P.S. Fire Division
- Parnell Fire District
- Union Township Fire District/Pickering Fire District
- Polk Township Rural Fire Protection District
- Skidmore Fire Protection District
- Tri-C Fire Protection District
- West Nodaway Fire Protection District

Figure 2.5 shows the service areas of each fire district in Nodaway County.

**Figure 2.5 Fire District Service Areas**

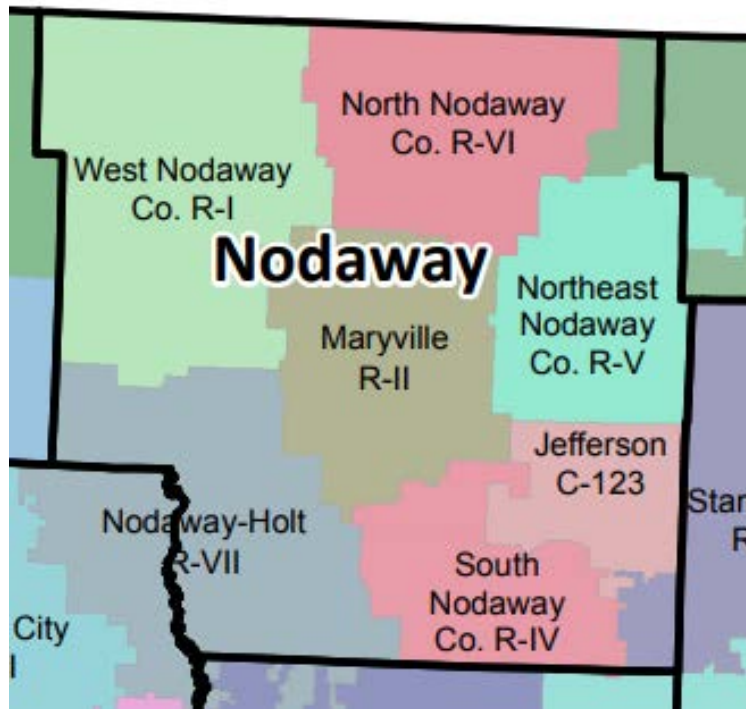


### 2.2.18 Public School District Profiles and Mitigation Capabilities

Nodaway County contains seven public schools within its borders: Jefferson C-123 School District, Maryville R-II School District, Nodaway Holt R-VII School District, North Nodaway County R-VI School District, Northeast Nodaway County R-V School District, South Nodaway County R-IV School District, and West Nodaway County R-1 School District. One of the public institutions, Nodaway-Holt, has infrastructure in the eastern part of Holt County. Northwest Missouri State University, a public, four-year institution, is also located within Maryville, Missouri. Northwest Missouri State’s enrollment was reported as 8,505 for the 2022-2023 academic year.

Figure 2.6 shows the boundaries of each public school district within Nodaway County.

**Figure 2.6 Boundaries of School Districts Serving Nodaway County**



Source: Missouri Department of Elementary & Secondary Education 2017-2018 Missouri School District Map

Jefferson C-123 is located in the southeast quadrant of Nodaway County. The school building is in the City of Conception Junction. One campus serves both the elementary and high school. The school district receives students coming from Conception Junction and Clyde. The school employs 35 staff with a student population of 133 grades PK-12.

Maryville R-II is located in central Nodaway County. The school buildings are located in the City of Maryville. Three campuses serve as the elementary school, middle school, and high school/technical center. The school district receives students coming from Maryville and Arkoe. The school employs 123 staff with a student population of 1,405.

Nodaway-Holt R-VII is located in southwest Nodaway County and Northeast Holt County. The Junior-Senior High is located in Graham, while the elementary school is located in Holt County's Maitland. The school district receives students from Skidmore, Maitland, and Graham. The school employs 47 staff with a student population of 216, K-12.

North Nodaway County R-VI is located in northern Nodaway County. The school buildings are located in both the City of Hopkins and the . The Junior-Senior High is located in Hopkins, and the Elementary school is located in Pickering. The school district receives students from Hopkins and Pickering. The school employs 39 staff with a student population of 202, PK-12.

Northeast Nodaway County R-V is located in northeast Nodaway County in the City of Ravenwood. One campus serves both the elementary and high school. The school district receives students coming from Parnell and Ravenwood. The school employs 46 staff with a student population of 238, PK-12.

Northwest Missouri State University is a public institution of higher education and is in the City of Maryville. The University employed 1,338 faculty and staff with a student population of 8,505 for the



2022-2023 academic year.

South Nodaway County R-IV is located in southern Nodaway County in the City of Barnard. One campus serves both the elementary and high school. The school district receives students from Arkoe, Barnard, and Guilford. The school employs 37 staff with a student population of 173, PK-12.

West Nodaway County R-I is located in the northwestern quadrant of Nodaway County in the City of Burlington Junction. One campus serves both the elementary and high school. The school district receives students coming from Elmo, Clearmont, and Burlington Junction. The school employs 52 staff with a student population of 227, PK-12.

Table 2.25 below provides information on the buildings and enrollment for each school district within Nodaway County.

**Table 2.25. Nodaway County School District Buildings and Enrollment Data, March 2021**

<b>District Name</b>	<b>Building Name</b>	<b>Building Enrolment</b>
Jefferson C-123	Jefferson High School	75
	Jefferson Elementary School	59
Maryville R-II	Maryville High/ Northwest Technical School	454
	Maryville Middle School	454
	Eugene Field Elementary	572
Nodaway-Holt R-VII	Nodaway-Holt Jr.-Sr. High School	94
	Nodaway-Holt Elementary	99
North Nodaway County R-VI	North Nodaway Jr.-Sr. High School	116
	North Nodaway Elementary	106
Northeast Nodaway County R-V	Northeast Nodaway High School	116
	Northeast Nodaway Elementary	118
Northwest Missouri State University	Northwest Missouri State University	8,505
South Nodaway County R-IV	South Nodaway High School	85
	South Nodaway Elementary	78
West Nodaway County R-I	West Nodaway High School	123
	West Nodaway R-1 Elementary	142

Source: Missouri Department of Elementary and Secondary Education

Mitigation capabilities can vary drastically in Nodaway County due to the diverse impacts from natural hazards. To determine the various capabilities, the seven public school districts and Northwest Missouri State University in Nodaway County completed a Data Collection Questionnaire, reporting on their planning processes, personnel, fiscal, and other capabilities related to mitigation programs. Table 2.26 provides a summary of the capabilities of the school districts and university in Nodaway County.

**Table 2.26. Summary of Mitigation Capabilities-Jefferson C-123, Maryville R-II, Nodaway-Holt R-VII, North Nodaway R-VI, Northeast Nodaway R-V, Northwest Missouri State University, South Nodaway R-IV, West Nodaway R-I, School Districts**

Capability	Jefferson	Maryville	Nodaway-Holt	North Nodaway	Northeast Nodaway	NW MO State University	South Nodaway	West Nodaway
Planning Elements								
Master Plan/ Date	Yes, Feb 2005	No	No	Yes, June 2017	No	Yes, 09/2016	Yes, 2014	Yes
Capital Improvement Plan/Date	No	No	Yes, Feb 2023	Yes, June 2017	No	Yes, 06/2022	N/A	Yes
School Emergency Plan / Date	Yes, Sept, 2021	Yes, Ongoing process	Yes, June 2022	Yes	Yes, 01/2018	Yes, 08/2021	Yes, 2015	Yes. 2023
Weapons Policy/Date	Yes, 01/18/17	Yes, 5/16/01	Yes, 10/18/16	Yes, 10/17/07	Yes, 08/2019	Yes, 07/2017	Yes, 2017	Yes, 2016
Personnel Resources								
Full-Time Building Official (Principal)	Yes, HS Principal	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Emergency Manager	Yes, Superintendent	No	Yes	Yes	Yes	Yes	Yes	Yes
Grant Writer	No	No	No	No	No	Yes	No	No
Public Information Officer	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Financial Resources								
Capital Improvements Project Funding	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Local Funds	Yes	Yes	Yes, Limited	Yes	Yes	Yes	Yes	Yes
General Obligation Bonds	Yes	Yes	No	No	Yes	N/A	No	Yes
Special Tax Bonds	No	No	No	No	Yes	N/A	No	N/A
Private Activities/Donations	No	Yes	Yes, Limited	No	Yes	Yes	Yes	Yes
State and Federal Funds/Grants	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Other								
Public Education Programs	Yes	Yes	No	No	No	Yes	No	No
Privately or Self-Insured?	Privately	Privately	Privately	Privately	Privately	Both	Privately	Privately

Fire Evacuation Training	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tornado Sheltering Exercises	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Public Address/Emergency Alert System	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NOAA Weather Radios	No	Yes	No	Yes	No	Yes	Yes	Yes
Lock-Down Security Training	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mitigation Programs	Yes	Yes	Yes	No	No	No	Yes	No
Tornado(nonFEMA) Shelter/Saferoom	No	Yes (FEMA)	Yes	Yes	Yes	Yes	Yes	Yes
Campus Police	No	Yes	No	No	No	Yes	No	No
<b>Capability</b>	<b>Jefferson</b>	<b>Maryville</b>	<b>Nodaway-Holt</b>	<b>North Nodaway</b>	<b>Northeast Nodaway</b>	<b>NW MO State University</b>	<b>South Nodaway</b>	<b>West Nodaway</b>
Data Collection Questionnaires, March 2023								

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## 3 RISK ASSESSMENT

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<b>3.1 Hazard Identification</b> .....	<b>3.1.3</b>
3.1.1 <i>Review of Existing Mitigation Plans</i> .....	3.1.3
3.1.2 <i>Review of Disaster Declaration History</i> .....	3.1.4
3.1.3 <i>Research Additional Sources</i> .....	3.1.5
3.1.4 <i>Hazards Identified</i> .....	3.1.6
3.1.5 <i>Multi-Jurisdictional Risk Assessment</i> .....	3.1.9
<b>3.2 Assets at Risk</b> .....	<b>3.2.9</b>
3.2.1 <i>Total Exposure of Population and Structures</i> .....	3.2.9
3.2.2 <i>Critical and Essential Facilities and Infrastructure</i> .....	3.2.12
3.2.3 <i>Other Assets</i> .....	3.2.15
<b>3.3 Land Use and Development</b> .....	<b>3.3.21</b>
3.3.1 <i>Development Since Previous Plan Update</i> .....	3.3.21
3.3.2 <i>Future Land Use and Development</i> .....	3.3.22
<b>3.4 Hazard Profiles, Vulnerability, and Problem Statements</b> .....	<b>3.4.25</b>
3.4.1 <i>Dam Failure</i> .....	3.4.28
3.4.2 <i>Drought</i> .....	3.4.40
3.4.3 <i>Earthquakes</i> .....	3.4.48
3.4.4 <i>Extreme Temperatures</i> .....	3.4.55
3.4.5 <i>Flooding (Flash and River)</i> .....	3.4.63
3.4.6 <i>Levee Failure</i> .....	3.4.82
3.4.7 <i>Thunderstorm/High Winds/Lightning/Hail</i> .....	3.4.85
3.4.8 <i>Tornado</i> .....	3.4.95
3.4.9 <i>Wildfires</i> .....	3.4.101
3.4.10 <i>Severe Winter Weather</i> .....	3.4.106

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 purpose of the risk assessment process is to identify and profile relevant hazards and assess the exposure of lives, property and infrastructure within the planning area to these hazards. Nodaway County and participating jurisdictions and school districts developed a risk assessment update to reduce future losses from hazard events to the County and its communities and school districts.

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

This chapter is divided into four main parts:

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

This update of the Nodaway County Multi-Jurisdictional Natural Hazard Mitigation Plan only addresses natural hazards. Human-caused and technological hazards are out of the scope of the plan. The risk assessment for Nodaway County addresses individual jurisdictions’ risks only when there is a notable difference in the impact relative to the entire county.

\*The City of Clyde is choosing not to participate in the plan, but their data may be included for a better understanding of the county’s plan

#### 3.1.1 Review of Existing Mitigation Plans

In Missouri, local hazard mitigation plans typically contain only natural hazards as required by federal regulations. Table 3.1 below compares the hazards covered by this updated plan with the latest update to the state plan as well as Nodaway County’s previous plan.

**Table 3.1. Comparison of Existing Mitigation Plans**

<b>2023 Nodaway County Update</b>	<b>2019 Nodaway County Plan</b>	<b>2018 State Plan</b>
<b>Natural Hazards</b>	<b>Natural Hazards</b>	<b>Natural Hazards</b>
Tornadoes	Tornado	Tornadoes
Severe Thunderstorms	Thunderstorm/High Winds/Lightning/Hail	Severe Thunderstorms
Flooding (Major and Flash)	Flooding (Flash and River)	Flooding (Major and Flash)
Severe Winter Weather	Winter Weather/Snow/Ice/Severe Cold	Severe Winter Weather
Drought	Drought	Drought
Extreme Temperatures	Extreme Heat	Extreme Temperatures
Earthquakes	Earthquakes	Earthquakes
Dam Failure	Dam Failure	Dam Failure
Wildfire	Wildfires	Wildfire
Levee Failure	Levee Failure	Levee Failure
Not included in this plan	Not included in this plan	Land Subsidence/Sinkholes
<b>Manmade &amp; Other Hazards</b>	<b>Manmade &amp; Other Hazards</b>	<b>Manmade &amp; Other Hazards</b>
Not included in this plan	Not included in this plan	See State HMP for list

Because they do not threaten Missouri, the following natural hazards are not included in this analysis: avalanches, coastal erosion, coastal storms, hurricanes, tsunamis, and volcanoes. While land subsidence/sinkholes, expansive soils, landslides, and rock falls are recognized as hazards in Missouri, they occur infrequently, and their impacts are minimal; therefore, they will not be profiled further in this document. Nodaway County has no record of any of the above hazards taking place. The rest of the hazards list is the same except for minor wording changes as seen in the table.

The only natural hazard that is on the SEMA list that will not be addressed in the Nodaway County Plan is Land Subsidence/Sinkholes. The conformation of the geography and the soil structure make this type of hazard extremely rare in Nodaway County. Fires: Structural & Urban is not addressed in this plan due to the rural nature of the county, the presence of well-serviced fire districts across the county and as this hazard is most often a result of mankind’s actions. The current update will also reflect the new hazard classifications that are being used in the Missouri plan. The Extreme Heat category has now been renamed Extreme Temperatures which now includes severe cold events,

while the Winter Weather/Snow/Ice/Severe Cold category has been renamed Severe Winter Weather.

### 3.1.2 Review of Disaster Declaration History

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

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

Table 3.2 lists the federal FEMA disaster declarations that included the planning area from 1965 to present. In March of 2020, EM-3482 and DR-4490 were issued for the Covid-19 pandemic.

**Table 3.2. FEMA Disaster Declarations including Nodaway County, Missouri, 1965-Present**

Disaster Number	Description	Declaration Date	Program(s) Declared
DR-203	Severe storms & flooding	7/27/1965	Individual Assistance (IA) Public Assistance (PA)
DR-372	Heavy rains, tornadoes & flooding	4/19/1973	Individual Assistance (IA) Public Assistance (PA)
DR-407	Severe storms & flooding	11/1/1973	Individual Assistance (IA) Public Assistance (PA)
DR-439	Severe storms & flooding	6/10/1974	Individual Assistance (IA) Public Assistance (PA)
EM-3017	Drought	9/24/1976	Public Assistance (PA)
DR-995	Severe storms & flooding	7/9/1993	Individual Assistance (IA) Public Assistance (PA)
DR-1054	Severe storms, tornadoes, hail, flooding	6/2/1995	Individual Assistance (IA) Public Assistance (PA)
DR-1524	Severe storms, tornadoes, and flooding	6/11/2004	Individual Assistance (IA)
EM-3232	Hurricane Katrina evacuation	9/10/2005	Public Assistance (PA)
DR-1708	Severe storms and flooding	6/11/2007	Individual Assistance (IA) Public Assistance (PA)
EM-3281	Severe winter storms	12/12/2007	Public Assistance (PA)
DR-1736	Severe winter storms	12/27/2007	Public Assistance (PA)
DR-1773	Severe storms and flooding	6/25/2008	Individual Assistance (IA) Public Assistance (PA)
EM-3303	Severe winter storm	1/30/2009	Public Assistance (PA)
DR-1934	Severe storms, flooding, and tornadoes	8/17/2010	Public Assistance (PA)
EM-3317	Severe winter storm	2/3/2011	Public Assistance (PA)
DR-4200	Severe storms, tornadoes, straight-line winds, flood	10/31/2014	Public Assistance (PA)
DR-4238	Severe storms, tornadoes, straight-line winds, flood	8/7/2015	Public Assistance (PA)
DR-4451	Severe storms, tornadoes, and flooding	7/9/2019	Public Assistance (PA)

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



### 3.1.3 Research Additional Sources

Additional data on the impact of past disasters was collected from the following sources:

- Missouri Hazard Mitigation Plans (2010, 2013 and 2018) preliminary 2023 data
- Previously approved planning area Hazard Mitigation Plan (2014)
- Federal Emergency Management Agency (FEMA)
- Missouri Department of Natural Resources (MDNR)
- 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 (MSDIS)
- Flood Insurance Administration
- Hazards US (HAZUS)
- Missouri Department of Transportation
- National Fire Incident Reporting System (NFIRS)
- National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information (NCEI)
- 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. Census Bureau, American Community Survey
- Missouri Census Data Center
- United States Geological Survey (USGS)
- Various articles and publications available on the internet will show citations for the sources in the body of the plan.

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

The NCEI damage amounts are estimates received from a variety of sources, including those listed above in the Data Sources section. For damage amounts, the NWS makes a best guess using all available data at the time of the publication. Property and crop damage figures should be considered as a broad estimate. Damages reported are in dollar values as they existed at the time of the storm event. They do not represent current dollar values. Zeroes entered mean no information was reported to NWS, not necessarily that damage did not occur.

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

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

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

### 3.1.4 Hazards Identified

Natural hazards in northwestern Missouri vary dramatically in regard to intensity, frequency, and the scope of impact. Some hazards, like earthquakes, happen without warning and do not provide any opportunity to warn the public. Other hazards, such as tornadoes, flooding, or severe winter storms, provide a period of warning which allows for public preparation prior to their occurrence. The following natural hazards have been identified as potential threats for Nodaway County:

- Dam Failure
- Drought
- Earthquakes
- Extreme Temperatures
- Flooding (Major and Flash)
- Levee Failure
- Severe Thunderstorms
- Tornadoes
- Wildfire
- Severe Winter Weather

Several resources were investigated for the accumulated data relating to natural hazards. The primary sources used for this data include the Federal Emergency Management Agency (FEMA), the Missouri State Emergency Management Agency (SEMA), National Centers for Environmental Information (NCEI) and National Oceanic and Atmospheric Administration (NOAA) websites and databases. United States Geological Survey (USGS) and the Center for Earthquake Research and Information (CERI) were the primary sources for earthquake information. Other sources included county officials; existing county, regional and state plans; reports on the floods of 1993, 1995, 2007, 2008, levee district data and information from local officials and residents. This plan utilizes compiled data through December 2017 except where noted.

As noted, Nodaway County is in northwest Missouri. This location precludes many natural hazards from occurring or having a significant impact. The natural hazards not included in this hazard mitigation plan include landslides and severe land subsidence. According to the USGS, this is not a serious threat in that the soil types and elevations do not lend themselves to such activity. Other risks that are not included in this plan are coastal storms, tsunamis, hurricanes, avalanches, volcanic activity, and tropical storms. These do not occur in the area due to soil substructure, location and

geological structure. During the review process, no new natural hazards were identified for Nodaway County.

Dam Failure, Drought, Earthquakes, Extreme Temperatures, Flooding (Major and Flash), Levee Failure, Severe Thunderstorms, Tornadoes, Wildfire, and Severe Winter Weather (as listed above) are the hazards chosen for further analysis. They significantly impact the planning area. Not all hazards impact every jurisdiction. Table 3.3 shows the hazards by jurisdiction. The symbols used in Table 3.3 are "X" to indicate the jurisdiction is impacted by the hazard, and a "-" indicates the hazard is not applicable to that jurisdiction. Since Nodaway County is a very rural county there are not many variations. Most of the jurisdictions are taking mitigation actions to address all the hazards addressed in the plan. Many of the actions are focused on planning and education, therefore, address all the hazards regardless of the impact.

**Table 3.3. Hazards Identified for Each Jurisdiction**

Jurisdiction	Dam Failure	Drought	Earthquake	Extreme Temperatures	Flooding (Major and Flash)	Levee Failure	Severe Winter Weather	Severe Thunderstorms	Tornadoes	Wildfire
Nodaway County Unincorporated Areas	X	X	X	X	X	X	X	X	X	X
Arkoe	-	-	X	X	X	X	X	X	X	-
Barnard	X	X	X	X	X	X	X	X	X	X
Burlington Junction	X	X	X	X	X	X	X	X	X	X
Clearmont	X	X	X	X	X	X	X	X	X	X
Clyde*	X	-	X	X	X	X	X	X	X	X
Conception Junction	-	-	X	X	X	X	X	X	X	X
Elmo	X	X	X	X	X	X	X	X	X	X
Graham	X	X	X	X	X	X	X	X	X	X
Guilford	X	X	X	X	X	X	X	X	X	X
Hopkins	X	X	X	X	X	X	X	X	X	X
Maryville	X	X	X	X	X	X	X	X	X	X
Parnell	X	X	X	X	X	X	X	X	X	X
Pickering	X	X	X	X	X	X	X	X	X	X
Ravenwood	X	X	X	X	X	X	X	X	X	X
Skidmore	X	X	X	X	X	X	X	X	X	X
Jefferson C-123 School District	X	X	X	X	X	X	X	X	X	X
Maryville R-II School District	X	X	X	X	X	X	X	X	X	X
Nodaway-Holt R-VII School District	X	X	X	X	X	X	X	X	X	X
Northeast Nodaway R-V School District	X	X	X	X	X	X	X	X	X	X
North Nodaway R-VI School District	X	X	X	X	X	X	X	X	X	X
South Nodaway R-IV School District	X	-	X	-	X	X	X	X	X	X
West Nodaway R-I School District	X	X	X	X	X	X	X	X	X	X
Northwest Missouri State University	X	X	X	X	X	X	X	X	X	X

### 3.1.5 Multi-Jurisdictional Risk Assessment

This Hazard Mitigation Plan for Nodaway County is an update of the 2018 Plan. This is a multi-jurisdictional plan that addresses the unincorporated area of Nodaway County, the fifteen communities within its boundaries, the seven public school districts and one state university.

The plan is set up to address each hazard with an individual profile to detail risks associated with the hazard across the region and specifically for each jurisdiction participating. Each hazard profile will address hazard risk variations and describe variances.

Nodaway County is fairly uniform in terms of climate, topography and building construction characteristics. Most of the town centers date back to the middle years of the last century with very little new construction with the exception of the city of Maryville. Maryville had a population of 10,633 for the 2020 census. The remaining communities are all small communities. The populations range between 56 at Arkoe to 521 at Burlington Junction. The second largest population group is 7,679 people spread out in farms across unincorporated Nodaway County (2020 U.S. Census data).

The development trends for Nodaway County outside of Maryville are negative. Since so much of the county is in farmland, the rural areas have agricultural assets (crops/livestock) that are vulnerable to losses from hail damage and other weather-related hazards. These differences in vulnerability to damages will be discussed in greater detail in the vulnerability section of each hazard profile.

All municipalities and government subunits within Nodaway County participated in the creation of this hazard mitigation plan, and unless otherwise noted, the actions prescribed within pertain to all jurisdictions without bias. Nodaway County hazards tend to be either geographically random or regional in scope. Using historical events and data compiled from the National Weather Service and United States Geological Survey (USGS), Hazard Profile Worksheets for each identified natural hazard affecting Nodaway County are included in the following pages. The most recent declared disasters for the County were severe storms and flooding in 2014, 2015 and 2019.

The hazards that vary across the planning area in terms of risk include dam failure, wildfire, levee failure, major flood, and flash flood. The details of these differences are detailed in each hazard profile under a separate heading. The unincorporated areas of the County have experienced limited damage from winter storms, tornadoes, thunderstorms, extreme temperatures, drought, dam failure, and wildfire.

## 3.2 Assets at Risk

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This section assesses the planning area population, structures, critical facilities and infrastructure, and other important assets that may be at risk to hazards. If there have been any changes in the planning area since the previously approved plan was adopted, these changes are summarized, and any new risks assessed.

The best data available for Nodaway County is HAZUS 4.2 data. The tables, maps and charts are based on this data unless otherwise cited. There are DFIRM maps included for each jurisdiction participating in the plan further in this section.

### 3.2.1 Total Exposure of Population and Structures

#### Unincorporated County and Incorporated Cities

In the following three tables, population data is based on 2020 Census Bureau data. Building counts and building exposure values are based on census tract data provided by the use of the FEMA HAZUS 4.2 database. Contents exposure values were calculated by factoring a multiplier to the

building exposure values based on usage type. The multipliers were derived from the HAZUS MH 2.1 and are defined below in **Table 3.4**. 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 3.4** shows the total population, building count, estimated value of buildings, estimated value of contents and estimated total exposure to parcels for the unincorporated county and each incorporated city. For multi-county communities, the population and building data may include data on assets located outside the planning area.

**Table 3.4. Maximum Population and Building Exposure by Jurisdiction**

Jurisdiction	2020 Population	Building Count	Building Exposure (\$1,000s)	Contents Exposure (\$1,000s)	Total Exposure (\$1,000s)
Nodaway County (unincorporated)	7,679	17,258	\$779,984.99	\$409,664	\$1,189,649
Arkoe	56	31	\$5,123	\$2,551	\$7,674
Barnard	201	125	\$21,143	\$10,839	\$31,983
Burlington Junction	521	362	\$60,394	\$33,541	\$93,935
Clearmont	158	128	\$25,515	\$14,372	\$39,887
Clyde*	55	32	\$5,929	\$2,959	\$8,888
Conception Junction	177	103	\$19,292	\$9,725	\$29,016
Elmo	114	117	\$21,865	\$12,535	\$34,400
Graham	147	108	\$23,355	\$11,069	\$34,424
Guilford	60	71	\$9,874	\$4,898	\$14,773
Hopkins	472	389	\$65,525	\$38,272	\$103,798
Maryville	10,633	3,699	\$790,439	\$448,372	\$1,238,811
Parnell	135	144	\$23,292	\$12,042	\$35,334
Pickering	149	101	\$21,335	\$10,204	\$31,539
Ravenwood	439	230	\$46,470	\$24,879	\$71,368
Skidmore	245	247	\$39,170	\$23,379	\$62,549
<b>Totals</b>	<b>21,241</b>	<b>23,183</b>	<b>\$1,966,081</b>	<b>\$1,073,521</b>	<b>\$3,039,602</b>

Sources: Population, 2020 U.S. Census; Building Count and Building Exposure, FEMA HAZUS 4.2; 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 the purposes of these calculations, government, school, and utility were calculated at the commercial contents rate.

On the following page, **Table 3.5** provides the building value exposures for the county and each city in the planning area broken down by usage type. Finally, **Table 3.6** 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 3.5. Building Values/Exposure by Usage Type (in \$1000s)**

Jurisdiction	Residential	Commercial	Industrial	Agriculture	Government	Education
Nodaway County (unincorporated)	\$652,472	\$36,764	\$27,884	\$46,912	\$4,838	\$11,115
Arkoe	\$5,102	\$0	\$0	\$20	\$0	\$0
Barnard	\$18,572	\$1,553	\$465	\$92	\$0	\$926
Burlington Junction	\$53,675	\$5,437	\$0	\$248	\$569	\$0
Clearmont	\$22,246	\$3,107	\$0	\$20	\$142	\$0
Clyde*	\$5,919	\$0	\$0	\$10	\$0	\$0
Conception Junction	\$15,307	\$2,071	\$0	\$61	\$0	\$1,853
Elmo	\$18,572	\$3,107	\$0	\$44	\$142	\$0
Graham	\$18,980	\$1,294	\$0	\$17	\$285	\$2,779
Guilford	\$9,796	\$0	\$0	\$78	\$0	\$0
Hopkins	\$52,043	\$9,320	\$1,859	\$309	\$142	\$1,853
Maryville	\$650,839	\$88,026	\$20,913	\$241	\$3,557	\$26,862
Parnell	\$20,409	\$1,553	\$0	\$119	\$285	\$926
Pickering	\$20,409	\$0	\$0	\$0	\$0	\$926
Ravenwood	\$41,226	\$4,142	\$0	\$10	\$142	\$926
Skidmore	\$33,471	\$2,589	\$2,324	\$217	\$569	\$0
Totals	\$1,645,365	\$160,000	\$53,445	\$48,433	\$10,672	\$48,167

**Table 3.6. Building Counts by Usage Type**

Jurisdiction	Residential	Commercial	Industrial	Agricultural	Government	Education
Nodaway County (unincorporated)	3197	142	60	13813	34	12
Arkoe	25			6		
Barnard	91	6		27		1
Burlington Junction	263	21	1	73	4	
Clearmont	109	12		6	1	
Clyde*	29			3		
Conception Junction	75	8		18		2
Elmo	91	12		13		
Graham	93	5		5	2	3
Guilford	48			23		
Hopkins	255	36	4	91	1	2
Maryville	3189	340	45	71	25	29
Parnell	100	6		35	2	1
Pickering	100					1
Ravenwood	202	16		10	1	1
Skidmore	164	16		64	4	
Totals	8062	618	115	14261	75	52

Source for both tables: FEMA HAZUS 4.2

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

Educational Jurisdiction	Enrollment	Building Count	Building Exposure (\$)	Contents Exposure (\$)	Total Exposure (\$)
Jefferson C-123 School District	140	5	9,658,447	1,536,910	11,195,357
Maryville R-II School District	1,453	10	68,259,394	6,453,289	74,712,683
Nodaway-Holt R-VII School District	216	5	13,860,948	2,526,777	16,387,725
Northeast Nodaway R-V School District	227	1	9,872,912	1,192,996	11,065,908
North Nodaway R-VI School District	222	2	10,695,124	1,308,042	12,003,166
South Nodaway R-IV School District	182	8	6,562,324	1,180,103	7,742,427
West Nodaway R-I School District	270	7	11,612,695	1,681,031	13,293,726
Northwest Missouri State University	6,338	94	452,540,853	95,933,727	548,474,580

Source: <http://mcids.dese.mo.gov/quickfacts/Pages/District-and-School-Information.aspx>, 2023 Data Collection Questionnaires

### 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 3.8**, on the following page, includes a summary of the inventory of critical and essential facilities and infrastructure in the planning area. The list was compiled from the Data Collection Questionnaire as well as the following sources: FEMA HAZUS 4.2, Missouri Spatial Data Information Service (MSDIS), Missouri State Emergency Management Agency (SEMA) and the Nodaway County Emergency Management Director (EMD).



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

Jurisdiction	Airport Facility	Bus Facility	Childcare Facility	Communications Tower	Electric Power Facility	Emergency Operations	Fire Service	Government	Housing Authority	Shelters	Highway Bridge	Hospital/Health Care	Military	Natural Gas Facility	Nursing Homes	Police Station	Potable Water Facility	Rail	Sanitary Pump Stations	School Facilities	Storm Water Pump Stations	Tier II Chemical Facility	Wastewater Facility	Total
Nodaway County (unincorporated)	2	0	0	1	0	3	13	2	0	1	440	1	1	1	6	4	0	0	0	13	21	0	0	<b>509</b>
Arkoe	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>1</b>
Barnard	0	0	0	0	0	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1	0	0	1	<b>8</b>
Burlington Junction	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	1	2	0	1	<b>9</b>
Clearmont	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	<b>4</b>
Conception Junction	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	<b>3</b>
Elmo	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	<b>4</b>
Graham	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	<b>6</b>
Guilford	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	<b>3</b>
Hopkins	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	1	<b>6</b>
Maryville	2	0	8	3	0	3	1	3	1	1	1	1	1	0	6	3	1	0	1	5	0	28	1	<b>70</b>
Parnell	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	<b>4</b>
Pickering	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Ravenwood	0	0	2	0	0	1	1	1	1	0	0	0	0	1	0	0	1	0	0	1	0	0	1	<b>10</b>
Skidmore	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	<b>5</b>
<b>Totals</b>	<b>2</b>	<b>0</b>	<b>10</b>	<b>5</b>	<b>0</b>	<b>10</b>	<b>12</b>	<b>9</b>	<b>2</b>	<b>2</b>	<b>442</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>6</b>	<b>3</b>	<b>6</b>	<b>0</b>	<b>3</b>	<b>10</b>	<b>25</b>	<b>58*</b>	<b>12</b>	<b>642</b>

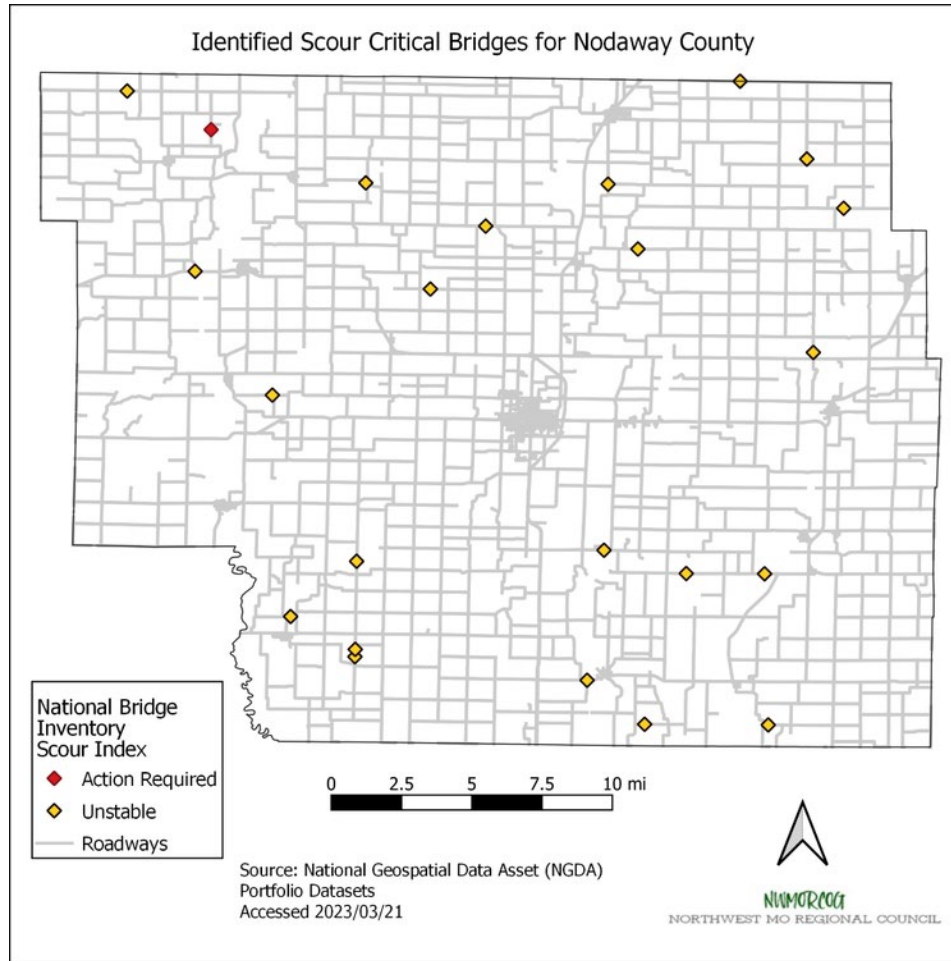
\*fire station given maps of all tier 2 facilities in county. non-FEMA shelter

Source: Data Collection Questionnaires, HAZUS 4.2, MSDIS, SEMA, Nodaway County EMD

## Bridges

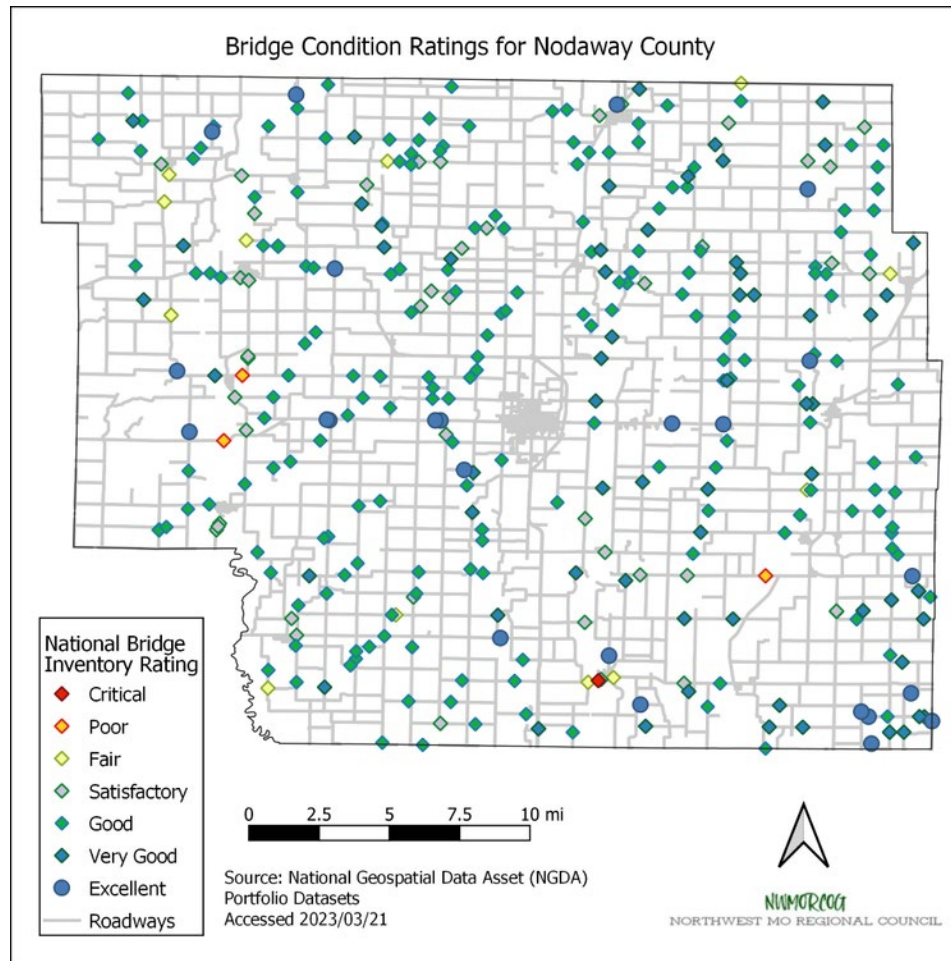
“Scour critical” refers to one of the database elements in the National Bridge Inventory. This element is quantified using a “scour index”, which is a number indicating the vulnerability of a bridge to scour during a flood. Bridges with a scour index between 1 and 3 are considered “scour critical”, or a bridge with a foundation determined to be unstable for the observed or evaluated scour condition. There are four bridges in the county with a scour index of 3. These bridges are scour critical. In addition, there are 93 bridges within the county that have a scour index rating of 5. These bridges are at a moderate risk of damage due to scour. Figure 3.1 shows the location of all of the 443 bridges and the scour index of each.

**Figure 3.1. Scour Critical Bridges**



The National Bridge Inventory provides information about physical characteristics and structural condition of the nation’s bridges on public roadways. The number of bridges in Nodaway County that are rated as structurally deficient is 71. The location of these bridges is shown in Figure 3.2.

**Figure 3.2. Structural Condition of Bridges**



### 3.2.3 Other Assets

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

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

#### Threatened and Endangered Species:

Table 3.9 shows Federally Threatened, Endangered, Proposed and Candidate Species in the county. There is a total of two animal species listed by the U.S. Fish and Wildlife Service as either threatened or endangered that are known to appear in Nodaway County. There are migratory birds that travel

through the county that are listed on the U.S. Fish and Wildlife Services' "Birds of Conservation Concern." The eight species are Black-billed Cuckoo, Bobolink, Henslow's Sparrow, Lesser Yellowlegs, Red-headed Woodpecker, Rusty Blackbird, Semipalmated Sandpiper, and Smith's Longspur. Another vulnerable species that migrates through Nodaway County is the Bald Eagle.

**Table 3.9. Threatened and Endangered Species in Nodaway County**

Common Name	Scientific Name	Status
Indiana bat	<i>Myotis sodalis</i>	Endangered mammal
Northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened mammal

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

**Natural Resources:**

Nodaway County is home to several parks and wildlife areas. The county has one conservation area owned by the Missouri Conservation Department (MDC). MDC also owns and maintains four river access areas and manages the fishery at two recreational lake areas. Bilby Ranch Lake Conservation Area is over 5,000 acres of grassland, cropland, old fields, lakes, and some forest. It is a popular site for anglers, hunters and bird watchers.

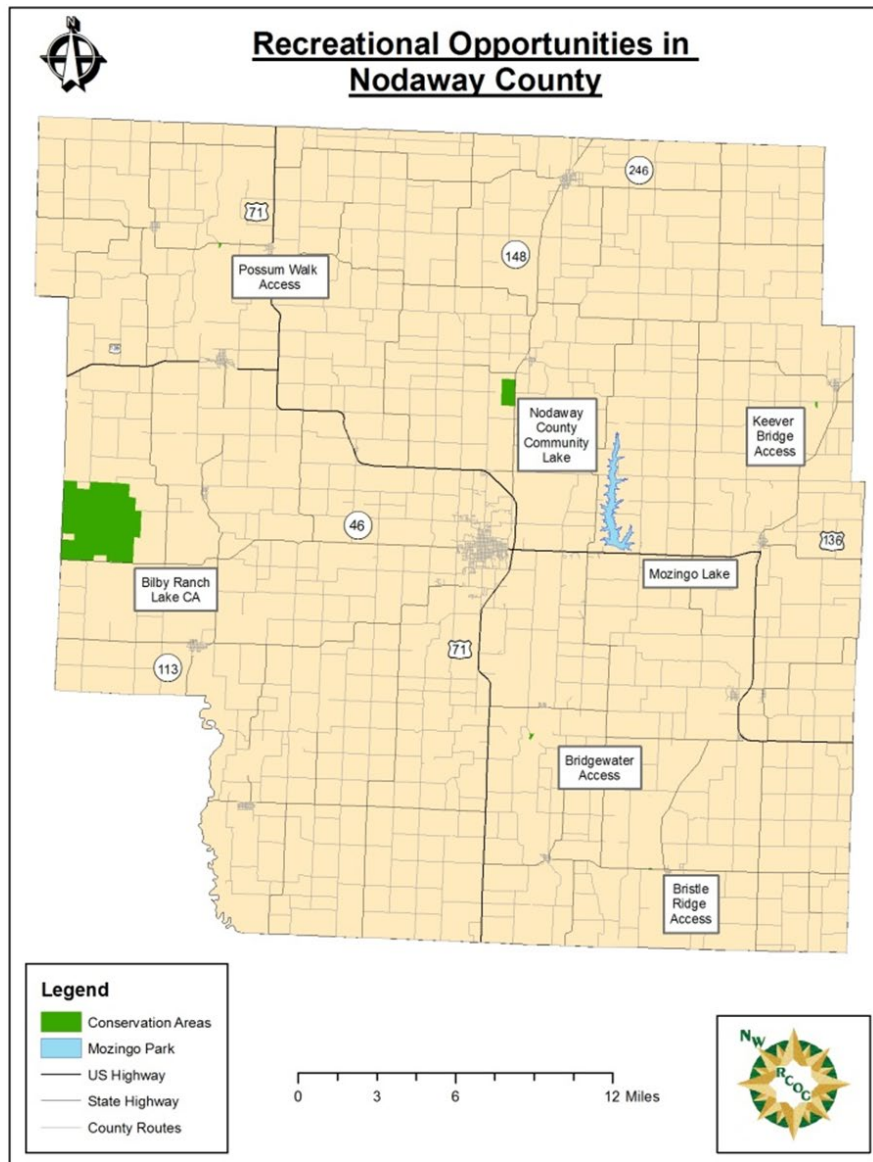
The Missouri Department of Conservation provides an online atlas which contains information about lands the MDC owns, leases, or manages for public use. Table 3.10 provides information about the sites that the MDC manages the fishery or owns in Nodaway County. Missouri Department of Conservation Sites in Nodaway County. Figure 3.3 shows the locations of these areas.

**Table 3.10.**

Area Name	Location	City
Bilby Ranch Lake Conservation Area	14 miles west on Highway 46	Maryville
Bridgewater Access	1 mile southwest on Jet Road	Arkoe
Bristle Ridge Access	1 mile west on Route M	Guilford
Keever Bridge Access	1 mile southwest on 200 <sup>th</sup> St.	Parnell
Mozingo Lake	3 miles east on U.S.136, north on Liberty Rd.	Maryville
Nodaway County Community Lake	2 miles south on Highway 148	Pickering
Possum Walk Access	2 miles west on Route C	Clearmont

Source: <https://nature.mdc.mo.gov>

Figure 3.3. Map of Conservation Areas in Nodaway County



County and municipal events draw large numbers to Nodaway County, largely due to the many parks and community facilities that are available throughout the area. Table 3.11 provides information on the local community recreational locations.

**Table 3.11. Public Parks and Community Centers in Nodaway County**

Name	Address	City
Beal Park	700 North Laura Street	Maryville
Clearmont Park and Ball Field	Railroad Street and West 3 <sup>rd</sup> Street	Clearmont
Community Building	123 South 3 <sup>rd</sup> Street	Hopkins
Conception Junction City Playground	Berry and 3 <sup>rd</sup> Streets	Conception Junction
Donaldson West Side	1000 North Country Club Road	Maryville
Downtown Pocket Park	224 N. Main	Maryville
Elmo City Park	South Scott & East Streets	Elmo
Elmo Community Center	200 Main Street	Elmo
Graham City Park	99 Main Street	Graham
Happy Hollow Park	709 East Third Street	Maryville
City Park	North Highway 148	Hopkins
Judah Park	615 West Thompson Street	Maryville
Little Peach Park	704 West Edwards Street	Maryville
Maryville Aquatic Center	502 North Laura Street	Maryville
Maryville Community Center	1407 North Country Club Road	Maryville
Mozingo Lake Recreation Park	25055 Liberty Road	Maryville
Nodaway County Community Building	25669 Hawk Road	Maryville
Northeast Nodaway Ball Field	126 South High School Avenue	Ravenwood
Ravenwood City Park	East State Street	Ravenwood
Ravenwood Community Building	West Hawk Street	Ravenwood
Robertson-Crist Park	519 Prather Avenue	Maryville
Sisson-Eek Park	406 West Lincoln Street	Maryville
Sunrise Park	1316 East Halsey Street	Maryville
Thomson Splash 'N' Play	1812 S. Munn Ave	Maryville
Wabash Park	915 North Mulberry Street	Maryville
Pickering City Park	West 5 <sup>th</sup> and South Wallis Streets	Pickering
Pickering Community Building	206 E 4 <sup>th</sup> Street	Pickering
Burlington Junction City Park	South Clarinda and South Davis Streets	Burlington Junction
Hopkins Community Building	123 South 3 <sup>rd</sup> Street	Hopkins
Skidmore City Park	Washington and Adams Streets	Skidmore

Source: County and community websites, local sources.

**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.

Nodaway County has seven listings on the National Register of Historic Places. Another listing, the Big Pump of Consumer Oil Company of Maryville was moved to King City, Missouri after it was listed in 1980. Table 3.12 shows the remaining properties on the register.

**Table 3.12. Nodaway County Properties on the National Register of Historic Places**

Property	Address	City	Date Listed
Administration Building	800 University Drive	Maryville	2010
Caleb Burns Home	422 West Second Street	Maryville	1980
Frank House	307 East Seventh Street	Maryville	1983
Thomas Gaunt House	703 College Avenue	Maryville	1979
Nodaway County Courthouse	Third and Main Streets	Maryville	1979
Possum Walk Hotel	Longitude: 95.5.10 N Latitude: 40.29.46 W	Burlington Junction	1983
Simpson's College	515 East Jackson Street	Graham	1978

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

**Economic Resources:**

Nodaway County houses many manufacturing companies or other businesses that employ large numbers of people. Table 3.13 lists the employers with the largest workforce in Nodaway County.

**Table 3.13. Major Non-Government Employers in Nodaway County**

Employer Name	Main Locations	Product or Service	Employees
A&G Restaurant	Maryville	Food Service	50
Association of Group Homes	Maryville	Residential Care	50
Benedictine Convent-Perpetual	Clyde*	Religious	50
Community Services Inc	Maryville	Individual/Family Advocacy Services	85
Focus Staffing Agency	Maryville	Staffing Agency	350
Jefferson C-123 School District	Conception Junction	School	44
Maryville R-II School District	Maryville	School	168
Life Care Ctr of America	Maryville	Care Retirement Communities	50-99
Maryville Living Center	Maryville	Residential Care	88
Maryville Treatment Center	Maryville	Healthcare	240
McDonald's	Maryville	Food Service	60
NOCOMO Industries	Maryville	Wood/Pallet Manufacturing	68
Nodaway Nursing Home	Maryville	Residential Care	55
Nodaway-Holt R-VII School District	Graham	School	47
Northeast Nodaway R-V	Ravenwood	School	46
North Nodaway R-VI	Hopkins/Pickering	School	49
Parkdale Manor	Maryville	Residential Care	50

Employer Name	Main Locations	Product or Service	Employees
Pizza Hut	Maryville	Food Service	50
St. Francis Family Life Svc	Maryville	Medical Services	69
South Nodaway County R-IV School District	Barnard	School	39
United Services	Maryville	Electronics/Internet/Cable	55
Village Care Ctr Inc	Maryville	Residential Care	55
Walmart Supercenter	Maryville	Department Store	190
West Nodaway R-1	Burlington Junction	School	62
Aramark Corp	Maryville	Food Service	200
Deluxe Corp	Maryville	Commercial Printing	150
Federal-Mogul Corp	Maryville	Sheet Metal Manufacturing	200
Hy-Vee	Maryville	Grocery Stores	100
Laclede Chain	Maryville	Steel Manufacturer	130
Nucor-LMP Inc	Maryville	Steel Manufacturer	150
Northwest Missouri State University	Maryville	Higher Education	690
SSM Health St. Francis Hospital	Maryville	Medical Services	499
Houston J L Co	Hopkins	Steel Storage Tank Manufacturer	51
Kawasaki	Maryville	Heavy Equipment Manufacturer	750

Source: Data Collection Questionnaires; local Economic Development Commissions, Reference USA

#### Agriculture:

According to the 2017 Census of Agriculture, Nodaway County consists of 1,133 farms that cover 439,787 acres of land. The average farm size in Nodaway County is 388 acres, and the average sales per farm constitute \$134,308. The top crops in the county are soybeans, corn, forage-land used for hay, and wheat. Most livestock in the county are cattle, ranking 29 out of the 113 counties in Missouri; however, sheep and lambs rank 19 in the state. In Nodaway County, there are 608 farm jobs. This makes up 5.5 percent of the workforce in Nodaway County.

The following Table 3.14 shows information about agriculture-related jobs in Nodaway County.

**Table 3.14. Agriculture-Related Jobs in Nodaway County**

Hired Farm Labor	2017 Census of Agriculture
Farms	291
Workers	571
Payroll (\$1000)	4,473
Unpaid Workers	2017 Census of Agriculture
Farms	435
Workers	878

Source: USDA 2017 Census of Agriculture



## 3.3 Land Use and Development

This section provides information on land use and development in Nodaway County and the incorporated communities within its boundaries.

### 3.3.1 Development Since Previous Plan Update

Development in Nodaway County has been increasing since the adoption of the 2014 Hazard Mitigation Plan. The county as a whole has decreased in population. Table 3.15 summarizes the trends in population for the different jurisdictions.

**Table 3.15. County Population Growth, 2010-2020**

Jurisdiction	Total Population 2020	Total population 2010	2010-2020 #Change	2010-2020 %Change
<b>Nodaway County</b>	<b>21,241</b>	<b>23,370</b>	<b>-2,129</b>	<b>-9.1%</b>
Arkoe	56	68	-12	-17.6%
Barnard	201	221	-20	-9.0%
Burlington Junction	521	537	-16	-3.0%
Clearmont	158	170	-12	-7.1%
Clyde*	55	82	-27	-32.9%
Conception Junction	177	198	-21	-10.9%
Elmo	114	168	-54	-32.1%
Graham	147	171	-24	-14.0%
Guilford	60	85	-25	-29.4%
Hopkins	472	532	-60	-11.3%
Maryville	10,633	11,972	-1,339	-11.2%
Parnell	135	191	-56	-29.3%
Pickering	149	160	-11	-6.9%
Ravenwood	439	440	-1	-0.2%
Skidmore	245	284	-39	-13.7%
Unincorporated	7,679	8,091	-412	-5.1%

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

Population growth or decline can be accompanied by increases or decreases in the number of housing units. Following a population decrease between 2010-2020, the number of housing units also decreased in Nodaway County. Table 3.16 shows the changes in the number of housing units in each jurisdiction within Nodaway County.

**Table 3.16. Change in Housing Units, 2010-2020**

Jurisdiction	Housing units 2020	Housing Units 2010	2010-2020 # Change	2010-2020 % change
<b>Nodaway County</b>	<b>9,449</b>	<b>9,524</b>	<b>-75</b>	<b>-0.8%</b>
Arkoe	24	27	-3	-12.5%
Barnard	97	107	-10	-10.3%
Burlington Junction	246	266	-20	-8.1%
Clearmont	97	110	-13	-13.4%
Clyde*	23	30	-7	-30.4%
Conception Junction	85	97	-12	-14.1%

Jurisdiction	Housing units 2020	Housing Units 2010	2010-2020 # Change	2010-2020 % change
Elmo	73	83	-10	-13.7%
Graham	92	89	3	3.3%
Guilford	39	49	-10	-25.6%
Hopkins	218	261	-43	-19.7%
Maryville	4,868	4,543	325	6.7%
Parnell	83	127	-44	-53%
Pickering	75	92	-17	-22.7%
Ravenwood	191	208	-17	-8.9%
Skidmore	138	172	-34	-24.6%
Unincorporated	3,100	3,263	-163	-5.0%%

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

### 3.3.2 Future Land Use and Development

#### ***Unincorporated Nodaway County***

Since the last plan update, the County has worked to improve development in the surrounding areas. Within the county, Mazingo Conference Center, Northwest Missouri State University Athletic Facility, and the FCS Bank has been constructed since the last plan update. The new development in Nodaway County has increased economic vulnerabilities to the area, but it has also decreased the risk of old infrastructure posing hazards to the population. Unincorporated Nodaway County does not have a comprehensive plan. Nodaway County has experienced a 9.1% decrease from 2010-2020. The County plans to construct 25-30 new bridges within the next five years. A committee has been researching the feasibility of developing a new County Fair/Exposition site.

#### ***Town of Arkoe***

Little-to-no development has taken place since the adoption of the 2018 Hazard Mitigation Plan; therefore, new development has not affected Arkoe's vulnerability. The Town of Arkoe currently has no comprehensive plan. Arkoe has experienced a 17.6 % decrease in population from 2010-2020. No new development is expected to occur in known hazard areas, and no new facilities or infrastructure are planned for construction during the next five years.

#### ***City of Barnard***

Little-to-no development has taken place since the adoption of the 2018 Hazard Mitigation Plan; therefore, new development has not affected Barnard's vulnerability. The City of Barnard currently has no comprehensive plan. Barnard has experienced a 9% decrease in population from 2000-2010. No new development is expected to occur in known hazard areas; however, within the next five years, Barnard will be constructing a CDBG wastewater project. At the time of this Plan update, the project is in the design phase.

#### ***City of Burlington Junction***

Little-to-no development has taken place since the adoption of the 2018 Hazard Mitigation Plan; therefore, new development has not affected Burlington Junction's vulnerability. The City of Burlington Junction currently has no comprehensive plan. Burlington Junction has experienced a 3% decrease in population from 2010-2020. The city currently has no future plans for development for the next five years.

#### ***City of Clearmont***

Little-to-no development has taken place since the adoption of the 2018 Hazard Mitigation Plan; therefore, new development has not affected Clearmont's vulnerability. The City of Clearmont

currently has no comprehensive plan. Clearmont has experienced a 7.1% decrease in population from 2010-2020. The city currently has no future plans for development for the next five years

### ***Village of Clyde***

Clyde has chosen not to participate in this update. Little-to-no development has taken place since the adoption of the 2018 Hazard Mitigation Plan; therefore, new development has not affected Clyde's vulnerability. The Village of Clyde currently has no comprehensive plan. Clyde has experienced a 32.9% increase in population from 2010-2020. The Village currently has no future plans for development for the next five years.

### ***City of Conception Junction***

Little-to-no development has taken place since the adoption of the 2018 Hazard Mitigation Plan; therefore, new development has not affected Conception Junction's vulnerability. The City of Conception Junction currently has no comprehensive plan. Conception Junction has experienced a 10.9% decrease in population from 2010-2020. The city currently has no future plans for development for the next five years.

### ***City of Elmo***

Little-to-no development has taken place since the adoption of the 2018 Hazard Mitigation Plan; therefore, new development has not affected Elmo's vulnerability. The City of Elmo currently has no comprehensive plan. Elmo has experienced a 32.1% decrease in population from 2010-2020. The city currently has no future plans for development for the next five years.

### ***City of Graham***

Little-to-no development has taken place since the adoption of the 2018 Hazard Mitigation Plan; therefore, new development has not affected Graham's vulnerability. The City of Graham currently has no comprehensive plan. Graham has experienced a 14% decrease in population from 2010-2020. The City is planning to construct a new Post Office within the next five years.

### ***Village of Guilford***

Little-to-no development has taken place since the adoption of the 2018 Hazard Mitigation Plan; therefore, new development has not affected Guilford's vulnerability. The Village of Guilford currently has no comprehensive plan. Guilford has experienced a 29.4% decrease in population from 2010-2020. The Village currently has no future plans for development for the next five years.

### ***City of Hopkins***

Since the last plan update, the City of Hopkins has introduced businesses, such as Houston Polytank. This makes the City more susceptible to economic vulnerabilities. The City of Hopkins currently has no comprehensive plan. Hopkins has experienced an 11.3% decrease in population from 2010-2020. The City currently has no future plans for development for the next five years.

### ***City of Maryville***

Since the last plan update, the City of Maryville has constructed Mazingo Lake Conference Center, with adjacent hotel, and the Northwest Missouri State University Athletic Facility. The City has constructed a new facility for Maryville Public Safety. The development makes the City more economically and socially vulnerable. The City of Maryville has a comprehensive plan that was adopted in December of 2012. Maryville has experienced a 11.2% decrease in population from 2010-2020. For future development within the next five years, a major upgrade of South Main Street has commenced.

***City of Parnell***

Little-to-no development has taken place since the adoption of the 2014 Hazard Mitigation Plan; therefore, new development has not affected Parnell's vulnerability. The City of Parnell currently has no comprehensive plan. Parnell has experienced a 29.3%% decrease in population from 2010-2020. The City plans to construct a new water tower and waterlines within the next five years.

***City of Pickering***

Little-to-no development has taken place since the adoption of the 2014 Hazard Mitigation Plan; therefore, new development has not affected Pickering's vulnerability. The City of Pickering currently has no comprehensive plan. Pickering has experienced a 6.9% decrease in population from 2010-2020. The City currently has no future plans for development for the next five years.

***City of Ravenwood***

Little-to-no development has taken place since the adoption of the 2014 Hazard Mitigation Plan; therefore, new development has not affected Ravenwood's vulnerability. The City of Ravenwood currently has no comprehensive plan. Ravenwood has experienced a 0.2% decrease in population from 2010-2020. The City plans to conduct a new wastewater facility within the next five years.

***City of Skidmore***

Since the last plan update, a new restaurant has developed within city limits. This makes Skidmore more vulnerable to economic complications. The City of Skidmore currently has no comprehensive plan. Skidmore has experienced a 13.7% decrease in population from 2010-2020. The city plans to improve the existing sewer plant and delivery systems within the next five years.

**School Districts' Future Development*****Jefferson C-123 School District***

Since the last plan update, Jefferson C-123 has constructed a new gymnasium. The new gymnasium decreases the vulnerability of the hazards that old infrastructure poses. Jefferson C-123 expects its enrollment to decrease by 4% within the next five years. The school has no plans for future development for the next five years.

***Maryville R-II School District***

Since the last plan update, Maryville R-II has constructed a new cafeteria addition to Eugene Field Elementary and a new performing arts center and FEMA storm shelter to Maryville High School. A new Central Office is being built adjacent to the high school. The new FEMA storm shelter that the school district has built, has decreased the risk of severe weather posing harm toward the lives of students and faculty. Maryville R-II expects no significant changes in enrollment for the next five years. The school district does not have any plans for future development for the next five years.

***Nodaway-Holt R-VII School District***

Nodaway-Holt has not had any significant development since the last plan update; therefore, new development has not affected the vulnerability of Nodaway-Holt. Nodaway-Holt expects enrollment to remain steady with roughly 210 students each year for the next five years. Nodaway-Holt plans to construct an addition to the current high school within the next five years.

***North Nodaway County R-VI School District***

North Nodaway has not had any significant development since the last plan update; therefore, new development has not affected the vulnerability of North Nodaway. North Nodaway does not have any plans for future development for the next five years. The school district expects the enrollment rate to stay at the current level for the next five years.

### ***Northeast Nodaway County R-V School District***

Since the last plan update, Northeast Nodaway has added a new library, enclosure between the main building and the shop, two classrooms, a conference room, and a weight room. This has reduced the vulnerabilities in hazard prone areas because old infrastructure has been updated. Northeast Nodaway expects enrollment to stay the same for the next five years. Northeast Nodaway has recently added a new concession stand/press box, a new baseball field, and a track.

### ***Northwest Missouri State University***

Since the last update, Northwest Missouri State University has constructed the Hughes Field House and Foster Fitness Center and has remodeled Franken Hall. The University has also developed a partnership with North Kansas City School District (Gladstone). The new development has made the University more economically vulnerable; however, the remodeling of Franken Hall has reduced the vulnerabilities of the safety hazards that the Hall posed on students and faculty in the dorm.

Northwest has plans to demo a variety of older dorms, which are no longer in use. The University expects an 8% increase in enrollment for the next year, but enrollment for the next four years is undetermined. Northwest Missouri State University has recently remodeled Wells Hall, replaced windows in Brown Hall and Colden Hall, and added a new agricultural learning center.

### ***South Nodaway County R-IV School District***

Since the last plan update, South Nodaway has added an elementary school to Barnard. They have also added a baseball field house, to be used as a shelter if needed. This new development has introduced a new building to be vulnerable to hazards within the City of Barnard. South Nodaway plans to decrease in enrollment for the next five years.

### ***West Nodaway County R-I School District***

West Nodaway has not had any significant development since the last plan update; therefore, new development has not affected West Nodaway's vulnerabilities. West Nodaway plans for enrollment to remain steady with enrollment remaining around 260 students PK-12. The district plans to fluctuate between a 4% increase or decrease in enrollment for the next five years. West Nodaway chose to eliminate the shatterproof glass above the lockers in the high school building and replace it with walls constructed to code and safety measures. The district has also replaced the fencing at the baseball field, while also redesigning the field to decrease weather damage.

## **Special Districts' Future Development**

### ***Nodaway County Ambulance District***

Within the next five years, the Nodaway County Ambulance District plans to continue training members and update equipment as needed.

### ***Nodaway County Fire Districts***

Within the next five years, the fire districts in Nodaway County plan to develop an automatic mutual aid agreement among the fire districts for structure fires.

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

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

## **Hazard Profiles**

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

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

### Hazard Description:

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

### Geographic Location:

This description includes the geographic location of the hazard in the planning area. Where available, maps will be used to indicate the specific locations of the planning area that are vulnerable to the subject hazard. For some hazards, the entire planning area is at risk.

### Severity/Magnitude/Extent:

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

### Previous Occurrences:

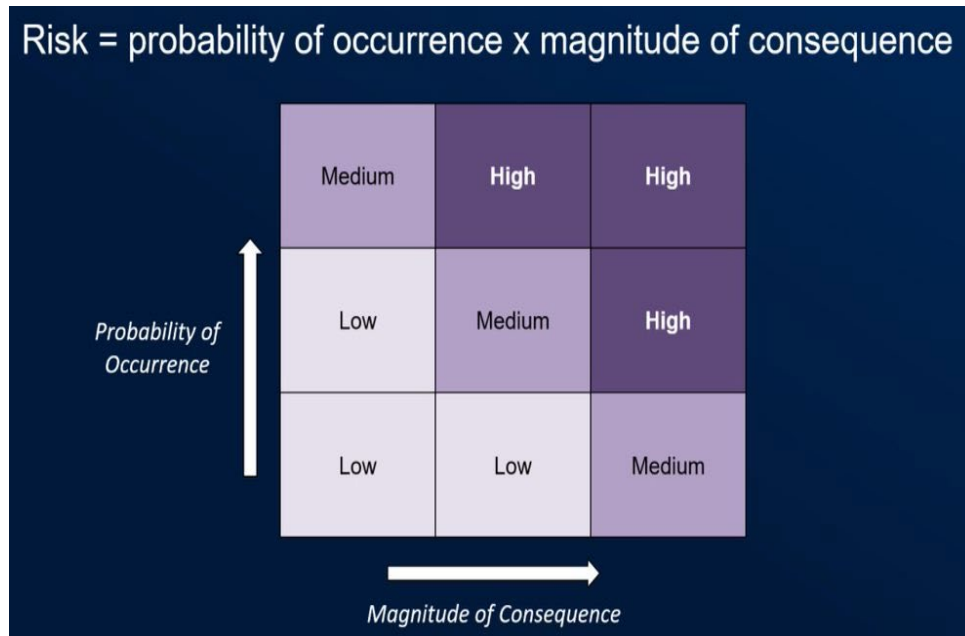
This section includes available information on historic incidents and their impacts. Historic event records form a solid basis for probability calculations.

### Probability of Future Occurrence:

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

The risk calculator illustrated in Figure 3.4 helps to visualize the analysis performed on each hazard of this plan.

**Figure 3.4. Risk Calculator**



### **Vulnerability Assessments**

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

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

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

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

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

Following the hazard profile for each hazard will be the vulnerability assessment. The vulnerability assessment further defines and quantifies populations, buildings, critical facilities, and other community assets at risk of damage from natural hazards. The vulnerability assessments will be based on the best available county-level data, which is in the Missouri Hazard Mitigation Plan (2018). The county-level assessments in the State Plan were based on the following sources:

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

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

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

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

#### Vulnerability Overview

Each hazard included in the plan has a general statement of vulnerability. This statement defines if the hazard affects the entire region or if specific jurisdictions have greater vulnerabilities.

#### Potential Losses to Existing Development

When data is available, the potential losses to existing development is stated for each hazard. The rural nature of the region makes the available data an estimated value that may not reflect the true vulnerability.

#### Previous and Future Development

This section will include information about how changes in development have impacted the community's vulnerability to this hazard. Any changes in development that occurred in known hazard prone areas since the previous plan that have increased or decreased the community's vulnerability will be described. Since Nodaway County and most of the jurisdictions within the county are losing or maintaining population, there is not much future development anticipated in the county except for the City of Maryville.

#### 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 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.

## **3.4.1 Dam Failure**

### **Hazard Profile**

#### **Hazard Description**

A dam is defined as a barrier constructed across a watercourse for storage, control, or diversion of water. Dams are designed to help with flood control, stabilize a grade, provide water for livestock or fire protection, and/or for recreational activities. Dams are typically constructed of earth, rock, concrete, or mine tailings. Dam owners have primary responsibility for the safe design, operation, and maintenance of their dams. Dam owners also have the responsibility for inspections and for providing early warning of problems at the dam which could result in a dam failure.

A dam failure is characterized by an uncontrolled release of water from behind a dam. Flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation, poor construction, damage caused by wildlife, vandalism, and terrorism can all cause a dam to fail. Figure 3.5 illustrates

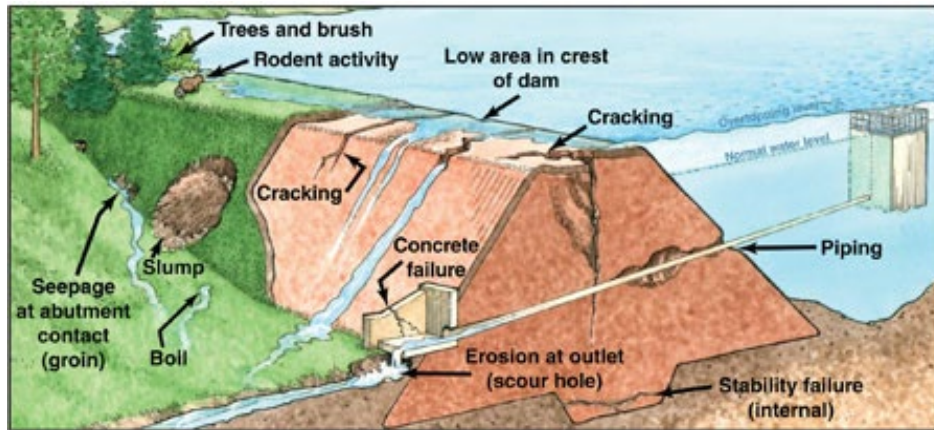


some of these common causes of dam failure. When a dam failure occurs, an enormous amount of water is suddenly released, destroying infrastructure and flooding the area downstream of the dam.

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.

**Figure 3.5. Causes of Dam Failure**



Source: United States Forest Service

Dams in Nodaway County are subject to classification by the State of Missouri and by the federal government. Table 3.17 shows the system of classification used by the Missouri Department of Natural Resources (MDNR). A hazard classification is assigned to each dam during the initial permit process.

**Table 3.17. MDNR Dam Hazard Classification Definitions**

Hazard Class	Definition
Class I	Represents the most severe threat to public safety based on the downstream environment
Class II	Represents a serious threat to public safety
Class III	Represents the least threat to public safety

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

The U.S. Army Corps of Engineers has compiled a National Inventory of Dams (NID) for the United States. The NID consists of dams meeting at least one of the following criteria:

- 1) High hazard classification - loss of human life is likely if the dam fails,
- 2) Significant hazard classification - possible loss of human life and likely significant property or environmental destruction,
- 3) Equal or exceed 25 feet in height and exceed 15 acre-feet in storage,
- 4) Equal or exceed 50 acre-feet storage and exceed 6 feet in height.

Table 3.18 gives information about the hazard classification system used in the National Inventory of Dams. There is not a direct correlation between the State Hazard classification and the NID

classifications. However, most dams that are in the State's Classes 1 and 2 are considered NID High Hazard Dams.

**Table 3.18. NID Dam Hazard Classification Definitions**

Hazard Class	Definition
Low Hazard	Where dam failure or operational errors result in no probable loss of human life and low economic and/or environmental losses
Significant Hazard	Where dam failure or operational errors result in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns
High Hazard	Where dam failure or operational errors will likely result in the loss of at least one human life

Source: National Inventory of Dams

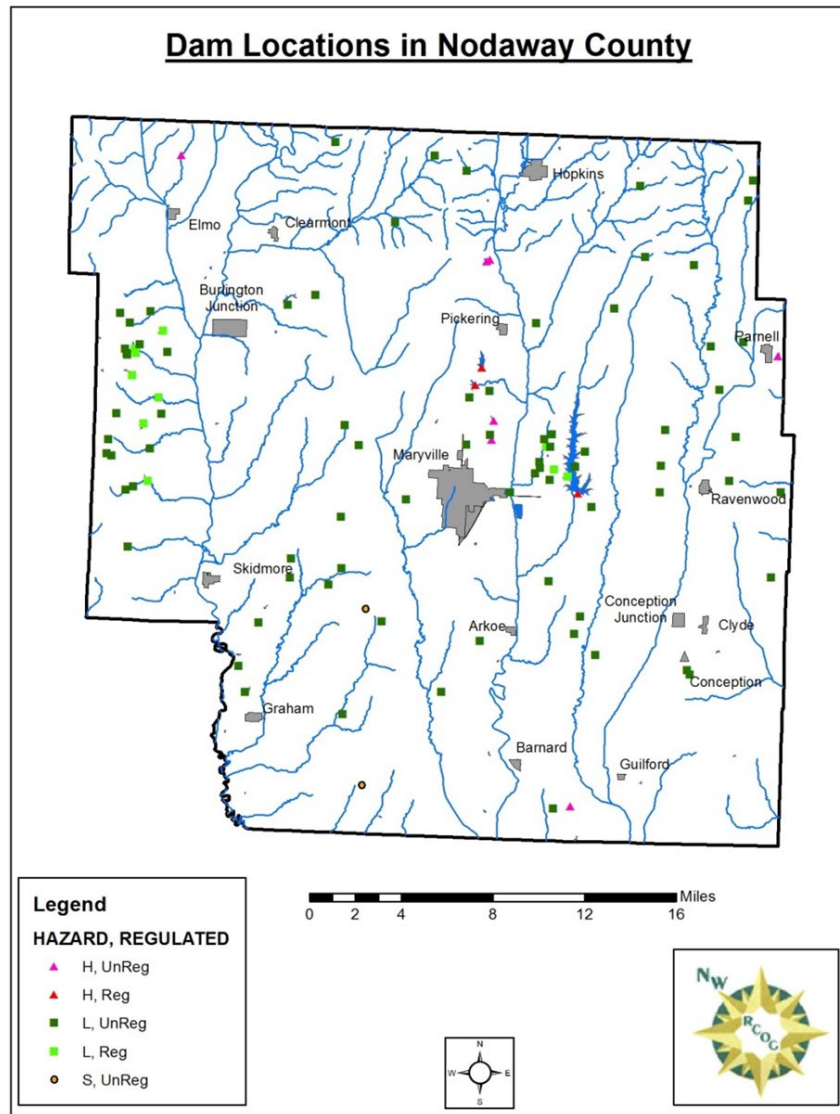
## Geographic Location

### *Dams in Planning Area*

The Missouri Dam and Reservoir Safety Program is leading an effort to help develop Emergency Action Plans, or EAPs, for regulated dams in the state. Completion of EAPs can help save lives and reduce property damage during a dam safety emergency. Plans increase preparedness by organizing emergency contact information and evacuation procedures into an official document and by providing enhanced communications between dam owners and local emergency management officials.

The Missouri Department of Natural Resources (MDNR) has identified 101 dams in Nodaway County. There is one Class 1 dam, ten Class 2 dams, thirty-eight Class 3 dams, while the rest have not been given a Hazard Class rating by the MDNR. The same 101 dams are listed on the NID, 27 are owned by local governments, two are owned by the Missouri Department of Conservation and the rest are privately owned. The location of all dams is shown in Figure 3.5.

**Figure 3.5. Location of Dams in Nodaway County**



Missouri dams 35 feet or more in height are regulated by the state (10 CSR 22-1.020 (13)) and dam owners are required to complete a plan. Nodaway County has 13 State regulated dams, one which has a hazard classification of 1 and two dams have a hazard classification of 2. There are 8 dams in the county which the NID has given the highest hazard class rating for dams. These structures are listed in Table 3.19. Two of the county's dams have been classified in the significant hazard category. Besides giving the distance and location of the nearest downstream city, the table also lists the NID storage capacity of each dam. This quantity of water is given in acre-feet, which is the volume of water necessary to cover an acre of surface area with a depth of one foot. One acre-foot is equal to 325,851 gallons of water.

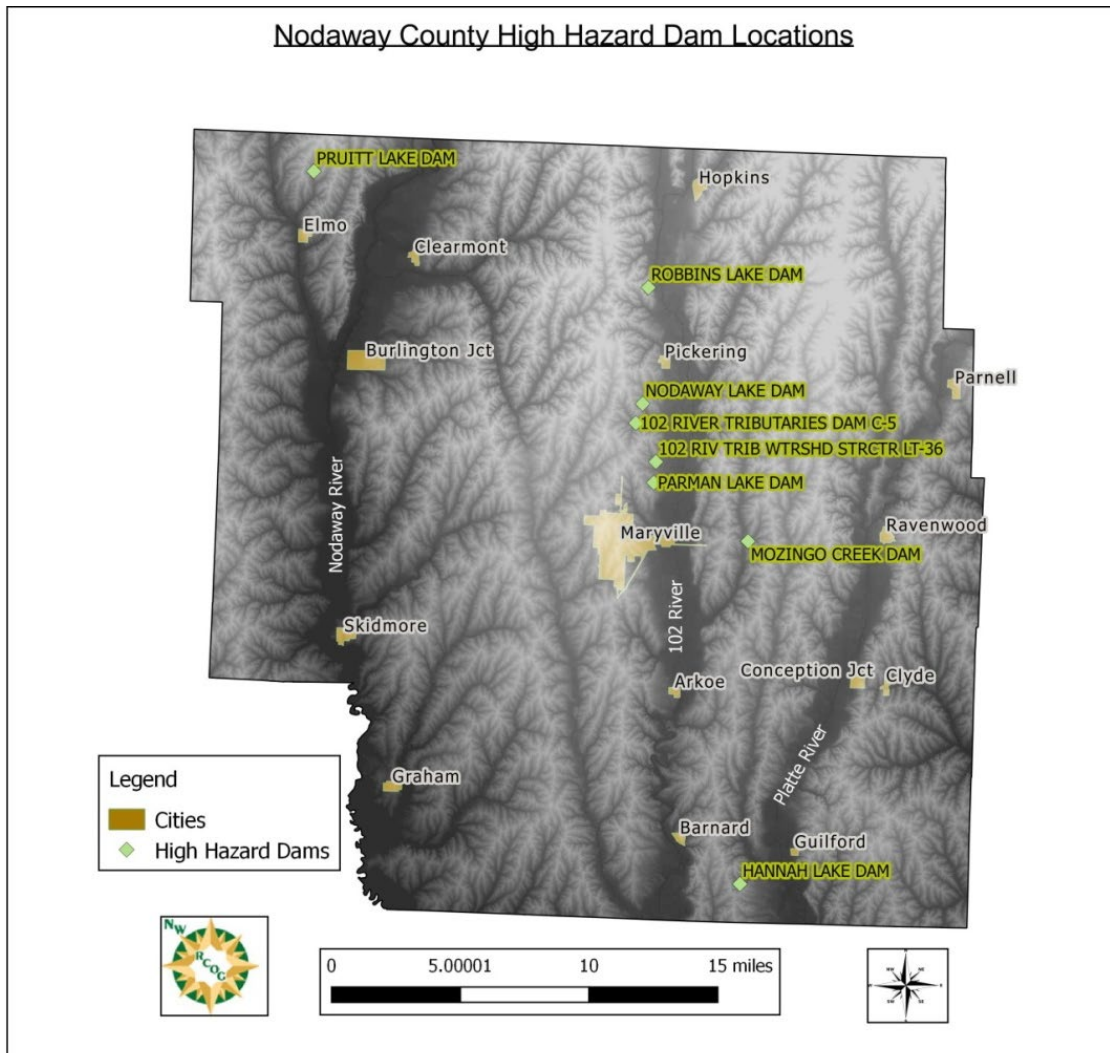
**Table 3.19. High Hazard Dams in the Nodaway County Planning Area**

Dam Name	Emergency Action Plan (EAP)AP	Dam Height (Ft)	Normal Storage (Acre-Ft)	Last Inspection Date	River	Nearest Downstream City	Distance To Nearest City (Miles)	Dam Owner
Nodaway Lake Dam	Yes	55	1,716	12/16/2014	Tr-Canal Branch	Maryville	3	Missouri Dept. of Conservation
Parman Lake Dam	No	25	80	Not known	Tr-102 River	Arkoe	11	Dr. Russell Parman
102 River Tributaries Dam C-5	Yes	36	990	08/04/2014	Canal Branch 102 River	Maryville	2	102 Riv Trib Wrsh Subdst
Pruitt Lake Dam	No	30	104	Not known	Jerry Creek	Elmo	0	Charles Pruitt
Mozingo Creek Dam	Yes	77	1,275	03/20/2014	Mozingo Creek	Arkoe	7	City of Maryville
102 Riv Trib Wtrshd Strctr Lt-36	No	30	96	Not Known	Tr-102 River	Arkoe	0	102 Riv Trib Wrsh Subdst
Robbins Lake Dam Downstream	No	50	268	05/26/1993	Tr-102 River	Pickering	3	Rancho del Rayo, inc.
Hannah Lake Dam	No	25	80	Not Known	Tr-Long Branch Platte River	Guilford	1	John D. Hannah, Jr.
Homer Lawrence Lake Dam	No	25	50	Not Known	Trib Coal Creek/Nodaway River	Nodway	30	Private

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

Six of Nodaway County's high hazard dams are in the 102 River watershed. Pickering is located downstream of the Robbins Lake Dam. The communities of Maryville, Arkoe, and Barnard are all located downstream of other dams in the 102 River watershed. In the Nodaway River watershed, Elmo is downstream from the Pruitt Lake Dam. The locations of High Hazard Dams are shown in Figure 3.6.

**Figure 3.6. High Hazard Dam Locations in Nodaway County**

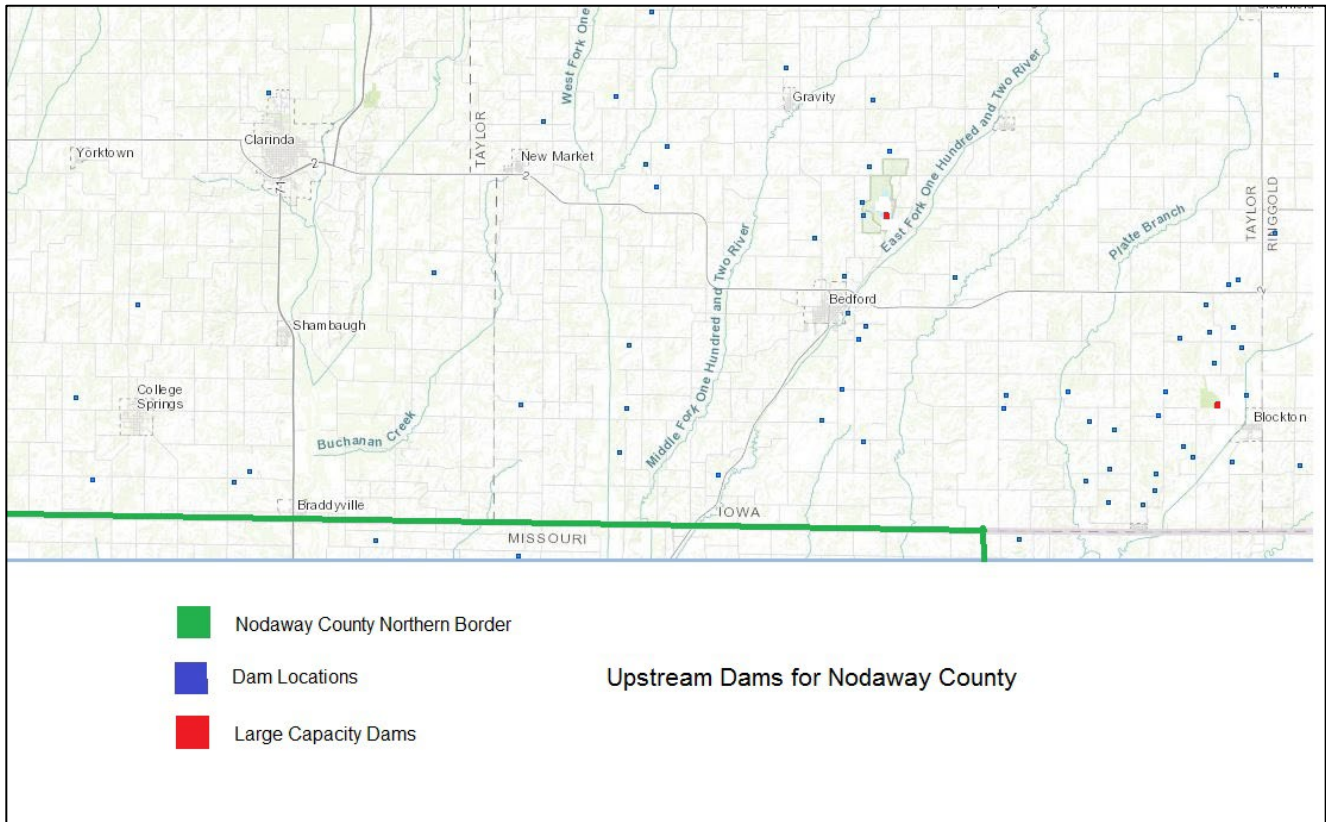


Source: U.S. Army Corps of Engineers, Missouri Department of Natural Resources

*Upstream Dams Outside the Planning Area*

There are numerous dams on the main branches of the 102 River, Platte River and Nodaway Rivers and their tributaries upstream from Nodaway County in Taylor and Page Counties in Iowa. In Figure 3.7, the location of these dams is indicated. A dam failure in any of the upstream dams does carry the risk of flooding for assets near these rivers. The Blockton 2027 dam and the Lake of Three Fires dam, indicated as red squares on the map, have NID storage capacities of 3,021 acre feet and 2,100 acre feet, respectively. These dams are both over 30 feet in height and a failure could threaten lives and assets downstream. The communities of Hopkins, Pickering, Maryville, Arkoe, and Barnard are close to the floodplain of the 102 River. The floodplain of the Platte River is close to the jurisdictions of Parnell, Ravenwood, Conception Junction, and Guilford.

**Figure 3.7. Upstream Dams Outside Nodaway County**



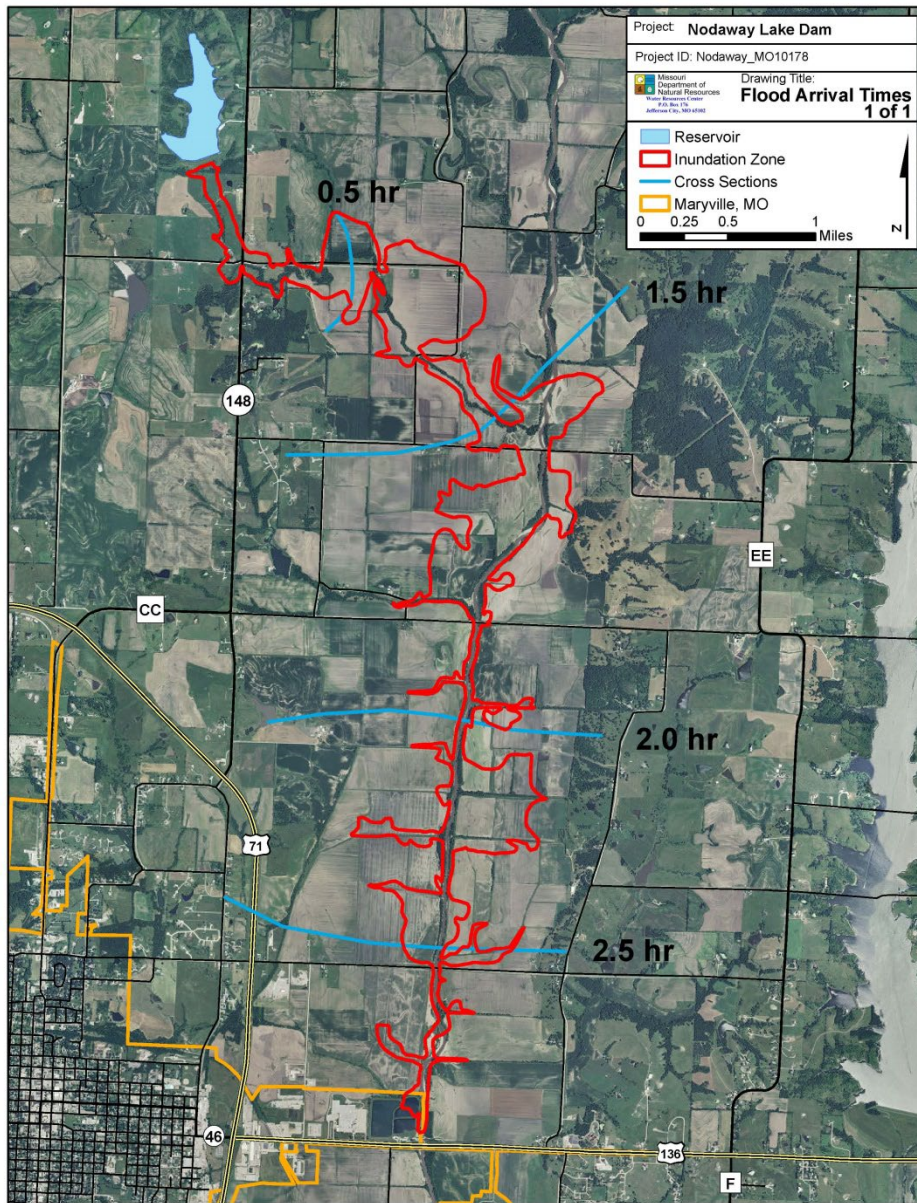
Source: U.S. Army Corps of Engineers

*Strength/Magnitude/Extent*

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

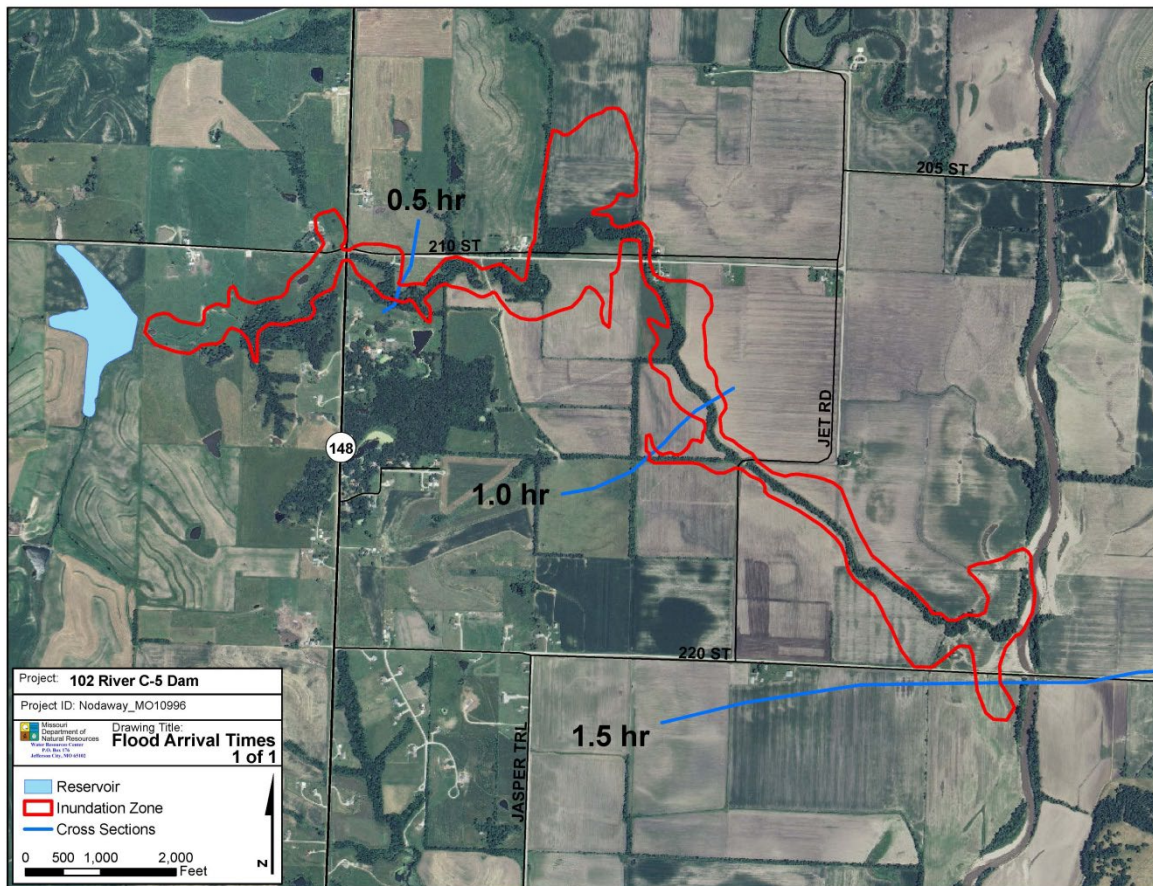
The Nodaway Lake Dam is a class 2 hazard dam with a lake area of 73 acres. Its normal storage capacity is 1,716 acre-feet of water. Inundation information obtained from Missouri Department of Natural Resources is shown in Figure 3.8. The blue lines represent a 30-minute time period after the failure of the dam. According to these calculations the flood waters would reach the city limits of Maryville in about three hours.

Figure 3.8. Nodaway Lake Dam Failure Inundation Zones



The 102 River C-5 dam is a class 2 hazard dam which impounds a 40-acre lake of a volume of 510 acre-feet of water. Figure 3.9 shows the areas flooded after a dam failure and the approximate time the surge of water would arrive.

Figure 3.9. 102 River C-5 Dam Failure Inundation Map

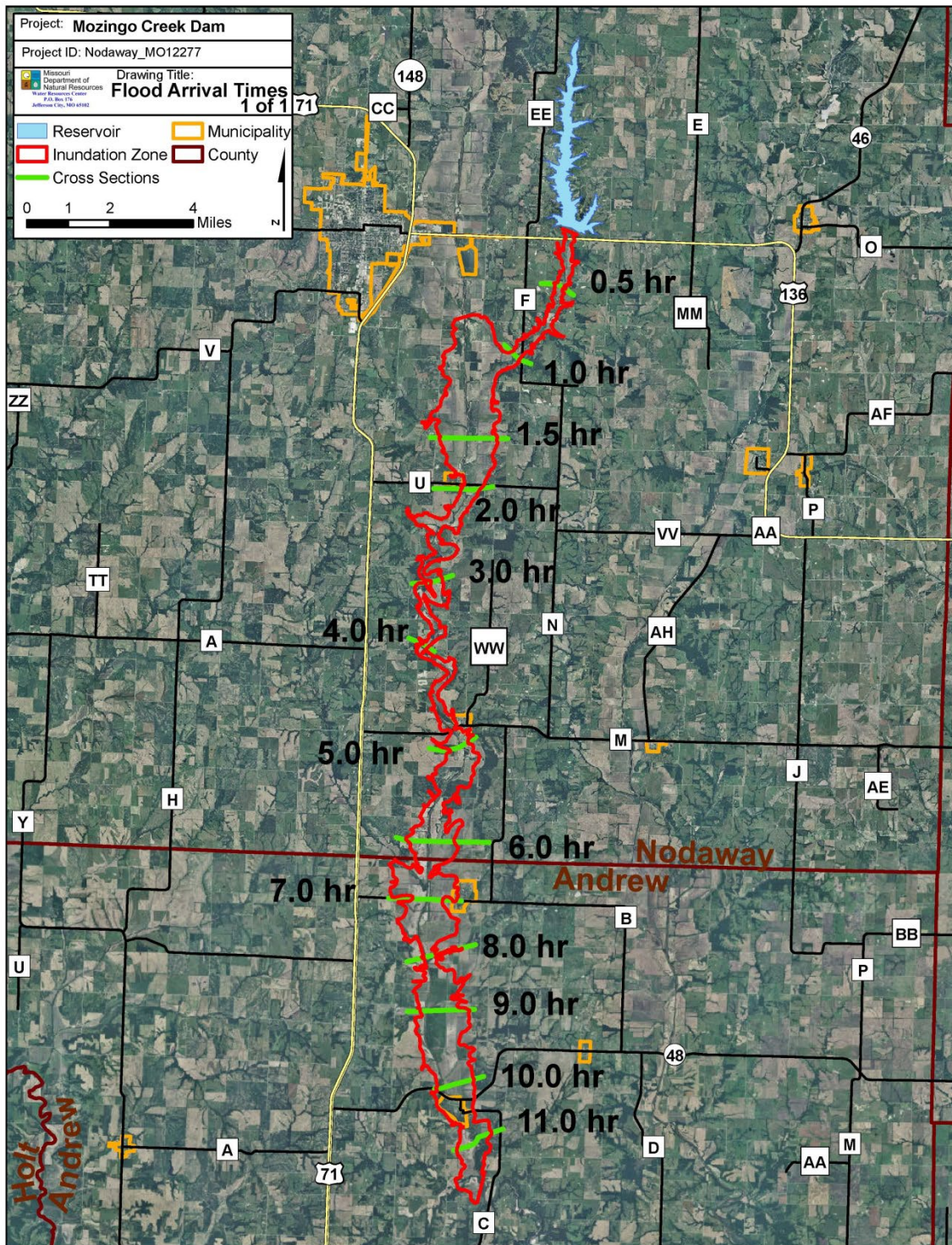


Source: Missouri Department of Natural Resources

The final dam in Nodaway County for which there is inundation information available is the Mozingo Creek Dam. This dam was finished in 1992 with a height of 77 feet and a maximum storage capacity of 41,750 acre-feet. This is a class 1 high hazard dam whose lake provides recreational opportunities for the area as well as a water supply to Maryville and the rural water district serving the county. The map showing the affected areas in case of a breach is Figure 3.10. Details of the structures in the inundation zones for Mozingo Creek Dam and the other two dams will be provided in the vulnerability discussion for this hazard.



Figure 3.10. Mozingo Creek Dam Failure Inundation Map



Source: Missouri Department of Natural Resources

### *Previous Occurrences*

Thousands of people have been injured, many killed, and billions of dollars of property damaged by dam failures in the United States. The problem of unsafe dams in Missouri was underscored by dam failures at Lawrenceton in 1968, Washington County in 1975, Fredericktown in 1977, Taum Sauk in 2005, and a near failure in Franklin County in 1978. There have been 26 recorded dam failures in Missouri over the last 100 years. One drowning is recorded among all of these disasters. There are no known instances of dam failure in Nodaway County which caused injury, loss of life, or that imposed a considerable cost.

Stanford University's National Performance of Dams Program does document four incidents related to dam safety in Nodaway County. Twice, on August 10, 1993 and on July 7, 1994 Mozingo Creek Dam experienced inflow floods. Due to heavy precipitation in the watershed over a short period of time, the level of the reservoir increased rapidly. However, the level did not reach a height to flow down the emergency spillway so there was not an uncontrolled release of water from the lake.

On May 26, 1996 after heavy precipitation there was an embankment slide along the reservoir of the Robbins Lake Dam. The integrity of the dam was not compromised by this event and emergency action was not required. Finally, on December 4, 1996, excessive debris was reported in the reservoir of 102 River Tributary Watershed Structure LT-36. The cause or remedy of this situation was unknown, but no uncontrolled release of water occurred.

### *Probability of Future Occurrence*

The Dam and Reservoir Safety Program of the Department of Natural Resources is responsible for the inspection of any of the state's regulated dams. All the state regulated high hazard dams were inspected in 2014. The Nodaway Lake Dam was last inspected in 2017. Four of the County's dams were inspected on the federal level by the Natural Resources Conservation Service.

As stated earlier, 26 dam failures have occurred within the state of Missouri over the past 100 years. However, Nodaway County has experienced no such event. Therefore, the probability of a dam failure within Nodaway County's boundaries remains at 0%. (0 events/100 years = 0% probability). However, for the purposes of this assessment, dam failure and its associated impacts cannot be eliminated from the realm of possibility. In order to allow for a risk assessment, the probability of this event has been included as less than 10%.

### *Changing Future Conditions Considerations:*

One of the consequences of changing climate has been rain events with above normal amounts and rates of precipitation. As the levels of precipitation increase, the dams are going to experience higher levels of pressure, following that, there is an increased amount of dam failures.

## **Vulnerability**

### **Vulnerability Overview**

Most of Nodaway County's vulnerability in the event of a dam failure is loss of agriculture assets. None of the school buildings appear to be at risk. Several communities have dams located upstream from them but again it is not easy to ascertain how many lives or how much property would be affected in a dam failure. Some of the dams are located close enough to major highways that it appears that a compromise in the integrity of a dam could threaten to close or damage roadways.

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

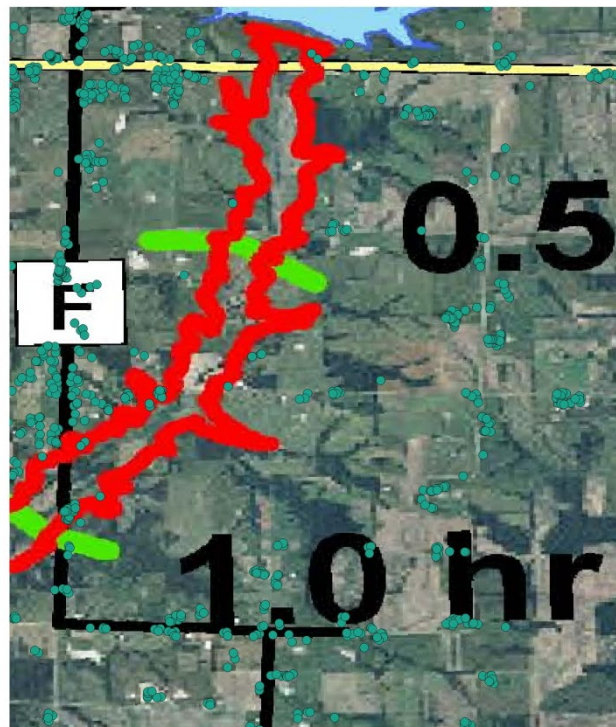
The preliminary data for the 2018 update to the Missouri State Hazard Mitigation plan was made available online. The information concerning the vulnerability of Nodaway County to dam failure is provided in Table 3.20 and Figure 3.11 shows the inundation area for Mozingo Lake.

**Table 3.20. Nodaway County Dam Failure Vulnerability**

# of Class 1 dams	# of Class 2 dams	# of Class 3 dams	Estimated # of buildings	Estimated Total Building exposure	Estimated population exposure
1	2	10	39	\$11,350,283	21

Source: Missouri 2018 Hazard Mitigation Plan

**Figure 3.11. Mozingo Lake Inundation Map**



Mozingo Creek Dam: Structures Near Inundation Zone



Source: Missouri Department of Natural Resources

### Previous and Future Development

Nodaway County has been proactive in the placement of dams to ensure population areas would not be in the path of released water in the event of a dam failure. As shown in the inundation maps, most of the assets in the zones are agricultural in nature. The county has monitored and discouraged any development in areas that would be affected by a dam failure.

### Hazard Summary by Jurisdiction

None of the county's school districts have assets that lie in the inundation zones shown on the previous maps. The communities of Pickering, Maryville, Arkoe, and Barnard are all located close to the 102 River. In the event of failure of one of the high hazard dams located in this river's watershed, highways and properties near these communities would be affected, but it appears that the water would stay outside of their city limits.

### Problem Statement

Based on the data available, most of the damage that would be sustained in a dam failure would be to agricultural assets. Highways and roads could be washed out in a catastrophic failure. The

estimated number of buildings at risk in the county is 39 with a valuation of \$11,350,283. The county can reduce risks by limiting development in inundation zones. The ability to warn of this hazard should be included in all warning systems to facilitate the orderly evacuation of any population necessary to avoid putting lives at risk.

## 3.4.2 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**

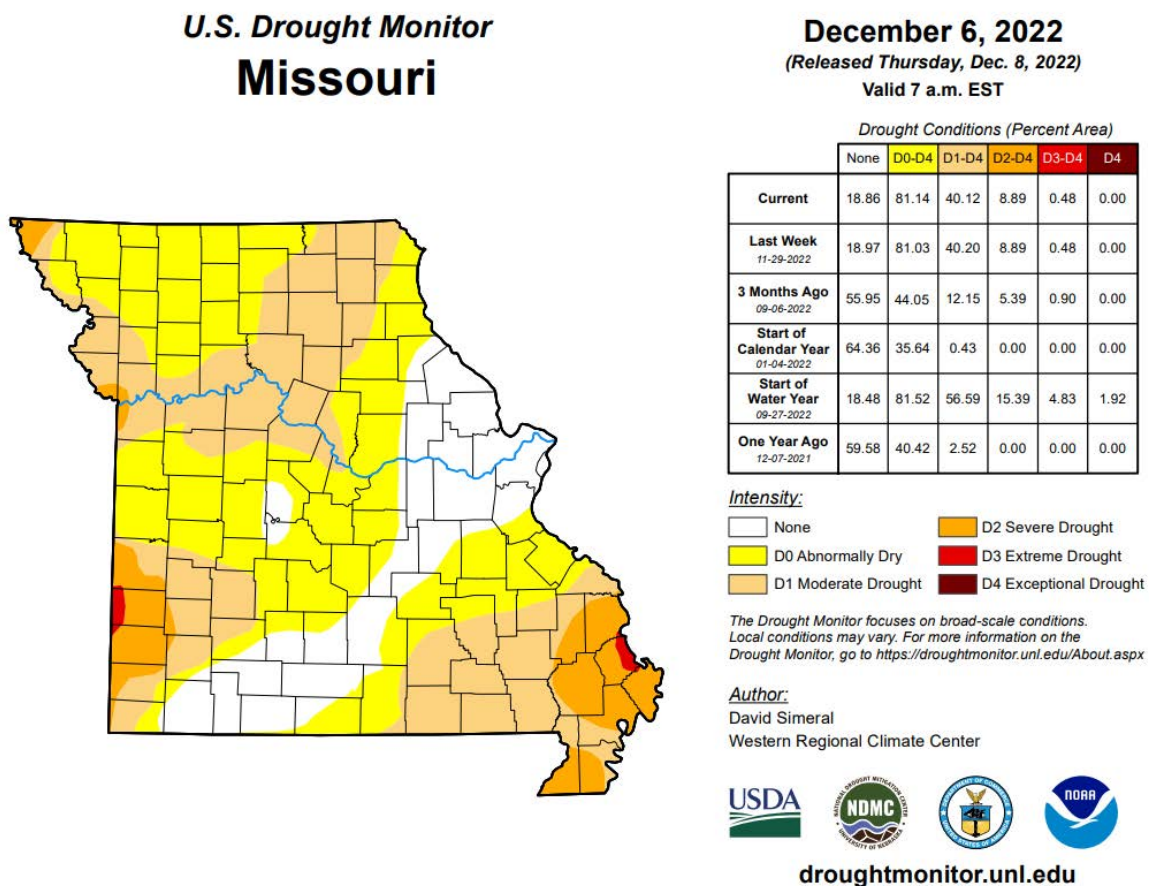
Northwest Missouri is a region that is subject to drought. The impacts are predominately concentrated in the agricultural sector, but when the drought period extends into the extreme, water supplies for communities are also affected. Since the previous Hazard Mitigation Plan was completed Nodaway County has experienced the historic drought of 2012 that affected a large area of the central United States.

Nodaway County has 75.5% of its surface land area in agriculture. This is a 22% reduction since 2007. However, the importance of agriculture in the region’s economy is still high. The annual market value of Nodaway County’s agriculture products was \$141,579,000 according to the most recent U. S. Census of Agriculture. Even though the most productive land in the county is found along the rivers and creeks, these areas are located throughout the county so that a drought in any part of the county affects agricultural assets.

## Strength/Magnitude/Extent

The National Drought Monitor Center at the University of Nebraska at Lincoln summarized the potential severity of drought as follows. Drought can create economic impacts on agriculture and related sectors, including forestry and fisheries, because of the reliance of these sectors on surface and subsurface water supplies. In addition to losses in yields in crop and livestock production, drought is associated with increases in insect infestations, plant disease, and wind erosion. Droughts also bring increased problems with insects and disease to forests and reduce growth. The incidence of forest and range fires increases substantially during extended droughts, which in turn place both human and wildlife populations at higher levels of risk. Income loss is another indicator used in assessing the impacts of drought because so many sectors are affected. Finally, while drought is rarely a direct cause of death, the associated heat, dust and stress can all contribute to increased mortality. Figure 3.12 below shows the drought condition in December of 2022. Nodaway County was facing moderate drought conditions.

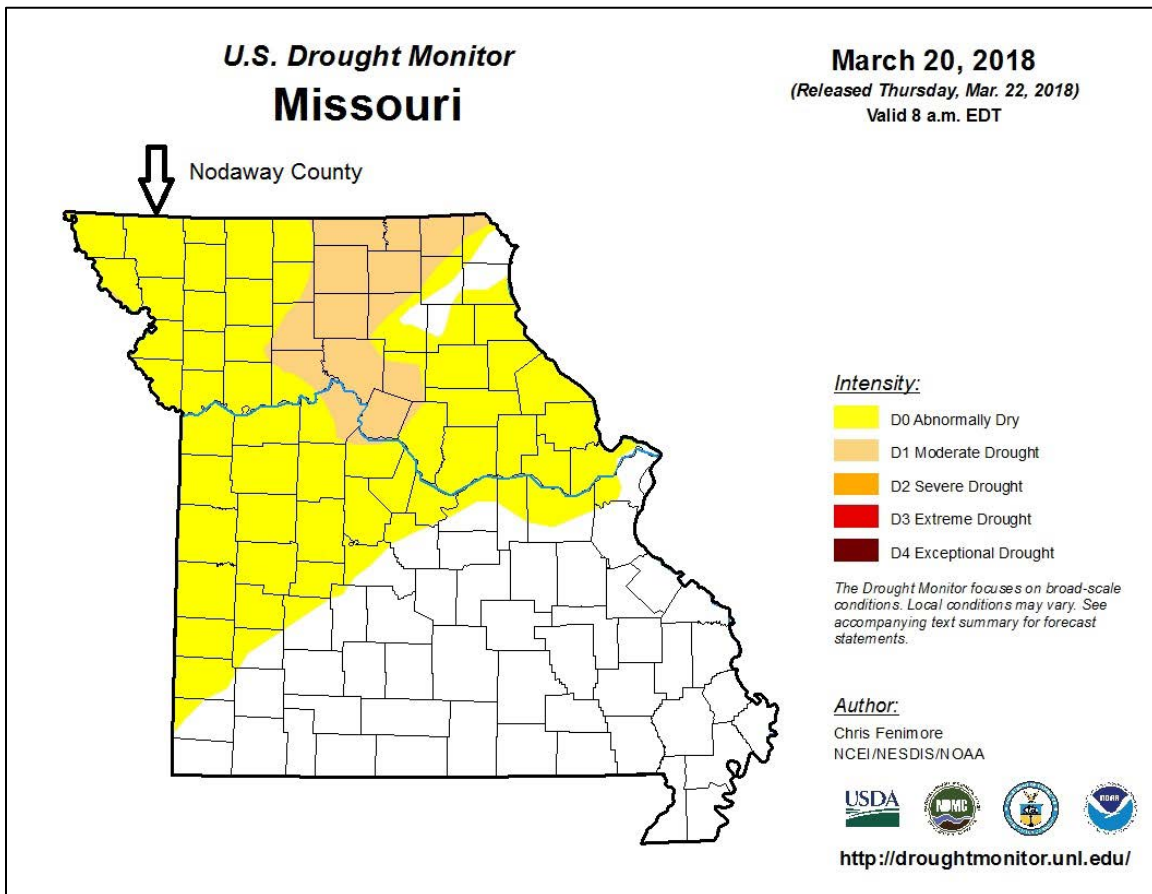
**Figure 3.12. U.S. Drought Monitor Map of Missouri on December 6, 2022**



Source: U.S. Drought Monitor, <http://droughtmonitor.unl.edu/>

Figure 3.13 shows the state of Missouri in 2018, when abnormally dry conditions were present in Nodaway County.

**Figure 3.13. U.S. Drought Monitor Map of Missouri on March 20, 2018**



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

In the past 10 years, Nodaway County was subject to periods of drought that resulted in crop indemnities. The year of the highest losses was 2012, when a prolonged drought caused \$23,943,468 worth of damage throughout the county. The crops affected by drought in Nodaway County over the past 10 years were corn, soybeans and wheat. The average annual crop damage caused by droughts is \$3,089,253. Table 3.21 shows the amount of drought losses for each of the past 10 years.

**Table 3.21. USDA Indemnity Payments for Losses due to Drought 2013-2022**

Year	Crop	Losses
2013	Corn	\$3,593,609
	Soybeans	\$1,381,520
2014	Wheat	\$21,089
2015	No claims	\$0
2016	Soybeans	\$1,991
2017	Corn	\$5,874
	Soybeans	\$176,599
2018	Wheat	\$22,814
	Corn	\$4,864,639.8
	Soybeans	\$3,575,182

Year	Crop	Losses
2019	Wheat	\$611
	Corn	\$20,311
2020	Soybean	\$242,515
	Corn	\$243,514
2021	Wheat	\$9345
	Corn	\$45,278
	Soybeans	\$61,368
2022	Corn	\$15,444
	Soybeans	\$18,008
<b>Total</b>		\$14,299,711

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

Drought conditions have a large impact on the livestock producers of Nodaway County as well. The market value of the county’s livestock and poultry was listed at \$26,949,000 in the latest Census of Agriculture. Extended periods without precipitation can lead to shortages of pasture and hay crops. Ponds and wells that provide water for the animals can dry up, resulting in additional expenses or the liquidation of livestock herds.

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

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

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

The National Drought Mitigation Center uses a scale to show the intensity of drought that goes from D0 to D4. Figure 3.14 shows the correlation of this scale to the Palmer Index. Reports from NCEI Storm Database use the D0-D4 scale in their narratives.

**Figure 3.14. Drought Intensity Scales**

Category	Description	Possible Impacts	<u>Palmer Drought Severity Index (PDSI)</u>
D0	Abnormally Dry	Going into drought: <ul style="list-style-type: none"> <li>▪ short-term dryness slowing planting, growth of crops or pastures</li> </ul> Coming out of drought: <ul style="list-style-type: none"> <li>▪ some lingering water deficits</li> <li>▪ pastures or crops not fully recovered</li> </ul>	-1.0 to -1.9
D1	Moderate Drought	<ul style="list-style-type: none"> <li>▪ Some damage to crops, pastures</li> <li>▪ Streams, reservoirs, or wells low, some water shortages developing or imminent</li> <li>▪ Voluntary water-use restrictions requested</li> </ul>	-2.0 to -2.9
D2	Severe Drought	<ul style="list-style-type: none"> <li>▪ Crop or pasture losses likely</li> <li>▪ Water shortages common</li> <li>▪ Water restrictions imposed</li> </ul>	-3.0 to -3.9
D3	Extreme Drought	<ul style="list-style-type: none"> <li>▪ Major crop/pasture losses</li> <li>▪ Widespread water shortages or restrictions</li> </ul>	-4.0 to -4.9
D4	Exceptional Drought	<ul style="list-style-type: none"> <li>▪ Exceptional and widespread crop/pasture losses</li> <li>▪ Shortages of water in reservoirs, streams, and wells creating water emergencies</li> </ul>	-5.0 or less

Source: National Drought Mitigation Center, <http://droughtmonitor.unl.edu/AboutUs/ClassificationScheme.aspx>

The availability of water throughout the county has been improved in recent years with the expansion of the Nodaway County Public Water Supply District #1 (PWSD#1). PWSD#1 is a rural water system located in the Northwest corner of Missouri and is the largest rural water district, in terms of miles of pipe, in the State of Missouri. The District is supplied by the City Maryville Water Treatment Plant, whose source of water is the Mozingo Lake reservoir. The system consists of approximately 1200 miles of water main, 2400 service connections (including the municipalities of Clearmont and Skidmore), five elevated storage towers ranging in size from 110,000-135,000 gallons, three clear wells, and various pump stations.

**Previous Occurrences**

From 2002-2004, the region was again subjected to the impact of drought, though the cost and impacts were far greater. Drought conditions could be found in most of northwest Missouri. Water conservation measures, including restrictions on water usage, were implemented during this time period. The winter of 2002-2003 was particularly harsh, being the third driest winter on record since 1914. The drought continued through the summer of 2003 requiring the state to implement Phase 3 Conservation in many areas. Conditions improved with the arrival of spring 2004 which saw an increase in precipitation for the region. By June 2004, northwest Missouri was considered drought



free. The 2002-2004 drought left an indelible mark on the region. The estimated cost for Missouri's economic productivity (including agriculture) was \$621 million for 2002-2003. The costliest year was 2003, with losses estimated at \$575 million. During the 2012-2013 drought the agricultural losses across the state were estimated at over \$547 million. Eight-nine emergency cost-share assistance contracts were approved for Nodaway County because of this extended dry period.

More recently, around two-thirds of the County suffered Extreme Drought conditions in August of 2012. (See Figure 3.8). This started with a dry winter in 2011 and intensified and persisted through 2013. Narrative accounts of drought events are included in the following Table 3.22. The NCEI Storm Events Database did not contain any information on the 2002-2004 drought event.

Nodaway County shares drought history with the adjacent counties of northwest Missouri that have been subject to severe droughts over the past 20 years. The first quarter of 2013 began relatively drier than normal with a scarce amount of snow and other precipitation, leaving Northwest Missouri in a severe drought.

In the summer of 2018 drought conditions began to set in, and they lasted through the beginning of October. These conditions were ruled to be worse than a D2 level drought by the University of Nebraska, and the impacts were felt primarily in the later part of the year. Farmers took a crop loss on hay and corn and were forced to bail it for livestock or knock it down, instead. By the end of October, the drought came to an end with a 4-day stretch of rain, 6-9 inches falling in some areas.

**Table 3.22. Drought Event Reports for Nodaway County 2013-2022**

Start Date	End Date	Event Description
1/1/2013	1/31/2013	There have been several storm systems that have impacted the region in the last half of January. Most of the precipitation from these systems has fallen along and southeast of a Kansas City to Kirksville line. This has resulted in some improvement to the drought across portions of central to northern and northeastern Missouri. However, western and far northwestern Missouri remain in a severe drought (D2).
2/1/2013	2/28/2013	Short-term drought conditions continue to improve over northern Missouri, through the month of February 2013. Recent rains and snowstorms have led to this improvement in the short-term, with retention ponds, streams, and rivers, beginning to return to normal or near normal levels. Long-term impacts continue to be the prevailing source for our drought conditions, but with the magnitude of the recent snow melt and rains, even the long-term impacts have diminished. As a result, a one category improvement to moderate drought (D1) was made, across mostly north central and central Missouri. The rest of the area also improved but remained in severe drought (D2) conditions.
3/1/2013	3/31/2013	Drought conditions continue to improve across the region, with only parts of northwest Missouri and northeast Kansas, as well as east central Kansas and west central Missouri, remaining in Severe Drought (D2). Several storm systems have continued to ease drought conditions across the area.
8/27/2013	8/31/2018	A persistent upper-level ridge of high pressure centered over the lower Missouri Valley, in late August, caused D2 drought conditions to redevelop across portions of north central Missouri. Several locations, including Kirksville, reported only a trace of rainfall for the month of August.
9/1/2013	9/30/2018	Severe drought D2 conditions persisted across most of northern Missouri during the month of September.
10/1/2013	10/31/2018	Severe D2 drought conditions continued in the month of October across north central Missouri.
6/1/2018	6/30/2018	Starting at the very end of May and going into June the US Drought Monitor at the University of Nebraska declared portions of Missouri in a D2 or worse drought. While impacts from this drought would be felt through the summer, it's unclear if any drought impacts were felt through the month of June.

Start Date	End Date	Event Description
7/1/2018	7/31/2018	The anomalously dry period that plagued the region during the summer of 2018 continued into and through July. Most areas were about 2 inches short of normal precipitation for the month of July. Most of northern Missouri, north of the Missouri River, came up between 4 and 5 inches short of normal. This combined with the dry June has caused the drought across the region to worsen.
8/1/2018	8/31/2018	Precipitation picked up during August, especially in some of the hardest hit drought areas, but in a lot of cases the damage had already been done, and while the rains did pick back up the ground soil was so parched that it made hardly a dent in the drought across northern Missouri.
9/1/2018	9/30/2018	While much of the area saw some relief from the drought, many counties remained in D2-D4 status through the month of September. While the full scope of drought impacts are unknown, many farmers took losses on their hay and corn, opting to bale it for livestock or knock it down.
10/1/2018	10/9/2018	After a very dry summer, exceptional drought (D4) conditions were experienced area-wide, resulting in heavy losses for local farmers. Things changed in October when widespread heavy rain effectively ended that drought. A widespread 6 to 9 inches of rain fell, with some locations receiving over a foot of rain over the 4 day stretch from October 6 through October 9. By October 9th, the drought was effectively ended by the UNL drought monitor.

Source: NCEI Storm Event Database. Accessed 1/23/2023

### Probability of Future Occurrence

Data from a 20-year period was available for analysis from the National Drought Mitigation Center. Using this data, there were 67.75 months out of the 240-month period where all of Nodaway County was experiencing at least a D1, Moderate Drought. This yields a probability of 28.2% of a moderate drought over the county in any given year. For 37.25 months there were severe drought conditions covering the county, yielding a 15.5% probability of severe drought each year. There were 16.25 months where the entire county was rated as D3, Extreme Drought. This is a 6.8% probability that a part of the county will experience extreme drought conditions.

#### *Changing Future Conditions Considerations*

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

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

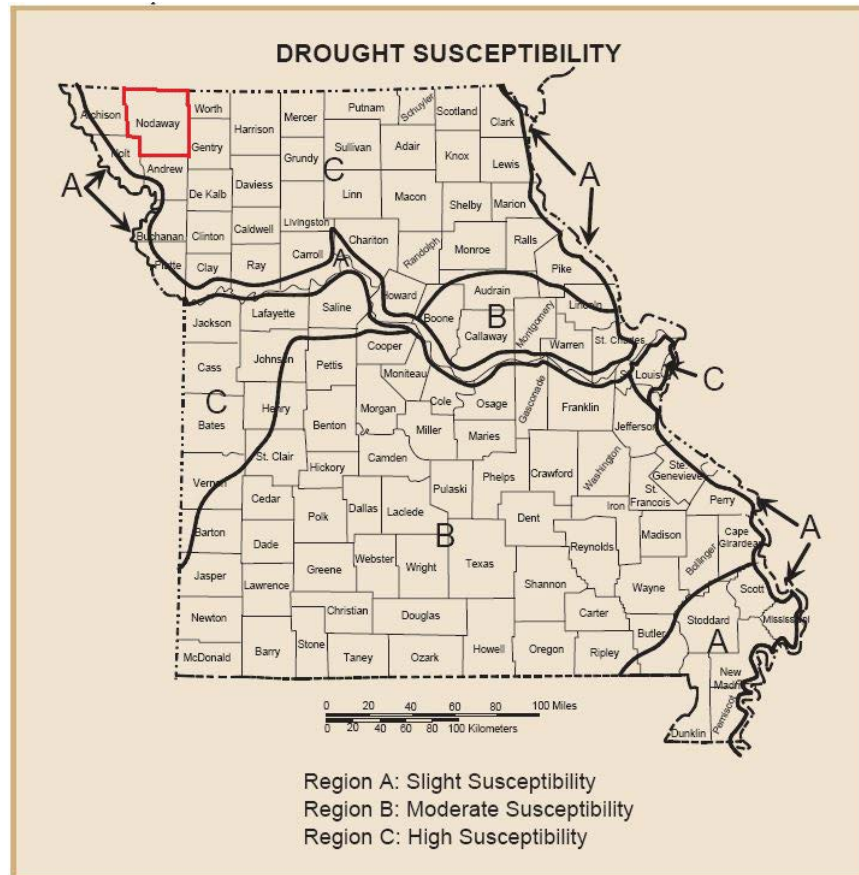
## **Vulnerability**

### **Vulnerability Overview**

The Missouri Drought Plan divided the state into four regions of susceptibility based on water resources and climate data. Most of northern Missouri, including Nodaway County fell into Region C. This is how the Missouri Drought Plan described Region C: "Region C has severe surface and

groundwater supply drought vulnerability. Surface water sources usually become inadequate during extended drought. Groundwater resources are naturally of poor quality and typically only supply enough water for domestic needs. Irrigation is generally not feasible.” The map showing these susceptibility regions is shown in Figure 3.15.

**Figure 3.15. Drought Susceptibility Regions of Missouri**



Source: Missouri Dept. of Natural Resources: Missouri Drought Plan, <https://dnr.mo.gov/pubs/WR69.pdf>

Agricultural assets are the most readily susceptible to drought. The agricultural assets are located in the unincorporated areas of Nodaway County. However, many of the other businesses in the incorporated parts of the county rely on a strong agricultural economy to ensure their success. Therefore, the entire county is vulnerable to the effects of a prolonged drought.

### Potential Losses to Existing Development

Determining the costs associated with drought is difficult because of the diverse impacts of drought and the difficulty in establishing when droughts begin and end. For this analysis of vulnerability, the impacts of drought have been assessed through the vantage point of agricultural losses. Data is readily available on crop losses, but losses to livestock and other damages due to long term droughts are not as accessible.

During the ten-year period ending in 2017, \$30,892,531 was paid to Nodaway County farmers for losses. This is an annualized amount of \$3,089,253. This figure is the baseline for estimating potential loss due to drought on an annual basis with the realization that losses related to livestock and other businesses is not included in this amount.

### *Impact of Previous and Future Development*

Although the total number of acres in cropland has decreased in the last five years, the value of the crops produced on the remaining acres has increased 14%. Nodaway County is the fourth largest producer of corn in the state. Due to declining population growth in most communities and a trend of fewer acres of cropland planted, the potential losses due to drought should remain steady or decrease slightly, depending on current market value of the crops.

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

As discussed previously, the risk to agricultural assets is spread throughout the unincorporated portions of the county. Gains have been made in the county to provide a reliable source of water to all areas with the expansion of the rural water system in both capacity and in coverage.

#### **Problem Statement**

Drought is a moderate risk to farming in any year in all jurisdictions in Nodaway County. It is not a predictable hazard, but it is a hazard that can have lasting impact. Livestock is particularly susceptible to severe drought and farmers are often obligated to sell off their herds because they do not have access to adequate water supply. Crop insurance is the best way to provide protection from crop losses in times of drought. Conservation of the water supply, planting drought-resistant hybrid crops, and utilizing moisture-conserving farming methods will help farmers to endure drought conditions as is shown in the historical data presented.

### **3.4.3 Earthquakes**

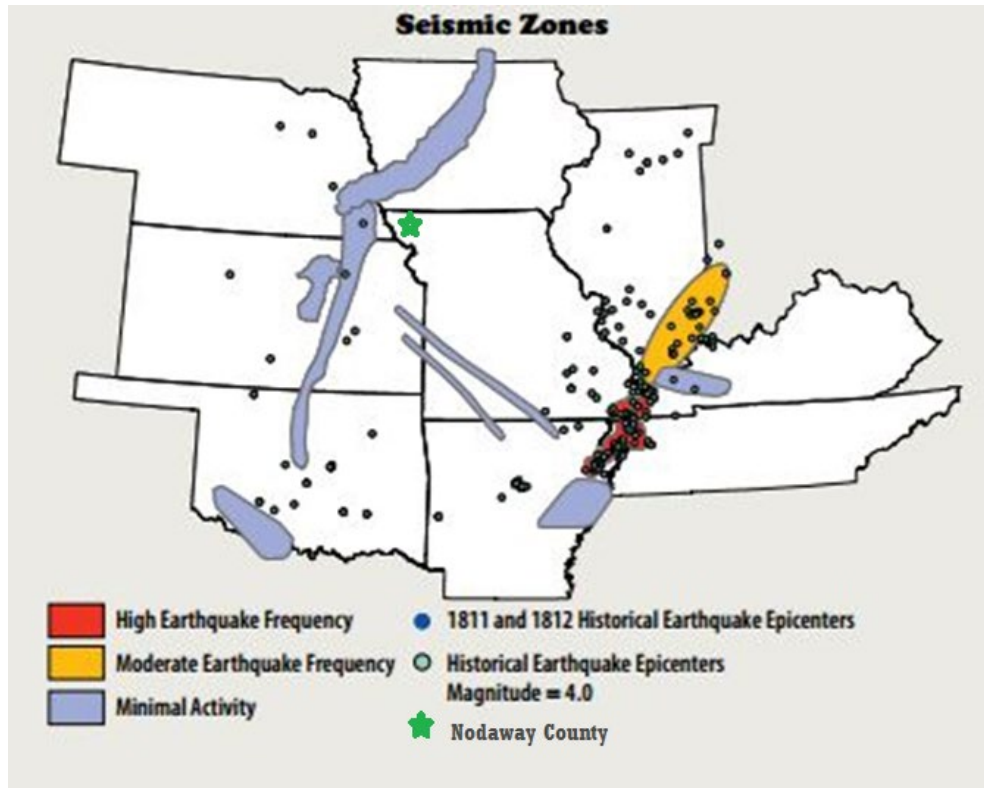
#### **Hazard Profile**

##### **Hazard Description**

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

There are two primary fault areas as shown in Figure 3.16 that can impact Nodaway County: the Nemaha Fault in eastern Kansas and the New Madrid fault in southeast Missouri.

**Figure 3.16. Primary Faults Impacting Nodaway County**



Source: MDNR Publication Geologic Hazards-<https://dnr.mo.gov/pubs/pub2467.pdf>

The closest source of earthquake risk in Nodaway County is the Nemaha Fault, which runs roughly from Oklahoma City, Oklahoma north to Lincoln, Nebraska. The fault is located approximately 75 miles west of Worth County. In 1993, the Nemaha fault produced a discernable earthquake, rating a 2.9 on the Richter Scale of Earthquake Intensity. Additional quakes took place February 11, 1995 (3.1 rating); July 16, 2004 (3.5 rating); March 23, 2003 (3.1 rating). More recently, an earthquake rating 3.6 was recorded on December 17, 2009. Although relatively quiet most of the time, the Nemaha Fault nonetheless has the potential to produce a significant earthquake that could impact Nodaway County.

In addition, the County is subject to effects of the New Madrid Fault located in extreme southeast Missouri, which has, according to many experts, the potential to produce the largest earthquakes in North America. Though unlikely, this fault has the potential to affect Nodaway County and the infrastructure that serves it (gas lines, electricity, highways, etc.). In addition, there have been several small, virtually undetectable earth movements in the region in recent history, which may or may not be attributed to the aforementioned fault lines or other very small faults located nearby.

### **Geographic Location**

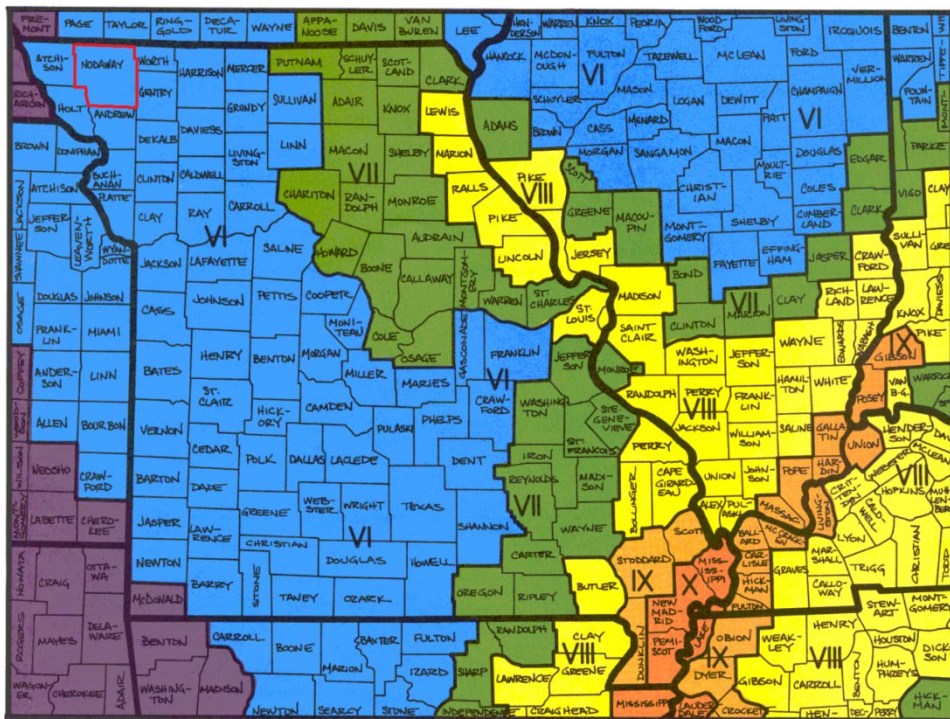
As Nodaway County is located near the middle of the North American Continent, far away from mountains, volcanoes, and historic earthquake zones, many incorrectly assume that the community is not subject to the risk of an earthquake. While very infrequent and often only barely detectable, earthquakes can, do, and will occur in the Nodaway County area. The potential for damage from earthquakes in the entire state of Missouri comes from the New Madrid fault zone. Data indicates that earthquake intensity will not vary across the planning area, which will be the case in most Missouri counties.

As an example of recent seismic activity, a FOX NEWS2 St. Louis posting for September 9, 2016, by Joe Millitzer and Chris Higgins states:

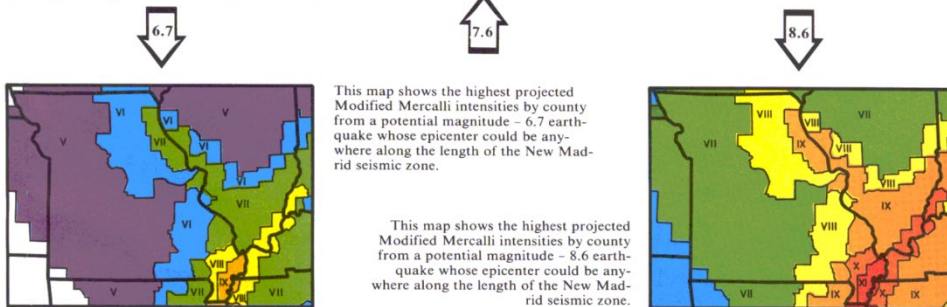
*“A 5.6 magnitude earthquake struck Saturday morning near Pawnee, Oklahoma, and rattled through at least six surrounding states in the US heartland, according to the US Geological Survey. The earthquake was also felt in Kansas, Arkansas, Missouri, Texas, Nebraska, and Iowa, according to USGS geophysicists. The New Madrid fault line is about twenty times larger than California’s famed San Andreas Fault. The biggest earthquake in U.S. history happened in the New Madrid seismic zone in 1812. The fault line has been more active over the last few years.”*

In Figure 3.17, the larger map at the top shows that Nodaway County would be in Zone VI in the event of an earthquake with a magnitude of 7.6. The smaller maps show that for an earthquake of 6.7, the County lies in Zone V, and for the more severe 8.6 earthquake, the zone would be VII.

**Figure 3.17. Impact Zones for Earthquake along the New Madrid Fault**



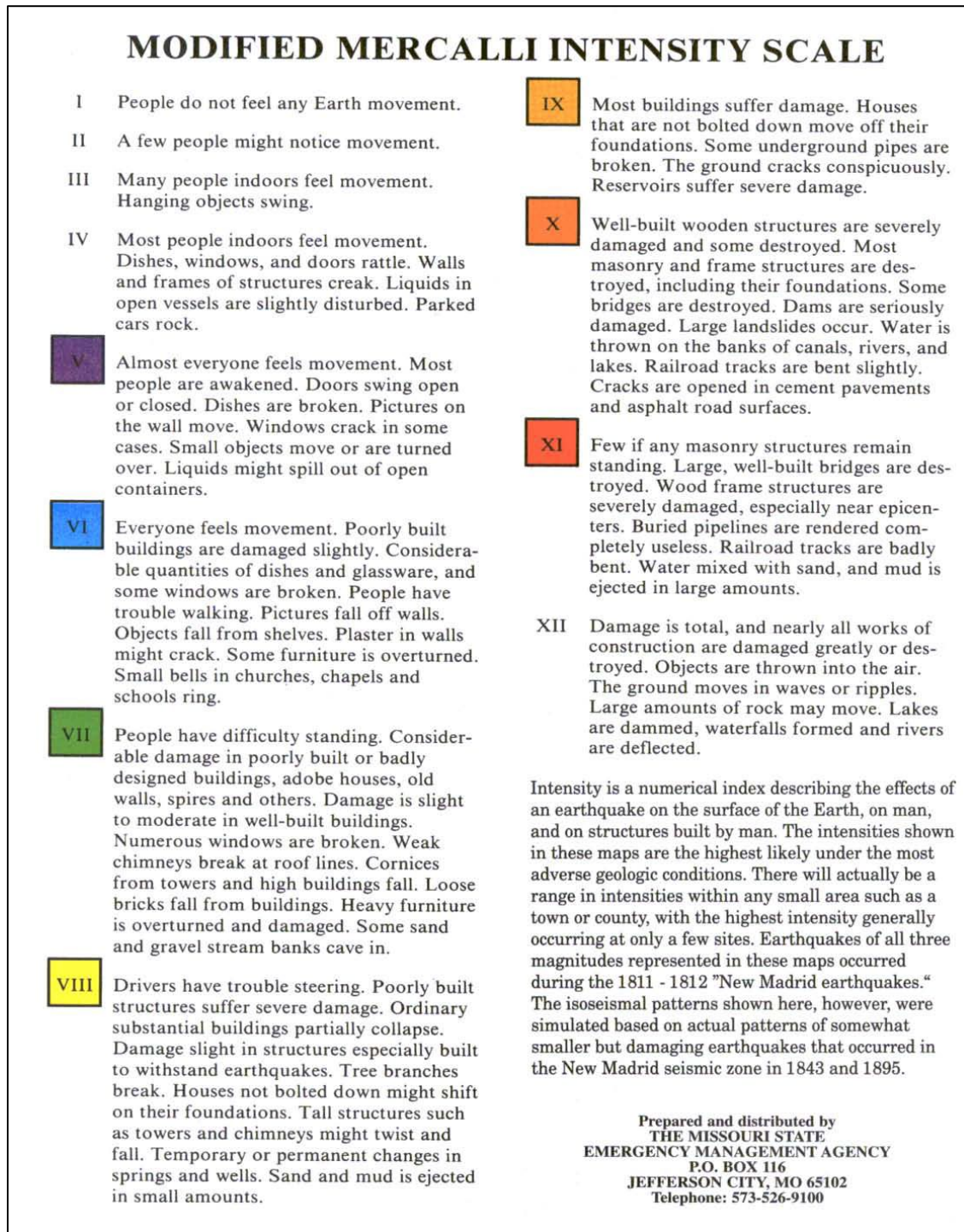
This map shows the highest projected Modified Mercalli intensities by county from a potential magnitude - 7.6 earthquake whose epicenter could be anywhere along the length of the New Madrid seismic zone.



Source: SEMA

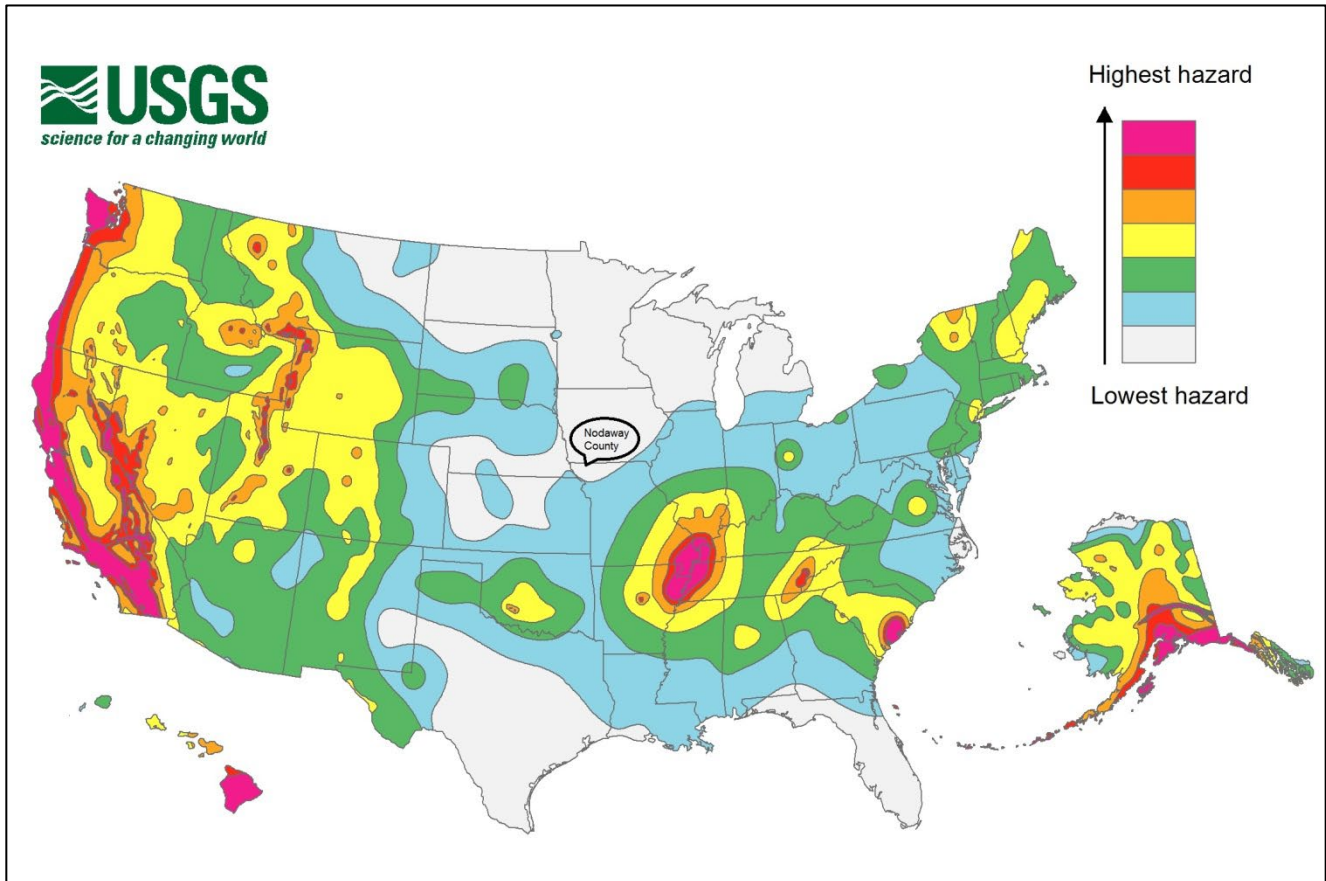
The projected consequences of an earthquake on locations in each zone are shown in the following explanation of the Modified Mercalli Intensity Scale in Figure 3.18.

**Figure 3.18. The Modified Mercalli Intensity Scale**



Nodaway County is in the lowest risk category on the following map of seismic hazards, Figure 3.19.

**Figure 3.19. United States Seismic Hazard Map**



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

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

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..

#### *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**

All jurisdictions have very low earthquake risk, with a total of one recorded earthquake since 1931. A magnitude 3.1 earthquake was recorded on February 11, 1995. The epicenter was located four miles east of Clearmont. No damage was reported.

**Probability of Future Occurrence**

Nodaway County is at low risk for earthquake damage. The probability of having an earthquake over 6.9 is less than 1%. The New Madrid fault is the source of the most intense earthquake activity in Missouri, and it is located nearly 500 miles to the south and east of Nodaway County. This fault has been under study for some time and seismologists expect that it is only a matter of time before the New Madrid fault moves, creating a substantial earthquake that would affect the entire Midwest region.

Table 3.23 below shows the probability that there will be an earthquake with a magnitude greater than 5 in any given year. The risk for all jurisdictions is less than one within 50 years.

**Table 3.23. Probability of Magnitude 5.0 or Greater Earthquake within 50 Years**

Jurisdiction	Probability >5.0 in 50 Years
Arkoe	0.36%
Barnard	0.36%
Burlington Junction	0.46%
Clearmont	0.43%
Clyde*	0.31%
Conception Junction	0.31%
Elmo	0.46%
Graham	0.45%
Guilford	0.45%
Hopkins	0.34%
Maryville	0.38%
Parnell	0.29%
Pickering	0.36%
Ravenwood	0.30%
Skidmore	0.47%

Source: <https://www.homefacts.com/earthquakes/Missouri/Nodaway-County.html>

*Changing Future Conditions Considerations*

With increased temperatures, scientists believe there is a connection between climate change and earthquakes. Melting ice caps and sea levels are redistributing weight over the plate boundaries, which can influence earthquake frequency.

## **Vulnerability**

### **Vulnerability Overview**

Besides the risk to human life, earthquakes pose a risk to the buildings and infrastructures of the area. To assess Nodaway County's exposure to this risk, the 2018 Missouri State Hazard Mitigation Plan was used.

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

Hazus 2.1 was used to analyze vulnerability and estimate losses to earthquakes. All Hazus analyses were run using an enhanced, Level 2 inventory database comprised of updated demographic and aggregated data based on the 2010 census. Additionally, site-specific essential facility data was updated based on 2011 HSIP inventory data.

The estimates for Nodaway County show an annualized building loss of \$11,000. Coupled with an income loss of \$4,000, the total economic loss is \$15,000.

A second scenario, based on an event with a 2% probability of exceedance in 50 years, was done to model a worst-case scenario. The methodology is based on probabilistic seismic hazard shaking grids developed by the U.S. Geological Survey (USGS) for the National Seismic Hazard Maps that are included with Hazus. The USGS maps provide estimates of peak ground acceleration and spectral acceleration at periods of 0.3 second and 1.0 second, respectively, which have a 2% probability of exceedance in the next 50 years. The International Building Code uses this level of ground shaking for building design in seismic areas. This scenario used a 7.7 driving magnitude in HAZUS-MH, which is the magnitude used for typical New Madrid fault planning scenarios in Missouri. While the 2% probability of exceedance in the next 50 years ground motion maps incorporate the shaking potential from all faults with earthquake potential in and around Missouri, the most severe shaking is predominately generated by the New Madrid Fault. Table 3.24 shows the results of this scenario for Nodaway County.

**Table 3.24. HAZUS-MH Earthquake Loss Estimation: 2% Probability of Exceedance in 50 Years Scenario for Nodaway County**

<b>Structural Damage</b>	<b>Non-Structural Damage</b>	<b>Contents Damage and Inventory Loss</b>	<b>Loss Ratio</b>	<b>Total Loss</b>
\$1,535	\$2,783	\$703	\$18%	\$6,759

Source: 2018 Missouri State Hazard Mitigation Plan

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

Most of the recent development has been in the area around Maryville. It is not anticipated that any future development would increase the risk of damage due to an earthquake event. Future development would add to the county's exposure in the event of an earthquake.

### **Hazard Summary by Jurisdiction**

Since the earthquake intensity is not likely to vary greatly throughout the planning area, the risk will vary only by the structures that exist in each community. Five jurisdictions (Arkoe, Barnard, Clyde, Guilford, Hopkins) have over 50% of their housing built before 1939. Typically, older homes will sustain more damage than those of more recent construction. The likelihood of damage from an earthquake in Nodaway County is very low because the highest magnitude earthquake to be detected in the area since 1931 was only a magnitude of 3.6.

**Problem Statement**

The risk for damage from earthquakes is possible, but unlikely. History shows that any earthquakes perceived by the population were only minor shaking causing no damage. Residents should be aware that earthquakes can happen on any active fault, large or small. The largest faults are the Nemaha Fault and the New Madrid fault, across the state along the eastern border. Earthquakes of higher magnitude might be felt in this area from movement on those two faults.

The school districts should educate children about how to respond to an earthquake event because there is no warning, and they need to know how to respond to the dangers if an earthquake occurs.

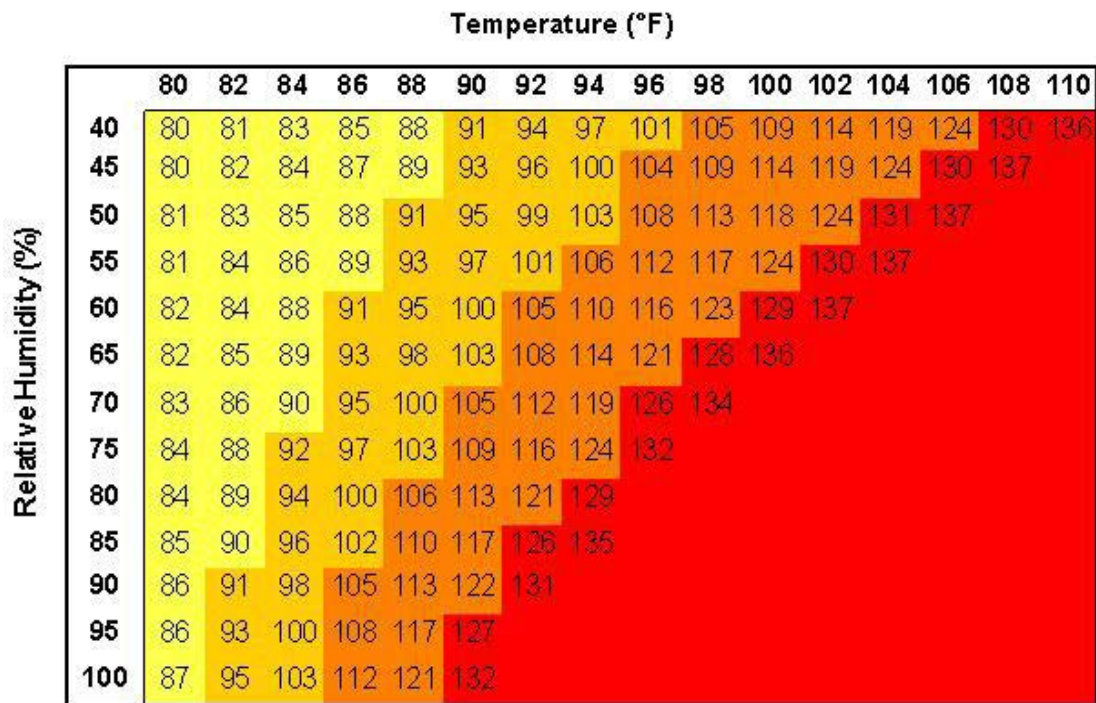
**3.4.4 Extreme Temperatures**

**Hazard Profile**

**Hazard Description**

Extreme temperature events, both hot and cold, can impact human health and mortality, natural ecosystems, agriculture and other economic sectors. The remainder of this section profiles extreme heat. Extreme cold events are profiled in combination with Winter Storm in Section 3.4.10. According to information provided by FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks. Ambient air temperature is one component of heat conditions, with relative humidity being the other. The relationship of these factors creates what is known as the apparent temperature. The Heat Index chart shown in Figure 3.20 uses both factors to produce a guide for the apparent temperature or relative intensity of heat conditions.

**Figure 3.20. Heat Index (HI) Chart**



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

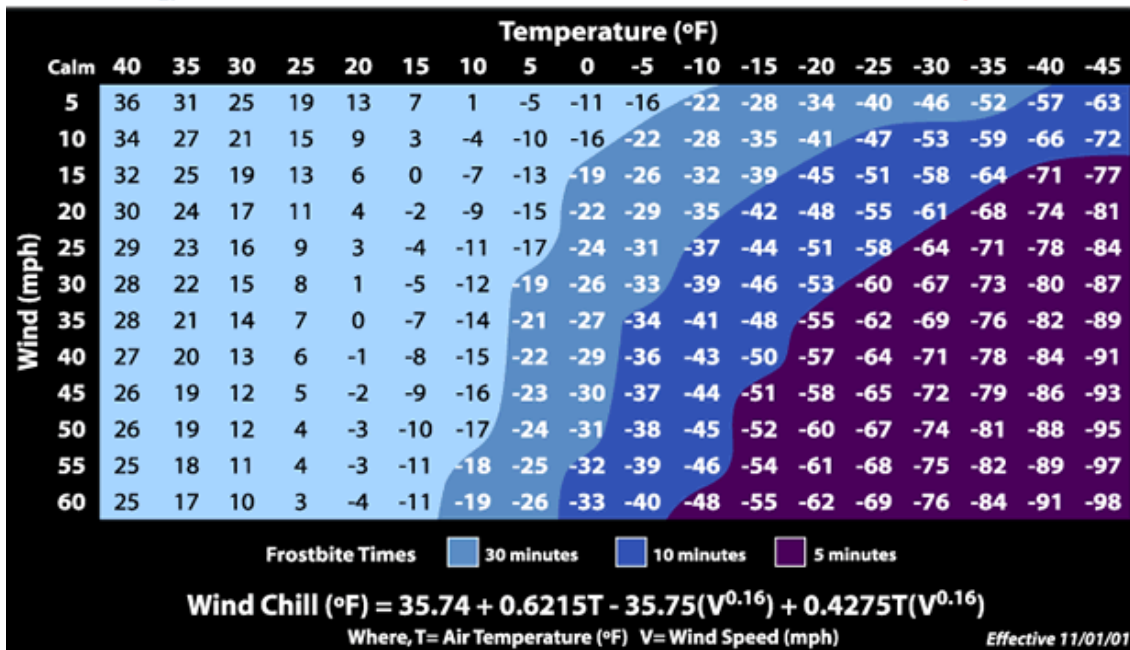
- Caution
- Extreme Caution
- Danger
- Extreme Danger

Source: National Weather Service (NWS)

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

Wind can greatly amplify the impact of cold ambient air temperatures. Provided by the National Weather Service, **Figure 3.21** below shows the relationship of wind speed to apparent temperature and typical time periods for the onset of frostbite.

**Figure 3.21. National Weather Service Wind Chill Chart**



Source: National Weather Service, [http://www.nws.noaa.gov/om/cold/wind\\_chill.shtml](http://www.nws.noaa.gov/om/cold/wind_chill.shtml)

Winter storms, cold, frost and freeze take a toll on crop production in the planning area. Table 3.25 shows the USDA’s Risk Management Agency payments for insured crop losses in Nodaway County as a result of cold conditions and snow for the past 10 years.

**Table 3.25. Crop Insurance Claims Paid due to Cold Conditions or Snow 2013—2022**

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2013	Corn	Cold Wet Weather	\$49,344
2013	Wheat	Snow	\$2,482
2014	Soybeans	Cold Wet Weather	\$9,010
2014	Soybeans	Freeze	\$3,222
2014	Soybeans	Frost	\$9,198
2014	Wheat	Cold Winter	\$84,022
2015	Corn	Cold Wet Weather	\$14,294
2015	Soybeans	Cold Wet Weather	\$72,507
2015	Corn	Frost	\$6,728
2015	Wheat	Cold Winter	\$4,298
2016	Corn	Cold Wet Weather	\$2,365

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2016	Wheat	Cold Wet Weather	\$11,133
2017	Soybeans	Cold Wet Weather	\$6,862
2018	Corn	Cold Wet Weather	\$1,267
2019	Corn	Cold Wet Weather	\$47,584
2019	Soybeans	Cold Wet Weather	\$6,850
2019	Soybeans	Frost	\$15,644
2020	Corn	Cold Wet Weather	\$12,172
2021	Corn	Cold Wet Weather	\$5,336
2021	Soybeans	Cold Wet Weather	\$18,246
2022	Wheat	Cold Winter	\$16,454
2022	Soybeans	Cold Wet Weather	\$25,071
Total			\$806,529

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

### Geographic Location

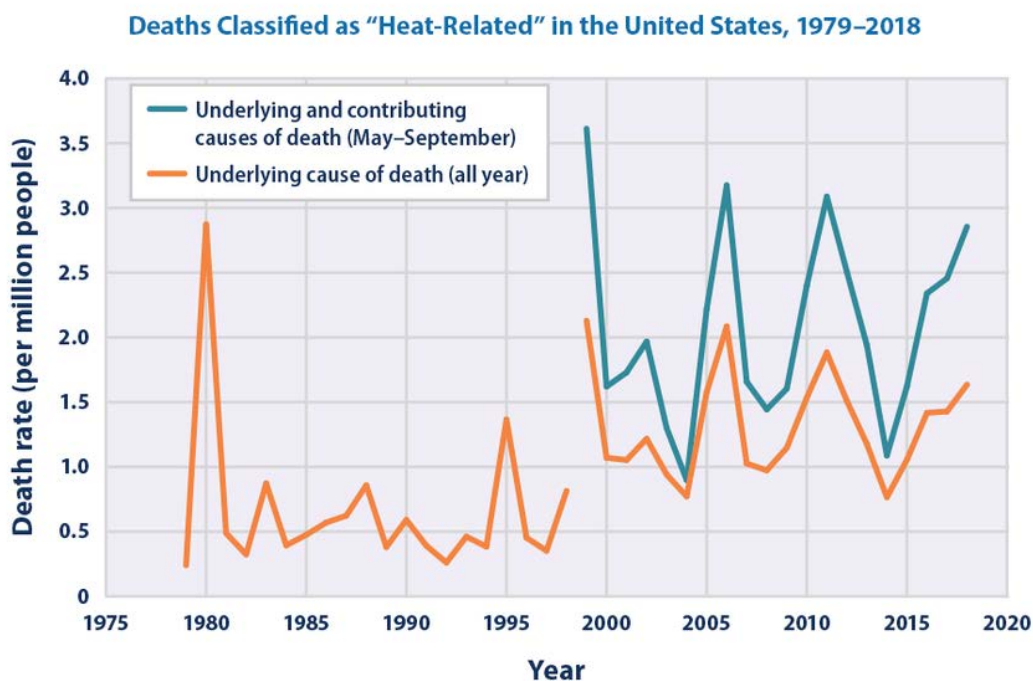
Location within the county is not a factor when facing an extreme heat event. Specific climatic factors, such as the two previously discussed, temperature and humidity, along with wind and sun/shade determine the effects of this hazard. An individual's physical condition has a profound effect on his/her ability to deal with excessive heat. Illness or heavy exercise adds to the metabolic heat that the body must dissipate. Age is also a contributing factor which will be discussed later. The accessibility of air-conditioned shelters is important to those falling into at-risk groups.

### Severity/Magnitude/Extent

Extreme heat can cause stress to crops and animals. 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, there were no deaths recorded in the planning area, according to NCEI data. The National Weather Service stated that among natural hazards, no other natural disaster—not lightning, hurricanes, tornadoes, floods, or earthquakes—causes more deaths. Figure 3.22 shows the heat-related death rate for the country.

**Figure 3.22. Heat Related Deaths in the United States (1979-2018)**



Between 1998 and 1999, the World Health Organization revised the international codes used to classify causes of death. As a result, data from earlier than 1999 cannot easily be compared with data from 1999 and later.

Data sources:

- CDC (U.S. Centers for Disease Control and Prevention). 2020. CDC WONDER database: Compressed mortality file and detailed mortality file, underlying cause of death. Accessed June 2020. <https://wonder.cdc.gov>.
- CDC (U.S. Centers for Disease Control and Prevention). 2020. Indicator: Heat-related mortality. National Center for Health Statistics. Annual national totals provided by National Center for Environmental Health staff in July 2020. <https://ephtracking.cdc.gov>.

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at [www.epa.gov/climate-indicators](http://www.epa.gov/climate-indicators).

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

**Table 3.26. 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)

The National Weather Service has an alert system in place (advisories or warnings) when the Heat Index is expected to have a significant impact on public safety. The expected severity of the heat

determines whether advisories or warnings are issued. A common guideline for issuing excessive heat alerts is when for two or more consecutive days: (1) when the maximum daytime Heat Index is expected to equal or exceed 105 degrees Fahrenheit (°F); and (2) 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. Livestock producers cannot afford to ignore the effects of high temperatures on their herds.

The following symptoms are signs of heat stress on livestock:

- Restlessness and crowding under shade or at water tanks/areas
- Open-mouthed breathing or panting and increased salivating
- Increased respiration rates
- Gasping and lethargic demeanor (source: USDA, 2007):

According to the USDA Risk Management Agency, insured crop losses throughout the State of Missouri as a result of Excessive Heat for the 19-year period of 1998 – 2016 totaled \$149,701,372. Excessive Heat ranked 6th in the State for insured crop losses. Also, hot winds in Missouri totaled \$8,499,208 in insured crop losses from the same timeframe. A detailed listing of insured crop losses by crop, county, and year for insured crop losses is provided at the following link:

<https://www.rma.usda.gov/>. (2018 State of Missouri HMP)

### Previous Occurrences

For the twenty-year period, 1998-2017, the National Weather Service has issued warnings for excessive heat events 11 times. Information regarding those events is shown in Table 3.27.

**Table 3.27. Recorded Heat/Cold Events from 1999–2021 for Nodaway County**

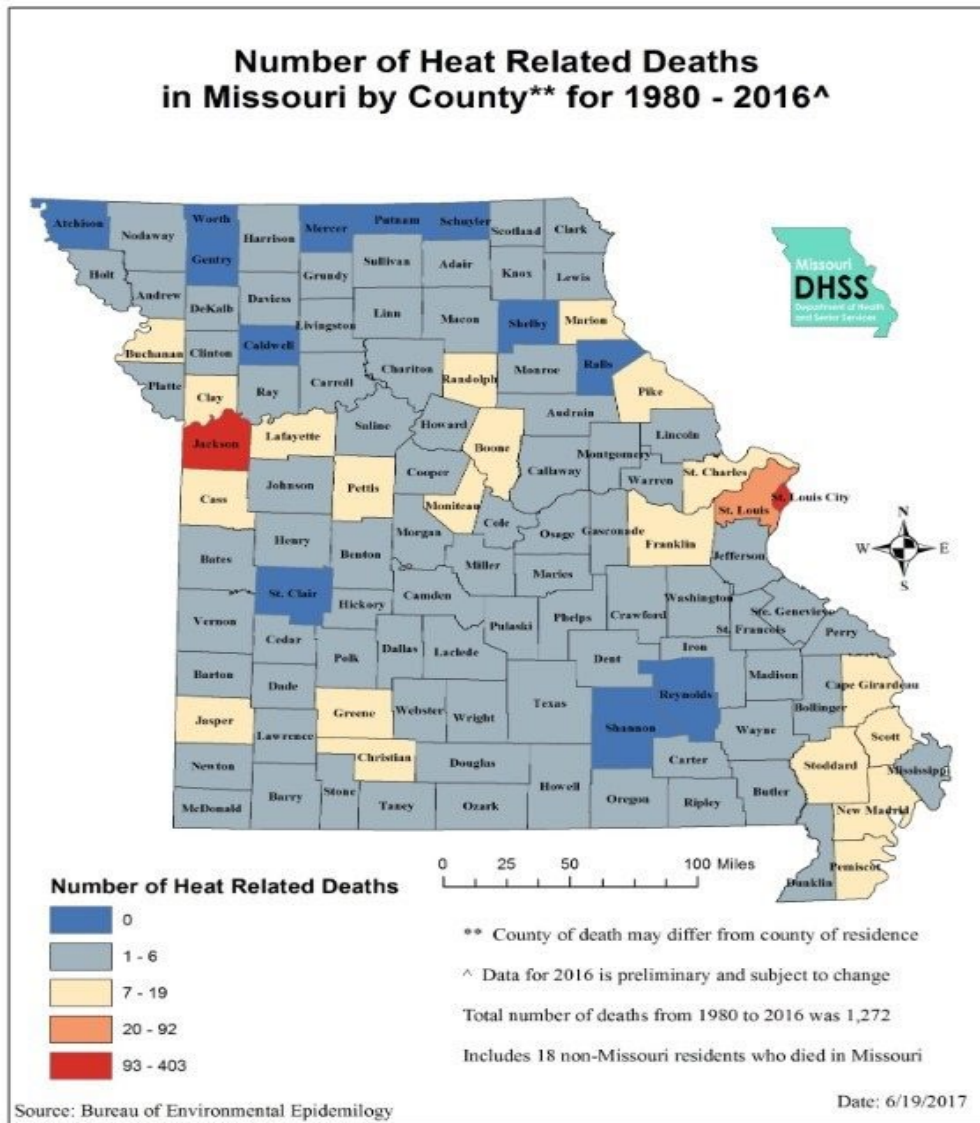
Start of the event	Duration in days	Details
July 18, 1999	14	two weeks of oppressive heat and humidity left the NW MO area with 22 deaths, none in Nodaway County
August 28, 2000	7	heat indices as high as 115 degrees
October 6, 2000	4	Temperatures remained below freezing for 5 consecutive days in the KC/St. Joseph areas
December 10, 2000	21	Temperatures dopped to 9 below zero at KCI, and 16 below in Maryville. Average temperature was between 10-20 degrees
July 6, 2001	3	dew points as high as 80 degrees, 2 deaths in KC area
July 17, 2001	8	oppressive heat and humidity, 2 elderly deaths in KC
August 1, 2001	9	5 fatalities in the KC metro area due to heat
July 14, 2003	5	oppressive heat and humidity with heat indices to 110 degrees
July 21, 2005	5	heat indices reached from 105 to 110 degrees
July 16, 2006	5	heat indices from 105 to 115 degrees
July 29, 2006	6	heat indices from 105 to 115 degrees
August 6, 2007	12	heat indices ranged from 105 to 115 degrees.
July 18, 2012	8	high temperatures in the 100 to 110-degree range
January 5, 2014	2	Wind chills averaged 30 below zero
February 6, 2014	1	Northly winds bring the wind chill values around 30 below zero
February 14, 2021	3	Temperatures dropped below zero, wind chills of 20-30 below zero, with 30 mph winds
11 heat events	82 days	over 30 heat-related deaths in the region, but none in the county
5 cold events	31 days	0 cold weather deaths but many days below zero

Source: NCEI Storm Event Database

The following Figure 3.23, map of Missouri provided by the Missouri Dept. of Health and Senior Services shows the location of heat related deaths in the state. It shows that Nodaway County had

between one to three heat-related deaths of this type during this period. No other sources have been found to confirm or to provide details about these deaths.

**Figure 3.23. Heat Related Deaths in Missouri 1980-2016**



**Probability of Future Occurrence**

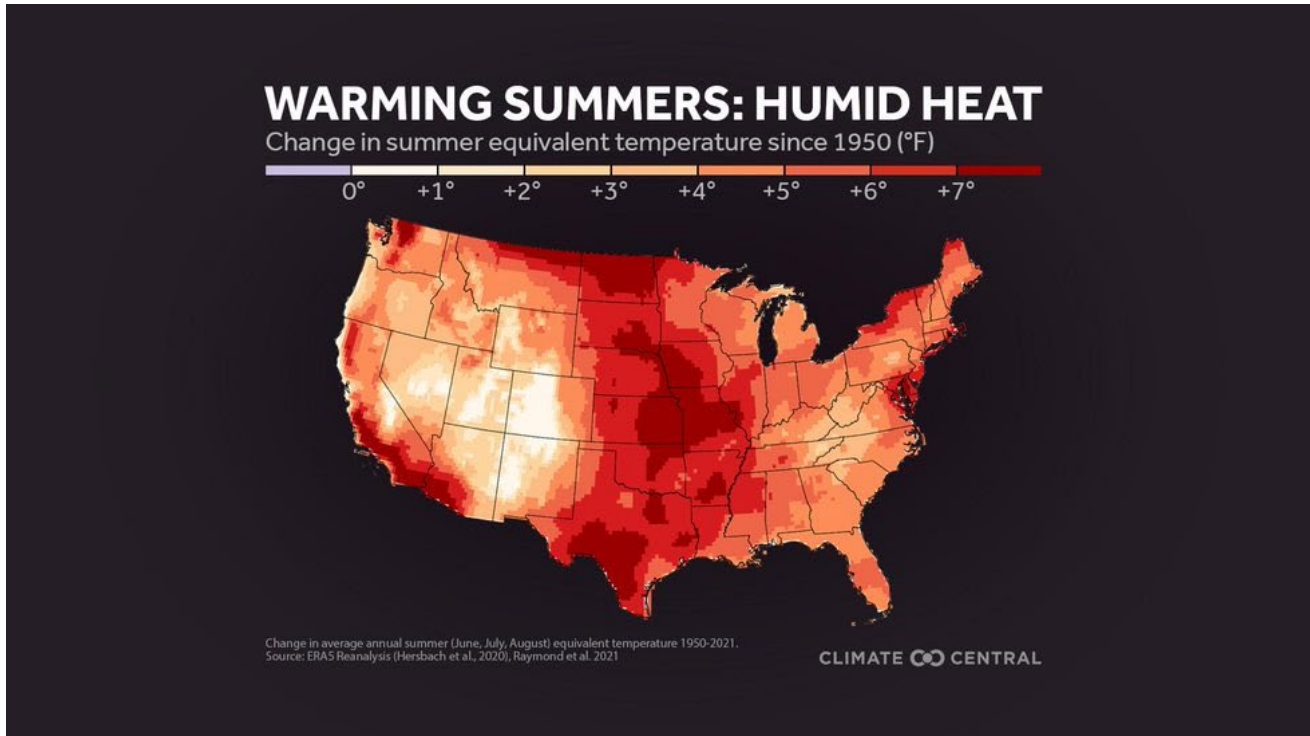
The likelihood of an excessive heat event in Nodaway County over any given summer is likely. Limited data identifying such events prior to 1999 makes it difficult to calculate reliable probability results. Based on data available, there were eleven events in a twenty-year period. The probability of an event in any given year is 55% with past events averaging a length of 7.5 days. The average time between events was 1.5 years with as little as nine days and as much as five years passing between documented heat episodes. Nodaway county experiences an average of 2.5 cold weather events three days or longer. Data analysis was based on events occurring between 1998 and 2017.



### Changing Future Conditions Considerations

With the higher emissions pathway, the average annual temperature highs are set to increase as a result of climate change. By the middle of the 21<sup>st</sup> century, heat records are likely to occur on a regular basis. This will lead to a higher frequency of heat waves, and an increased concern for those urban areas. Figure 3.24 illustrates the changes in summer temperatures, and how the temperatures are on the rise.

**Figure 3.24. Summer Heat-Index Trends**



Source: <https://www.climatecentral.org/>

## **Vulnerability**

### **Vulnerability Overview**

All jurisdictions (municipalities and educational institutions) within the county are equally susceptible to damage stemming from a heat wave as these types of events tend to be regional in nature. With the main agriculture crops of corn and soybeans, farmers are at the mercy of the weather patterns to provide sufficient growing degree days without excessive heat or hot winds, to produce sufficient yields to make a profit.

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

According to USDA Risk Management Agency, losses to insurable crops due to heat during the 10-year time period from 2008 to 2017 were \$107,892. This amounts to an average annual cost of \$10,789. Losses for livestock farmers are harder to estimate. Deaths can occur, but heat-stress animals can lose weight and higher costs for water and other utilities can economically stress the producer. Roads can suffer from the expansion-related buckling and asphalt softening from very hot temperatures. These types of losses are difficult to predict and determine mitigation strategies.

## Impact of Previous and Future Development

Population growth can result in increases in the age groups that are most vulnerable to extreme heat. Population growth also increases the strain on electricity infrastructure, as more electricity is needed to accommodate the growing population. Many of the smaller communities have experienced declining populations according to the 2020 census. The overall rate of decrease in population for the county is 9.1% , with the communities of Arkoe, Clyde\* and Maryville all experiencing double digit percent increases.

### Hazard Summary by Jurisdiction

Those at greatest risk for heat-related illness and deaths include children up to five years of age, people 65 years of age and older, people who are overweight, and people who are ill or on certain medications. To determine jurisdictions within the planning area with populations more vulnerable to extreme heat, demographic data was obtained from the 2020 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 3.28 below summarizes vulnerable populations in the participating jurisdictions Note that the school districts are not included in the table because students and those working for districts are not customarily in these age groups. Most of those persons at risk are located in either Maryville or the unincorporated areas of the county.

**Table 3.28. County Population Under Age 5 and Over Age 65, 2020 Census Data**

Jurisdiction*	Population Under 5 yrs.	Percent Under 5 yrs.	Population 65 yrs. and over	Percent Over 65 yrs.
Unincorporated	383	4.9%	1,436	18.7%
Arkoe	6	10.7%	3	5.4%
Barnard	7	3.9%	52	26.0%
Burlington Junction	61	11.8%	50	9.6%
Clearmont	6	3.9%	42	26.8%
Clyde	4	7.7%	15	30.8%
Conception Junction	20	11.8%	29	16.7%
Elmo	1	1.6%	13	12.2%
Graham	10	6.9%	41	28.5%
Guilford	2	4.9%	5	8.5%
Hopkins	17	3.7%	69	14.7%
Maryville	446	4.2%	1,286	12.1%
Parnell	16	12%	20	15%
Pickering	7	5.3%	21	14.6%
Ravenwood	25	5.8%	54	12.5%
Skidmore	8	3.4%	50	20.7%
<b>Nodaway County Totals</b>	<b>1,019</b>	<b>4.8%</b>	<b>3,186</b>	<b>15%</b>

Source: 2021 ACS 5-Year Estimates Data Profiles

Schools have improved their facilities by adding air conditioning and other upgrades to maintain an environment that is safe for the county's youth. The same is true for the nursing home facilities in the

county. Some of the smaller communities in the county have informal systems of monitoring their older residents during prolonged periods of extreme temperatures.

### **Problem Statement**

All jurisdictions within the county are equally susceptible to damage stemming from a heat wave as these types of events tend to be regional in nature. The large percentage of residents that are over 65 years of age means that many are at risk during extreme heat events. The rural nature of the county does work in its favor, as statistically more deaths occur in urban areas during a heat wave.

Nodaway County does include mitigation strategies which include the opening of cooling centers in case of a severe heat event. As with extreme cold temperatures, special consideration must be given to the potential impact upon the young, disabled, and elderly populations. Overutilization of the electrical power grid during heat waves can lead to brown-outs or power failures. Nodaway County should continue to provide cooling centers or portable fans for the elderly and those populations without air conditioning during sustained high temperatures. Availability of cooling stations will reduce the threat of heat stroke due to hyperthermia in vulnerable groups of the population.

## **3.4.5 Flooding (Flash and River)**

### **Hazard Profile**

#### **Hazard Description**

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

Flooding caused by dam and levee failure is discussed in Section 3.4.1 and Section 3.4.6 respectively. It will not be addressed in this section.

A flash flood occurs when water levels rise at an extremely fast rate because 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.

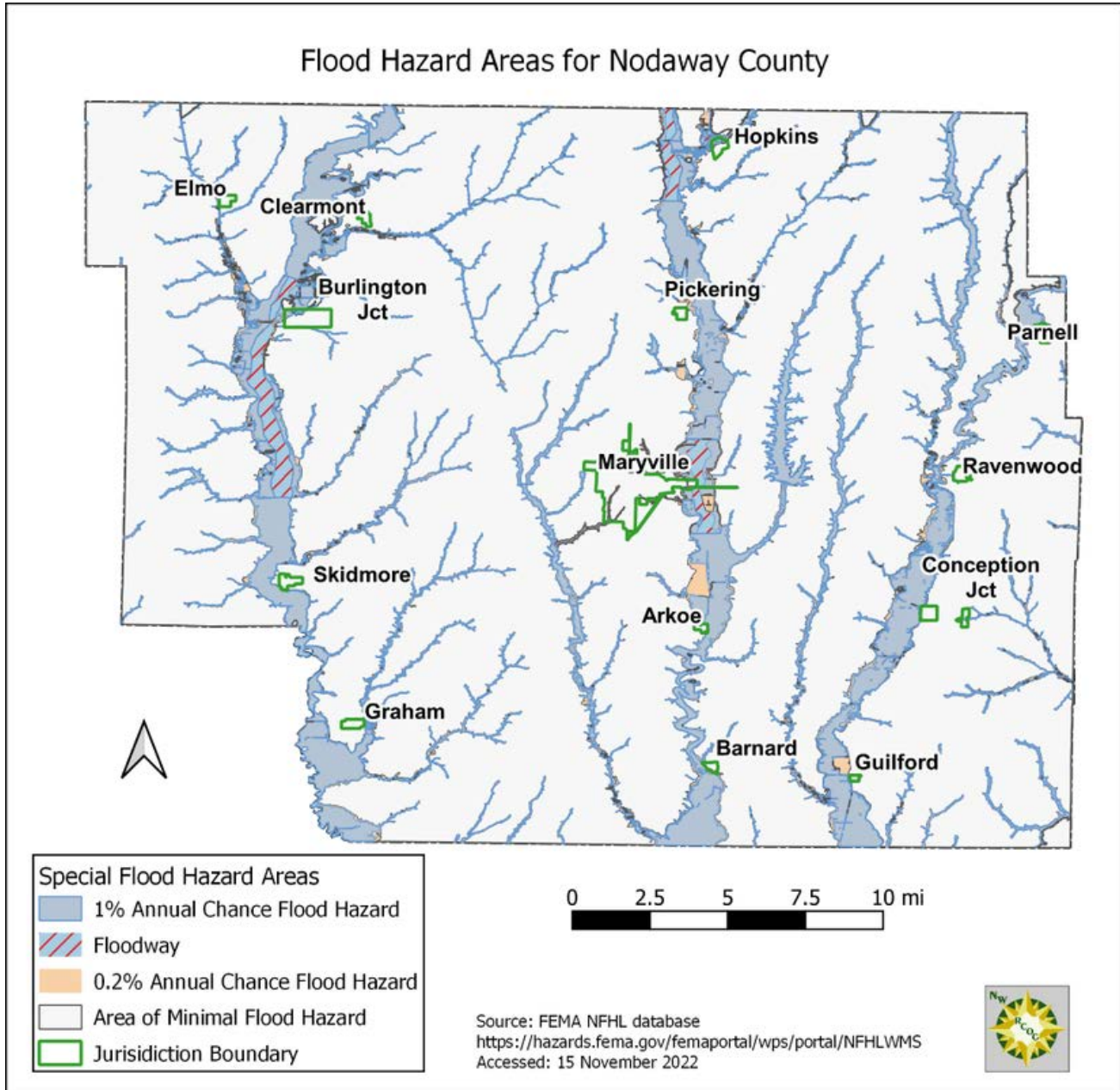
In certain areas, aging storm sewer systems are not designed to carry the capacity currently needed to handle the increased storm runoff. Typically, the result is water backing into basements, which damages mechanical systems and can create serious public health and safety concerns. This combined with 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**

There is risk of riverine flooding in Nodaway County. It is most likely to occur in the Special Flood Hazard Areas (SFHA) that represent the 100 and 500-year floodplains shown in Figure 3.25. Flash flooding occurs in SFHA and those other locations in the planning area that are low-lying. They also occur in areas without adequate drainage to carry away the amount of water that falls during intense rainfall events.

Figure 3.25. Special Flood Hazard Areas in Nodaway County



Detailed maps for each incorporated community are included in the Vulnerability section for this hazard. Over the last 20 years there have been 16 riverine and 25 flash flood incidents impacting Nodaway County. Table 3.29 shows the locations of recorded flood events.

**Table 3.29. Nodaway County NCEI Flood Events by Location, 1998-2020**

Location	Flash Flood Events	Riverine Flood Events
Unincorporated Nodaway Co.	6	6
Arkoe	2	0
Burlington Junction	2	0
Clearmont	1	1
Conception Junction	1	1
Elmo	1	1
Graham	1	0
Guilford	2	0
Hopkins	2	0
Maryville	4	5
Parnell	0	0
Pickering	0	1
Pumpkin Center(unincorporated)	1	0
Ravenwood	1	0
Skidmore	4	1
Totals	28	16

Source: National Centers for Environmental Information

**Severity/Magnitude/Extent**

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

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

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

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

*National Flood Insurance Program (NFIP) Participation*

The County of Nodaway and five of Nodaway County’s communities currently participate in the National Flood Insurance Program. The NFIP aims to reduce the impact of flooding on private and public structures. It does so by providing affordable insurance to property owners and by encouraging communities to adopt and enforce floodplain management regulations. These efforts help mitigate the effects of flooding on new and improved structures.

The Nodaway County Commissioners and the jurisdictions of Barnard, Burlington Junction, Hopkins, Maryville, and Pickering have all adopted ordinances based on the Model Floodplain Management Ordinance template 60.3(c) so all would meet at least the minimum Federal requirements in Title 44. All six jurisdictions participated in the process of reviewing the updated flood maps with FEMA personnel and adopted the current 1/22/2020 FIRM. Nodaway County designates one of its commissioners as Floodplain Administrator. Maryville has designated the Public Works Director to fill this position and its ordinance exceeds the minimum requirements. The remaining participants have the mayor or his/her designee serving in this role. In all instances each jurisdiction's Floodplain Administrator is responsible for implementing and enforcing the local regulations of the ordinance. These duties include:

1. Review of all applications for floodplain development permits to assure that sites are reasonably safe from flooding and that the floodplain development permit requirements of this Chapter have been satisfied.
2. Review of all applications for floodplain development permits for proposed developments to assure that all necessary permits have been obtained from Federal, State, or local governmental agencies from which prior approval is required by Federal, State, or local law.
3. Review all subdivision proposals and other proposed new development, including manufactured home parks or subdivisions, to determine whether such proposals will be reasonably safe from flooding.
4. Issue floodplain development permits for all approved applications.
5. Notify adjacent communities and the Missouri State Emergency Management Agency (MOSEMA) prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency (FEMA).
6. Assure that the flood carrying capacity is not diminished and shall be maintained within the altered or relocated portion of any watercourse.
7. Verify and maintain a record of the actual elevation (in relation to mean sea level) of the lowest floor, including basement, of all new or substantially improved structures.
8. Verify and maintain a record of the actual elevation (in relation to mean sea level) that the new or substantially improved non-residential structures have been floodproofed.
9. When floodproofing techniques are utilized for a particular non-residential structure, the Flood Plain Administrator shall require certification from a registered professional engineer or architect.

Local Floodplain Administrators will coordinate efforts with local, county and state Emergency personnel to implement the substantial damage/improvement clauses after an event. A copy of each NFIP participant's Floodplain Ordinance is available from that jurisdiction or from NWMOROCOG office upon request. A map showing the SFHA of Nodaway County (Figure 3.25) is located above. The remaining jurisdictions participating in this updated plan have chosen not to participate in the NFIP program due to a lack of assets located in any SFHA that would be at risk in the event of riverine flooding. Maps using the current FIRM data are shown for each jurisdiction and school districts later in this chapter (Figures 3.26-3.43).

The following tables, Table 3.30 and Table 3.31, show information about NFIP in Nodaway County.

**Table 3.30. Communities Participating in the National Flood Insurance Program**

Community Identification	Community Name	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Regular-Emergency Program Entry Date
290768	Barnard	7/11/1975	9/4/1985	1/22/2020	9/4/1985
290740	Burlington Junction	7/11/1975	4/1/1982	1/22/2020	4/1/1982
290489	Hopkins	3/15/1974	4/1/1982	1/22/2020	4/1/1982
290264	Maryville	5/3/1974	9/18/1985	1/22/2020	9/18/1985
290821	Nodaway County *	9/15/1983	4/17/1985	1/22/2020	5/10/2007
290534	Pickering	9/5/1975	4/27/2020	1/22/2020	4/27/2020

Source: NFIP Community Status Book, 3/20/20; BureauNet, <http://www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-status-book>;\*=Unincorporated area

**Table 3.31. NFIP Policy and Claim Statistics as of January 31, 2018**

Community Name	Policies in Force	Insurance in Force	Closed Losses	Total Payments
Nodaway County, Unincorporated	8	\$1,064,700	1	\$10,000
Maryville	3	\$920,000	0	0

Source: NFIP Community Status Book, 01/31/2018; BureauNet, <http://bsa.nfipstat.fema.gov/reports/reports.html>; Closed Losses are those flood insurance claims that resulted in payment. Loss statistics are for the period from 01/01/1978 to 01/31/2018

### *Repetitive Loss/Severe Repetitive Loss Properties*

Repetitive Loss Properties are those properties with at least two flood insurance payments of \$5,000 or more in a 10-year period. According to the Flood Insurance Administration, jurisdictions included in the planning area have a combined total of zero repetitive loss properties. As of 01/31/2018, there are no Repetitive Loss Properties to report.

A Severe Repetitive Loss (SRL) property is defined it as a single family property (consisting of one-to-four residences) that is covered under flood insurance by the NFIP; and has (1) incurred flood-related damage for which four or more separate claims payments have been paid under flood insurance coverage with the amount of each claim payment exceeding \$5,000 and with cumulative amounts of such claims payments exceeding \$20,000; or (2) for which at least two separate claims payments have been made with the cumulative amount of such claims exceeding the reported value of the property. There are no SRL properties in Nodaway County.

### **Previous Occurrences**

Since 1965, there have been 12 declared disasters that have made funds available to Nodaway County residents to aid in the recovery from storms that produced flooding. Information about these declared disasters was previously summarized in Table 3.2 in the previous section. The reports of flash flooding within the county for the past 20 years are summarized in Table 3.32. The NCEI database enters a zero for property damage when the amount is unknown.

**Table 3.32. NCEI Nodaway County Flash Flood Events Summary, 1998 through 2020**

Year	# of Events	# of Deaths	# of Injuries	Property Damages
2004	3	0	0	0
2005	1	0	0	0
2007	4	0	0	0
2008	1	0	0	0
2011	1	0	0	0
2014	6	0	0	0
2015	8	0	0	0
2017	1	0	0	0
2019	2	0	0	0
2020	1	0	0	0

Source: NCEI, data accessed 12/13/2022

As seen in the above table, there have been 25 flash flood events reported in Nodaway County during the last twenty years. There are limitations to the property damage amounts listed by NCEI. Damage estimates are not available when the event is reported and follow up does not always occur. One of the most dramatic events occurred on June 28, 2017 when a prolonged flash flooding event took place across much of Nodaway County. Numerous roads across the county were closed, and at least one water rescue was performed near Maryville. At one point a herd of cattle were reported floating across U.S. Hwy 136.

Riverine flooding events have occurred as well in Nodaway County. Eighteen events have been reported over the last 20 years. Heavy rains commenced on May 6, 2007 eventually causing the 102



River near Maryville to crest at 26.98 feet, or 8.98 feet above flood stage. This was its highest crest to date and occurred on May 8, 2007. This flooding resulted in agricultural damage in the adjacent bottom lands. The following year on May 5, 2008 many roads adjacent to the Nodaway River were flooded from the Iowa border, to south of Skidmore. Several roads were washed out and two bridges were heavily damaged with early estimates of \$250,000 in damage. Table 3.33 shows the events recorded by NCEI. This database enters a zero for property damage when the amount is unknown.

**Table 3.33. NCEI Nodaway County Riverine Flood Events Summary, 1998—2021**

Year	# of Events	# of Deaths	# of Injuries	Property Damages
1998	1	0	0	0
2000	1	0	0	0
2004	2	0	0	0
2005	1	0	0	0
2006	1	0	0	0
2007	6	0	0	0
2008	5	0	0	\$250,000
2017	1	0	0	0

Source: NCEI, data accessed 12/13/2022

Some of the most productive farm land lies along the rivers of Nodaway County. This puts many acres of cropland at risk to riverine flooding. Almost \$1.5 million has been paid in claims for agricultural losses as a result of flooding during the last ten years as shown in Table 3.34.

**Table 3.34. Crop Insurance Claims Paid in Nodaway County 2013—2022**

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2013		No claims	\$0
2014	Soybeans	Flood	\$258,752
2015	Corn	Flood	\$114,018
	Soybeans		\$17,729
	All Other Crops		\$8,254
2016	Corn	Flood	\$17,610
2017		No claims	\$0
2018		No claims	\$0
2019	Wheat	Flood	\$9,716
	Corn		\$147,629
	Soybeans		\$50,365
2020	Corn	Flood	\$670
	Soybeans		\$183
2021		No Claims	\$0
2022		No Claims	\$0
Total			\$624,926

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

### Probability of Future Occurrence

Based on twenty years of data, there is a 90% probability of a riverine flooding event in any given year with 18 events reported. For flash flood events there is an average annual occurrence of 1.3 recorded floods.

### Changing Future Conditions Considerations

During the last fifty years, the number of above normal precipitation events in the Midwest have continued to grow. Therefore, the frequency of flooding is set to increase as well. There is a 90-100%

probability of most areas of the United States to increase a 5% or greater increase in precipitation due to climate change.

## **Vulnerability**

### **Vulnerability Overview**

Nodaway County has three major rivers running from the north to the south across the county. Every city and village are either located on or very near one of these waterways. There is very limited development in any of the floodplains.

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

The 2018 Missouri State Hazard Plan used HAZUS data to analyze the county's vulnerability to flooding. A summary of the findings is shown in Table 3.35.

**Table 3.35. HAZUS Estimation of Nodaway County Vulnerability to Flood**

Structural Damage	Loss Ratio	Contents Damage	Inventory Loss	Total Direct Loss	Total Income loss	Total Direct and Income Loss
\$10,093,000	0.41%	\$16,674,000	\$928,000	\$27,695,000	\$164,000	\$27,859,000

Source: 2018 Missouri State Hazard Mitigation Plan

Information on the vulnerability of individual jurisdictions was limited. Modifications and relocations of critical facilities have occurred as a result of previous events reducing the risks of damage in the future.

**Impact of Previous and Future Development**

Since Nodaway County participates in the NFIP and regulates development in SFHA there is no significant increase in vulnerable structures anticipated.

**Hazard Summary by Jurisdiction**

The following maps show each of the communities in Nodaway County and the floodplains that exist in their vicinity. The first jurisdiction is Arkoe shown in Figure 3.26. There are two structures indicated that are in the Zone A floodplain. Even though more of the city limits are in the floodplain there are no assets that at risk.

**Figure 3.26. DFIRM Map for Arkoe**



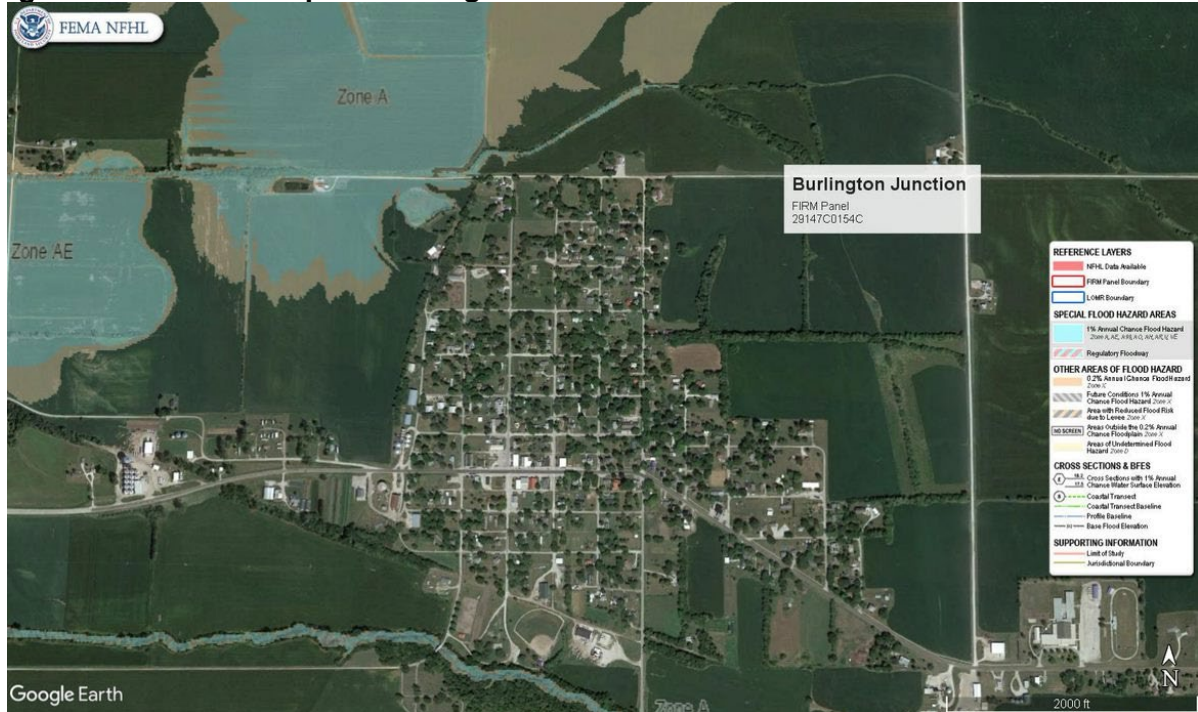
The map in Figure 3.27 shows Barnard and its surrounding area. Located adjacent to the 102 River there are numerous structures (shown as green circles) located in the 100-year floodplain and several structures (shown as tan diamonds) in the 500-year floodplain. With all of these vulnerable structures, there are no repetitive loss properties reported in this location.

**Figure 3.27. DFIRM Map for Barnard**



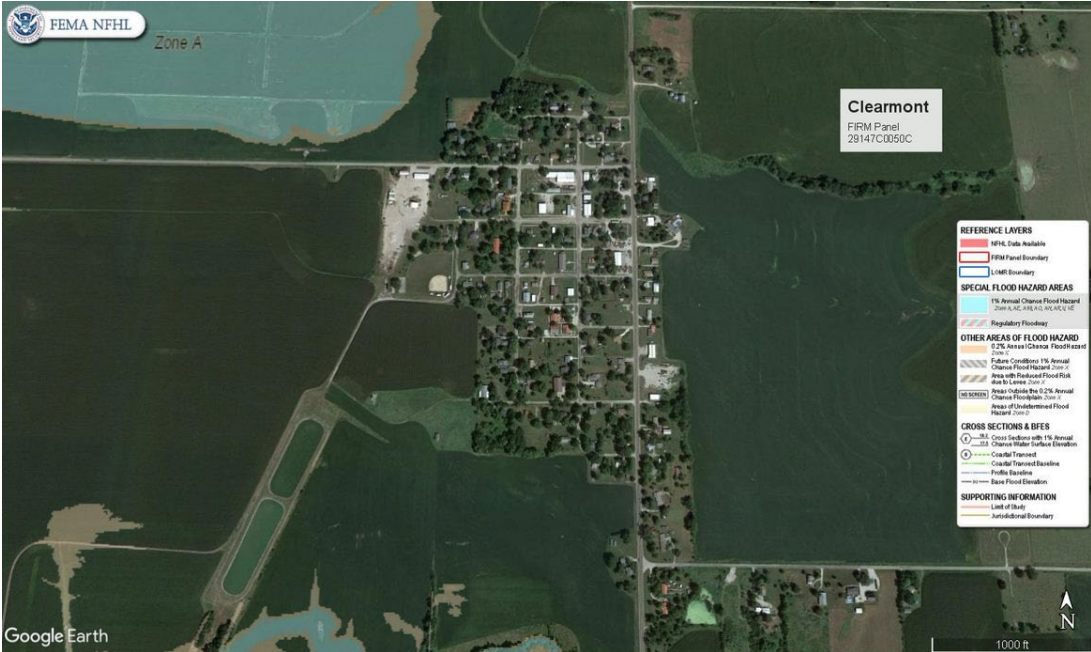
Burlington Junction (Figure 3.28) is located near the Nodaway River with the Cuyhoga Creek flowing through its southern boundary. There is one structure located in the floodplain of this creek and four structures lying in the 500-year flood zone on the northern part of the city. The remaining areas of the floodplain are either agricultural land or unimproved properties.

**Figure 3.28. DFIRM Map for Burlington Junction**



Clearmont, Figure 3.29, is located on a hill between the Nodaway River and Clear Creek. None of the jurisdiction is vulnerable to riverine flooding.

**Figure 3.29. DFIRM Map for Clearmont**



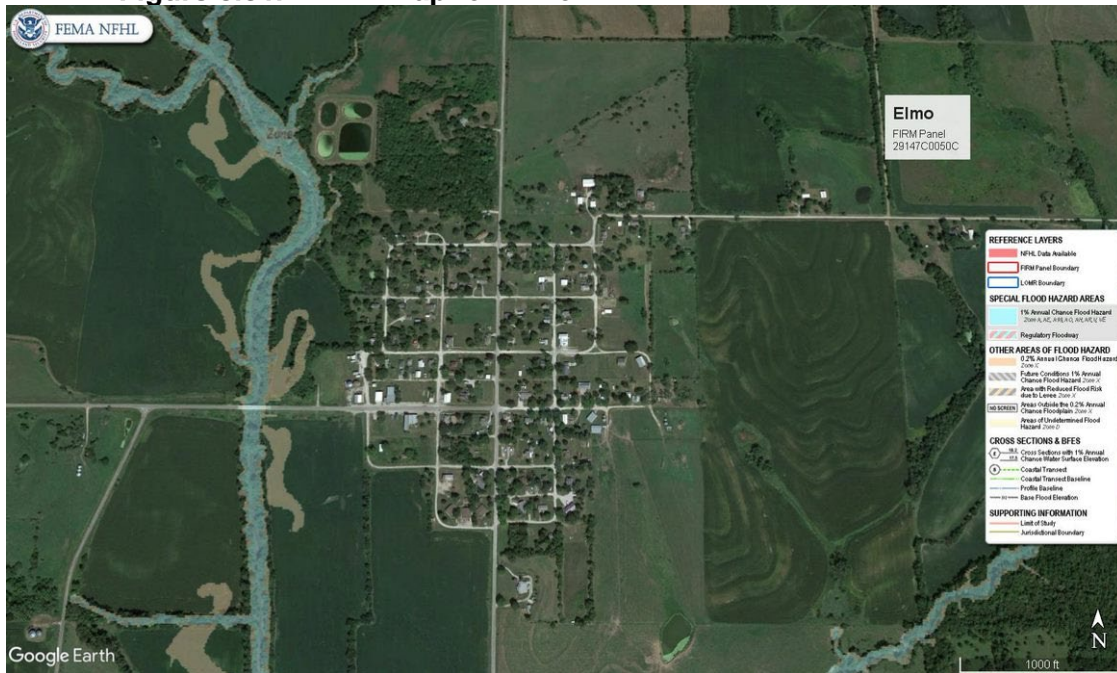
Conception Junction (Figure 3.30) is located near the Platte River. None of the city limits is in SFHA. The Village of Clyde (\*non-participant in this update) does have a very small creek that bisects the community, but this is a green area with no structures at risk.

**Figure 3.30. DFIRM Map for Conception Junction**



The City of Elmo (Figure 3.31) has Mill Creek along its western edge and Moss Branch to its south and east. The higher elevation of the city prevents any riverine flooding from reaching any structures or other assets.

**Figure 3.31. DFIRM Map for Elmo**



In Figure 3.32 the map shows the City of Graham and the surrounding area. The city limits show no flood zone incursions but closer to the Nodaway River there are three structures indicated that are located in Zone A.

**Figure 3.32. DFIRM Map for Graham**



The Platte River flows by the western edge of Guilford. As seen in the map (Figure 3.33) there are no structures located in the floodplain in or near Guilford.

**Figure 3.33. DFIRM Map for Guilford**



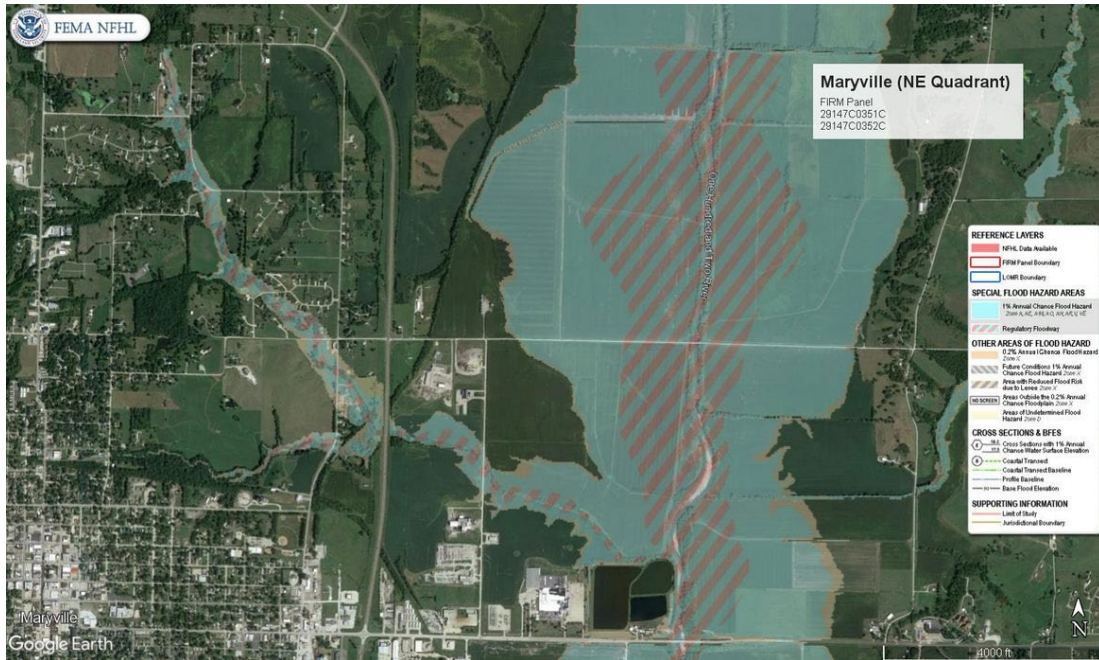
The City of Hopkins is located near the 102 River in the north central part of Nodaway County. Hopkins does participate in the NFIP and as shown in Figure 3.34, there are numerous structures located in the 500-year floodplain in this part of the county.

**Figure 3.34. DFIRM Map for Hopkins**



The Special Flood Hazard Areas in and near Maryville are shown in Figure 3.35-3.38. While there are a couple of structures in the 500-year floodplain within the city limits, most of the vulnerable structures are in the unincorporated area nearby. There are three structures northeast of Maryville identified as being in the AE Floodway Zone. Three structures are shown as lying in the A Flood Zone. One is located west of the city near a small reservoir and the other two are on the west side of the 102 River, one north of U.S. Hwy. 136 and the other south. Finally, six other buildings are shown as being within the 500-year flood zone.

**Figure 3.35. DFIRM Map for Maryville NE Quadrant**



**Figure 3.36. DFIRM Map for Maryville NW Quadrant**





Figure 3.37. DFIRM Map for Maryville SE Quadrant

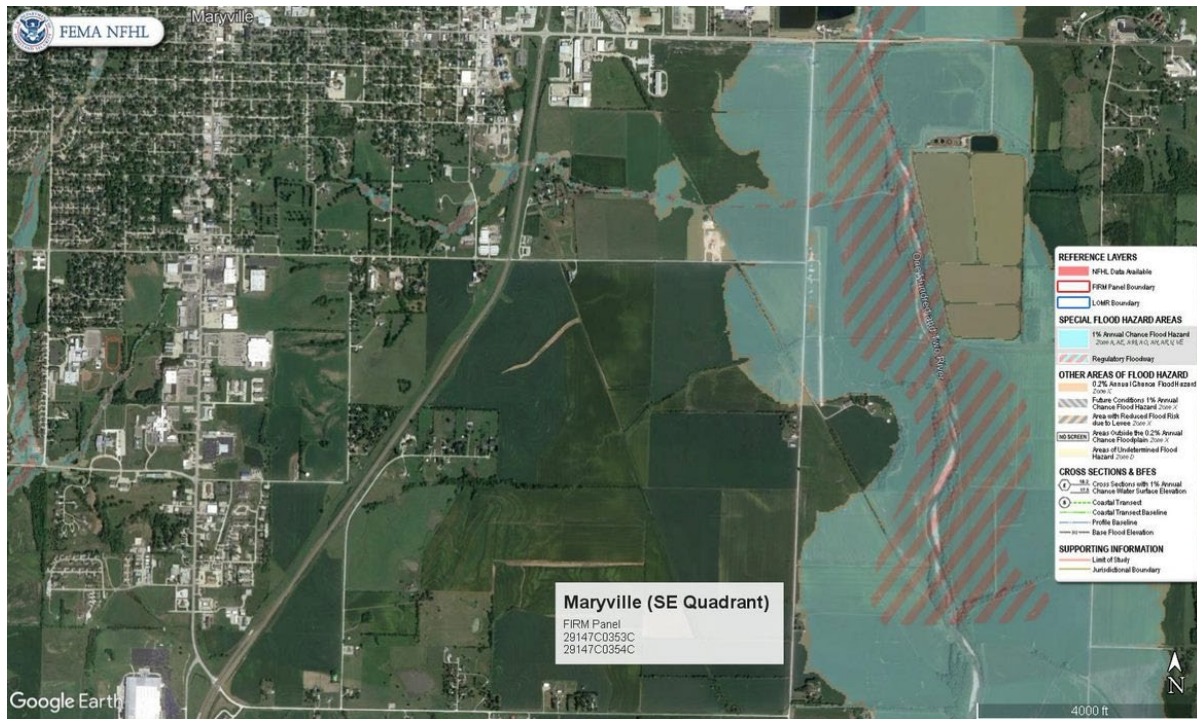
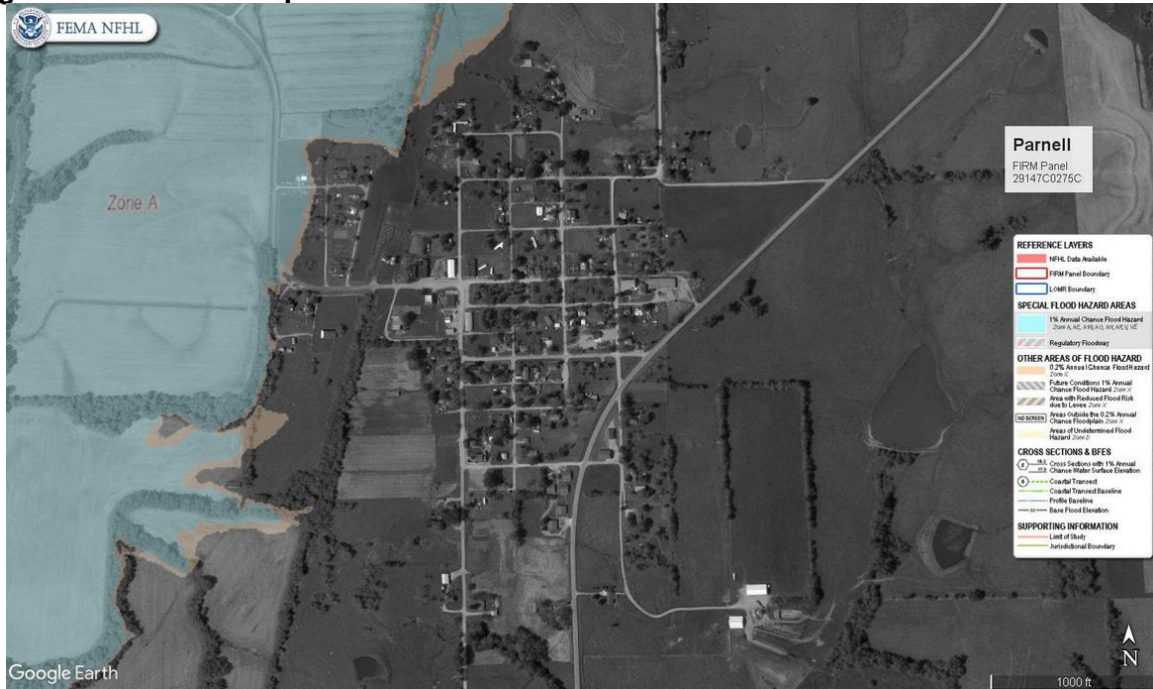


Figure 3.38. DFIRM Map for Maryville SW Quadrant



Parnell (Figure 3.39) is located on the eastern side of Nodaway County near the Platte River. Part of the city limits lie within the A Flood Zone with three structures within this zone. North of Parnell there have been five structures and an additional structure southwest of the city on the west side of the Platte River placed within the 100-year floodplain.

**Figure 3.39. DFIRM Map for Parnell**



Although Pickering is located near the 102 River in the central part of Nodaway County, Figure 3.40 shows that there are no structures located in the SFHA.

**Figure 3.40. DFIRM Map for Pickering**



Figure 3.41 shows that the City of Ravenwood is near the Platte River but indicates that none of its assets are at risk from riverine flooding. One structure in the unincorporated area southwest of the city does lie in the A Flood Zone.

**Figure 3.41. DFIRM Map for Ravenwood**



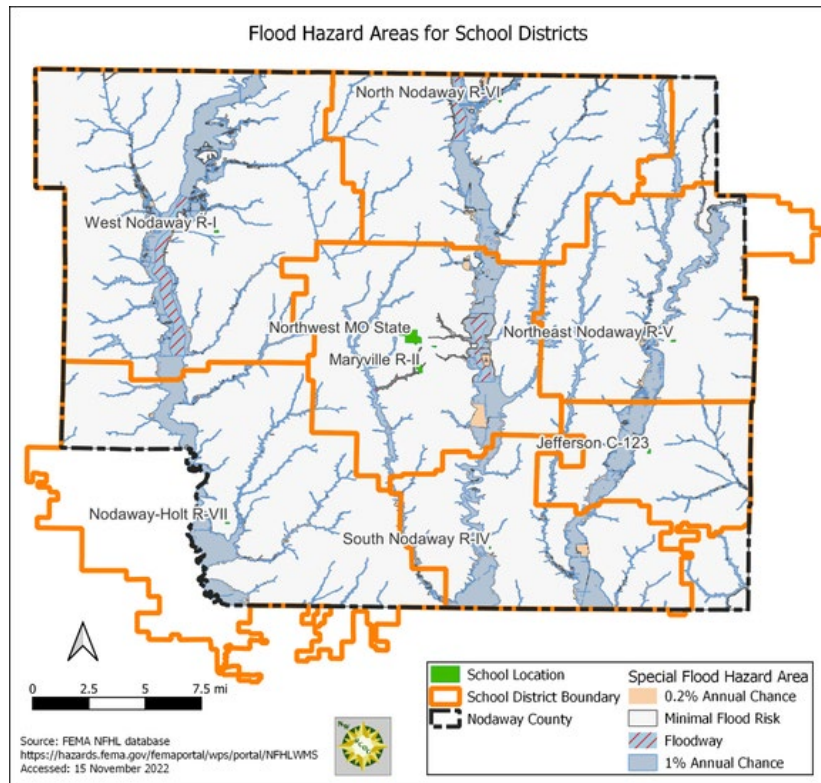
Skidmore (Figure 3.42) is located on the west side of Nodaway County. The map shows that the incorporated portions of the city are not located within any SFHA. Highway 113 south of Skidmore is in the 100-year floodplain and there are two structures indicated to lie in the 500-year floodplain. Almost 25% of the flash flood events recorded in Nodaway County over the last 20 years have occurred in the Skidmore area.

**Figure 3.42. DFIRM Map for Skidmore**



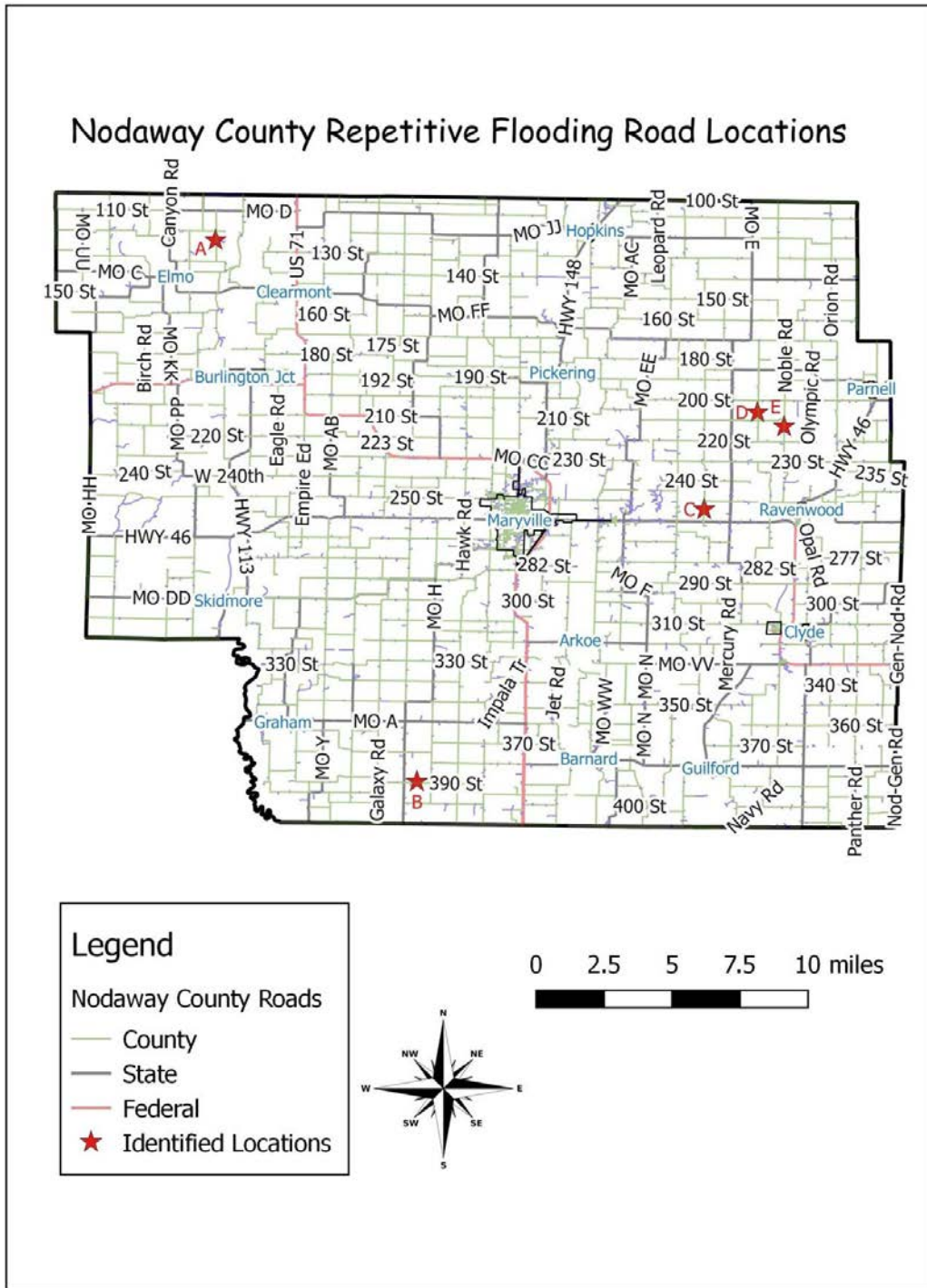
None of the county's school districts have assets in SFHA and none have reported issues with flooding other than road closures affecting bus routes. Figure 3.43 shows the school district boundaries and identified SFHA.

**Figure 3.43. Flood Hazard Areas for School Districts**



In 2017-18 Nodaway County participated in a CDBG Special Project that assessed the county's roads for areas that were repetitively closed or damaged by flooding. Five areas were identified (Figure 3.44) and prioritized to receive attention whenever funding becomes available. The county commissioners and NWMORCOG are currently researching FEMA and other federal and state grant sources to address funding these projects.

Figure 3.44. Repetitive Flood Damaged Road Sites



**Problem Statement**

The major risks for flooding are along the Platte River, 102 River, Nodaway River and their tributaries. Most of the reported riverine flooding events have occurred in the rural areas of the county. While there is almost \$2 million in NFIP coverage for the county, only one claim for \$10,000 has been closed. Costly damages in the county occurs to agriculture crops with almost \$1.5 million in indemnity payments made over the past ten years for an average annual amount of \$144,847 paid.

## 3.4.6 Levee Failure

### Hazard Profile

#### Hazard Description

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

Levees can be small agricultural levees that protect farmland from high-frequency flooding. Levees can also be larger, designed to protect people and property in larger urban areas from less frequent flooding events such as the 100-year and 500-year flood levels. For purposes of this discussion, levee failure will refer to both overtopping and breach as defined in FEMA's Publication "So You Live behind a Levee" (<http://dx.doi.org/10.1061/9780784410837>). Following are the FEMA publication descriptions of different kinds of levee failure.

#### ***Overtopping: When a Flood Is Too Big***

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

#### ***Breaching: When a Levee Gives Way***

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

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

#### **Geographic Location**

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

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

It is likely those agricultural levees and other non-regulated levees within the planning area exist that are not inventoried or inspected. These levees that are not designed to provide protection from the 1-percent annual chance flood would overtop or fail in the 1-percent annual chance flood scenario. Therefore, any associated losses would be considered in the loss estimates provided in the Flood Hazard Section, 3.4.5.

For purposes of the levee failure profile and risk assessment, normally those levees indicated on the Preliminary DFIRM as providing protection from at least the 1-percent annual chance flood would be discussed and further analyzed. However, in the situation of Nodaway County, there are no levees identified. The levees in the county are low-head agricultural levees, the breach of which would not cause widespread damages. It is noted that increased discharges are being taken into account in revision of the flood maps as part of the Risk Mapping, Assessment, and Planning program (Risk MAP), which is the Federal Emergency Management Agency (FEMA) Program that provides communities with flood information and tools they can use to enhance their mitigation plans and take action to better protect their citizens. This may result in changes to the flood protection level that existing levees are certified as providing. A FEMA Risk MAP assessment has been completed on the Upper Grand River Watershed. This project's area includes a narrow slice of southeastern Nodaway County with the Village of Clyde on its western edge.

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

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

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

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

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

Both Routine and Periodic Inspections result in a rating for operation and maintenance. Each levee segment receives an overall segment inspection rating of Acceptable, Minimally Acceptable, or Unacceptable. Figure 3.45 below defines the three ratings.

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**Figure 3.45. Definitions of the Three Levee System Ratings**

Levee System Inspection Ratings

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

Source: U.S. Army Corps of Engineers <http://nld.usace.army.mil>

**Previous Occurrences**

With the lack of data of the county’s levees in the national databases and the absence of a comprehensive statewide database, there is limited information on previous levee breaches. One incident was recorded on the NCEI Storm Events Database. During a severe thunderstorm event on June 5-6, 2008, heavy precipitation caused a levee break near Skidmore. Highway 113 was closed due to the flooding waters.

**Probability of Future Occurrence**

With one levee break recorded during the twenty years of data researched, there is a 5% probability of levee failure occurring in any given year in Nodaway County.

**Changing Future Conditions Considerations**

As the levels of precipitation increase and extreme events occur because of a changing climate, the levees are likely going to experience higher levels of pressure, following that, there is an increased number of levee failures. Furthermore, levees with age, and lack of maintenance are more vulnerable to failure.

**Vulnerability**

**Vulnerability Overview**

Levees may not be detected on computer terrain models. Thus, some communities that may be protected from 100-year floods from levees may be modeled by Hazus as inundated and the risk may be overestimated. While the levee program has made extraordinary progress, there are still limitations and gaps in the data available. The study information used by the 2018 Missouri HMP did not include inland levee protection information other than those listed on the major rivers. The population exposed to flooding risk due to levees that do not provide flood protection for Nodaway County is estimated to be zero.

**Potential Losses to Existing Development**

The only assets at risk in Nodaway County due to levee failure would be agricultural lands and roadways that are behind unregistered levees.



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

As previously stated, only low head agricultural levees exist in Nodaway County with no planned development in those areas.

### **Hazard Summary by Jurisdiction**

With a lack of identified levee failure risk, the section on the hazard of flooding with the included DFIRM maps is the best source of differences between jurisdictions for this risk.

### **Problem Statement**

Considering that significant levee systems do not exist in Nodaway County, the risks from the hazard of levee failure are minimal. A county-wide inventory and assessment of the low-head agricultural levees would help identify problems that could be addressed to help limit future losses to agricultural assets as well as county roads and bridges.

## **3.4.7 Thunderstorm/High Winds/Lightning/Hail**

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

##### *Hail*

According to the National Oceanic and Atmospheric Administration (NOAA), hail is precipitation that is formed when thunderstorm updrafts carry raindrops upward into extremely cold atmosphere causing them to freeze. The raindrops form into small frozen droplets. They continue to grow as they come into contact with super-cooled water which will freeze on contact with the frozen rain droplet. This frozen

droplet can continue to grow and form hail. As long as the updraft forces can support or suspend the weight of the hailstone, hail can continue to grow before it hits the earth.

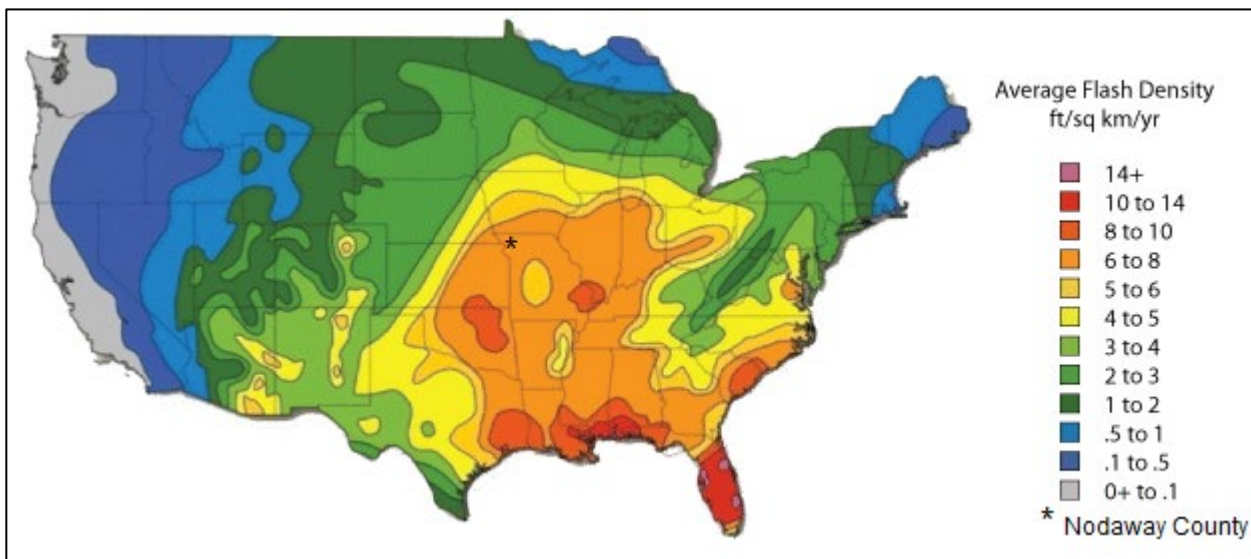
At the time when the updraft can no longer support the hailstone, it will fall down to the earth. For example, a ¼” diameter or pea sized hail requires updrafts of 24 miles per hour, while a 2 ¾” diameter or baseball sized hail requires an updraft of 81 miles per hour. According to the NOAA, the largest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

### Geographic Location

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

Nodaway County’s location in the Midwest puts it in an area where lightning storms are common. The county can expect 6-8 flashes per square kilometer per year as shown in the map below in Figure 3.46. This would be about 15-20 flashes per square mile on average each year.

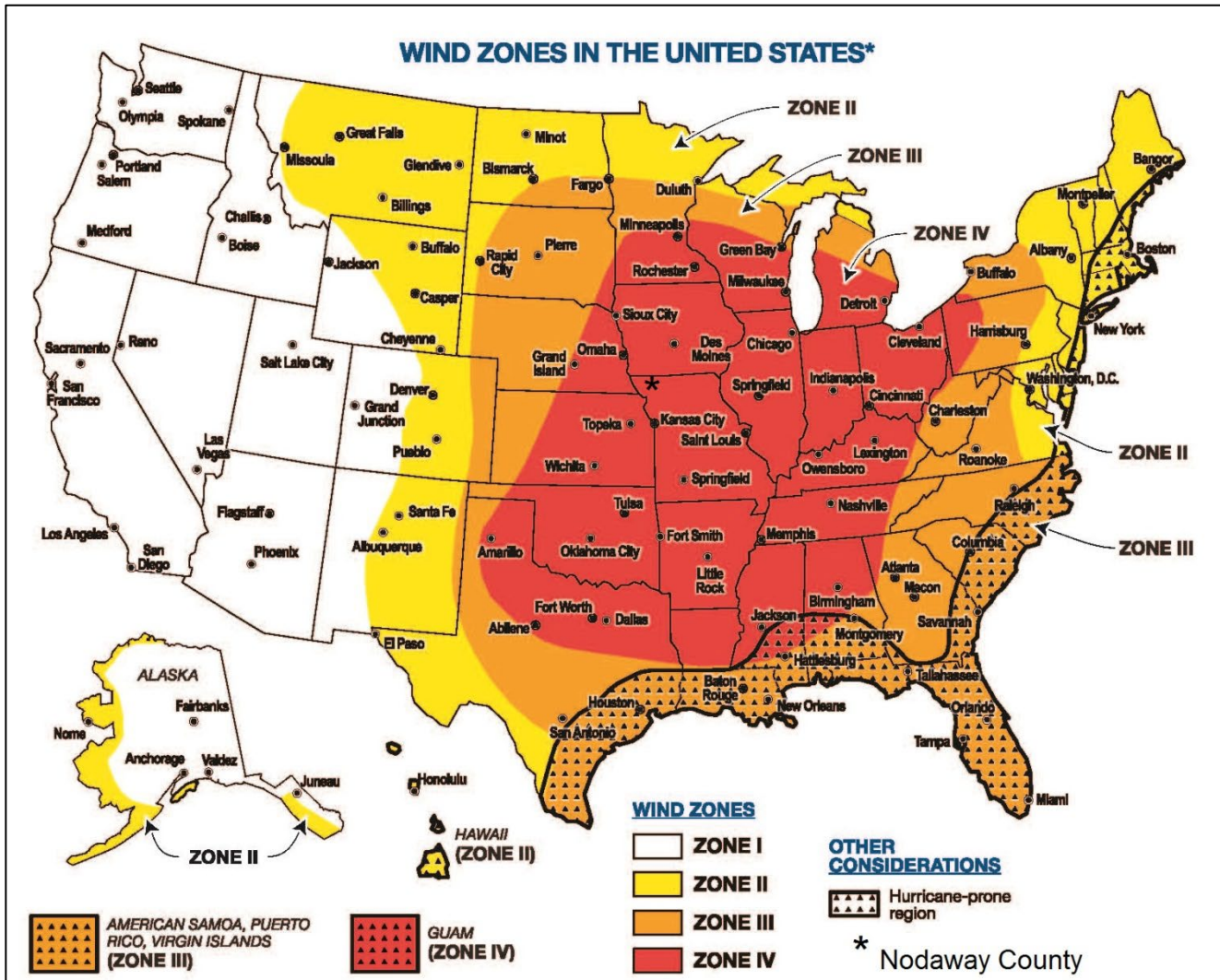
**Figure 3.46. Location and Frequency of Lightning across the U.S.**



Source: Insurance Institute for Business & Home Safety

The wind zone map (Figure 3.47) shows that the entire state of Missouri is located in Zone IV with winds up to 250 miles per hour. Nodaway County, located in the northwest part of the state, is well within this highest velocity zone.

Figure 3.47. Wind Zones in the United States



Source: FEMA 320, Taking Shelter from the Storm, 4th edition, [https://www.fema.gov/media-library-data/1418837471752-920f09bb8187ee15436712a3e82ce709/FEMA\\_P-320\\_2014\\_508.pdf](https://www.fema.gov/media-library-data/1418837471752-920f09bb8187ee15436712a3e82ce709/FEMA_P-320_2014_508.pdf)

### Severity/Magnitude/Extent

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

In general, assets in 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.

Based on information provided by the Tornado and Storm Research Organization (TORRO), **Table 3.36** below describes typical damage impacts of the various sizes of hail.

**Table 3.36. Tornado and Storm Research Organization Hailstorm Intensity Scale**

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

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

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

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

The tables below (**Tables 3.37** through **Table 3.40**) summarize past crop damages as indicated by crop insurance claims. The tables illustrate the magnitude of the impact on the planning area's agricultural economy.

**Table 3.37. Crop Insurance Claims Paid from Thunderstorms, 2013—2022**

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2013	Corn	Excess Precipitation	\$129,075
2013	Soybeans	Excess Precipitation	\$459,623
2014	Corn	Excess Precipitation	\$212,494
2014	Soybeans	Excess Precipitation	\$494,031
2015	Corn	Excess Precipitation	\$8,827,625
2015	Soybeans	Excess Precipitation	\$4,595,102
2015	Wheat	Excess Precipitation	\$130,601
2016	Corn	Excess Precipitation	\$547,045
2016	Soybeans	Excess Precipitation	\$71,919
2016	Wheat	Excess Precipitation	\$4,256
2017	Corn	Excess Precipitation	\$59,370
2017	Soybeans	Excess Precipitation	\$103,180
2018	Corn	Excess Precipitation	\$242,866
2018	Soybean	Excess Precipitation	\$136,151
2019	Wheat	Excess Precipitation	\$114,846
2019	Corn	Excess Precipitation	\$2,720,877
2019	Soybean	Excess Precipitation	\$647,176
2020	Wheat	Excess Precipitation	\$16,438
2020	Corn	Excess Precipitation	\$175,030
2020	Soybean	Excess Precipitation	\$117,692
2021	Corn	Excess Precipitation	\$195,131
2021	Soybeans	Excess Precipitation	\$384,021
2022	Wheat	Excess Precipitation	\$16,547
2022	Corn	Excess Precipitation	\$56,846
2022	Soybean	Excess Precipitation	\$220,626
Total			\$15,795,441

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

**Table 3.38. Crop Insurance Claims Paid from High Winds, 2013—2022**

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2013	Corn	Wind/Excess Wind	\$4,278
2014	Corn	Wind/Excess Wind	\$77,934
2016	Corn	Wind/Excess Wind	\$373,301
2016	All Other Crops	Wind/Excess Wind	\$9,860
2017	Soybeans	Wind/Excess Wind	\$3,363
2018	Corn	Wind/Excess Wind	\$6,200
2022	Corn	Wind/Excess Wind	\$944
	Grain Sorghum		\$6,911
Total			\$482,791

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

**Table 3.39. Crop Insurance Claims Paid from Lightning, 2017-2022**

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2017	Corn	Other (Lightning, etc.)	\$1,378
2020	Soybeans	Other (Lightning, etc.)	\$300
2021	Corn	Other (Lightning, etc.)	\$501
Total			\$12,450

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

**Table 3.40. Crop Insurance Claims Paid from Hail, 2014—2022**

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2014	Corn	Hail	\$100,370
2014	Soybeans	Hail	\$89,250
2015	Corn	Hail	\$158,622
2015	Soybeans	Hail	\$108,221
2016	Soybeans	Hail	\$3,053
2017	Soybeans	Hail	\$15,122
2018	Corn	Hail	\$16,547
2018	Soybeans	Hail	\$48,698
2020	Corn	Hail	\$66,698
2022	Soybeans	Hail	\$11,397
Total			\$617,978

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

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

The following two tables, Table 3.41 and Table 3.42 show the reported thunderstorm hail and wind episodes that occurred during the ten-year period 2013-2022. There were no reports for lightning or heavy rain. Limitations to using NCEI data for these events are reported lightning events include the only lightning events that result in fatality, injury and/or property and crop damage. Heavy rain events usually coincide with flooding events and those events are discussed in the hazard section on floods. NCEI relies not only on law enforcement and trained spotters to report storms, but also on input from the public. The information is often estimates and when a zero is recorded in the property damage column that means that the amount is unknown.

**Table 3.41. Nodaway County Hail Events (diameter 1 inch or greater), 2013-2022**

Date	Size (inches)	Locations	Deaths/Injuries	Property Damage (\$)
5/28/2013	1	Parnell	0/0	0
4/13/2014	1	Maryville Rankin Airport	0/0	0
5/10/2014	1.75	Conception	0/0	0
6/3/2014	2.75	Hopkins, Skidmore	0/0	0
5/25/2015	1	Ravenwood	0/0	0
6/10/2015	1	Hopkins	0/0	0
7/13/2015	1.25	Burlington Jct., Clearmont	0/0	0
8/2/2015	1.5	Hopkins, Pickering	0/0	0
3/23/2016	1	Skidmore	0/0	0
5/26/2016	1.5	Ravenwood	0/0	0
3/6/2017	1.75	Conception Jct., Maryville, Parnell, Ravenwood	0/0	0
6/28/2017	1.75	Pickering	0/0	0
8/28/2018	0.88	Maryville	0/0	0
6/5/2019	1	Barnard	0/0	0
3/19/2020	1	Pumpkin Center	0/0	0
3/19/2020	1.25	Barnard	0/0	0
5/14/2020	1.5	Pickering	0/0	0
7/30/2021	1	Maryville	0/0	0
12/15/2021	1.75	Maryville	0/0	0
3/5/2022	1	Maryville Rankin Airport	0/0	0
5/17/2022	1	Hopkins	0/0	0
31 events				

Source: NCEI, data accessed 12/13/2022

**Table 3.42. Nodaway County Thunderstorm Wind Events, 2013-2022**

Date	Estimated Wind (Knots/mph)	Locations	Deaths/Injuries	Property Damage (\$)
5/27/2013	56/65	Pumpkin Center	0/0	0
9/19/2013	52/60	Clearmont, Hopkins, Parnell	0/0	500
5/8/2014	52/60	Maryville	0/0	0
6/3/2014	61/70	Skidmore, Graham	0/0	0
5/25/2015	52/60	Ravenwood	0/0	0
6/11/2015	52/60	Maryville	0/0	0
7/16/2015	78/90	Graham	0/0	0
8/8/2015	61/70	Barnard	0/0	10,000
11/11/2015	61/70	Parnell	0/0	2,000

Date	Estimated Wind (Knots/mph)	Locations	Deaths/Injuries	Property Damage (\$)
7/7/2016	70/80	Ravenwood, Maryville, Hopkins, Pickering	0/0	0
3/6/2017	61/70	Ravenwood	0/0	0
5/17/2017	61/70	Maryville	0/0	0
6/15/2017	52/60	Quitman	0/0	0
6/16/2017	61/70	Maryville	0/0	0
5/2/2018	61/70	Graham	0/0	0
5/2/2018	53/60	Maryville	0/0	0
5/2/2018	52/59	Clearmont	0/0	0
5/2/2018	61/70	Ravenwood	0/0	0
5/2/2018	61/70	Orrsburg	0/0	0
8/6/2018	56/64	Elmo	0/0	0
8/6/2018	56/64	Burlington JCT	0/0	0
8/6/2018	52/59	Maryville	0/0	0
8/6/2018	52/59	Pickering	0/0	0
9/20/2018	53/60	Maryville Mem Airport	0/0	0
5/25/2019	61/70	Maryville Mem Airport	0/0	8000
5/24/2020	61/70	Maryville Rankin Airport	0/0	0
6/5/2020	52/59	Maryville	0/0	0
12/15/2021	64/73	Burlington JCT	0/0	0
12/15/2021	61/70	Clearmont	0/0	0
12/15/2021	61/70	Maryville	0/0	0
5/7/2022	61/70	Hopkins	0/0	1000
45 total events, 0 deaths/injuries, Average cost of \$26,382				

Source: NCEI, data accessed 12/13/2022

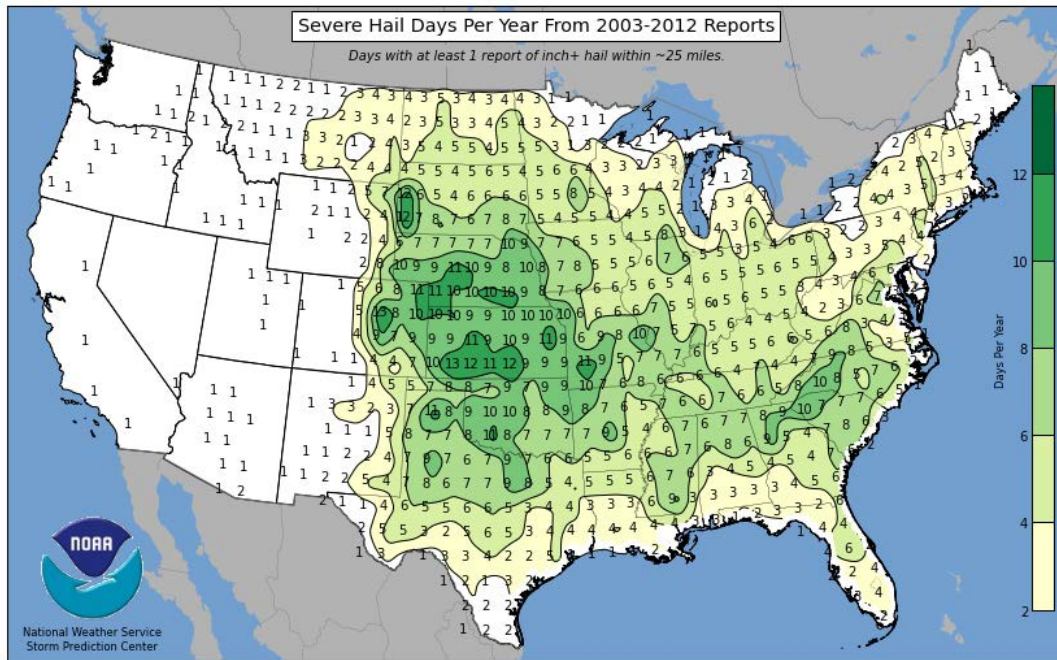
### Probability of Future Occurrence

Based on information from the National Centers for Environmental Information (NCEI) there has been an annual average of 4.3 days of thunderstorm activity in Nodaway County during the previous ten-year period. The database provided by NCEI did not contain reports of heavy rain nor lightning for the ten-year period. However, as has been discussed earlier, this database does not report these events unless there is a confirmed fatality or property damage because of the event.

There was an annual average of 2.8 windstorm events for the ten-year period. There were 22 reports of hailstorms with one inch or larger diameter stones. This is an annual average of 2.2 events. The following map in Figure 3.48 shows the probability of a large hailstone event. Most of the County lies in the zone of over 1.25 annual events with two inch or larger hailstones.



**Figure 3.48. Annual Hailstorm Probability (1” diameter or larger), U.S. 2003-2012**



Source: National Weather Service Storm Prediction Center

**Changing Future Conditions Considerations**

As temperatures increase with climate change, the severity of storms is likely to follow, as warm air is the key ingredient to thunderstorms. Due to higher levels of convection, there is going to be a higher frequency of storms, and more severe storms.

**Vulnerability**

**Vulnerability Overview**

The 2018 update to the Missouri State Hazard Mitigation Plan gives Nodaway County an overall rating of Medium-High vulnerability to the threat from this hazard. The State Plan looked at historical losses due to hail, wind, and lightning and calculated a vulnerability rating for each threat. An overall vulnerability rating was calculated with more weight given to the hail and wind factors. For Nodaway County the likelihood of wind and hail events and the medium-high rating for crop exposure were major factors in its overall rating of medium high vulnerability to this hazard.

**Potential Losses to Existing Development**

The factors used to arrive at the vulnerability rating are summarized in Table 3.43.

**Table 3.43. Nodaway County Exposure to Severe Thunderstorms**

Housing Units/sq. Mi.	Total Building Exposure	Social Vulnerability Index (1-5)
10.96	\$2,447,800,000	3 (Medium)

Source: 2018 Missouri State Hazard Mitigation Plan

The main potential loss to the County due to thunderstorms is damage to crops. Using the source of the data summarized in Table 3.42, above, the average annual property and crop loss due to thunderstorm hail, wind, and excessive rain is \$1,372,688.

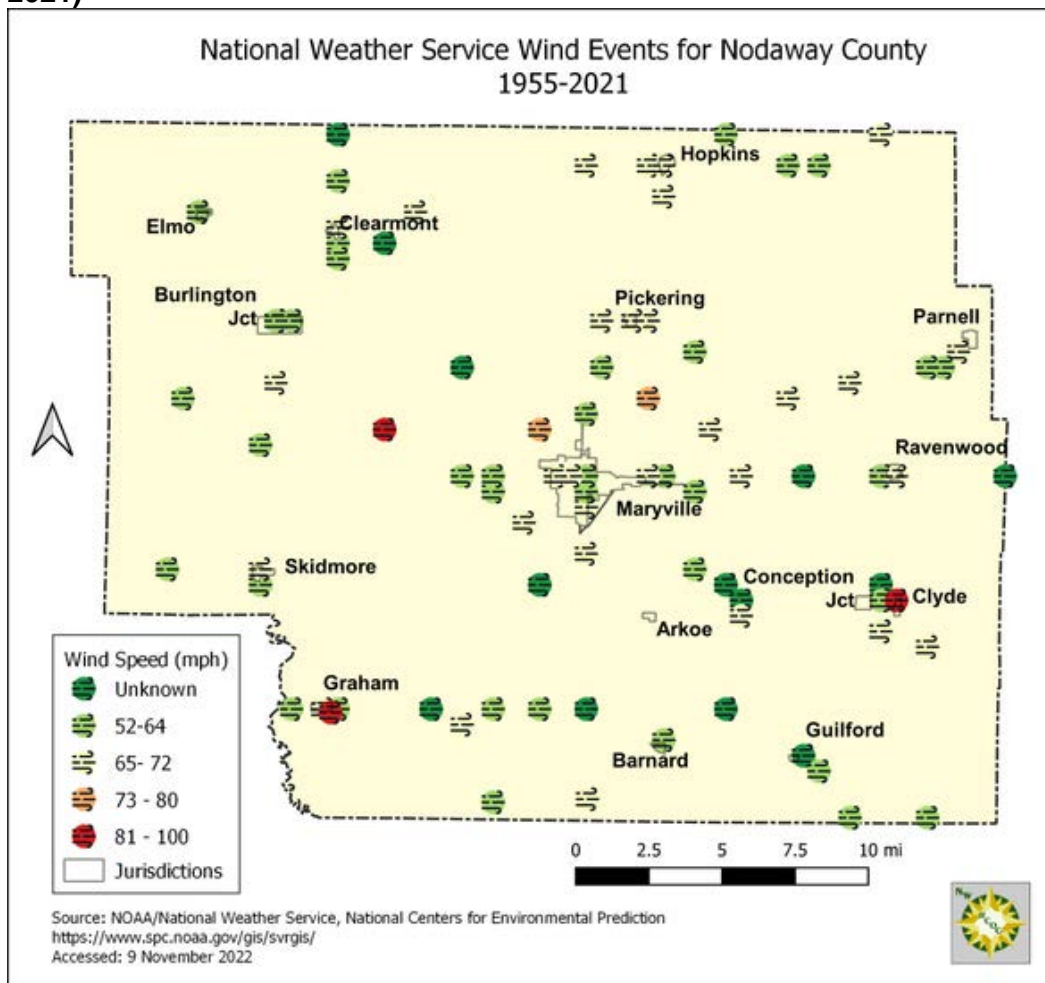
### Previous and Future Development

Additional development results in the exposure of more homes and businesses to the threat of damage from thunderstorms. With the declining population trend for most of the County, no significant development is anticipated except in the area in and around Maryville. The amount of crop acreage vulnerable to damage is expected to remain steady.

### Hazard Summary by Jurisdiction

The hazards from thunderstorms are county-wide. The narratives from the NCEI database included storms affecting all parts of the county with equal likelihood. The following map, Figure 3.49 shows the location and magnitude of windstorms affecting Nodaway County.

**Figure 3.49. Location and Magnitude of Nodaway County Thunderstorm Wind Events (1955-2021)**



### Problem Statement

Early warnings are possibly the best hope for residents when severe weather strikes. Cities that do not already possess warning systems should plan to purchase a system. Additional public awareness also includes coverage by local media sources. Local governments should encourage residents to

purchase weather radios to ensure that everyone has sufficient access to information in times of severe weather. Storm shelters are another important means of mitigating the effects of severe thunderstorms. A community-wide shelter program should be adopted for residents who may not have adequate shelter in their homes. Residents should also be encouraged to build their own storm shelters to prepare for emergencies. Early warnings and available safe rooms will reduce the number of residents at-risk of injury or death from this type of hazard.

### **3.4.8 Tornado**

#### **Hazard Profile**

##### **Hazard Description**

The NWS defines a tornado as “a violently rotating column of air extending from a thunderstorm to the ground.” It is usually spawned by a thunderstorm and produced when cool air overrides a layer of warm air, forcing the warm air to rise rapidly. Often, vortices remain suspended in the atmosphere as funnel clouds. When the lower tip of a vortex touches the ground, it becomes a tornado.

High winds not associated with tornadoes are profiled separately in this document in **Section 3.4.7, Thunderstorm/High Wind/Hail/Lightning.**

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

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

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

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

##### **Geographic Location**

Any person or structure at any location in Nodaway County could be impacted by a tornado. The amount of damage depends on 1) the strength of the tornado, 2) the tornado’s proximity to the person/structure, 3) the strength of the structure, 4) how well a person is sheltered.

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

Tornadoes are the most violent of all atmospheric storms and are capable of tremendous destruction. Wind speeds can exceed 250 miles per hour and damage paths can be more than one mile wide and

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

Tornado magnitude is classified according to the EF- Scale (or the Enhance Fujita Scale, based on the original Fujita Scale developed by Dr. Theodore Fujita, a renowned severe storm researcher). The EF- Scale (see Table 3.44) 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 3.44. 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 3.45. 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.

**Table 3.45. Enhanced Fujita Scale with Potential Damage**

Enhanced Fujita Scale			
Scale	Wind Speed	Relative Frequency	Potential Damage
EF0	65-85 mph	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 mph	31.6%	Moderate. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and glass broken.
EF2	111-135 mph	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 mph	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 mph	0.7%	Devastating. Well-constructed houses and whole frame houses completely levelled; cars thrown, and small missiles generated.
EF5	>200 mph	<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. As noted for other hazards, a zero in the property or crop damages columns means the amount is unknown. Table 3.46 below details the tornado history for Nodaway County.

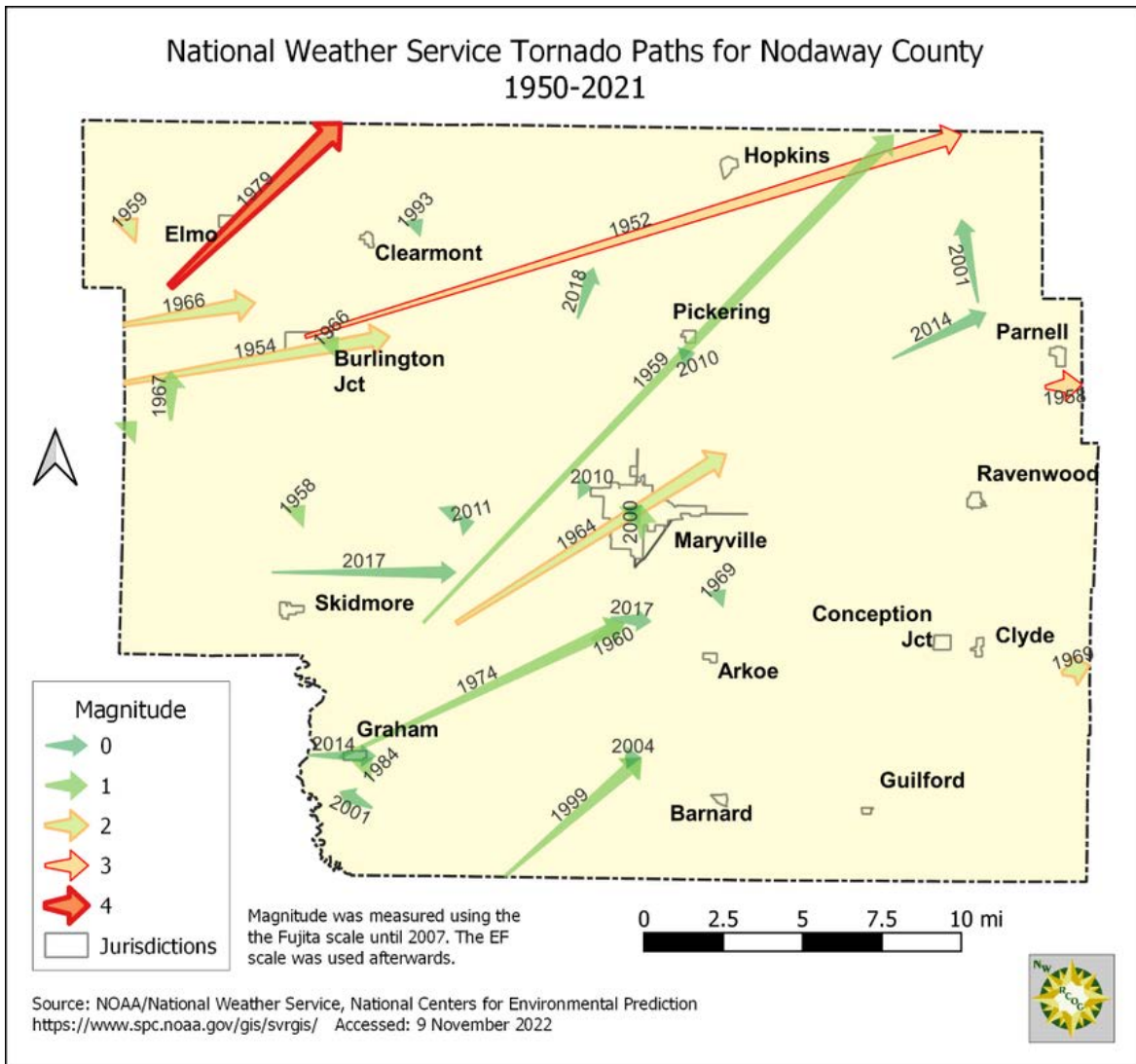
**Table 3.46. Recorded Tornadoes in Nodaway County, 1998 – 2018**

Date	Beginning Location	Ending Location	Length (miles)	Width (yards)	F/EF Rating	Death	Injury	Property Damage	Crop Damages
4/8/1999	Pumpkin Center (8 mi S of Maryville)	Pumpkin Center	5.5	75	F1	0	0	\$250,000	\$100,000
5/26/2000	Maryville	Maryville	1	50	F1	0	0	\$50,000	0
4/8/2001	Parnell	Parnell	1	20	F0	0	0	0	0
5/4/2001	Graham	Graham	25	0.5	F0	0	0	0	0
5/24/2004	Graham	Graham	0.5	50	F0	0	0	0	0
6/13/2004	Elmo	Elmo	0.5	50	F0	0	0	0	0
8/26/2004	Quitman (6 mi N of Skidmore)	Quitman	0.1	50	F0	0	0	0	0
4/24/2010	Maryville Mem Airport	Maryville Mem Airport	0.06	25	EF0	0	0	0	0
4/24/2010	Pickering	Pickering	0.11	25	EF0	0	0	0	0
6/26/2011	Maryville Mem Airport	Maryville Mem Airport	0.05	25	EF0	0	0	0	0
6/30/2014	Orrsburg (6 mi W of Parnell)	Parnell	3.52	200	EF0	0	0	0	0
9/9/2014	Graham	Graham	2.17	30	EF0	0	0	0	0
3/6/2017	Skidmore	Maryville Mem Airport	5.8	25	EF0	0	0	0	0
6/28/2017	Arkoe	Arkoe	1.31	25	EF0	0	0	0	0
10/8/2018	Pickering	Pickering	2.18	50	EF0	0	0	0	0
Total						0	0	\$300,000	\$100,000

Source: NCEI, data accessed 12/13/2022

Using information from the National Centers for Environmental Information the following map (Figure 3.50) shows the paths of tornadoes that occurred 1950-2021. Only one EF4 tornado had been documented in the county. One school was hit by a tornado in 2014 which will be detailed later in the Hazard Summary by Jurisdiction section.

**Figure 3.50. Nodaway County Map of Historic Tornado Events (1950-2021)**



Source: NOAA, National Weather Service <http://www.spc.noaa.gov/gis/svrgis/>

According to the USDA Risk Management Agency, there have not been any indemnity payments to Nodaway County farmers during the past 10 years for losses suffered due to tornado activity. It is possible that any damages that occurred from tornadic activity were listed as wind damage or excess precipitation, which usually accompanies the storms that spawn tornadoes.

**Probability of Future Occurrence**

There have been 14 tornadoes recorded over the last 20 years. This puts Nodaway County’s risk for a tornado at 70% for any given year.

**Changing Future Conditions Considerations**

It is unknown how much the frequency of tornadoes is going to change in the future. Research displays there have been more tornadoes since the 1950’s. There is not necessarily new areas of seeing tornadoes for the first time, but the areas that already see frequent tornadoes have seen a

higher number. Some data suggests that the changing climate has shifted the area most likely to experience tornado events. In Nodaway County an increase has not been evident.

## **Vulnerability**

### **Vulnerability Overview**

Although the boundaries of Tornado Alley shown in Figure 3.51 are debatable (depending on which criteria you use—frequency, intensity, or events per unit area), the region from central Texas, northward to northern Iowa, and from central Kansas and Nebraska east to western Ohio is often collectively known as Tornado Alley. Meteorologically, the region is ideally situated for the formation of supercell thunderstorms, often the producers of violent (EF-2 or greater) tornadoes.

Overall, most tornadoes (around 77%) in the United States are considered weak (EF-0 or EF-1) and about 95% of all United States tornadoes are below EF-3 intensity. The remaining small percentage of tornadoes are categorized as violent (EF-3 and above). Of these violent twisters, only a few (0.1% of all tornadoes) achieve EF-5 status, with estimated winds over 200 mph and nearly complete destruction. However, given that on average over 1,000 tornadoes hit the United States each year, which means that 20 can be expected to be violent and one might possibly be so intense as to be described as incredible.

**Figure 3.51. Tornado Alley in the U.S.**



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

In the 2013 update to its hazard mitigation plan, the State of Missouri looked at four factors to determine tornado vulnerability. This measured the likelihood of future tornado impacts, average annual property loss ratio (total building exposure value divided by average annualized historic losses), population change (percent change), and housing change (percent change). Scales were created to rank these factors: likelihood (1-3), loss ratio (1-3), population change (1-3), housing change (1-3). By adding up the factor scores for each county, the counties were given a total vulnerability rating. These ratings identified where tornadoes could have the greatest impacts. Counties with totals of 4-5 were given a Moderate vulnerability rating. Tornadoes could still impact counties that ranked lower in this process. For this reason, the low end of the risk is still considered Moderate. Totals of 6-7 were assigned a High vulnerability rating. Counties with a total risk score of 8 to 9 were at a very high risk. Nodaway County totaled a seven for a High vulnerability rating. The data for Nodaway County is given in the following Table 3.47.

**Table 3.47. Tornado Vulnerability Data for Nodaway County**

Number of Tornadoes 1950-2012	31
Likelihood of Occurrence	50.4%-Very High
Total Economic Exposure (2012)	\$2,097,395,000
Annualized Historic Loss	\$196,754
Loss Ratio	0.009%-Moderate
Population Growth from 2000 to 2012	6.7%-High
Housing Change from 2000 to 2012	5.00%-Moderate

Source: Missouri State Hazard Mitigation Plan 2013

The preliminary data for the 2018 update to the Missouri State Hazard Mitigation Plan places Nodaway County in the category of Moderate Risk for vulnerability to the hazard of tornadoes. This is based on a historical 48% probability of these violent storms and annualized property losses for the county of \$52,426.

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

The rural nature of the county lessens the likelihood of a tornado striking a densely populated area. The 2010 U.S. Census data showed a population density of 26.6 persons per square mile and a housing density of 10.9 units per square mile. This means most damage would probably occur to agricultural assets.

The last twenty years have seen an increase in the frequency of tornadoes in the county; however the intensity of the storms has been less: two F1 tornadoes and the rest have been F0 or EF0. The damage from these lower scale storms is usually light to moderate which again limits the potential losses to the County. The annual average property loss has been \$15,000, significantly below the historic amount.

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

The county has seen a slight increase in population since the last census, with most of the increase in the Maryville area with many of the small communities losing residents. The total building exposure at risk to tornadoes is \$62,145,595. Only a small increase in exposure is foreseen at this time.

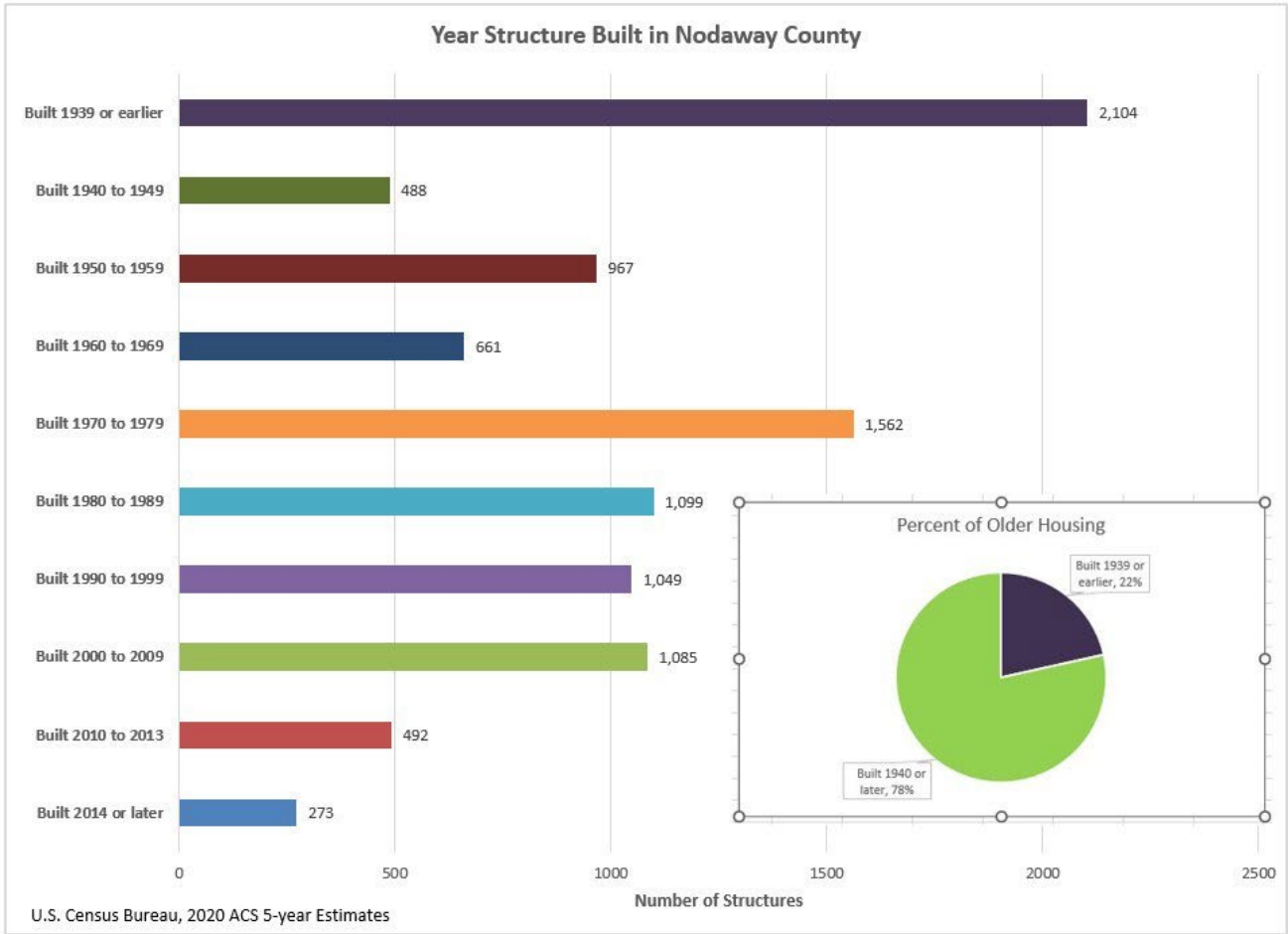
#### **Hazard Summary by Jurisdiction**

Northwest Missouri State University's location within Maryville increases the number of high occupancy buildings with numerous dormitories and apartment complexes. Most of the businesses with the greatest number of employees are also situated in Maryville as well. Three of the four nursing homes are in Maryville with the fourth located in an unincorporated area close to Maryville.

Mobile homes, which offer little protection from tornadoes, make up about 7% of the housing for Nodaway County. These homes are located throughout the county, but more trailer parks are near Maryville. More than one-fifth of the housing in Nodaway County was built before 1940, housing that is usually more susceptible to damage from storms and earthquakes. This data is shown in Figure 3.52.



**Figure 3.52. Age of Nodaway County Structures**



Nodaway Holt R-VII schools suffered damage from a tornado on September 9, 2014. Damages totaling over \$380,000 resulted in the school cancelling classes for days. The event occurred at night so there were no deaths or injuries.

**Problem Statement**

Nodaway County has been fortunate that the seven tornadoes that have occurred over the last ten years have all been of the lowest intensity. The risk of a devastating tornado cannot be ignored. The latest available estimates place the annualized property losses for the county at \$52,426. Residents must immediately be aware when an area will be facing a severe weather incident. Jurisdictions that do not already possess warning systems should plan to purchase a system. Storm shelters are another important means of mitigating the effects of tornadoes. Additional public awareness also includes coverage by local media sources. A community-wide shelter program should be adopted for residents who may not have adequate shelter in their homes to minimize the potential for loss of life.

**3.4.9 Wildfires**

**Hazard Profile**

**Hazard Description**

The fire incident types for wildfires include: 1) natural vegetation fire, 2) outside rubbish fire, 3) special outside fire, and 4) cultivated vegetation, crop fire. The Missouri Division of Fire Safety (MDFS) indicates that approximately 80 percent of the fire departments in Missouri are staffed with

volunteers. Whether paid or volunteer, these departments are often limited by lack of resources and financial assistance. The impact of a fire to a single-story building in a small community may be as great as that of a larger fire to a multi-story building in a large city.

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 both structural and wildland fires depend largely on weather conditions. Spring in Missouri is usually characterized by low humidity and high winds. These conditions result in higher fire danger. In addition, due to the recent lack of moisture throughout many areas of the state, conditions are likely to increase the risk of wildfires.

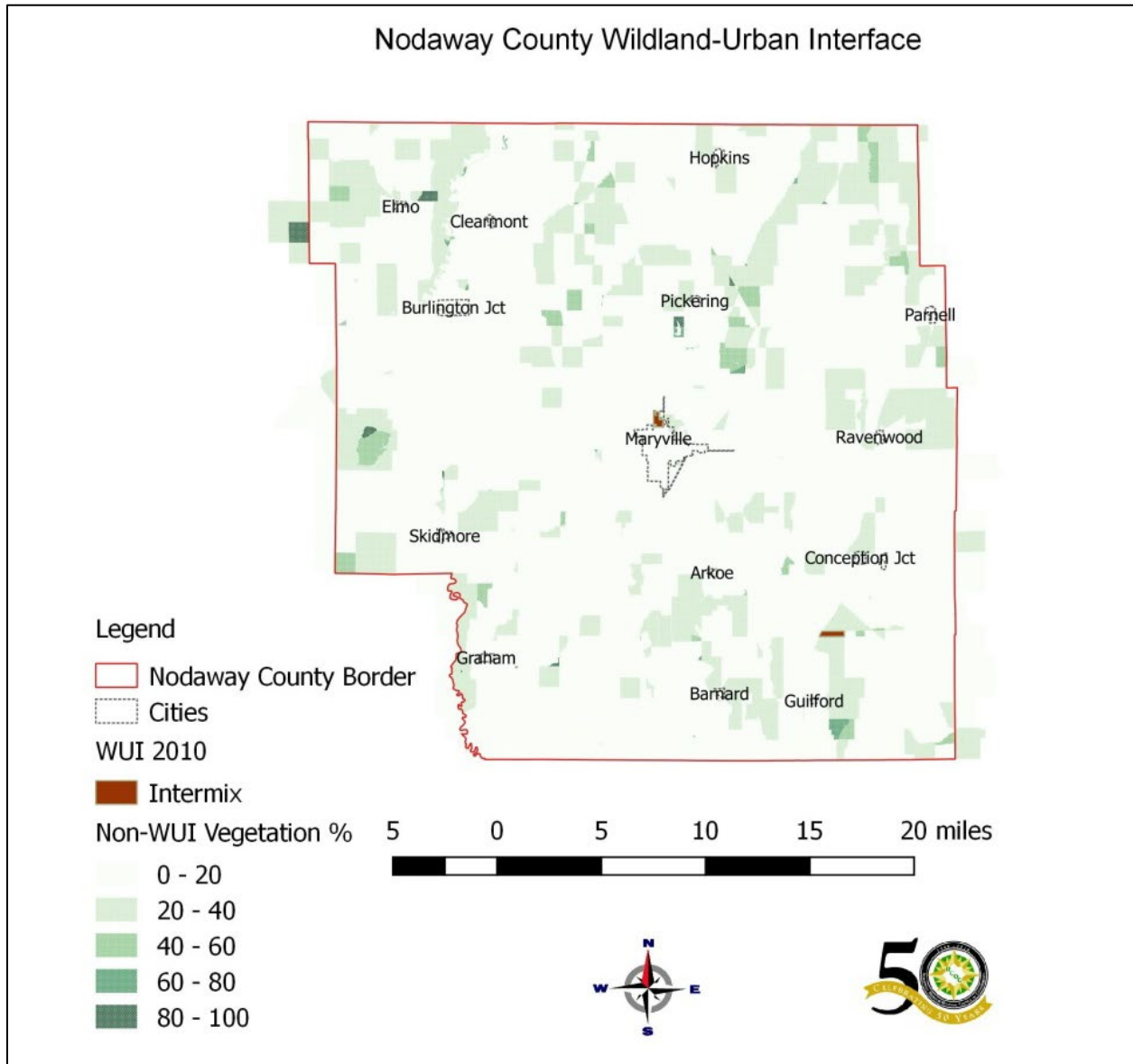
Drought conditions can also hamper firefighting efforts, as decreasing water supplies may not prove adequate for firefighting. It is common for rural residents to burn their garden spots, brush piles, and other areas in the spring. Some landowners also believe it is necessary to burn their forests in 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 wildland-urban interface (WUI) 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.

The map below (Figure 3.53) shows the Wildland-Urban Interface for Nodaway County. The entire Northwest Region is comparable to Nodaway County with low risk for damages in the area. An area on the northern boundary of Maryville is the most significant location on the WUI map. This is an area of Intermix WUI where housing and vegetation intermingle. Another area of intermix WUI exists in a rural setting in Washington Township between Guilford and Conception Junction. The bulk of the county is designated as having NonWUI vegetation of varying percent as illustrated on the map.

**Figure 3.53. Wildland-Urban Interface Map**



Wildfires are included in the plan because like most other natural hazards there is always a possibility of occurrence. When there are periods of extreme heat and drought the risk of wildfire increases.

**Severity/Magnitude/Extent**

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

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

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

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

**Previous Occurrences**

Of the 205 fires in Nodaway County reported to the Missouri Department of Conservation over the last ten years 52 were caused by sparks from persons burning trash, leaves, or other debris. Only two fires were acknowledged as being the result of lightning. The remaining causes with frequency in parentheses were classified as: arson (0), campfire (2), equipment (22), smoking (1), children (1), power line (1), miscellaneous (31), not reported (50) or unknown (44). There were an additional 52 fires reported that did not quantify the area burned. The largest reported fire burned 302 acres. The frequency and acres of land burned are shown on Table 3.48.

**Table 3.48. Wildfire Reports in Nodaway County, 2013-2022**

Fire Reporting Agency	# of Fires	Acres Burned
Adair County FPD	0	0
Clearmont FPD	0	0
Elmo Area FPD	19	653.05
Fairfax Volunteer FPD	1	21.53
Graham FPD	0	0
Hopkins FPD	3	27.49
King City FPD	0	0
Maitland Volunteer FPD	8	23.13
Maryville Public Safety	0	0
Parnell FPD	68	504.92
Polk Rural Fire Dept.	46	380.02
Sheridan FPD	10	176
Skidmore FPD	0	0
Tri-C Fire Dept.	13	826.21
Union Township FPD	6	121
West Nodaway FPD	29	363.2
All Others	2	26.99
<b>Totals for Nodaway County</b>	<b>205</b>	<b>3,123.54</b>

FPD = Fire Protection District

Source: Missouri Dept. of Conservation: Fire Reporting

<http://mdc7.mdc.mo.gov/applications/FireReporting/Report.aspx>

There was one fire occurrence reported by one of the school districts, but this occurrence was a structural fire.

## Probability of Future Occurrence

For the period from 2013-2022, there were 205 fires reported in Nodaway County. That's an average of 20 fires a year. The average number of acres burned per fire is 20.94 acres, but the median size fire is 8 acres. For the last ten years, an average of 312 acres burns each year. Sometimes agricultural prescribed fires become out of control and burn more acres than is intended. The lack of details on these fire events makes it difficult to assess the initial causes of the fires. The data that is available supports the idea that most of these fires were caused by human error.

## Changing Future Conditions Considerations

As average temperatures and the number of droughts increase with climate change, wildfire events are likely to increase. This may lead to extreme devastation but may also help with natural forest productivity. The limited forested areas of the county may limit the local effects. Drier temperatures may reduce the number of days for prescribed burns.

## Vulnerability

### Vulnerability Overview

The 2018 Missouri State HMP used Department of Conservation data to assess the vulnerability of each county to the effects of wildfire. The factors considered in the analysis were the likelihood of occurrence and the annualized acres burned. The ratings assigned to these factors were then averaged to give a vulnerability rating from one (low) to five (high).

The ratings assigned to Nodaway County were a 2 rating for likelihood, a 4 rating for acres burned, and an overall vulnerability rating of 3 for these two factors. When the number of buildings damaged by wildfire was considered, the overall rating given to the county was a 4, which is Medium High. The likelihood of occurrence for wildfires in Nodaway County is 36.85/year.

The data gathered from the Department of Conservation are shown in table 3.49

**Table 3.49. Statistical Data for Wildlife Vulnerability in Nodaway County**

# Wildfires 2013-2022	Likelihood of Occurrence (#/year)	Total Acres Burned	Average Annual Acreage Burned
205	20.5/year	3,123.54	20.94

### Potential Losses to Existing Development

There were 12 buildings reported as damaged by wildfires during 2004-2012 by the Department of Conservation. The dollar value of this damage was not available.

The preliminary data available from the 2018 update to the State HMP estimated Nodaway County's potential loss from wildfire at \$28,294,185 and the at-risk population at 132 persons. The total number of structures in the WUI area was set at 78 with a value of \$20,283,431.

### Impact of Previous and Future Development

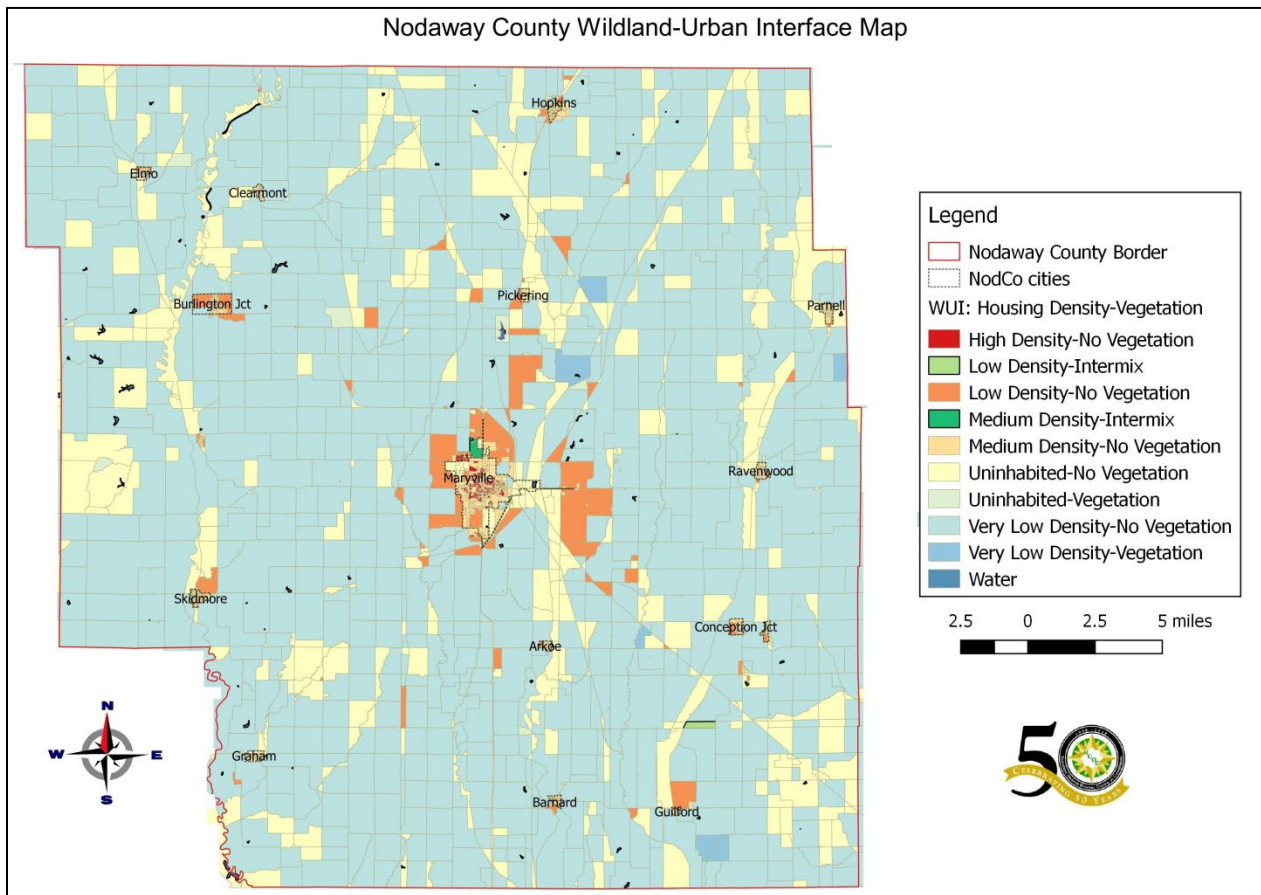
The areas of WUI in Nodaway County are sparsely populated with the exception of one subdivision built over twenty years ago north of Maryville. There has been no additional development in this Intermix area or in any of the other Intermix areas of the county or any plans to do so in the near future.

### Hazard Summary by Jurisdiction

The following map (Figure 3.54) shows the vegetation levels and population densities areas of Nodaway County. The only one of these communities that has a moderate population

density/intermix zone is Maryville. The majority of the county has low or very low housing density that is located in agricultural or non-vegetated areas so that there will be little difference between jurisdictions for this hazard. None of the public-school buildings are located in intermix zones.

**Figure 3.54. Population Density and Vegetation Levels in Nodaway County**



**Problem Statement**

While wildfires have no history of causing considerable damage in Nodaway County, there is a possibility that a wildfire could happen in any given year. The most-likely type of wildfire would be an out-of-control agricultural grassfire. Communications to reach residents to inform them of impending danger due to a wildfire can be improved by using text/caster and other county-wide warning systems of National Weather Service issued fire weather watches and red flag warnings. During a wildfire situation, evacuation is essential to save lives. Since wildfires can move very fast if there are high wind conditions, (which are common in Nodaway County) emergency notification of evacuation orders need to be disseminated quickly to provide accurate information to lead residents to safety.

**3.4.10 Severe Winter Weather**

**Hazard Profile**

**Hazard Description**

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

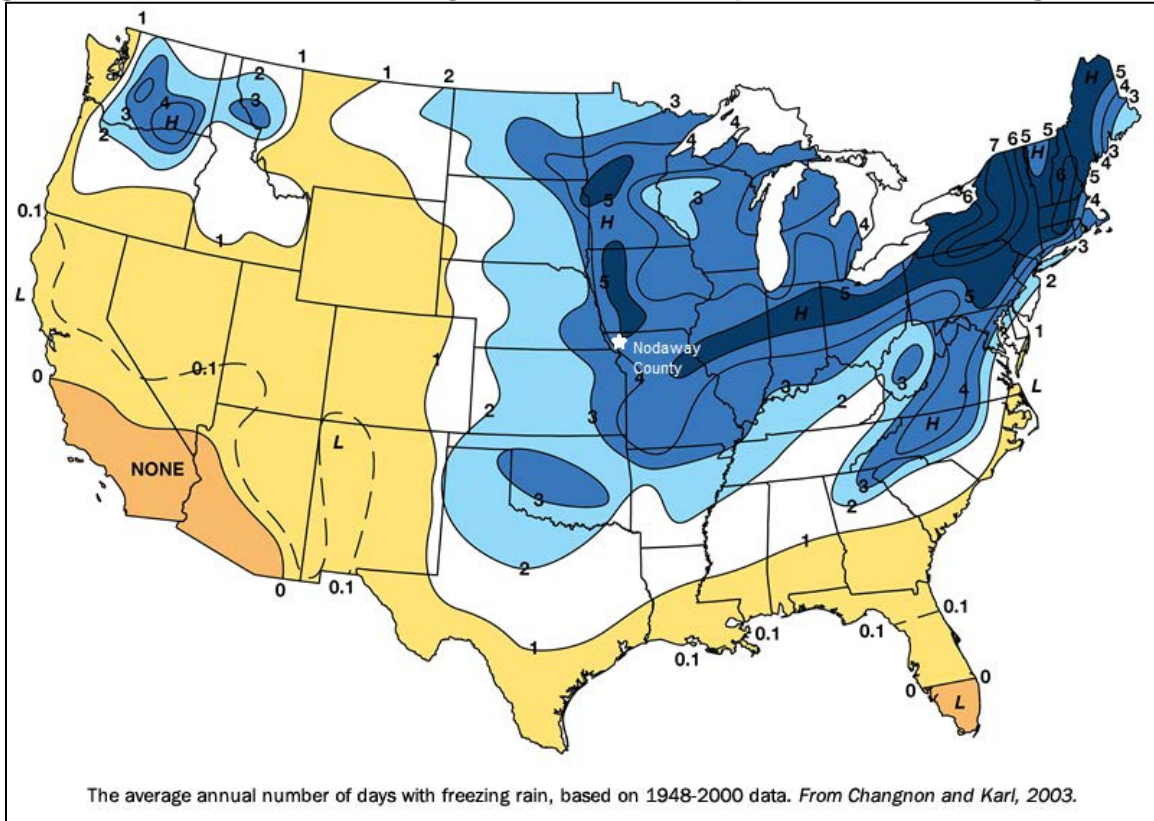
- **Blizzard**—Winds of 35 miles per hour or more with snow and blowing snow reducing visibility to less than ¼ mile for at least three hours.
- **Blowing Snow**—Wind-driven snow that reduces visibility. Blowing snow may be falling snow and/or snow on the ground picked up by the wind.
- **Snow Squalls**—Brief,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

### Geographic Location

Like thunderstorms, severe winter weather events tend to occur over wide geographic areas, encompassing an entire county or a large group of counties. According to SEMA, severe winter weather events such as snow, ice storms and extreme cold can cause injuries, deaths and property damage in a variety of ways. Winter storms are considered deceptive killers because most deaths are not directly related to the storm. Causes of death range from traffic accidents during adverse driving conditions to heart attacks caused by overexertion while shoveling snow. Hypothermia or frostbite may be considered the most direct cause of death and injuries attributed to winter storms and/or severe cold. Economic costs are difficult to measure. Heavy accumulations of ice can bring down trees, electric power lines and poles, telephone lines and communications towers. Crops, trees and livestock can be killed or injured due to deep snow, ice or severe cold. Buildings and automobiles may be damaged from falling tree limbs, power lines and poles. Local governments, homeowners, business owners, and power companies can be faced with spending millions of dollars for restoration of services, debris removal and landfill hauling.

Nodaway County, located in northwest Missouri, is shown on the map below (Figure 3.55) to have 4-5 hours of freezing rain per year. Freezing rain events typically last less than six hours but can last more than 24 hours, increasing the risk for catastrophic damage. High winds also contribute to the amount of damage sustained during freezing rain events.

**Figure 3.55. NWS Statewide Average Number of Hours per Year with Freezing Rain**



Source: [Midwestern Regional Climate Center](#)

### Severity/Magnitude/Extent

Severe winter storms include extreme cold, heavy snowfall, ice, and strong winds which can push the wind chill well below zero degrees in the planning area. Heavy snow can bring a community to a standstill by inhibiting transportation (in whiteout conditions), weighing down utility lines, and by causing structural collapse in buildings not designed to withstand the weight of the snow. Repair and snow removal costs can be significant. Ice buildup can collapse utility lines and communication towers, as well as make transportation difficult and hazardous. Ice can also become a problem on roadways if the air temperature is high enough that precipitation falls as freezing rain rather than snow.

Extreme cold often accompanies severe winter storms and can lead to hypothermia and frostbite in people without adequate clothing protection. Cold can cause fuel to congeal in storage tanks and supply lines, stopping electric generators. Cold temperatures can also overpower a building's heating system and cause water and sewer pipes to freeze and rupture. Extreme cold also increases the likelihood for ice jams on flat rivers or streams. When combined with high winds from winter storms, extreme cold becomes extreme wind chill, which is hazardous to health and safety.

The National Institute on Aging estimates that more than 2.5 million Americans are elderly and especially vulnerable to hypothermia, with the isolated elders being most at risk. About 10 percent of people over the age of 65 have some kind of bodily temperature-regulating defect, and 3-4 percent of all hospital patients over 65 are hypothermic.

Also, at risk are those without shelter, those who are stranded, or who live in a home that is poorly insulated or without heat. Other impacts of extreme cold include asphyxiation (unconsciousness or



death from a lack of oxygen) from toxic fumes from emergency heaters; household fires, which can be caused by fireplaces and emergency heaters; and frozen/burst pipes.

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

Overhead power lines and infrastructure are also vulnerable to damage from winter storms. Ice accumulation during winter storm events damage to power lines due to the ice weight on the lines and equipment. Damage also occurs to lines and equipment from falling trees and tree limbs weighted down by ice. Potential losses could include the 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 the risk of electrocution from downed power lines. Specific amounts of estimated losses are not available due to the complexity and multiple variables associated with this hazard. Standard values for loss of service for utilities reported in FEMA's 2009 BCA Reference Guide, the economic impact because of loss of power is \$126 per person per day of lost service. Table 3.50 summarizes the events across the state.

**Table 3.50. Annual Extreme Cold & Frost/Freeze Events in Missouri**

Year	# Of Events	Deaths	Injuries	Property Damages	Crop Damages
1996					
1997	11	0	0	0	0
1998					
1999					
2000	166	1	0	\$125,000	\$105,000
2001	53	1	0	0	0
2002					
2003	5	0	0	0	0
2004					
2005	17	0	0	0	\$2,645,000
2006	11	0	0	0	0
2007	184	0	0	0	\$166,323,950
2008	46	0	0	0	\$220,000
2009	40	0	0	0	0
2010	11	0	0	0	0
2011	22	0	0	0	0
2012	12	0	0	0	0
2013	33	0	0	0	0
2014	44	0	0	0	\$100,000
2015	11	0	0	0	0
2016	11	0	0	0	0
<b>Totals</b>	<b>677</b>	<b>2</b>	<b>0</b>	<b>\$125,000</b>	<b>\$169,393,950</b>

## Previous Occurrences

During the period from 1965-2022, there has been one Presidential Major Disaster Declaration for this hazard that has included Nodaway County. In December 2007, a series of ice storms lead to widespread damage that left thousands without power across the state. Three FEMA emergency declarations were made during this same period; the previously mentioned disaster plus a January 2009 ice and heavy snow event. Then a blizzard hit the region at the end of January 2011 that carried on into February of 2011, leaving many roads impassable. All the winter weather events recorded by the National Centers for Environmental Information are summarized in Table 3.51.

**Table 3.51. NCEI Nodaway County Winter Weather Events Summary, 2013-2022**

Type of Event	Date(s)	Magnitude	# of Injuries	Property Damages	Crop Damages
Winter Weather	1/29/2013	2-4" of snow across the county	0	0	0
Winter Storm	2/21/2013	6" inch snowfall	0	0	0
Winter Weather	5/2/2013	2" of snow, unseasonal cold temps	0	0	0
Heavy Snow	12/21—22/2013	7-9" of snow blanketed the area	0	0	0
Cold/Wind Chill	1/5—6/2014	Negative 30°F wind chill values	0	0	0
Heavy Snow	2/4—5/2014	12" of snow with 30 mph winds	0	0	0
Cold/Wind Chill	2/6/2014	Negative 30°F wind chill values	0	0	0
Heavy Snow	1/31—2/2/2015	8" of snow, low visibilities, drifting	0	0	0
Winter Storm	12/27/2015	0.25" of ice, 1" of sleet, 4" of snow	0	0	0
Winter Weather	1/13—15/2017	Up to .25" of ice with numerous traffic accidents	1 traffic fatality	0	0
Blizzard	11/25/2018	Heavy snow with 45 MPH wind gusts	0	0	0
Winter Storm	1/11/2019-1/12/2019	8-10 inches of snow within the first 12 hours	0	0	0
Winter Storm	2/19/2016-2/20-2019	5-7 inches of snow overnight (19 <sup>th</sup> -20 <sup>th</sup> )	0	0	0
Winter Storm	4/16/2020-4/17/2020	6-8 inches of snow	0	0	0
Winter Storm	12/29/2020	1" of liquid precipitation became frozen	0	0	0
Winter Storm	1/25/2021	6" of snowfall	0	0	0
Winter Weather	2/14/2021	Temperatures below zero, Windchill of -30	0	0	0
Winter Storm	1/1/2022	5-6 inches of snow	0	0	0
Winter Weather	3/6/2022	Widespread light snow, with one MVA rollover	0	0	1

Source: NCEI, data accessed 12/13/2022

## Probability of Future Occurrence

There were 25 events involving some type of winter weather occurring in the ten-year period summarized in the table above. The average for the period is 2.5 events per year. The duration of these events varied from hours to days. While it is highly likely that Nodaway County will experience a winter weather event in any given year, the severity of the event could vary from a nuisance to a life-threatening situation.

## Changing Future Conditions Considerations

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

## **Vulnerability**

### **Vulnerability Overview**

Severe Winter Weather including snow, ice, and severe cold has caused more damage for Missourians in recent years with numerous Presidential Declarations, including all or parts of the state, since 2007. The method used by the State of Missouri to determine vulnerability to severe winter weather across Missouri was statistical analysis of data from several sources: National Centers for Environmental Information (NCEI) storm events data (1996 to December 31, 2016), HAZUS Building Exposure Value data, housing density data from the U.S. Census (2015 ACS), and the calculated Social Vulnerability Index for Missouri Counties from the Hazards and Vulnerability Research Institute in the Department of Geography at the University of South Carolina. From the statistical data collected, five factors were considered in determining overall vulnerability to severe winter weather as follows: housing density, building exposure, social vulnerability, likelihood of occurrence, and average annual property loss. Based on natural breaks in the statistical data, a rating value of 1 through 5 was assigned to each factor. The rating values of all factors were then combined to determine the overall vulnerability rating. Table 3.52 below, provides the factors considered, the rating values assigned, and the rating that Nodaway County received on each factor.

**Table 3.52. Vulnerability Analysis Rating Factors Applied to Nodaway County**

<b>Factors Considered</b>	<b>Rating</b>	<b>Score</b>
<b>Housing Density</b>	10.96/mi <sup>2</sup> .	1-Low
<b>Building Exposure</b>	\$2,447,800,000	1-Low
<b>Social Vulnerability</b>	Medium	3
<b>Annual Likelihood of Occurrence</b>	1.857	3
<b>Annualized Property Loss</b>	\$9,557	1
<b>Overall Vulnerability</b>	Low-Medium	9

Source: 2018 Missouri State Hazard Mitigation Plan

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

The following, Table 3.53, provides the housing density, building exposure, crop exposure, total incidents, total property loss, and the total crop insurance paid. These are the common data elements for the analysis of severe winter weather. The total property loss column represents a combination of NCEI and FEMA PA funds. For declared events, the PA damage figures were used in lieu of NCEI data. NCEI damages represent early estimates, and the FEMA PA funds represent actual expenditures. It should be noted that the information in the following table is from the 2018 State HMP which used a set of data from a different period of years that was used earlier in this section.

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**Table 3.53. Potential Losses because of Winter Weather**

Housing units/ square mile	Total Building Exposure	Total Incidents	Total Property Loss	Social Vulnerability
10.96	\$2,447,800,000	39	\$9,524	3

Source: 2018 Missouri State Hazard Mitigation Plan

The preliminary data from the 2018 update to the state plan lists the annualized property loss at \$9,524 and an overall vulnerability rating of medium-low for Severe Winter Weather.

### **Previous and Future Development**

The population rate for Nodaway County saw a 9.1% decrease from 2010-2020. Estimates for Many of the smaller communities have seen double digit decreases since 2010. Any future development is anticipated to occur in the Maryville area and is not expected to significantly increase the assets at risk from this hazard.

### **Hazard Summary by Jurisdiction**

All jurisdictions within the county are equally susceptible to damage stemming from severe winter weather, particularly snow and ice events. In the event of a severe winter storm, 26-50% of any given jurisdiction may be at risk of damage. In the case of extreme cold temperatures, special consideration must be given to the potential impact upon the young, disabled, and elderly populations.

### **Problem Statement**

Severe winter weather is common with an average of 2.5 events per year affecting all jurisdictions. The electrical grid and the transportation system are the most affected by severe winter weather. Shelters with auxiliary power supplies should be available to residents affected by power outages.

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## 4 MITIGATION STRATEGY

<b>4</b>	<b>MITIGATION STRATEGY</b>	<b>4.1</b>
4.1	Goals	4.2
4.2	Identification and Analysis of Mitigation Actions	4.2
4.3	Implementation of Mitigation Actions	4.10
4.3.1	County of Nodaway: Updated Action Worksheets	4.16
4.3.2	Town of Arkoe: Updated Action Worksheets	4.27
4.3.3	City of Barnard: Updated Action Worksheets	4.30
4.3.4	City of Burlington Junction: Updated Action Worksheets	4.36
4.3.5	City of Clearmont: Updated Action Worksheets	4.42
4.3.6	City of Conception Junction: Updated Action Worksheets	4.50
4.3.7	City of Elmo: Updated Action Worksheets	4.54
4.3.8	City of Graham: Updated Action Worksheets	4.62
4.3.9	Village of Guilford: Updated Action Worksheets	4.74
4.3.10	City of Hopkins: Updated Action Worksheets	4.81
4.3.11	City of Maryville: Updated Action Worksheets	4.91
4.3.12	City of Parnell: Updated Action Worksheets	4.99
4.3.13	City of Pickering: Updated Action Worksheets	4.107
4.3.14	City of Ravenwood: Updated Action Worksheets	4.112
4.3.15	City of Skidmore: Updated Action Worksheets	4.120
4.3.16	Jefferson C-123 School District: Updated Action Worksheets	4.126
4.3.17	Maryville R-II School District: Updated Action Worksheets	4.131
4.3.18	Nodaway-Holt R-VII School District: Updated Action Worksheets	4.135
4.3.19	North Nodaway County R-VI School District: Updated Action Worksheets	4.139
4.3.20	Northeast Nodaway County R-V School District: Updated Action Worksheets	4.143
4.3.21	South Nodaway County R-IV School District: Updated Action Worksheets	4.146
4.3.22	West Nodaway County R-1 School District: Updated Action Worksheets	4.150
4.3.23	Northwest Missouri State University: Updated Action Worksheets	4.156

**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 general goal statements updated in 2018 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.” *Local Mitigation Planning Policy Guide (Released April 19, 2022, Effective April 19, 2023)* became available during the updating process for this plan with following definitions:

**Goals** are broad, long-term policy and vision statements that explain what is to be achieved by implementing the mitigation strategy.

A **mitigation action** is a measure, project, plan or activity proposed to reduce current and future vulnerabilities described in the risk assessment.

When reviewing the mitigation actions of the 2018 plan and considering new actions for this 2023 update, the emphasis was placed on those actions that would reduce the risk to existing buildings, structures, and infrastructure. Limiting risk to existing areas of redevelopment and any new development areas was addressed by MPC in the evaluation of this update's mitigation actions.

## 4.1 Goals

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

This planning effort is an update to Nodaway County's existing hazard mitigation plan approved by FEMA on September 12, 2018. Therefore, the goals from the 2018 Nodaway County Hazard Mitigation Plan Update 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 first meeting to review and update the plan goals. To ensure that the goals developed for this update were comprehensive and supported State goals, the 2018 State Hazard Mitigation Plan goals were reviewed.

The goals were reviewed at the Kickoff/Risk Assessment Meeting #1 of the planning process. There was consensus from the committee that the 2018 Goals, as written, should go forward into the 2023 plan update. There were no suggestions from any committee members to make any changes in the Goals. However, it was decided to eliminate the objectives from the previous plan. in order to streamline the review of the previous actions.

- GOAL 1: Protect the lives, property, and livelihoods of all citizens.
- GOAL 2: Manage growth in designated hazard areas through sustainable policies, principles, and practices.
- GOAL 3: Ensure continued operation of government and emergency functions in a disaster.
- GOAL 4: Maintain economic activities essential to the survival and recovery from natural hazards.

## 4.2 Identification and Analysis of Mitigation Actions

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

During meeting #1, 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.

During the last update, the MPC determined to include problem statements in the plan update at the end of each hazard profile, which had not been done in the previously approved plan. 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 to mitigate risks in the planning area.

The focus of Meeting #2 was update of the mitigation strategy. For a comprehensive range of mitigation actions to consider, the MPC reviewed the following information during Meeting #2:

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 Hazard Mitigation Assistance 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 #2, individual jurisdictions, including school and special districts, developed a final mitigation strategy for submission to the MPC. During the small group workshops, review of the details of the risk assessment vulnerability analysis specific to their jurisdiction were discussed. 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. During the small group workshops, the list of actions for each jurisdiction were presented 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,
- Not Started/Continue in Plan Update, with a discussion of the reasons for lack of progress,
- In Progress/Continue in Plan Update, with a description of the progress made to date or
- Deleted, with a discussion of the reasons for deletion.

There is a wide variety of decisions from each jurisdiction as to whether an action was completed, deleted or to be continued. It was suggested that many current actions do not meet the SMART criteria requested for actions included in updated plans. Many of this type of action were deleted by several jurisdictions. Table 4.1 provides a summary of the action statuses for each jurisdiction:

**Table 4.1. Action Status Summary**

Jurisdiction	Completed Actions	Deleted Actions	Continuing Actions
Arkoe	2	0	3
Barnard	4	0	6



Jurisdiction	Completed Actions	Deleted Actions	Continuing Actions
Burlington Junction	1	1	5
Clearmont	1	0	7
Conception Junction	0	22	3
Elmo	4	1	7
Graham	4	0	12
Guilford	4	2	6
Hopkins	6	8	10
Maryville	6	12	6
Parnell	4	1	6
Pickering	3	1	5
Ravenwood	4	3	8
Skidmore	7	4	6
Unincorporated Nodaway County	12	7	11
Jefferson School District	1	7	5
Maryville School District	1	6	4
Nodaway-Holt School District	0	4	4
North Nodaway School District	1	3	4
Northeast Nodaway School District	3	6	3
South Nodaway School District	1	2	4
West Nodaway School District	0	2	6
Northwest Missouri State University	8	0	3

Table 4.2 is a Table of Abbreviations used in Tables 4.3 and 4.4 to summarize completed and deleted Action Worksheets.

**Table 4.2. Table of Jurisdiction Abbreviations**

Jurisdiction	Abbreviation	Jurisdiction	Abbreviation
Arkoe	AR	Maryville R-II School District	MV2
Barnard	BA	Nodaway-Holt R-VII School District	NH7
Burlington Junction	BJ	North Nodaway R-VI School District	NN6
Clearmont	CM	Northeast Nodaway R-IV School District	NE5
Conception Junction	CJ	Northwest Missouri State University	NW
Elmo	EL	Parnell	PA
Graham	GM	Pickering	PK
Guilford	GL	Ravenwood	RV
Hopkins	HP	Skidmore	SK
Jefferson 123 School District	J123	South Nodaway R-IV School District	SN4
Maryville	MV	Unincorporated Nodaway County	UNC
		West Nodaway R-I School District	WN1

Table 4.3 provides a summary of the completed actions from the previous plan by jurisdiction.

**Table 4.3. Summary of Completed Actions from the Previous Plan**

<b>Goal 1: Protect the Lives, Property and Livelihoods of All Citizens.</b>		
<b>Action</b>	<b>Action Completed</b>	<b>Progress Report or Justification</b>
Action 1.1.1: Continue to promote use of weather radios by local residents and schools to insure advanced warning about threatening weather.	AR EL GM PA PK RV SK UNC CM GL HP MV	Completed. Ongoing plan in place
Action 1.1.2: Maintain an up-to-date list of addresses with shelters to assist fire departments and emergency service agencies to locate survivors after a natural hazard event. Make list available to public so citizens know shelter locations.	UNC AR BA BJ GM GL HP MV PA PK RV SK	Complete
Action 1.1.4: Assess existing facilities including, but not limited to, governments buildings, factories, large retail stores, and stadiums for the location of suitable “safe areas.” If available, these “safe areas” should be clearly marked and employees and visitors should be informed of their location in public facilities.	SK C123 MV2 NW SN4	This action is covered by other statutes or business practices. (This action will be continued by NH7 as #1.2)
Action 1.2.1: Continue to provide a NOAA weather radio to schools, licensed daycare facilities and the hearing impaired.	BA EL SK	Completed. All equipped with radios
Action 1.2.3: Enhance and expand methods of public notification concerning impending disasters.	CM GM HP MV	Completed with use of mobile phone apps
Action 1.3.1: Develop a coordinated response and accommodation schematic for disaster sheltering based on federal guidelines in cooperation with local and state agencies.	UNC MV PK NW	Completed with cooperation of Red Cross. (CM, GM, MV2, WN1 will continue this action as #1.5)
Action 1.3.2: Work with the Regional Homeland Security Committee, Red Cross, National Guard, and other local agencies to update the inventory of facilities with emergency power that can be used as shelters in the event of a natural disaster.	UNC EL GM SK	Inventory identified; coordination for county to bring generators to school in emergency situations. (CM will continue this action as #1.6)
Action 1.4.1: Develop an ongoing campaign to education the community about seasonal hazards. Coordinate this campaign with a variety of media types and advertising resources in order to maximize public outreach.	BA NW	Completed as part of an annual outreach. (CM, EL, HP, PA, SK will continue this action as #1.7)

<b>Goal 2: Manage Growth in Designated Hazard Areas Through Sustainable Policies, Principles and Practices.</b>		
<b>Actions</b>	<b>Action Completed</b>	<b>Progress Report or Justification</b>
Action 2.1.2: Inform citizens who reside in or own properties in the floodplain about flood insurance and reduce their risk through mitigation actions such as structure elevation.	PK	This is an ongoing action. Permits are required to build in the floodplain.(BA, BJ, Hp, RV will continue as #2.1)
Action 2.2.1: Review and revise floodplain regulations to meet the state and federal regulations for NFIP compliance. Monitor development in Special Flood Hazard Areas (SFHAs), including mapping updates, to ensure compliance with local floodplain management ordinances.	BA	Complete as it is reviewed as needed. (UNC, BJ, HP, MV, PK, RV will continue as #2.2)
Action 2.2.2: Provide an effective warning system to alert citizens in flood prone areas and on low lying roadways when flash flooding is imminent	HP	Sirens and warnings established. (BA, EL, GM, GL, RV will continue as #2.3)
Action 2.2.3: Achieve and maintain “Storm Ready” Certification through the National Weather Service.	EL GM GL PK RV	Nodaway County and Maryville are certified. An application for renewal must be completed every 3 years. Hopkins and Clyde participate as part of the county. (UNC continues #2.3-1)
Action 2.2.5: Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc.in drought emergencies.	CM	Ordinance complete. (GM, HP, PA will continue as #2.5)

<b>Goal 3: Ensure Continued Operation of Government and Emergency Functions in a Disaster.</b>		
<b>Actions</b>	<b>Action Completed</b>	<b>Progress Report or Justification</b>
Action 3.1.1: Execute and maintain mutual aid agreements with all relevant agencies. Develop written agreements between agencies as documentation.	BA EL GM GL HP PA PK RV SK NW	Feel all agreements complete. (UNC, MV continue as #3.0)
Action 3.1.5: Develop agreement for secondary water sources that may be used during drought conditions.	HP	Agreement reached. (UHC, BA, CM, GM, MV, MV2 will continue: #3.2)
Action 3.2.1: Provide guidelines to local jurisdictions and agencies to ensure the preservation of records in digital and/or off-site storage facilities.	UNC MV NW	All records are backed up. (BJ, CM, GM, GL, HP, PA, PK, RV, J123, NN6, WN1 will continue as #3.3)
Action 3.2.2: Inspect critical buildings and infrastructure for needed upgrades or retrofits.	NW	Inspection completed. (GM, GL, HP, PK, SK,J123, NH7, NE5: #3.4)

<b>Goal 4: Maintain Economic Activities Essential to the Survival and Recovery from Natural Hazards.</b>		
<b>Action</b>	<b>Action Completed</b>	<b>Progress Report or Justification</b>
Action 4.1.1: Provide resources for the development and maintenance of disaster plans for local businesses, schools, hospitals, and other entities as necessary that are coordinated with community disaster plans.	UNC C123 NE5 NH2 NW SN4	Plans Complete. (GM, SK, WN1 will continue this action as # 4.1)
Action 4.1.2: All area schools should practice disaster plans with employees and students. Employers should facilitate programs that ensure employees understand their roles and responsibilities in a natural hazard.	BA NW	This action is encouraged in media campaigns and public talks. (MV2, SN4 will continue as #4.2)
Action 4.1.3: Maintain emergency lists with names and phone numbers of plant managers and other large area employers	MV	Ongoing routine procedure.

Source: Previously approved County Hazard Mitigation Plan; Action Worksheets.

Table 4.4 provides a summary of the deleted actions from the previous plan by jurisdiction.

**Table 4.4. Summary of Deleted Actions from the Previous Plan**

<b>Goal 1: Protect the Lives, Property and Livelihoods of All Citizens.</b>		
<b>Action</b>	<b>Delete this Action</b>	<b>Progress Report or Justification</b>
Action 1.1.3: Expand relationship between Emergency Management and local businesses to coordinate disaster solutions and minimize the number of people on the roadways during periods of severe winter weather, flash floods, and other disasters as necessary.	UNC BA GM GL HP MV RV C123 MV2 NH4 WN1	Emergency Management and Law Enforcement officials coordinate media saturations seasonally to educate the public. (BJ, EL will continue this action as #1.1)
Action 1.1.4: Assess existing facilities including, but not limited to, governments buildings, factories, large retail stores, and stadiums for the location of suitable "safe areas." If available, these "safe areas" should be clearly marked and employees and visitors should be informed of their location in public facilities.	BA EL HP MV	This action is covered by other statutes or business practices. (NH7 will continue this action as #1.2)
Action 1.1.5: Review emergency access routes and evacuation routes; mitigate any problem areas.	UNC MV	Decided better covered by other agencies.
Action 1.2.1: Continue to provide a NOAA weather radio to schools, licensed daycare facilities and the hearing impaired.	UNC	no need to continue with other notification systems established
Action 1.2.3: Enhance and expand methods of public notification concerning impending disasters.	UNC BA BJ EL GL PA RV SK MV2	This action will be continued as #1.4 by J123, NH7, NN6, NW, SN4, WN1

Action 1.3.1: Develop a coordinated response and accommodation schematic for disaster sheltering based on federal guidelines in cooperation with local and state agencies.	EL GL HP SK C123 NH2 NN4	The closing of our local DHSS office has left a large void in this part of our planning. EMD is currently working with the Ministerial Alliance and the NWMSU Emergency and Disaster Management Program to address this issue.
Action 1.3.2: Work with the Regional Homeland Security Committee, Red Cross, National Guard, and other local agencies to update the inventory of facilities with emergency power that can be used as shelters in the event of a natural disaster.	HP C123	The American Red Cross and local officials have assessed the buildings in our county. (CM will continue as #1.6)
Action 1.4.1: Develop an ongoing campaign to education the community about seasonal hazards. Coordinate this campaign with a variety of media types and advertising resources in order to maximize public outreach.	UNC GM GL MV RV C123 NN4	Routine action by some jurisdictions. (CM, EL, HP, PA, SK have chosen to continue: #1.7)

<b>Goal 2: Manage Growth in Designated Hazard Areas Through Sustainable Policies, Principles and Practices.</b>		
<b>Actions</b>	<b>Delete This Action</b>	<b>Progress Report or Justification</b>
Action 2.1.1: Consider areas which were subject to damage in past natural hazards. Take inventory and use information in future development plans.	UNC MV	Decided this action was already a part of other programs.
Action 2.1.2: Inform citizens who reside in or own properties in the floodplain about flood insurance and reduce their risk through mitigation actions such as structure elevation.	UNC GL MV PK	This is an ongoing action. Permits are required to build in the floodplain. (BA, BJ, HP, RV will continue this action as #2.1)
Action 2.2.1: Review and revise floodplain regulations to meet the state and federal regulations for NFIP compliance. Monitor development in Special Flood Hazard Areas (SFHAs), including mapping updates, to ensure compliance with local floodplain management ordinances.	GL	UNC is a member of the NFIP and covers the area near GL that is in a floodplain. (UNC, BJ, HP, MV, PK, RV will include this action in this update as #2.2)
Action 2.2.2: Provide an effective warning system to alert citizens in flood prone areas and on low-lying roadways when flooding is imminent.	UNC MV	Use of media, social media, NOAA radios, radio broadcasts and cell phone apps. (BA, EL, GM, GL, RV will continue as #2.3)
Action 2.2.5: Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc.in drought emergencies.	UNC MV	Decided this is no longer a needed action. (GM, HP, PA will continue as #2.5)

**Goal 3: Ensure Continued Operation of Government and Emergency Functions in a Disaster.**

Actions	Delete this Action	Progress Report or Justification
Action 3.1.1: Execute and maintain mutual aid agreements with all relevant agencies. Develop written agreements between agencies as documentation.	C123 NH7 NE5 SN4 WN1	Schools determined this was unnecessary. (UNC, MV will continue this action as #3.0)
Action 3.1.2: Provide training for officials and employees of the county and other local jurisdictions regarding the county hazard mitigation plan, emergency operation plan, and other disaster preparedness programs.	UNC MV RV	This is an established ongoing routine procedure for the county and other jurisdictions.
Action 3.2.1: Research, purchase and maintain a system to ensure the preservation of records in digital and/or off-site storage facilities.	MV2 NE5	These schools have one or more off-site preservation facilities (real and /or digital). This action continues in the update as #3.3
Action 3.2.2: Inspect critical buildings and infrastructure for needed upgrades or retrofits.	UNC EL MV RV	Covered by other actions or procedures. (continued as #3.4 by GM, GL, HP, PA, SK, J123, NH7, NE5)
Action 3.2.3: Elevate roads and bridges as necessary to maintain dry access. In situations where flood waters tend to wash roads out, construction, reconstruction, or repair can include not only attention to drainage, but also stabilization or armoring of vulnerable shoulders or embankments.	MV	This action is part of other city plans and procedures. (Continued as #3.5 in this update by UNC, AR, EL, GM, HP)
Action 3.2.4: Assess publicly-held facilities, distribution systems, etc. for vulnerability to natural hazards. If necessary, providers should make improvements to ensure continued service during a disaster when possible. Improvements may include equipment elevation, backup generators for power, and other infrastructure changes.	BJ EL GM GL HP PK SK	Some improvements have been made to various facilities. Funding is an issue for almost all jurisdictions. (UNC, MV, RV, WN1 chose to continue this action as #3.6)
Action 3.2.7: Convert overhead lines to underground lines or vice versa in troubled areas based on vulnerability.	RV	City does not have authority or funding to accomplish this.

<b>Goal 4: Maintain Economic Activities Essential to the Survival and Recovery from Natural Hazards.</b>		
<b>Actions</b>	<b>Delete this Action</b>	<b>Progress Report or Justification</b>
Action 4.1.1: Provide resources for the development and maintenance of disaster plans for local businesses, schools, hospitals, and other entities as necessary that are coordinated with community disaster plans.	BA GL HP RV	Lacking resources to complete. (GM, SK, WN1 will retain this action as #4.1 in this update.)
Action 4.1.2: All area schools should practice disaster plans with employees and students. Employers should facilitate programs that ensure employees understand their roles and responsibilities in a natural hazard.	CJ EL MV C123	Not applicable. (Continued by MV2, SN4 as #4.2)
Action 4.1.4: Provide educational resources to businesses to secure copies of financial, insurance and other economic data records in either an off-site location, or in a fire/waterproof safe at the location to support economic resistance to disasters	UNC HP MV	Repetitive action

### 4.3 Implementation of Mitigation Actions

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

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

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

the responses to the questions as follows:

- Definitely yes = 3 points
- Maybe yes = 2 points
- Probably no = 1
- Definitely no = 0

The following questions were asked for each proposed action.

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

Will the implemented action result in lives saved?

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

The final scores are listed below in the analysis of each action. The worksheets are attached to this plan as Appendix C. 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. There are no Low priority Actions in the Nodaway County plan. A blank STAPLEE worksheet is shown in Figure 4.1 on the following page. Following the example worksheet, Table 4.5 lists the combined actions of the participating jurisdictions in this 2023 update.

The goals and actions are consistent with the hazards identified in the plan. For each jurisdiction, the hazards identified with the highest probability and historic damage have a strategy to mitigate future damages. Each jurisdiction participating in the plan reviewed the mitigation actions to choose which Actions apply to the community’s risk and vulnerabilities, as well as community priorities. After each action was analyzed, the action worksheets were updated with the new priority level ratings.

The updated action worksheets for each jurisdiction appear on the following pages. The small size and lack of capabilities of many Nodaway County jurisdictions guided them to adopt actions that would be under County guidance. Cooperation between the County and the smaller jurisdictions resulted in many shared actions that mitigate county-wide but are city specific.

During the small group workshops and during Meeting #2, discussions about mitigation actions that should remain in place and proposals for new actions occurred. All actions presented were considered. Representatives from individual jurisdictions discussed these with their governing boards and presented their completed action worksheets to NWMORCOG for inclusion in this update. Documentation of these discussions are part of each jurisdiction’s local records or can be found in the workshop and meeting materials found in Appendix B of this document. The Action Worksheets included with this chapter and the STAPLEE worksheets in Appendix C contain reasoning for inclusion into this plan. Please see Table 4.4 for justifications for deleted actions. Table 4.5, which also appears in the Executive summary, includes all actions included in this update. The action worksheets for each jurisdiction follow in Sections 4.3.1–4.3.23.



**Figure 4.1. Blank STAPLEE Worksheet**

**Nodaway County Multi-jurisdictional Hazard Mitigation Plan**

Action:	Jurisdiction: <table style="width:100%; border: none;"> <tr> <td><input type="checkbox"/> Nodaway County</td> <td><input type="checkbox"/> Guilford</td> <td><input type="checkbox"/> Jefferson C123</td> </tr> <tr> <td><input type="checkbox"/> Arkoe</td> <td><input type="checkbox"/> Hopkins</td> <td><input type="checkbox"/> Maryville R2</td> </tr> <tr> <td><input type="checkbox"/> Barnard</td> <td><input type="checkbox"/> Maryville</td> <td><input type="checkbox"/> Nod-Holt R7</td> </tr> <tr> <td><input type="checkbox"/> Burlington Junction</td> <td><input type="checkbox"/> Parnell</td> <td><input type="checkbox"/> N Nodaway R6</td> </tr> <tr> <td><input type="checkbox"/> Clearmont</td> <td><input type="checkbox"/> Pickering</td> <td><input type="checkbox"/> NE Nodaway R5</td> </tr> <tr> <td><input type="checkbox"/> Clyde</td> <td><input type="checkbox"/> Ravenwood</td> <td><input type="checkbox"/> S Nodaway R4</td> </tr> <tr> <td><input type="checkbox"/> Conception Junction</td> <td><input type="checkbox"/> Skidmore</td> <td><input type="checkbox"/> W Nodaway R1</td> </tr> <tr> <td><input type="checkbox"/> Elmo</td> <td><input type="checkbox"/> Northwest MO State University</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Graham</td> <td></td> <td></td> </tr> </table>		<input type="checkbox"/> Nodaway County	<input type="checkbox"/> Guilford	<input type="checkbox"/> Jefferson C123	<input type="checkbox"/> Arkoe	<input type="checkbox"/> Hopkins	<input type="checkbox"/> Maryville R2	<input type="checkbox"/> Barnard	<input type="checkbox"/> Maryville	<input type="checkbox"/> Nod-Holt R7	<input type="checkbox"/> Burlington Junction	<input type="checkbox"/> Parnell	<input type="checkbox"/> N Nodaway R6	<input type="checkbox"/> Clearmont	<input type="checkbox"/> Pickering	<input type="checkbox"/> NE Nodaway R5	<input type="checkbox"/> Clyde	<input type="checkbox"/> Ravenwood	<input type="checkbox"/> S Nodaway R4	<input type="checkbox"/> Conception Junction	<input type="checkbox"/> Skidmore	<input type="checkbox"/> W Nodaway R1	<input type="checkbox"/> Elmo	<input type="checkbox"/> Northwest MO State University		<input type="checkbox"/> Graham		
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<input type="checkbox"/> Elmo	<input type="checkbox"/> Northwest MO State University																												
<input type="checkbox"/> Graham																													
Action ID:																													
<b>STAPLEE CRITERIA</b>	Evaluation Rating Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	<b>SCORE</b>																											
<b>S:</b> Is it Socially acceptable?																													
<b>T:</b> Is it Technically feasible and potentially successful?																													
<b>A:</b> Does the jurisdiction have the Administrative capacity to execute this action?																													
<b>P:</b> Is it Politically acceptable?																													
<b>L:</b> Is there Legal authority to implement?																													
<b>E:</b> Is it Economically beneficial?																													
<b>E:</b> Will the project have a positive impact on the natural environment?																													
Will historic structures be saved or protected?																													
Could it be implemented quickly?																													
<b>STAPLEE SCORE TOTAL</b>		0																											
<b>MITIGATION EFFECTIVENESS CRITERIA</b>	Evaluation Rating	<b>SCORE</b>																											
Will the implemented action result in lives saved?	Assign 5-10 points based on the likelihood that lives would be saved																												
Will the implemented action result in a reduction of disaster damages?	Assign 5-10 points based on the relative reduction of disaster damages																												
<b>MITIGATION EFFECTIVENESS SCORE</b>		0																											
STAPLEE Score + Mitigation Effectiveness Score																													
<b>PRIORITY LEVEL</b>	30+ points	<input type="checkbox"/> HIGH																											
	25-29 points	<input type="checkbox"/> MEDIUM																											
	less than 25 points	<input type="checkbox"/> LOW																											
Completed by:																													

**Table 4.5. Mitigation Action Matrix**

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
<b>Prevention Public Education</b>								
1.4	Enhance and expand methods of public notification during disasters. Purchasing software, equipment.	J123, NH7, NN6, NW, SN4, WN1	High	1	All	yes	yes	
2.3	Provide an effective warning system to alert citizens in flood prone areas and on low-lying roadways when flash flooding is imminent.	BA, EL, GM, GL, RV	High	2	Flooding	yes	yes	yes
2.3-1	Achieve and maintain “Storm Ready” Certification through the National Weather Service.	UNC	High	2, 1	Severe Thunderstorms, Severe Winter Weather, Flooding, Tornado, Extreme Temperatures, Wildfire	yes		
<b>Structure and Infrastructure Projects</b>								
2.4	Install storm shelter in an acceptable site.	AR, BA, BJ, CJ, CM, EL, GM, GL, HP, MV, PA, PK, RV, SK, UNC, J123, NN6, NE5, NW, SN4, WN1	High	1, 2	Tornado, Severe Thunderstorms, Severe Winter Weather, Flooding	yes		
3.2	Develop agreement for secondary water sources that may be used during drought conditions.	BA, CM, GM, MV, UNC, MV2	High	3	Drought	yes		
3.4	Inspect critical buildings and infrastructure for needed upgrades or retrofits	GM, GL, HP, PA, SK, J123, NH7, NE5	High	3	Earthquake, Severe Thunderstorm, Flooding	yes	yes	
3.5	Elevate roads and bridges as necessary... stabilization or armoring of vulnerable shoulders or embankments.	AR, EL, GM, HP, UNC	High	3, 4	Flooding	yes		
<b>Natural Systems Protection</b>								
2.2	... ensure compliance with local floodplain management ordinances.	BJ, HP, MV, PK, RV, UNC	High	1, 2	Flooding	yes	yes	yes

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
	<b>Emergency Services</b>							
1.1	Minimize the number of people on the roadways during periods of hazards	BJ, EL	High	1	All	yes	yes	
1.3	Purchase &/or upgrade siren systems, synch activation	AR, BA, CM, CJ, EL, GM, GL, PK, UNC	High	1	Severe Thunderstorms, Tornado	yes	yes	
1.5	Develop a coordinated response and accommodation schematic for disaster sheltering based on federal guidelines in cooperation with local and state agencies.	CM, GM, MV2, WN1	Med	1	All	yes	yes	
1.6	Inventory made of available generator-equipped shelters	CM	High	1	Severe Winter Weather, Extreme Temperatures	yes		
2.5	Develop an ordinance to restrict the use of public water resources for non-essential usage	GM, HP, PA	High	2	Drought	yes	yes	
3.0	Execute and maintain written mutual aid agreements with all relevant agencies.	MV, UNC	High	3	All	yes	yes	
3.0-1	Continually update and monitor the Local Emergency Operation Plan (LEOP) for the county or community. As part of this process the local HMP will be reviewed quarterly or as needed.	MV, UNC	High	1, 2, 3, 4	All	yes	yes	yes
3.1	Purchase necessary equipment to participate in MOSWIN to maintain communication within community, county, and region during emergencies	BA, BJ, CM, EL, GM, GL, HP, MV, PA, RV, SK, UNC	High	3	All	yes	yes	
3.3	Purchase equipment or subscriptions necessary to ensure the preservation of essential records	BJ, CM, GM, GL, HP, PA, PK, RV, J123, NN6, WN1	High	3, 4	Tornado, Wildfire, Flooding	yes	yes	
3.7	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.	CJ, EL, GM, GL, HP, MV, PA, PK, RV, SK, UNC, J123, MV2, NH7, NN6, NE5, NW, SN4	High	3	Severe Thunderstorms, Severe Winter Weather, Flooding, Earthquake	yes		

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
	<b>Education and Outreach</b>							
1.2	Determine “safe” areas of public spaces & inform visitors by signage and other means	NH7	High	1	Severe Thunderstorms, Tornado	yes		
1.7	Develop and implement an ongoing campaign to educate the community about seasonal hazards.	CJ, CM, EL, HP, PA, SK	High	1	All seasonal hazards	yes	yes	
2.1	Inform citizens who reside in the floodplain about flood insurance and reduce their risk through mitigation actions such as structure elevation.	BA, BJ, HP, RV	High	2	Flooding	yes	yes	yes
3.6	Assess publicly held facilities, distribution systems, etc. for vulnerability to natural hazards. If necessary, providers should make improvements to ensure continued service during a disaster when possible. Improvements may include equipment elevation, backup generators for power, and other infrastructure changes.	MV, RV, UNC, WN1	High	3	Flooding, Levee Failure, Dam Failure, Earthquake, Severe Winter Weather	yes	yes	
4.1	Provide resources for the development and maintenance of disaster plans for local businesses, schools, hospitals, and other entities as necessary that are coordinated with community disaster plans.	GM, SK, WN1	Med	4	All	yes	yes	
4.2	All area schools should practice disaster plans with employees and students. Employers should facilitate programs that ensure employees understand their roles and responsibilities in a natural hazard.	MV2, SN4	Med	4	All	yes		

### 4.3.1 County of Nodaway: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nodaway County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes, Severe Thunderstorms, Tornadoes, Severe Winter Weather
<b>Problem being Mitigated:</b>	Provision of early warning of severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	UNC 1.3 (replaces 1.2.2)
<b>Name of Action or Project:</b>	Warning system upgrades
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Continue to upgrade warning systems and synchronized activation through centralized law enforcement.
<b>Estimated Cost:</b>	\$500-\$2500
<b>Benefits:</b>	Provide the widest coverage possible for early warning of possible hazard to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMGP, County EMD funds from tax revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, County school all hazard plan, NWMSU Emergency Operations Plan, Maryville Comprehensive Plan (MCP)
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	One operating siren activated by County Law Enforcement,

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nodaway County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods
<b>Problem being Mitigated:</b>	Flood mitigation efforts/compliances
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices.
<b>Action/Project Number:</b>	UNC 2.2 (replaces 2.2.1)
<b>Name of Action or Project:</b>	Floodplain regulation updates
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Review and revise floodplain regulations to meet the state and federal regulations to meet the state and federal regulations for NFIP compliance. Monitor development in Special Flood Hazard Areas (SFHA's), including mapping updates, to ensure compliance with local floodplain management ordinances
<b>Estimated Cost:</b>	\$1000
<b>Benefits:</b>	Reduce risk and damages in SFHA
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, MoDOT, NWS
<b>Action/Project Priority:</b>	High 36
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	County tax funds, FEMA NFIP grants
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	UNC is member of NFIP

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nodaway County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods, Extreme heat, Levee failure, thunderstorms, Tornadoes, Winter/Cold weather
<b>Problem being Mitigated:</b>	Flood mitigation efforts/compliances
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Decrease the impacts of natural hazards
<b>Action/Project Number:</b>	UNC-2.3-1 (replaces 2.2.3)
<b>Name of Action or Project:</b>	Storm Ready Certification
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Achieve and maintain "Storm ready" certification through the NWS
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Increased readiness to prepare and respond to weather related emergencies
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD,
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	3 years, recertify as needed
<b>Potential Fund Sources:</b>	County tax revenues
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	NodCo has been certified and storm ready by the NWS. The county must recertify every 3 years

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nodaway County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	UNC 2.4 (replaces 2.2.4)
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site that will provide protection when people congregate at public events.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County tax revenues and bonds, BRIC grants
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, EOP, County School All Hazard Plan
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	This action is very expensive and there is a lack of funding. Hope to include in plans for development of new county fair site.



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nodaway County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All Natural Hazards
<b>Problem being Mitigated:</b>	Lacking Capabilities of Local Governments
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Increase disaster mitigation management capability in local governments
<b>Action/Project Number:</b>	UNC 3.0 (replaces 3.1.1)
<b>Name of Action or Project:</b>	Establish mutual aid agreements
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Execute and maintain mutual aid agreements with all relevant agencies. Develop written agreements between agencies as documentation
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Improved communication between organizations and the public
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	County commissioner
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	County general budget
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, EOP, County School All Hazard Plan
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, in progress
<b>Report of Progress:</b>	Some mutual aid agreements are in place, but there are more pending

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nodaway County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All Natural Hazards
<b>Problem being Mitigated:</b>	Lacking Capabilities of Local Governments
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Increase disaster mitigation management capability in local governments
<b>Action/Project Number:</b>	UNC 3.0-1 (replaces 3.1.3)
<b>Name of Action or Project:</b>	Local HMP/Emergency Operation Plan Update
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Continually Update and monitor the Local Emergency Operation Plan for the county. As part of this process the local HMP will be reviewed annually or as needed
<b>Estimated Cost:</b>	\$200
<b>Benefits:</b>	Increased readiness and effectiveness of emergency response
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	County budget for Emergency Preparedness
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, in progress
<b>Report of Progress:</b>	Discussed how to increase the frequency of review and updates.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nodaway County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Communication in emergencies
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	UNC 3.1 (replaces 3.1.4)
<b>Name of Action or Project:</b>	Communication capabilities
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Apply for grants to upgrade equipment and technology for the County Sheriff Department, county fire and ambulance districts, and local EMDs to connect into the MOSWIN system.
<b>Estimated Cost:</b>	Partner with other agencies to reduce costs
<b>Benefits:</b>	Connection into the MOSWIN network would further Northwest Missouri's regional interoperability capacities and their ability to dispatch across jurisdictions. MOSWIN is one of Missouri's top priorities within the homeland security program as it strengthens various Missouri jurisdictions and disciplines communication and emergency and disaster response. MOSWIN creates safer communities in Missouri, and Northwest Missouri wants to become a strong partner.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	County tax revenues, State Homeland Security grant funds, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Communication capabilities have always been an issue with first responders, the most common issue being funding and changing technology. Maryville received grant funds.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nodaway County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought, Extreme Temperatures
<b>Problem being Mitigated:</b>	Lack of redundant water source
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	UNC-3.2 (replaces 3.1.5)
<b>Name of Action or Project:</b>	Secondary water source
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Develop agreement for secondary water sources that may be used during emergency conditions.
<b>Estimated Cost:</b>	\$10,000
<b>Benefits:</b>	Maintain reliable water source for residents
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 39
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	County bonds, CBDG grants, USDA loan, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, MCP
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, Not started
<b>Report of Progress:</b>	Communication with other public water suppliers has been established

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nodaway County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods, Levee Failure, Severe Thunderstorms
<b>Problem being Mitigated:</b>	Repetitive Damage to local roads from flooding events
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	UNC-3.5 (replaces 3.2.3)
<b>Name of Action or Project:</b>	Elevation and armoring of at-risk roads and bridges
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Elevate roads and bridges as necessary to maintain dry access. In situations where flood waters tend to wash roads out, construction, reconstruction, or repair can include not only attention to drainage, but also stabilization or armoring of vulnerable shoulders or embankments.
<b>Estimated Cost:</b>	\$300,000 for bridge projects, \$100,000 per mile for elevation
<b>Benefits:</b>	Reduced maintenance/repair costs for repetitive damaged roads/bridges.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local road district, MoDOT, local council
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	MoDOT, County tax and bonds, BRIC, RAISE grant
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, NodCo Road Assessment, RTP
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, not started
<b>Report of Progress:</b>	Continue to upgrade bridge system with MoDOT and grant support

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nodaway County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	At risk critical structures and infrastructure
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	UNC-3.6 (replaces 3.2.4)
<b>Name of Action or Project:</b>	Utility Resilience
<b>Mitigation Category:</b>	Structure and Infrastructure
<b>Action or Project Description:</b>	Assess publicly-held facilities, distribution systems, etc. for vulnerability to natural hazards. If necessary, providers should make improvements to ensure continued service during a disaster when possible. Improvements may include equipment elevation, backup generators for power, and other infrastructure changes
<b>Estimated Cost:</b>	\$500,000
<b>Benefits:</b>	Reduction in the interruption of essential utilities
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, local council, public utility board
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County tax revenues, BRIC, USDA
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Some improvements have been made to various facilities

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nodaway County
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	UNC-3.7 (replaces 3.2.5)
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County funds, Private donations
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, EOP, MCP
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Price for generators is very high and the demand for them across the county is also very high.

### 4.3.2 Town of Arkoe: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Town of Arkoe
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes, Severe Thunderstorms, Tornadoes, Severe Winter Weather
<b>Problem being Mitigated:</b>	Provision of early warning of severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	AR-1.3
<b>Name of Action or Project:</b>	Warning system installation
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install a siren warning system connected to the County activation system
<b>Estimated Cost:</b>	\$500-\$2500
<b>Benefits:</b>	Provide the widest coverage possible for early warning of possible hazard to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County funding, Local and private contributions
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	Hope to cooperate with county



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Town of Arkoe
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	AR-2.4 (replaces 2.2.4)
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, USDA loan, Local and private contributions
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Relying on neighbors for shelter

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Town of Arkoe
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods, Levee Failure, Severe Thunderstorms
<b>Problem being Mitigated:</b>	Repetitive Damage to local roads from flooding events
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	AR 3.5 (replaces 3.2.3)
<b>Name of Action or Project:</b>	Elevation and armoring of at-risk roads and bridges
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Elevate roads and bridges as necessary to maintain dry access. In situations where flood waters tend to wash roads out, construction, reconstruction, or repair can include not only attention to drainage, but also stabilization or armoring of vulnerable shoulders or embankments.
<b>Estimated Cost:</b>	\$300,000 for bridge projects, \$100,000 per mile for elevation
<b>Benefits:</b>	Reduced maintenance/repair costs for repetitive damaged roads/bridges.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local road district, MoDOT, local council
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	MoDOT, Raise Grants, BRIC
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	Locations identified

### 4.3.3 City of Barnard: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Barnard
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes, Severe Thunderstorms, Tornadoes, Severe Winter Weather
<b>Problem being Mitigated:</b>	Provision of early warning of severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	Ba-1.3(replaces 1.2.2)
<b>Name of Action or Project:</b>	Warning system upgrades
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Continue to upgrade warning systems and synchronized activation through centralized law enforcement.
<b>Estimated Cost:</b>	\$500-\$2500
<b>Benefits:</b>	Provide the widest coverage possible for early warning of possible hazard to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County contributions, Local taxes or bonding
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	One operating siren activated by County Law Enforcement

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Barnard
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	Ba-2.4 (replaces 2.2.4)
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County assistance, Local bonds, USDA loan
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Barnard
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods
<b>Problem being Mitigated:</b>	Lack of flood warning
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices.
<b>Action/Project Number:</b>	Ba-2.3(replace 2.2.2)
<b>Name of Action or Project:</b>	Flood warning system
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Provide an effective warning system to alert citizens in flood prone areas and on low-lying roadways along 102 River, when flash flooding is imminent.
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Reduce risk and damages in SFHA
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, MoDOT, NWS
<b>Action/Project Priority:</b>	High 36
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	County, Local tax sources, NFIP grant programs
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	River level sensor in place

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Barnard
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods
<b>Problem being Mitigated:</b>	Lack of NFIP awareness
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices.
<b>Action/Project Number:</b>	Ba-2.1(replaces 2.1.2)
<b>Name of Action or Project:</b>	Flood Insurance Information
<b>Mitigation Category:</b>	Education and Outreach
<b>Action or Project Description:</b>	Inform citizens who reside in the floodplain about flood insurance and reduce their risk through mitigation actions such as structure elevation.
<b>Estimated Cost:</b>	\$100 for education-much higher for elevation projects
<b>Benefits:</b>	Reduce risk and damages in SFHA
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 44
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	Local budget funding, NFIP grants, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Consider separate action for structure elevation

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Barnard
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Communication in emergencies
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	Ba-3.1(replaces 3.1.4)
<b>Name of Action or Project:</b>	Communication capabilities
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Improve and expand communication capabilities of all first responder agencies including, but not limited to, fire districts, ambulance districts, and law enforcement.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Maintain reliable contact with other area Emergency Teams
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	County-city partner on grant, Local bonding, NFIP grant, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has made improvements

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Barnard
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought, Extreme Temperatures
<b>Problem being Mitigated:</b>	Lack of redundant water source
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	Ba-3.2 (replaces 3.1.5)
<b>Name of Action or Project:</b>	Secondary water source
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Develop agreement for secondary water sources that may be used during emergency conditions.
<b>Estimated Cost:</b>	\$10,000
<b>Benefits:</b>	Maintain reliable water source for residents
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 39
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	Local taxes and bonds, USDA loan, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	New (previous County 3.1.5)
<b>Report of Progress:</b>	new



### 4.3.4 City of Burlington Junction: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Burlington Junction
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flash Floods, Severe Winter Weather
<b>Problem being Mitigated:</b>	Relationships between Emergency Management agencies and local communities
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	BJ 1.1
<b>Name of Action or Project:</b>	EM and local business relationships
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Expand relationship between Emergency management and local businesses to coordinate disaster solutions and minimize the number of people on the roadways during periods of severe winter weather, flash floods, and other disasters as necessary.
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Keeps the roadways clear during potentially hazardous road conditions
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County-partnership, Homeland Security funding
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Begin writing plan

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Burlington Junction
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods
<b>Problem being Mitigated:</b>	Lack of NFIP awareness
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices.
<b>Action/Project Number:</b>	BJ 2.1
<b>Name of Action or Project:</b>	Flood Insurance Information
<b>Mitigation Category:</b>	Education and Outreach
<b>Action or Project Description:</b>	Inform citizens who reside in the floodplain about flood insurance and reduce their risk through mitigation actions such as structure elevation.
<b>Estimated Cost:</b>	\$100 for education-much higher for elevation projects
<b>Benefits:</b>	Reduce risk and damages in SFHA
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 44
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	Local tax revenues, NFIP resources for materials
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Consider separate action for structure elevation

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Burlington Junction
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods
<b>Problem being Mitigated:</b>	Flood mitigation efforts/compliances
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices.
<b>Action/Project Number:</b>	BJ-2.2 (replaces 2.2.1)
<b>Name of Action or Project:</b>	Floodplain regulation updates
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Review and revise floodplain regulations to meet the state and federal regulations to meet the state and federal regulations for NFIP compliance. Monitor development in Special Flood Hazard Areas (SFHA's), including mapping updates, to ensure compliance with local floodplain management ordinances
<b>Estimated Cost:</b>	\$1000
<b>Benefits:</b>	Reduce risk and damages in SFHA
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, Floodplain Manager
<b>Action/Project Priority:</b>	High 36
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	Local tax sources, NFIP grant programs
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	BJ is member of NFIP

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Burlington Junction
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	BJ 2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County-partnership, Local bonding, USDA loans
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Designate sites

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Burlington Junction
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Communication in emergencies
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	BJ 3.1
<b>Name of Action or Project:</b>	Communication capabilities
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Improve and expand communication capabilities of all first responder agencies including, but not limited to, fire districts, ambulance districts, and law enforcement.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Maintain reliable contact with other area Emergency Teams
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	County assist with grant applications, Local tax, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has made improvements

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Burlington Junction
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Records Preservation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	BJ 3.3
<b>Name of Action or Project:</b>	Essential Records backup
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Research, purchase and maintain a system to ensure the preservation of records in digital and/or off-site storage facilities.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Ensure continuation of services after an emergency
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	State Sec'y of State program, Local revenues, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has made improvements

### 4.3.5 City of Clearmont: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Clearmont
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes, Severe Thunderstorms, Tornadoes, Severe Winter Weather
<b>Problem being Mitigated:</b>	Provision of early warning of severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	CM-1.3
<b>Name of Action or Project:</b>	Warning system upgrades
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Continue to upgrade warning systems and synchronized activation through centralized law enforcement.
<b>Estimated Cost:</b>	\$500-\$2500
<b>Benefits:</b>	Provide the widest coverage possible for early warning of possible hazard to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County EMD cooperation, Local tax revenues
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	One operating siren but not synched

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Clearmont
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes, Severe Thunderstorms, Tornadoes, Severe Winter Weather
<b>Problem being Mitigated:</b>	Lack of coordination between state and local agencies for sheltering in a disaster
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	CM-1.5
<b>Name of Action or Project:</b>	Coordination with local and state agencies for sheltering
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Develop a coordinated response and accommodations schematic for disaster sheltering based on federal guidelines in cooperation with local and state agencies
<b>Estimated Cost:</b>	\$500-\$2500
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	Homeland Security resources, County partnership, Local tax base
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Exploring options for acquiring/building storm shelter to accommodate individuals living in rural housing complex



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Clearmont
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes, Severe Thunderstorms, Tornadoes, Severe Winter Weather
<b>Problem being Mitigated:</b>	Lack of shared generator inventory between RHSOC, Red Cross, National Guard, and other local agencies
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	CM-1.6
<b>Name of Action or Project:</b>	Central inventory of facilities with generators with RHSOC, Red Cross, National Guard, and other local agencies
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Work with the RHSOC, Red Cross, National Guard and other local agencies to develop an inventory of facilities with generators /emergency power that can be used as shelters in the event of a natural disaster
<b>Estimated Cost:</b>	\$100
<b>Benefits:</b>	Provides all agencies helping during a disaster with knowing where to go for power
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	County resources, Local tax funds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Determine generator sites with county's EMD help

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Clearmont
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All hazards
<b>Problem being Mitigated:</b>	Public knowledge of natural hazards and mitigation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	CM 1.7
<b>Name of Action or Project:</b>	Information campaign
<b>Mitigation Category:</b>	Education and Outreach
<b>Action or Project Description:</b>	Develop an ongoing campaign to educate the community about seasonal hazards. Coordinate this campaign with a variety of advertising resources to reach the maximum number of people in a timely manner
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Reduce risks due to misconceptions about natural hazards
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Town council
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	1 years
<b>Potential Fund Sources:</b>	County, Local tax funds, Ready in 3 resources
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has Ready in 3 materials. Focus likely to be on rural housing units and senior citizens in area.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Clearmont
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	CM 2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site (Tower View Housing Complex) to give community members a safe-sheltering in respective locations.
<b>Estimated Cost:</b>	\$50,000+
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG through SEMA, County resources, Local tax and bonds, private donations
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue
<b>Report of Progress:</b>	This has been discussed with regard to Tower View Housing Complex and is considered a priority to reestablish. Research on shelters available for purchase was done a number of years ago but needs to be reconsidered as new rules/shelters for purchase may have improved the ability of the city to invest/act.

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Clearmont
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Communication in emergencies
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	CM 3.1
<b>Name of Action or Project:</b>	Communication capabilities
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Improve and expand communication capabilities of all first responder agencies including, but not limited to, fire districts, ambulance districts, and law enforcement.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Maintain reliable contact with other area Emergency Teams
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	County assistance/partnership on grant applications, Local tax
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has made improvements

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Clearmont
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought, Extreme Temperatures
<b>Problem being Mitigated:</b>	Lack of redundant water source
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	CM 3.2
<b>Name of Action or Project:</b>	Secondary water source
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Develop agreement for secondary water sources that may be used during emergency conditions.
<b>Estimated Cost:</b>	\$10,000
<b>Benefits:</b>	Maintain reliable water source for residents
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 39
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	Local tax revenues, USDA loan, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	Use of PWSD #1
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	options identified

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Clearmont
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Records Preservation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	CM 3.3
<b>Name of Action or Project:</b>	Essential Records backup
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Research, purchase and maintain a system to ensure the preservation of records in digital and/or off-site storage facilities.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Ensure continuation of services after an emergency
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	State, Local tax base, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has made improvements but local records at-risk

### 4.3.6 City of Conception Junction: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Village of Conception Junction
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes, Severe Thunderstorms, Tornadoes, Severe Winter Weather
<b>Problem being Mitigated:</b>	Provision of early warning of severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	CJ-1.3
<b>Name of Action or Project:</b>	Warning system upgrades
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Continue to upgrade warning systems and synchronized activation through centralized law enforcement.
<b>Estimated Cost:</b>	\$500-\$2500
<b>Benefits:</b>	Provide the widest coverage possible for early warning of possible hazard to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County partnership with emergency services, Local funds from tax base
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	One operating siren activated by County Law Enforcement

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Village of Conception Junction
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All natural hazards
<b>Problem being Mitigated:</b>	Public knowledge of natural hazards and mitigation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	CJ 1.7
<b>Name of Action or Project:</b>	Information campaign
<b>Mitigation Category:</b>	Education and Outreach
<b>Action or Project Description:</b>	Develop an ongoing campaign to educate the community about seasonal hazards as well as earthquakes. Coordinate this campaign with a variety of advertising resources to reach the maximum number of people in a timely manner
<b>Estimated Cost:</b>	\$100
<b>Benefits:</b>	Reduce risks due to misconceptions about natural hazards
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Town council
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	1 years
<b>Potential Fund Sources:</b>	County EMD funds, Local operating budget, Ready in 3 resources
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	County has Ready in 3 materials to share



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Village of Conception Junction
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	CJ-2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in the St. Columba Religious Education Building or alternate acceptable site.
<b>Estimated Cost:</b>	\$50,000+
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, BRIC, Local bonding
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Identified a location for shelter construction

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Village of Conception Junction
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	CJ-3.7
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.
<b>Estimated Cost:</b>	\$5,000 plus installation and switching
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, Local tax revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

### 4.3.7 City of Elmo: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Elmo
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flash Floods, Severe Winter Weather
<b>Problem being Mitigated:</b>	Relationships between Emergency Management agencies and local communities
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	EL 1.1
<b>Name of Action or Project:</b>	EM and local business relationships
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Expand relationship between Emergency management and local businesses to coordinate disaster solutions and minimize the number of people on the roadways during periods of severe winter weather, flash floods, and other disasters as necessary.
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Keeps the roadways clear during potentially hazardous road conditions
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	MoDOT, County EM funds, Local tax
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Continue writing plan

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Elmo
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes, Severe Thunderstorms, Tornadoes, Severe Winter Weather
<b>Problem being Mitigated:</b>	Provision of early warning of severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	EL 1.3
<b>Name of Action or Project:</b>	Warning system upgrades
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Continue to upgrade warning systems and synchronized activation through centralized law enforcement.
<b>Estimated Cost:</b>	\$500-\$2500
<b>Benefits:</b>	Provide the widest coverage possible for early warning of possible hazard to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG/SEMA, County Law enforcement partnership, Local tax funds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	One operating siren activated by County Law Enforcement

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Elmo
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All hazards
<b>Problem being Mitigated:</b>	Public knowledge of natural hazards and mitigation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	EL 1.7
<b>Name of Action or Project:</b>	Information campaign
<b>Mitigation Category:</b>	Education and Outreach
<b>Action or Project Description:</b>	Develop an ongoing campaign to educate the community about seasonal hazards. Coordinate this campaign with a variety of advertising resources to reach the maximum number of people in a timely manner
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Reduce risks due to misconceptions about natural hazards
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Town council
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	1 years
<b>Potential Fund Sources:</b>	County resources, Local/private donations, Ready in 3 resources
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has Ready in 3 materials, we can request

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Elmo
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods
<b>Problem being Mitigated:</b>	Lack of flood warning
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices.
<b>Action/Project Number:</b>	EL 2.3
<b>Name of Action or Project:</b>	Flood warning system
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Provide an effective warning system to alert citizens in flood prone areas and on low-lying roadways along Nodaway River, when flash flooding is imminent.
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Reduce risk and damages in SFHA
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, MoDOT, NWS
<b>Action/Project Priority:</b>	High 36
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	MoDOT cooperation, Local taxes, NFIP grant programs
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	River level sensor in place on bridge

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Elmo
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	EL 2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, BRIC, Local tax and bonding revenues
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	ID specific sites

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Elmo
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Communication in emergencies
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	EL 3.1
<b>Name of Action or Project:</b>	Communication capabilities
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Improve and expand communication capabilities of all first responder agencies including, but not limited to, fire districts, ambulance districts, and law enforcement.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Maintain reliable contact with other area Emergency Teams
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	County assistance with grants, Local revenues, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has made improvements



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Elmo
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All Hazards
<b>Problem being Mitigated:</b>	Low roads being flooded
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	EL 3.5
<b>Name of Action or Project:</b>	Road and bridge elevation
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Elevate roads and bridges as necessary to maintain dry access. In situations where flood waters tend to wash roads out, construction, reconstruction, or repair can include not only attention to drainage, but also stabilization or armoring of vulnerable shoulders or embankments.
<b>Estimated Cost:</b>	\$1,000 inspection, much higher for any needed retrofitting
<b>Benefits:</b>	Proactively eliminate possible weaknesses in critical infrastructure
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County Road and Bridge, Local bonding
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Study needed

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Elmo
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	EL-3.7
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	SEMA-HMG, County resources, Local tax revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Backup generator for sewer pumps

### 4.3.8 City of Graham: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Graham
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes, Severe Thunderstorms, Tornadoes, Severe Winter Weather
<b>Problem being Mitigated:</b>	Provision of early warning of severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	GM 1.3
<b>Name of Action or Project:</b>	Warning system upgrades
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Continue to upgrade warning systems and synchronized activation through centralized law enforcement.
<b>Estimated Cost:</b>	\$500-\$2500
<b>Benefits:</b>	Provide the widest coverage possible for early warning of possible hazard to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County EM cooperation, Local tax base
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	One operating siren activated by County Law Enforcement

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Graham
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes, Severe Thunderstorms, Tornadoes, Severe Winter Weather
<b>Problem being Mitigated:</b>	Lack of coordination between state and local agencies for sheltering in a disaster
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	GM-1.5
<b>Name of Action or Project:</b>	Coordination with local and state agencies for sheltering
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Develop a coordinated response and accommodations schematic for disaster sheltering based on federal guidelines in cooperation with local and state agencies
<b>Estimated Cost:</b>	\$500-\$2500
<b>Benefits:</b>	Provide the widest coverage possible for early warning of possible hazard to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	County EM funds, Local private organization donations
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Graham
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods
<b>Problem being Mitigated:</b>	Lack of flood warning
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices.
<b>Action/Project Number:</b>	GM 2.3
<b>Name of Action or Project:</b>	Flood warning system
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Provide an effective warning system to alert citizens in flood prone areas and on low-lying roadways along Nodaway River, when flash flooding is imminent.
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Reduce risk and damages in SFHA
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, MoDOT, NWS
<b>Action/Project Priority:</b>	High 36
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	MoDOT, County EM funds, Local tax, NFIP grant programs
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	River level sensor in place

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Graham
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	GM 2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County resources, BRIC, Local bonding capability
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Specific sites

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Graham
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought, Extreme Temperatures
<b>Problem being Mitigated:</b>	Insufficient water sources
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices
<b>Action/Project Number:</b>	GM-2.5
<b>Name of Action or Project:</b>	Water use ordinance
<b>Mitigation Category:</b>	Natural Systems Protection
<b>Action or Project Description:</b>	Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc.in drought emergencies.
<b>Estimated Cost:</b>	\$100
<b>Benefits:</b>	Extend limited resources in water shortages
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 37
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	HMG, USDA grants/loans, Local bonds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue. In progress
<b>Report of Progress:</b>	discussion

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Graham
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Communication in emergencies
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	GM 3.1
<b>Name of Action or Project:</b>	Communication capabilities
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Improve and expand communication capabilities of all first responder agencies including, but not limited to, fire districts, ambulance districts, and law enforcement.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Maintain reliable contact with other area Emergency Teams
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	County partnership on obtaining state grants, Local taxes, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has made improvements



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Graham
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought, Extreme Temperatures
<b>Problem being Mitigated:</b>	Lack of redundant water source
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	GM 3.2
<b>Name of Action or Project:</b>	Secondary water source
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Develop agreement for secondary water sources that may be used during emergency conditions.
<b>Estimated Cost:</b>	\$10,000
<b>Benefits:</b>	Maintain reliable water source for residents
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 39
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	Local bonds, USDA loan, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Feasibility study launched on wastewater cooperation

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Graham
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Records Preservation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	GM 3.3
<b>Name of Action or Project:</b>	Essential Records backup
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Research, purchase and maintain a system to ensure the preservation of records in digital and/or off-site storage facilities.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Ensure continuation of services after an emergency
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	State resources, County partnership, Local tax
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Who? When?

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Graham
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All Hazards
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	GM 3.4
<b>Name of Action or Project:</b>	Critical structure review
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Inspect critical buildings and infrastructure for needed upgrades or retrofits
<b>Estimated Cost:</b>	\$1,000 inspection, much higher for any needed retrofitting
<b>Benefits:</b>	Proactively eliminate possible weaknesses in critical infrastructure
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, Local tax revenues
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Study needed for upgrades

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Graham
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All Hazards
<b>Problem being Mitigated:</b>	Low roads being flooded
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	GM 3.5
<b>Name of Action or Project:</b>	Road and bridge elevation
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Elevate roads and bridges as necessary to maintain dry access. In situations where flood waters tend to wash roads out, construction, reconstruction, or repair can include not only attention to drainage, but also stabilization or armoring of vulnerable shoulders or embankments.
<b>Estimated Cost:</b>	\$1,000 inspection, much higher for any needed retrofitting
<b>Benefits:</b>	Proactively eliminate possible weaknesses in critical infrastructure
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County Road and Bridge Dept, MoDOT programing, Local bonding
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Study needed

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Graham
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	GM 3.7
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, BRIC, Local tax and private donations
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Complete not started
<b>Report of Progress:</b>	ID Specifics

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Graham
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Maintain economic activities essential to the survival and recovery from natural hazards.
<b>Action/Project Number:</b>	GM 4.1
<b>Name of Action or Project:</b>	Disaster plan coordination
<b>Mitigation Category:</b>	Education and Outreach
<b>Action or Project Description:</b>	Provide resources for the development and maintenance of disaster plans for local businesses, schools, hospitals, and other entities as necessary that are coordinated with community disaster plans.
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	Medium 29
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	County coordination with EMD, Local tax, other grants not identified yet
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, not started
<b>Report of Progress:</b>	

### 4.3.9 Village of Guilford: Updated Action Worksheets

#### Guilford Actions

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Village Of Guilford
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes, Severe Thunderstorms, Tornadoes, Severe Winter Weather
<b>Problem being Mitigated:</b>	Provision of early warning of severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	GL-1.3
<b>Name of Action or Project:</b>	Warning system upgrades
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase upgrades to siren warning system
<b>Estimated Cost:</b>	\$500-\$2500
<b>Benefits:</b>	Provide the widest coverage possible for early warning of possible hazard to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County EM funds, Local tax
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	One operating siren is activated by Local Officials. Location at south end of County makes County activation not accurate at times

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Guilford
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods
<b>Problem being Mitigated:</b>	Lack of flood warning
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices.
<b>Action/Project Number:</b>	GL-2.3
<b>Name of Action or Project:</b>	Flood warning system
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Provide an effective warning system to alert citizens in flood prone areas and on low-lying roadways along Platte River, when flooding is imminent.
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Reduce risk in nearby SFHA
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, MoDOT, NWS
<b>Action/Project Priority:</b>	High 36
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	MoDOT programs, Local tax
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	River level sensor in place,



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Guilford
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	GL-2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in Guilford Baseball Field area.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, BRIC, Local bonding capability
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Basement area of Concession stand is currently used

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Guilford
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Communication in emergencies
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	GL-3.1
<b>Name of Action or Project:</b>	Communication capabilities
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Improve and expand communication capabilities of all first responder agencies including, but not limited to, fire districts, ambulance districts, and law enforcement.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Maintain reliable contact with other area Emergency Teams
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	County assistance on grants, Local taxes, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has made improvements

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Guilford
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Records Preservation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	GL-3.3
<b>Name of Action or Project:</b>	Essential Records backup
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Research, purchase and maintain a system to ensure the preservation of records in digital and/or off-site storage facilities.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Ensure continuation of services after an emergency
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	State programs, County resources, Local taxes, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Learned of possible MO Sec'y of State funds

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Guilford
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All Hazards
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	GL-3.4
<b>Name of Action or Project:</b>	Critical structure review
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Inspect critical buildings and infrastructure for needed upgrades or retrofits
<b>Estimated Cost:</b>	\$1,000 inspection, much higher for any needed retrofitting
<b>Benefits:</b>	Proactively eliminate possible weaknesses in critical infrastructure
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County cooperation with EM, Local taxes
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Guilford
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	GL-3.7
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites of wastewater treatment facilities and sheltering sites.
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, BRIC, Local tax revenues
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	One generator in place

### 4.3.10 City of Hopkins: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Hopkins
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All hazards
<b>Problem being Mitigated:</b>	Public knowledge of natural hazards and mitigation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	HP-1.7(replaces 1.4.1)
<b>Name of Action or Project:</b>	Information campaign
<b>Mitigation Category:</b>	Education and Outreach
<b>Action or Project Description:</b>	Develop an ongoing campaign to educate the community about seasonal hazards. Coordinate this campaign with a variety of advertising resources to reach the maximum number of people in a timely manner
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Reduce risks due to misconceptions about natural hazards
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Town council
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	1 years
<b>Potential Fund Sources:</b>	County resources, Local service organization donations, Ready in 3 resources
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has Ready in 3 materials

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Hopkins
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods
<b>Problem being Mitigated:</b>	Lack of NFIP awareness
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices.
<b>Action/Project Number:</b>	HP-2.1(replaces 2.1.2)
<b>Name of Action or Project:</b>	Flood Insurance Information
<b>Mitigation Category:</b>	Education and Outreach
<b>Action or Project Description:</b>	Inform citizens who reside in the floodplain about flood insurance and reduce their risk through mitigation actions such as structure elevation.
<b>Estimated Cost:</b>	\$100 for education-much higher for elevation projects
<b>Benefits:</b>	Reduce risk and damages in SFHA
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 44
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	Local tax revenues, NFIP program grants, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Consider separate action for structure elevation

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Hopkins
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods
<b>Problem being Mitigated:</b>	Flood mitigation efforts/compliances
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices.
<b>Action/Project Number:</b>	HP-2.2(replaces 2.2.1)
<b>Name of Action or Project:</b>	Floodplain regulation updates
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Review and revise floodplain regulations to meet the state and federal regulations to meet the state and federal regulations for NFIP compliance. Monitor development in Special Flood Hazard Areas (SFHA's), including mapping updates, to ensure compliance with local floodplain management ordinances
<b>Estimated Cost:</b>	\$1000
<b>Benefits:</b>	Reduce risk and damages in SFHA
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, MoDOT, NWS
<b>Action/Project Priority:</b>	High 36
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	Local taxes, NFIP grants
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	City Budget Plan
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Annually and as needed



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Hopkins
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	HP-2.4 (replaces 2.2.4)
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County resources, Local bonding, private donations
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Possible site identified

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Hopkins
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought, Extreme Temperatures
<b>Problem being Mitigated:</b>	Insufficient water sources
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices
<b>Action/Project Number:</b>	HP-2.5(replaces 2.2.5)
<b>Name of Action or Project:</b>	Water use ordinance
<b>Mitigation Category:</b>	Natural Systems Protection
<b>Action or Project Description:</b>	Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc.in drought emergencies.
<b>Estimated Cost:</b>	\$100
<b>Benefits:</b>	Extend limited resources in water shortages
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 37
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	Local budget item-tax base
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue. Not started
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Hopkins
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Communication in emergencies
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	HP-3.1 (replaces 3.1.4)
<b>Name of Action or Project:</b>	Communication capabilities
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Improve and expand communication capabilities of all first responder agencies including, but not limited to, fire districts, ambulance districts, and law enforcement. Partner with MOSWIN
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Maintain reliable contact with other area Emergency Teams
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	County assistance , Local funding through tax, HMG, Fire/police grants
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has made improvements

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Hopkins
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Records Preservation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	HP-3.3 (replaces 3.2.1)
<b>Name of Action or Project:</b>	Essential Records backup
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Research, purchase and maintain a system to ensure the preservation of records in digital and/or off-site storage facilities.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Ensure continuation of services after an emergency
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	State programs, Local tax, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has made improvements. Local records at risk

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Hopkins
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All Hazards
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	HP-3.4 (replaces 3.2.2)
<b>Name of Action or Project:</b>	Critical structure review
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Inspect critical buildings and infrastructure for needed upgrades or retrofits
<b>Estimated Cost:</b>	\$1,000 inspection, much higher for any needed retrofitting
<b>Benefits:</b>	Proactively eliminate possible weaknesses in critical infrastructure
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County EM cooperation, Local tax
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Partnered with the City of Maryville to make some inspections

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Hopkins
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods, Levee Failure, Severe Thunderstorms
<b>Problem being Mitigated:</b>	Repetitive Damage to local roads from flooding events
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	HP-3.5 (replaces 3.2.3)
<b>Name of Action or Project:</b>	Elevation and armoring of at-risk roads and bridges
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Elevate roads and bridges as necessary to maintain dry access. In situations where flood waters tend to wash roads out, construction, reconstruction, or repair can include not only attention to drainage, but also stabilization or armoring of vulnerable shoulders or embankments.
<b>Estimated Cost:</b>	\$300,000 for bridge projects, \$100,000 per mile for elevation
<b>Benefits:</b>	Reduced maintenance/repair costs for repetitive damaged roads/bridges.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local road district, MoDOT, local council
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	MoDOT, Raise Grants, BRIC, city bonds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, not started
<b>Report of Progress:</b>	Identified sites of repetitive occurrences

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Hopkins
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	HP-3.7 (replaces 3.2.5)
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, BRIC, Local tax revenues
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue- not started
<b>Report of Progress:</b>	Not funded

### 4.3.11 City of Maryville: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Maryville
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Flooding, Levee Failure, Dam Failure
<b>Problem being Mitigated:</b>	Flood mitigation efforts/compliances
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices.
<b>Action/Project Number:</b>	MV-2.2
<b>Name of Action or Project:</b>	Floodplain regulation updates
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Review and revise floodplain regulations to meet the state and federal regulations to meet the state and federal regulations for NFIP compliance. Monitor development in Special Flood Hazard Areas (SFHA's), including mapping updates, to ensure compliance with local floodplain management ordinances
<b>Estimated Cost:</b>	\$1000
<b>Benefits:</b>	Reduce risk and damages in SFHA
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Floodplain Manager, EMD, MoDOT
<b>Action/Project Priority:</b>	High 36
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	Local tax, NFIP program grants
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, Maryville Comprehensive Plan (MCP)
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Peach Creek area reviewed



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Maryville
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	MV-2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable public site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County-city cooperate project, Local bonds, BRIC
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, Maryville Comprehensive Plan (MCP)
<b>Progress Report</b>	
<b>Action Status:</b>	Continue started
<b>Report of Progress:</b>	High school safe room provides part of city coverage

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Maryville
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All Natural Hazards
<b>Problem being Mitigated:</b>	Lacking Capabilities of Local Governments
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Increase disaster mitigation management capability in local governments
<b>Action/Project Number:</b>	MV-3.0 (replaces 3.1.1)
<b>Name of Action or Project:</b>	Establish mutual aid agreements
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Execute and maintain mutual aid agreements with all relevant agencies. Develop written agreements between agencies as documentation
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Improved communication between organizations and the public
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	County commissioner
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	Local taxes
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, EOP, County School All Hazard Plan
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, in progress
<b>Report of Progress:</b>	Some mutual aid agreements are in place, but there are more pending

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Maryville
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All Natural Hazards
<b>Problem being Mitigated:</b>	Lacking Capabilities of Local Governments
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Increase disaster mitigation management capability in local governments
<b>Action/Project Number:</b>	MV-3.0.1 (replaces 3.1.3)
<b>Name of Action or Project:</b>	Local HMP/Emergency Operation Plan Update
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Continually Update and monitor the Local Emergency Operation Plan for the city. As part of this process the local HMP will be reviewed annually or as needed
<b>Estimated Cost:</b>	\$200
<b>Benefits:</b>	Increased readiness and effectiveness of emergency response
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	Local tax-operating funds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	MCP, LEOP
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, in progress
<b>Report of Progress:</b>	Some mutual aid agreements are in place, but there are more pending

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Maryville
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Tornado, Severe Thunderstorms, Floods
<b>Problem being Mitigated:</b>	Lack of communication capabilities
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	MV-3.1
<b>Name of Action or Project:</b>	First Responder Communication Capabilities
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Apply for grants to upgrade equipment and technology for the Maryville Police Department and Maryville Fire Department to connect into the MOSWIN system
<b>Estimated Cost:</b>	\$40,000
<b>Benefits:</b>	Connection into the MOSWIN network would further Northwest Missouri's regional interoperability capacities and their ability to dispatch across jurisdictions. MOSWIN is one of Missouri's top priorities within the homeland security program as it strengthens various Missouri jurisdictions and disciplines communication and emergency and disaster response. MOSWIN creates safer communities in Missouri, and Northwest Missouri wants to become a strong partner.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	All Jurisdictions working with County
<b>Action/Project Priority:</b>	STAPLEE Score 33 High
<b>Timeline for Completion:</b>	2026
<b>Potential Fund Sources:</b>	State Grants, Federal Appropriations through Community Funded Projects, city
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	MCP, LEOP
<b>Progress Report</b>	
<b>Action Status:</b>	Continuing Started
<b>Report of Progress:</b>	This will continue to be ongoing as technology increases

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Maryville
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought, Extreme Temperatures
<b>Problem being Mitigated:</b>	Lack of redundant water source
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	MV-3.2 (replaces 3.1.5)
<b>Name of Action or Project:</b>	Secondary water source
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Develop agreement for secondary water sources that may be used during emergency conditions.
<b>Estimated Cost:</b>	\$10,000
<b>Benefits:</b>	Maintain reliable water source for residents
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 39
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	CBDG grants, Local bonds, USDA loan, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, MCP
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, Not started
<b>Report of Progress:</b>	Communication with other public water suppliers has been established

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Maryville
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	At risk critical structures and infrastructure
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	MV-3.6 (replaces 3.2.4)
<b>Name of Action or Project:</b>	Utility Resilience
<b>Mitigation Category:</b>	Structure and Infrastructure
<b>Action or Project Description:</b>	Assess publicly held facilities, distribution systems, etc. for vulnerability to natural hazards. If necessary, providers should make improvements to ensure continued service during a disaster when possible. Improvements may include equipment elevation, backup generators for power, and other infrastructure changes
<b>Estimated Cost:</b>	\$500,000
<b>Benefits:</b>	Reduction in the interruption of essential utilities
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, local council, public utility board
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, Local tax, BRIC, USDA grant/loans
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Lack of funding prevents improvements to some facilities

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Maryville
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	MV-3.7 (replaces 3.2.5)
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County EM, Local EM tax funds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, EOP, MCP
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Pending quotes for generators. Price for generators is very high and the demand for them across the city is also very high.

### 4.3.12 City of Parnell: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Parnell
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All hazards
<b>Problem being Mitigated:</b>	Public knowledge of natural hazards and mitigation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	PA-1.7
<b>Name of Action or Project:</b>	Information campaign
<b>Mitigation Category:</b>	Education and Outreach
<b>Action or Project Description:</b>	Develop an ongoing campaign to educate the community about seasonal hazards. Coordinate this campaign with a variety of advertising resources to reach the maximum number of people in a timely manner
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Reduce risks due to misconceptions about natural hazards
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Town council
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	1 years
<b>Potential Fund Sources:</b>	County cooperation, Local taxes, Ready in 3 resources, private contributions
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has Ready in 3 materials



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Parnell
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	PA-2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County-City partnership, Local tax and bonds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	New
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Parnell
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought, Extreme Temperatures
<b>Problem being Mitigated:</b>	Insufficient water sources
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices
<b>Action/Project Number:</b>	PA-2.5
<b>Name of Action or Project:</b>	Water use ordinance
<b>Mitigation Category:</b>	Natural Systems Protection
<b>Action or Project Description:</b>	Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc.in drought emergencies.
<b>Estimated Cost:</b>	\$100
<b>Benefits:</b>	Extend limited resources in water shortages
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 37
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	Local budget item-local tax
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue. Not started
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Parnell
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Communication in emergencies
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	PA-3.1
<b>Name of Action or Project:</b>	Communication capabilities
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Improve and expand communication capabilities of all first responder agencies including, but not limited to, fire districts, ambulance districts, and law enforcement.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Maintain reliable contact with other area Emergency Teams
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	County grant application cooperation, Local tax funds for match, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has made improvements

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Parnell
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Records Preservation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	PA-3.3
<b>Name of Action or Project:</b>	Essential Records backup
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Research, purchase and maintain a system to ensure the preservation of records in digital and/or off-site storage facilities.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Ensure continuation of services after an emergency
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	State program, County assistance, Local tax, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has made improvements

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Parnell
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All Hazards
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	PA-3.4
<b>Name of Action or Project:</b>	Critical structure review
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Inspect critical buildings and infrastructure for needed upgrades or retrofits
<b>Estimated Cost:</b>	\$1,000 inspection, much higher for any needed retrofitting
<b>Benefits:</b>	Proactively eliminate possible weaknesses in critical infrastructure
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County cooperation, Local tax
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Parnell
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	Pa 3.7
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites and sheltering site, Parnell Community Building.
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services and shelter for displaced residents
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, BRIC, Local match through tax base
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Parnell
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	PA-3.7a
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for sewer lift
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, BRIC, Local tax, DNR grant, USDA loan
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	

### 4.3.13 City of Pickering: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Pickering
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquakes, Severe Thunderstorms, Tornadoes, Severe Winter Weather
<b>Problem being Mitigated:</b>	Provision of early warning of severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	PI-1.3
<b>Name of Action or Project:</b>	Warning system upgrades
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Continue to upgrade warning systems and synchronized activation through centralized law enforcement.
<b>Estimated Cost:</b>	\$500-\$2500
<b>Benefits:</b>	Provide the widest coverage possible for early warning of possible hazard to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County Law enforcement cooperation, Local tax revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	One operating siren activated by County Law Enforcement



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Pickering
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods
<b>Problem being Mitigated:</b>	Flood mitigation efforts/compliances
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices.
<b>Action/Project Number:</b>	PI 2.2
<b>Name of Action or Project:</b>	Floodplain regulation updates
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Review and revise floodplain regulations to meet the state and federal regulations to meet the state and federal regulations for NFIP compliance. Monitor development in Special Flood Hazard Areas (SFHA's), including mapping updates, to ensure compliance with local floodplain management ordinances
<b>Estimated Cost:</b>	\$1000
<b>Benefits:</b>	Reduce risk and damages in SFHA
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, MoDOT, NWS
<b>Action/Project Priority:</b>	High 36
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	Local tax, NFIP program grants
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Pickering
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	PI 2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County assistance, Local bonding capability, BRIC
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Specific site

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Pickering
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Records Preservation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	PI 3.3
<b>Name of Action or Project:</b>	Essential Records backup
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Research, purchase and maintain a system to ensure the preservation of records in digital and/or off-site storage facilities.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Ensure continuation of services after an emergency
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	State program participation, County partnership, Local tax, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	in dialogue with NWMORCOG and county EM

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Pickering
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	PI 3.7
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites. Purchase, install generators for sewer pumps.
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County, Local tax, BRIC
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Ongoing
<b>Report of Progress:</b>	Determined that sewer pumps need backup power supply

### 4.3.14 City of Ravenwood: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Ravenwood
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods
<b>Problem being Mitigated:</b>	Lack of NFIP awareness
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices.
<b>Action/Project Number:</b>	RV-2.1
<b>Name of Action or Project:</b>	Flood Insurance Information
<b>Mitigation Category:</b>	Education and Outreach
<b>Action or Project Description:</b>	Inform citizens who reside in the floodplain about flood insurance and reduce their risk through mitigation actions such as structure elevation.
<b>Estimated Cost:</b>	\$100 for education-much higher for elevation projects
<b>Benefits:</b>	Reduce risk and damages in nearby SFHA
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD
<b>Action/Project Priority:</b>	High 44
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	Local tax base, NFIP program grants and resources
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Consider separate action for structure elevation

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Ravenwood
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods
<b>Problem being Mitigated:</b>	Flood mitigation efforts/compliances
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices.
<b>Action/Project Number:</b>	RV-2.2
<b>Name of Action or Project:</b>	Floodplain regulation updates
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Review and revise floodplain regulations to meet the state and federal regulations to meet the state and federal regulations for NFIP compliance. Monitor development in Special Flood Hazard Areas (SFHA's), including mapping updates, to ensure compliance with local floodplain management ordinances
<b>Estimated Cost:</b>	\$1000
<b>Benefits:</b>	Reduce risk and damages in SFHA
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, MoDOT, NWS
<b>Action/Project Priority:</b>	High 36
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	Local revenues, NFIP grants
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Investigate NFIP participation

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Ravenwood
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Floods
<b>Problem being Mitigated:</b>	Lack of flood warning
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Manage growth in designated hazard areas through sustainable policies, principles, and practices.
<b>Action/Project Number:</b>	RV-2.3
<b>Name of Action or Project:</b>	Flood warning system
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Provide an effective warning system to alert citizens in flood prone areas and on low-lying roadways along Platte River, when flash flooding is imminent.
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Reduce risk and damages in SFHA
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, MoDOT, NWS
<b>Action/Project Priority:</b>	High 36
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	MoDOT programing, Local taxing, NFIP program grants
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Ravenwood
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	RV-2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County resources, Local bonds and taxes, BRIC grant
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	No money funded



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Ravenwood
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Communication in emergencies
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	RV-3.1
<b>Name of Action or Project:</b>	Communication capabilities
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Improve and expand communication capabilities of all first responder agencies including, but not limited to, fire districts, ambulance districts, and law enforcement.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Maintain reliable contact with other area Emergency Teams
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	County cooperation, Local tax, HMG, Homeland Security funds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has made improvements

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Ravenwood
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Records Preservation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	RV-3.3
<b>Name of Action or Project:</b>	Essential Records backup
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Research, purchase and maintain a system to ensure the preservation of records in digital and/or off-site storage facilities.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Ensure continuation of services after an emergency
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	State program, Local tax, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Inquired with MO Sec'y of State

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Ravenwood
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	At risk critical structures and infrastructure
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	RV-3.6
<b>Name of Action or Project:</b>	Utility Resilience
<b>Mitigation Category:</b>	Structure and Infrastructure
<b>Action or Project Description:</b>	Assess publicly held facilities, distribution systems, etc. for vulnerability to natural hazards. If necessary, providers should make improvements to ensure continued service during a disaster when possible. Improvements may include equipment elevation, backup generators for power, and other infrastructure changes
<b>Estimated Cost:</b>	\$500,000
<b>Benefits:</b>	Reduction in the interruption of essential utilities
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, local council, public utility board
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, Local funds, BRIC, USDA
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Lack of Funds

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Ravenwood
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	RV-3.7
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County resources, Local tax, BRIC
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	

### 4.3.15 City of Skidmore: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Skidmore
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All hazards
<b>Problem being Mitigated:</b>	Public knowledge of natural hazards and mitigation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	Sk 1.7
<b>Name of Action or Project:</b>	Information campaign
<b>Mitigation Category:</b>	Education and Outreach
<b>Action or Project Description:</b>	Develop an ongoing campaign to educate the community about seasonal hazards. Coordinate this campaign with a variety of advertising resources to reach the maximum number of people in a timely manner
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Reduce risks due to misconceptions about natural hazards
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Town council
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	1 years
<b>Potential Fund Sources:</b>	County resources, Local revenue from taxes, Ready in 3 resources
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has Ready in 3 materials

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Skidmore
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	SK-2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County resources, Local taxes/bonds, BRIC
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Skidmore
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Communication in emergencies
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	SK-3.1
<b>Name of Action or Project:</b>	Communication capabilities
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Improve and expand communication capabilities of all first responder agencies including, but not limited to, fire districts, ambulance districts, and law enforcement.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Maintain reliable contact with other area Emergency Teams
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County assistance, Local taxes, Homeland Security funds/grants
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Skidmore
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All Hazards
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	Sk 3.4
<b>Name of Action or Project:</b>	Critical structure review
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Inspect critical buildings and infrastructure for needed upgrades or retrofits
<b>Estimated Cost:</b>	\$1,000 inspection, much higher for any needed retrofitting
<b>Benefits:</b>	Proactively eliminate possible weaknesses in critical infrastructure
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	Local taxes
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Skidmore
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	Sk 3.2(replaces 3.2.5)
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, Local funds, BRIC, CountyEM partnership
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, not started
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	City of Skidmore
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Maintain economic activities essential to the survival and recovery from natural hazards.
<b>Action/Project Number:</b>	Sk 4.1
<b>Name of Action or Project:</b>	Disaster plan coordination
<b>Mitigation Category:</b>	Education and Outreach
<b>Action or Project Description:</b>	Provide resources for the development and maintenance of disaster plans for local businesses, schools, hospitals, and other entities as necessary that are coordinated with community disaster plans.
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	Medium 29
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	County cooperation, Local taxes
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, not started
<b>Report of Progress:</b>	

### 4.3.16 Jefferson C-123 School District: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Jefferson C-123
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Insufficient warning system
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	J123-1.4
<b>Name of Action or Project:</b>	Enhanced warning systems
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Enhance and expand the methods of public notification to provide warning prior and information during natural disasters
<b>Estimated Cost:</b>	\$2.000
<b>Benefits:</b>	Ability to inform public of information before/during/after events
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Public Safety dept and EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	Yearly review
<b>Potential Fund Sources:</b>	Local, State, Federal, phone providers
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, County School All Hazard Plans , NWMSU Emergency Operations Plan (EOP), Maryville Comprehensive Plan (MCP)
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, ongoing
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Jefferson C-123
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	J123-2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County partnership, district bonds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Construct storm shelter and gather emergency supplies

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Jefferson C-123
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Records Preservation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	J123-3.3
<b>Name of Action or Project:</b>	Essential Records backup
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Research, purchase and maintain a system to ensure the preservation of records in digital and/or off-site storage facilities.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Ensure continuation of services after an emergency
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	State, District tax funds, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Provide funds to digitalize records

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Jefferson C-123
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All Hazards
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	J123-3.4
<b>Name of Action or Project:</b>	Critical structure review
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Inspect critical buildings and infrastructure for needed upgrades or retrofits
<b>Estimated Cost:</b>	\$1,000 inspection, much higher for any needed retrofitting
<b>Benefits:</b>	Proactively eliminate possible weaknesses in critical infrastructure
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, District funds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue
<b>Report of Progress:</b>	Upgrade current shelter areas

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Jefferson C-123
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	J123-3.7
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, District funds/bonds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	

### 4.3.17 Maryville R-II School District: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Maryville R-2
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Lack of FEMA approved disaster sheltering
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	MV2-1.5
<b>Name of Action or Project:</b>	Disaster Response and sheltering
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Develop a coordinated response and accommodation schematic for disaster sheltering based on federal guidelines in cooperation with local and state agencies
<b>Estimated Cost:</b>	\$1.000
<b>Benefits:</b>	FEMA approved shelters will be available in a disaster
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Public Safety dept and EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	Yearly review
<b>Potential Fund Sources:</b>	Cooperate with City; State, Federal, grant programs, District funds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, County School All Hazard Plans , NWMSU Emergency Operations Plan (EOP), Maryville Comprehensive Plan (MCP)
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, in progress
<b>Report of Progress:</b>	



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Maryville R-2
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Drought, Extreme Temperatures
<b>Problem being Mitigated:</b>	Lack of redundant water source
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	MV2-3.2
<b>Name of Action or Project:</b>	Secondary water source
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Develop agreement for secondary water sources that may be used during emergency conditions.
<b>Estimated Cost:</b>	\$10,000
<b>Benefits:</b>	Maintain reliable water source for residents
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 39
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	District funds, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue Not Started
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Maryville R-2
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	MV2-3.7
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County-City cooperation, Local district funding, BRIC
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue Not started
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Maryville R-2
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Maintaining economic activities is essential to the survival and recovery from natural hazards.
<b>Action/Project Number:</b>	MV2-4.2
<b>Name of Action or Project:</b>	Disaster plan coordination
<b>Mitigation Category:</b>	Education and Outreach
<b>Action or Project Description:</b>	All area schools should practice disaster plans with employees and students. Employers should facilitate programs that ensure employees understand their roles and responsibilities in a natural hazard.
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	Medium 29
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	School district funds cooperating with city programs and Chamber of Commerce
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, not started
<b>Report of Progress:</b>	

### 4.3.18 Nodaway-Holt R-VII School District: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nodaway-Holt R-VII
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes
<b>Problem being Mitigated:</b>	At-Risk critical facilities
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	NH7-1.2
<b>Name of Action or Project:</b>	Identification of “safe areas”
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Assess existing facilities including but not limited to school buildings and stadiums for the location of suitable “safe areas.” If available, these “safe areas” should be clearly marked. Students, employees and visitors should be informed of their location.
<b>Estimated Cost:</b>	\$1,000
<b>Benefits:</b>	The ability to place at-risk citizens into safe areas during emergencies.
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	School Administrators, Staff and Employees
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	2024
<b>Potential Fund Sources:</b>	Local School District Funds and Grants (yet to be identified)
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	School Plan
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Some training and signage in place

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nodaway-Holt R-VII
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Insufficient warning system
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	NH7-1.4
<b>Name of Action or Project:</b>	Enhanced warning systems
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Enhance and expand the methods of public notification to provide warning prior and information during natural disasters
<b>Estimated Cost:</b>	\$2.000
<b>Benefits:</b>	Ability to inform public of information before/during/after events
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Board, Superintendent and EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	Yearly review
<b>Potential Fund Sources:</b>	Local funds, State-Federal grants, phone/cable TV/radio/broadband providers
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, School All Hazard Plan
<b>Progress Report</b>	
<b>Action Status:</b>	NEW
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nodaway-Holt R-VII
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All Hazards
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	NH7-3.4
<b>Name of Action or Project:</b>	Critical structure review
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Inspect critical buildings and infrastructure for needed upgrades or retrofits
<b>Estimated Cost:</b>	\$1,000 inspection, much higher for any needed retrofitting
<b>Benefits:</b>	Proactively eliminate possible weaknesses in critical infrastructure
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Board, Superintendent
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, Local district funds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	Some needs identified

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Nodaway-Holt R-VII
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of school essential functions in a disaster.
<b>Action/Project Number:</b>	NH7-3.7
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to sheltering sites.
<b>Estimated Cost:</b>	\$15,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Board, Superintendent, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County, Local district funds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	NEW
<b>Report of Progress:</b>	

### 4.3.19 North Nodaway County R-VI School District: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	North Nodaway R-VI
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Insufficient warning system
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	NN6-1.4
<b>Name of Action or Project:</b>	Enhanced warning systems
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Enhance and expand the methods of public notification to provide warning prior and information during natural disasters
<b>Estimated Cost:</b>	\$2.000
<b>Benefits:</b>	Ability to inform public of information before/during/after events
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Public Safety dept and EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	Yearly review
<b>Potential Fund Sources:</b>	Local, State, Federal, phone providers
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, County School All Hazard Plans , NWMSU Emergency Operations Plan (EOP), Maryville Comprehensive Plan (MCP)
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, ongoing
<b>Report of Progress:</b>	



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	North Nodaway R-VI
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	NN6-2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County cooperation, Local bonding capacity, BRIC
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	New storm shelter at high school practice field with emergency supplies

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	North Nodaway R-VI
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Records Preservation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	NN6-3.3
<b>Name of Action or Project:</b>	Essential Records backup
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Research, purchase and maintain a system to ensure the preservation of records in digital and/or off-site storage facilities.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Ensure continuation of services after an emergency
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	State programs, Local district funds, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has made improvements

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	North Nodaway R-VI
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	NN6-3.7
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, Local school district revenue
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	

### 4.3.20 Northeast Nodaway County R-V School District: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	NE Nodaway R5
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	NE5-2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, District funds/bonds, BRIC, partnership with City of Ravenwood
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Gather supplies to support the shelters

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	NE Nodaway R5
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All Hazards
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	NE5-3.4
<b>Name of Action or Project:</b>	Critical structure review
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Inspect critical buildings and infrastructure for needed upgrades or retrofits
<b>Estimated Cost:</b>	\$1,000 inspection, much higher for any needed retrofitting
<b>Benefits:</b>	Proactively eliminate possible weaknesses in critical infrastructure
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, District funding
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	NE Nodaway R5
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	NE5-3.7
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, District funds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	

### 4.3.21 South Nodaway County R-IV School District: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	South Nodaway R4
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Insufficient warning system
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	SN4-1.4
<b>Name of Action or Project:</b>	Enhanced warning systems
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Enhance and expand the methods of public notification to provide warning prior and information during natural disasters
<b>Estimated Cost:</b>	\$2.000
<b>Benefits:</b>	Ability to inform public of information before/during/after events
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Public Safety dept and EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	Yearly review
<b>Potential Fund Sources:</b>	Local, State, Federal, phone providers
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, County School All Hazard Plans , NWMSU Emergency Operations Plan (EOP), Maryville Comprehensive Plan (MCP)
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, ongoing
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	South Nodaway R IV
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	SN4-2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, Local school district funds/bonds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	



<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	South Nodaway R IV
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	SN4-3.7
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.
<b>Estimated Cost:</b>	\$5,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, Local school district funds, BRIC
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	South Nodaway R-IV
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Maintaining economic activities is essential to the survival and recovery from natural hazards.
<b>Action/Project Number:</b>	SN4-4.2
<b>Name of Action or Project:</b>	Disaster plan coordination
<b>Mitigation Category:</b>	Education and Outreach
<b>Action or Project Description:</b>	All area schools should practice disaster plans with employees and students. Employers should facilitate programs that ensure employees understand their roles and responsibilities in a natural hazard.
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	Medium 29
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	Local school funds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, not started
<b>Report of Progress:</b>	

### 4.3.22 West Nodaway County R-1 School District: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	West Nodaway R-1
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Insufficient warning system
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	WN1-1.4
<b>Name of Action or Project:</b>	Enhanced warning systems
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Enhance and expand the methods of public notification to provide warning prior and information during natural disasters
<b>Estimated Cost:</b>	\$2.000
<b>Benefits:</b>	Ability to inform public of information before/during/after events
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Public Safety dept and EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	Yearly review
<b>Potential Fund Sources:</b>	Local, State, Federal, phone providers
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, County School All Hazard Plans , NWMSU Emergency Operations Plan (EOP), Maryville Comprehensive Plan (MCP)
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, ongoing
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	West Nodaway R-1
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Lack of FEMA approved disaster sheltering
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	WN1-1.5
<b>Name of Action or Project:</b>	Disaster Response and sheltering
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Develop a coordinated response and accommodation schematic for disaster sheltering based on federal guidelines in cooperation with local and state agencies
<b>Estimated Cost:</b>	\$1.000
<b>Benefits:</b>	FEMA approved shelters will be available in a disaster
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Public Safety dept and EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	Yearly review
<b>Potential Fund Sources:</b>	Local, State, Federal, phone providers
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, County School All Hazard Plans , NWMSU Emergency Operations Plan (EOP), Maryville Comprehensive Plan (MCP)
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, in progress
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	West Nodaway R-1
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	WN1-2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	partner with Burlington Jct. HMG, BRIC, School district funds and bonds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	West Nodaway R-1
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Records Preservation
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	WN1-3.3
<b>Name of Action or Project:</b>	Essential Records backup
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Research, purchase and maintain a system to ensure the preservation of records in digital and/or off-site storage facilities.
<b>Estimated Cost:</b>	Partner with County to reduce costs
<b>Benefits:</b>	Ensure continuation of services after an emergency
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, County Law Enforcement, Local Fire District
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	State Sec'y Program, County resources, district funds, HMG
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue in progress
<b>Report of Progress:</b>	County has made improvements

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	West Nodaway R-1
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	At risk critical structures and infrastructure
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	WN1-3.6
<b>Name of Action or Project:</b>	Utility Resilience
<b>Mitigation Category:</b>	Structure and Infrastructure
<b>Action or Project Description:</b>	Assess publicly-held facilities, distribution systems, etc. for vulnerability to natural hazards. If necessary, providers should make improvements to ensure continued service during a disaster when possible. Improvements may include equipment elevation, backup generators for power, and other infrastructure changes
<b>Estimated Cost:</b>	\$500,000
<b>Benefits:</b>	Reduction in the interruption of essential utilities
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	EMD, local council, public utility board
<b>Action/Project Priority:</b>	High 32
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, district funds, BRIC
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	Lack of Funds

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	West Nodaway R_1
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Maintaining economic activities is essential to the survival and recovery from natural hazards.
<b>Action/Project Number:</b>	WN1-4.1
<b>Name of Action or Project:</b>	Disaster plan coordination
<b>Mitigation Category:</b>	Education and Outreach
<b>Action or Project Description:</b>	Provide resources for the development and maintenance of disaster plans for local businesses, schools, hospitals, and other entities as necessary that are coordinated with community disaster plans.
<b>Estimated Cost:</b>	\$500
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	Medium 29
<b>Timeline for Completion:</b>	2 years
<b>Potential Fund Sources:</b>	County/city/school cooperation, Local district funds
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, not started
<b>Report of Progress:</b>	



### 4.3.23 Northwest Missouri State University: Updated Action Worksheets

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Northwest Missouri State University
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	All
<b>Problem being Mitigated:</b>	Insufficient warning system
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	NW-1.4
<b>Name of Action or Project:</b>	Enhanced warning systems
<b>Mitigation Category:</b>	Prevention
<b>Action or Project Description:</b>	Enhance and expand the methods of public notification to provide warning prior and information during natural disasters
<b>Estimated Cost:</b>	\$2.000
<b>Benefits:</b>	Ability to inform public of information before/during/after events
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Public Safety dept and EMD
<b>Action/Project Priority:</b>	High 33
<b>Timeline for Completion:</b>	Yearly review
<b>Potential Fund Sources:</b>	University budge;, State, Federal grants, phone,ISP providers cooperation
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	LEOP, County School All Hazard Plans , NWMSU Emergency Operations Plan (EOP), Maryville Comprehensive Plan (MCP)
<b>Progress Report</b>	
<b>Action Status:</b>	Continue, ongoing
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Northwest Missouri State University
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Provision of shelter from severe weather and other hazards
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Protect the lives, property, and livelihoods of all citizens.
<b>Action/Project Number:</b>	NW-2.4
<b>Name of Action or Project:</b>	Community Storm Shelter
<b>Mitigation Category:</b>	Structure and Infrastructure Projects
<b>Action or Project Description:</b>	Install storm shelter in an acceptable site.
<b>Estimated Cost:</b>	\$50,000
<b>Benefits:</b>	Provide shelter to save lives/prevent injuries
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 30
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, County-City-University partnership, NWMSU funds, Private donations
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NWMSU Emergency Operations Plan (EOP)
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	

<b>Action Worksheet</b>	
<b>Name of Jurisdiction:</b>	Northwest Missouri State University
<b>Risk / Vulnerability</b>	
<b>Hazard(s) Addressed:</b>	Earthquake, Severe Thunderstorms, Tornadoes, Severe Winter Weather, Extreme Temperatures
<b>Problem being Mitigated:</b>	Continued operation of critical facilities during power outages
<b>Action or Project</b>	
<b>Applicable Goal Statement:</b>	Ensure continued operation of government and emergency functions in a disaster.
<b>Action/Project Number:</b>	NW-3.7
<b>Name of Action or Project:</b>	Purchase emergency-use generators
<b>Mitigation Category:</b>	Emergency Services
<b>Action or Project Description:</b>	Purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.
<b>Estimated Cost:</b>	\$5,000 to \$50,000
<b>Benefits:</b>	Provide power to continue emergency services
<b>Plan for Implementation</b>	
<b>Responsible Organization/Department:</b>	Local Council, EMD
<b>Action/Project Priority:</b>	High 31
<b>Timeline for Completion:</b>	5 years
<b>Potential Fund Sources:</b>	HMG, BRIC, Local budgetary funding
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	NWMSU Emergency Operations Plan (EOP)
<b>Progress Report</b>	
<b>Action Status:</b>	Continue not started
<b>Report of Progress:</b>	

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# 5 PLAN MAINTENANCE PROCESS

<b>5 PLAN MAINTENANCE PROCESS .....</b>	<b>5.1</b>
<i>5.1 Monitoring, Evaluating, and Updating the Plan.....</i>	<i>5.1</i>
5.1.1 Responsibility for Plan Maintenance.....	5.1
5.1.2 Plan Maintenance Schedule.....	5.2
5.1.3 Plan Maintenance Process .....	5.2
5.2 Incorporation into Existing Planning Mechanisms .....	5.3
5.3 Continued Public Involvement .....	5.6

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

## 5.1 Monitoring, Evaluating, and Updating the Plan

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

### 5.1.1 Responsibility for Plan Maintenance

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

- Meet annually, and after a disaster event, to monitor and evaluate the implementation of the plan;
- Act as a forum for hazard mitigation issues;
- Disseminate hazard mitigation ideas and activities to all participants;
- Pursue the implementation of high priority, low- or no-cost recommended actions;
- Maintain vigilant monitoring of multi-objective, cost-share, and other funding opportunities to help the community implement the plan’s recommended actions for which no current funding exists;
- Monitor and assist in implementation and update of this plan;
- Keep the concept of mitigation in the forefront of community decision making by identifying plan recommendations when other community goals, plans, and activities overlap, influence, or directly affect increased community vulnerability to disasters;
- Report on plan progress and recommended changes to the County Commissioners and governing bodies of participating jurisdictions; and
- Inform and solicit input from the public.
- The process by which the plan will be evaluated for effectiveness is discussed in the **Plan Maintenance Process** section of this chapter.

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

### **5.1.2 Plan Maintenance Schedule**

The MPC agrees to meet annually and after a state or federally declared hazard event as appropriate to monitor progress and update the mitigation strategy. The Nodaway 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, a five-year written update of the plan will be submitted to the Missouri State Emergency Management Agency (SEMA) and FEMA Region VII per Requirement §201.6(c)(4)(i) of the Disaster Mitigation Act of 2000, unless disaster or other circumstances (e.g., changing regulations) require a change to this schedule.

### **5.1.3 Plan Maintenance Process**

Progress on the proposed actions can be monitored by evaluating changes in vulnerabilities identified in the plan. The MPC, under the direction of the Nodaway County Emergency Management Director, during the annual meeting (or more often as needed) should review changes in vulnerability identified as follows:

- Decreased vulnerability because of implementing recommended actions,
- Increased vulnerability because of failed or ineffective mitigation actions,
- Increased vulnerability due to hazard events, and/or
- Increased vulnerability because 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.

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

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

These evaluations of the changes in vulnerability will be part of the MPC's determination of the effectiveness of this hazard mitigation plan and the individual actions within. The STAPLEE tool prioritization questionnaire will serve as a guide for this evaluation process. The Emergency Management Director along with the MPC will involve each participant jurisdiction in this effectiveness review process for those actions which are part of their mitigation strategy

If the action does not meet identified objectives, the jurisdictional MPC member will determine necessary remedial action, making any required modifications to the plan. Changes will be made to the plan to remedy actions that have failed or are not considered feasible. Feasibility will be determined after a review of action consistency with established criteria, time frame, community priorities, and/or funding resources. Actions that were not ranked high but were identified as potential mitigation activities will be reviewed as well during the monitoring of this plan. Updating of the plan will be accomplished by written changes and submissions, as the responsible entity deems it appropriate and necessary. Changes will be approved by the Nodaway County Commissioner 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 Chapter 2 of this plan. Based on the capability assessments of the participating jurisdictions, communities in Nodaway 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:

- Regional Comprehensive Economic Development Strategy (CEDS);
- Rural Regional Transportation Plans;
- Comprehensive or master plans of participating jurisdictions;
- Ordinances of participating jurisdictions;
- Nodaway 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 Section 2 of this plan.

The MPC members involved in updating these existing planning mechanisms, under the direction of the Nodaway County Emergency Management Director, will be responsible for integrating the findings and actions of the mitigation plan, as appropriate. The MPC is also responsible for monitoring this integration and incorporation of the appropriate information into the five-year update of the multi-jurisdictional hazard mitigation plan.

Additionally, after the annual review of the Hazard Mitigation Plan, the Nodaway County Emergency Management Director will provide the updated Mitigation Strategy with current status of each mitigation action to the County Commission as well as all Mayors, City Clerks, and School District Superintendents. The Emergency Manager Director will request that

the mitigation strategy be incorporated, where appropriate, in other planning mechanisms. Nodaway County and all jurisdictions within may be integrated into the county-wide Emergency Operations Plan (EOP) and the regional plans written by the Northwest Missouri Regional Council of Governments including the Comprehensive Economic Development Strategy (CEDS) and the Regional Transportation Plan.

Table 5.1 below lists other planning mechanisms by jurisdiction into which the Hazard Mitigation Plan will be integrated. The 2014 plan did not specifically address the individual planning mechanism integration process. This table was added to the 2018 update and edited for this current update.

**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
Arkoe	Reg. Transportation, CEDS	Regional plan review	Annual RTP review County EMD review Annual CEDS review NWMORCOG monthly grant review
Barnard	Nuisance Ordinance	Annual reviews with EOP plan review and Regional plan review.	County EMD review Annual CEDS review NWMORCOG monthly grant review
Burlington Junction	Council budgeting session	Regional plan review	Annual RTP review County EMD review Annual CEDS review NWMORCOG monthly grant review
Clearmont	Landscape Ordinance	Annual reviews with EOP plan review and Regional plan review.	Annual RTP review County EMD review Annual CEDS review NWMORCOG monthly grant review
Conception Junction	Council budgeting session	Regional plan review	Annual RTP review County EMD review Annual CEDS review NWMORCOG monthly grant review
Elmo	City Emergency Operations Plan	Annual reviews with EOP plan review and Regional plan review	Annual RTP review County EMD review Annual CEDS review
Graham	Council budgeting session	Regional plan review	Annual RTP review NWMORCOG monthly grant review County EMD review Annual CEDS review
Guilford	Nuisance Ordinance, Drainage Ordinance	Annual reviews with board review and Regional plan review.	Annual RTP review County EMD review Annual CEDS review NWMORCOG monthly grant review
Hopkins	City Emergency Operations Plan, Zoning Ordinance, Floodplain Ordinance, Nuisance Ordinance	Annual reviews with EOP plan review and Regional plan review	Annual RTP review County EMD review Annual CEDS review NWMORCOG monthly grant review



Jurisdiction	Planning Mechanisms	Integration Process for Previous Plan	Integration Process for Current Plan
Maryville	City Comprehensive Plan, Capital Improvement Plan City Emergency Operations Plan, County Emergency Operations Plan, City Mitigation Plan County Mitigation Plan, Economic Development Plan, Zoning Ordinance Building Code, Floodplain Ordinance, Subdivision Ordinance, Tree Trimming Ordinance, Nuisance Ordinance, Storm Water Ordinance, Drainage Ordinance, Site Plan Review Requirements, Historic Preservation Ordinance, Landscape Ordinance, Zoning/Land Use Restrictions, Codes Building Site/Design	Annual reviews with EOP plan review and Regional plan review.	Annual RTP review County EMD review City EMD review Budgetary Process Annual CEDS review NWMORCOG monthly grant review
Parnell	Tree Trimming Ordinance, Nuisance Ordinance, Drainage Ordinance	Annual reviews with EOP plan review and Regional plan review.	Annual RTP review County EMD review Annual CEDS review NWMORCOG monthly grant review
Pickering	Nuisance Ordinance Council budgeting session	Annual reviews with EOP plan review and Regional plan review.	Annual RTP review County EMD review Annual CEDS review NWMORCOG monthly grant review
Ravenwood	City Mitigation Plan, Nuisance Ordinance	Annual reviews with EOP plan review and Regional plan review.	Annual RTP review County EMD review Annual CEDS review NWMORCOG monthly grant review
Skidmore	Junkyard Zoning Ordinance Tree Trimming Ordinance, Nuisance Ordinance	Annual reviews with EOP plan review and Regional plan review.	Annual RTP review County EMD review Annual CEDS review NWMORCOG monthly grant review
Unincorporated Nodaway County	Emergency Operations Plan, County Hazard Mitigation Plan, Economic Development Plan, Comprehensive Economic Development Strategy (CEDS) Floodplain Ordinance, Watershed Plan	Annual reviews with EOP plan review and regional plan review.	Annual RTP review County EMD review Annual CEDS review NWMORCOG monthly grant review
Jefferson School District	Master Plan, School Emergency Plan, Weapons Policy/Date	Annual reviews with EOP plan review	Annual Board review of Master Plan and Emergency Plan
Maryville School District	School Emergency Plan, Weapons Policy/Date	Annual reviews with EOP plan review	Annual Board review of Master Plan and Emergency Plan
Nodaway-Holt School District	Capital Improvement Plan, School Emergency Plan, Weapons Policy/Date	Annual reviews with EOP plan review	Annual Board review of Master Plan and Emergency Plan
North	Master Plan, Capital	Annual reviews with EOP	Annual Board review of

Jurisdiction	Planning Mechanisms	Integration Process for Previous Plan	Integration Process for Current Plan
Nodaway School District	Improvement Plan, School Emergency Plan, Weapons Policy/Date	plan review	Master Plan and Emergency Plan
Northeast Nodaway School District	School Emergency Plan, Weapons Policy/Date	Annual reviews with EOP plan review	Annual Board review of Master Plan and Emergency Plan
South Nodaway School District	Master Plan, School Emergency Plan, Weapons Policy/Date	Annual reviews with EOP plan review	Annual Board review of Master Plan and Emergency Plan
West Nodaway School District	Master Plan, Capital Improvement Plan, School Emergency Plan, Weapons Policy/Date	Annual reviews with EOP plan review	Annual Board review of Master Plan and Emergency Plan
Northwest Missouri State University	Master Plan, Capital Improvement Plan, School Emergency Plan, Weapons Policy/Date	Annual reviews with EOP plan review	Review of all Plans by administration and Board of Curators

Northwest Missouri Regional Council of Governments will routinely include hazard mitigation for any planning projects or plan updates initiated. Applicable goals and action items from hazard mitigation plans will be incorporated into the regional transportation plan updates as well as the Community Economic Development Strategy for the region. Both of these documents are resources for cities and counties within the five-county region and are updated on a regular basis with input from city and county representatives. This review and update process has helped city and county representatives better understand and appreciate the importance of including hazard mitigation in all applicable plans. In addition, the Nodaway County hazard mitigation planning committee is also working to encourage the incorporation of hazard mitigation into the planning activities of all local governments, school districts and local entities through presentations and participation in planning activities

### 5.3 Continued Public Involvement

**44 CFR Requirement §201.6(c)(4)(iii): [The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.**

The hazard mitigation plan update process provides an opportunity to publicize success stories resulting from the plan’s implementation and seek additional public comment. Press releases about the annual reviews will be sent to the local newspapers as well as posted on the Nodaway County website following each annual review of the mitigation plan. When the MPC reconvenes for the five-year update, it will coordinate with all stakeholders participating in the planning process. Included in this group will be those who joined the MPC after the initial effort, to update and revise the plan. Public notice will be posted, and public participation will be actively solicited, at a minimum, through available website postings and press releases to local media outlets, primarily newspapers and relevant social media sites.

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## Appendix A – References

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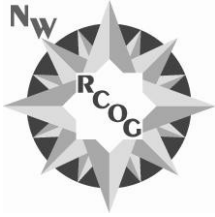
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## Appendix B – Planning Process

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# **NORTHWEST MISSOURI**

## **REGIONAL COUNCIL OF GOVERNMENTS**

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# **NEWS**

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FOR IMMEDIATE RELEASE

January 23, 2023

Amy Dowis, Regional Planner

660-582-5121, ext. 3

### **Nodaway County Hazard Mitigation Plan Public Survey OPEN!**

The Nodaway County Hazard Mitigation Planning Update process is underway! Become part of the planning process and take the five-question survey about the impact of natural hazards in Nodaway County. The link to the Nodaway County Multi-jurisdictional Hazard Mitigation Plan Public Survey is <https://forms.gle/HJHDbSa92AyEaNvV9>. The survey is also available on a special page dedicated to the update planning process on the Northwest Missouri Regional Council of Governments website at <https://nwmorcog.org/nodaway-county-hazard-mitigation-plan-update/>, as well as on the Regional Council's Facebook page. Nodaway County and the Northwest Missouri Regional Council of Governments appreciate your opinions!

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# SEMA Mitigation Management NODAWAY COUNTY MITIGATION PLAN PUBLIC SURVEY

The federal government requires all states and local governments to have hazard mitigation plans approved by FEMA that are consistent with the Disaster Mitigation Act of 2000. Approved mitigation plans are required to maintain eligibility for certain types of federal Hazard Mitigation Assistance Grants.

A planning committee comprised of representatives from Nodaway County, the incorporated cities, and the public-school districts is currently developing an update to the comprehensive Nodaway County Multi-Jurisdictional Hazard Mitigation Plan with a strategy to reduce the vulnerability of people and property in the planning area to the impacts of hazards and to remain eligible for mitigation funding programs from FEMA.

One of the key components of a hazard mitigation plan is public input during the planning process. The planning committee will be evaluating information on the hazards that impact each jurisdiction within Nodaway County. The committee is seeking your input on the hazards that will be evaluated as well as your opinions on the types of activities that should be considered to reduce future impacts. Your comments will be considered by your community's representatives on the planning committee as the plan is developed. Please take a few moments to answer the following questions. Thank you for your participation.

1. Please select your jurisdiction from the list. You may only select one jurisdiction for each survey completed. If you belong to more than one jurisdiction in this list, please complete multiple surveys.

<input type="checkbox"/> Unincorporated Nodaway County	<input type="checkbox"/> City of Maryville	<input type="checkbox"/> Village of Clyde (non-participant)
<input type="checkbox"/> Town of Arkoe	<input type="checkbox"/> City of Graham	<input type="checkbox"/> CDP of Quitman (non-participant)
<input type="checkbox"/> City of Conception Junction	<input type="checkbox"/> City of Hopkins	<input type="checkbox"/> Northwest Missouri State University
<input type="checkbox"/> City of Clearmont	<input type="checkbox"/> City of Ravenwood	<input type="checkbox"/> Jefferson C-123 School District
<input type="checkbox"/> Village of Guilford	<input type="checkbox"/> City of Skidmore	<input type="checkbox"/> West Nodaway County R-1 School District
<input type="checkbox"/> City of Barnard	<input type="checkbox"/> South Nodaway County R-IV School District	
<input type="checkbox"/> City of Parnell	<input type="checkbox"/> North Nodaway County R-VI School District	
<input type="checkbox"/> City of Burlington Junction	<input type="checkbox"/> Northeast Nodaway County R-V School District	
<input type="checkbox"/> City of Pickering	<input type="checkbox"/> Nodaway-Holt R-VII School District	
<input type="checkbox"/> City of Elmo	<input type="checkbox"/> Maryville R-II School District (includes the NW MO Technical School)	

2. The hazards addressed in the Multi-Jurisdictional Hazard Mitigation Plan Update are listed below. Please indicate your opinion on the likelihood for each hazard to impact YOUR JURISDICTION.

**Please rate EACH hazard 1 through 4 as follows: 1=Unlikely, 2=Occasional, 3=Likely, 4=Highly Likely**

	Flooding (Major and Flash)		Earthquake		Severe Thunderstorms
	Levee Failure		Land Subsidence / Sinkholes		Severe Winter Weather
	Dam Failure		Drought		Tornadoes
			Extreme Temperatures		Wildfire



## SEMA Mitigation Management NODAWAY COUNTY MITIGATION PLAN PUBLIC SURVEY

3. Please indicate your opinion on the potential magnitude of each hazard's impact on YOUR JURISDICTION (identified above). **Please rate EACH hazard 1 through 4 as follows: 1=Negligible, 2=Limited, 3=Critical, 4=Catastrophic**

	Flooding (Major and Flash)		Earthquake		Severe Thunderstorms
	Levee Failure		Land Subsidence / Sinkholes		Severe Winter Weather
	Dam Failure		Drought		Tornadoes
			Extreme Temperatures		Wildfire

4. FEMA Hazard Mitigation Assistance Grants are administered by the State Emergency Management Agency. Listed below are some types of projects considered.

**Please check all those that could benefit your jurisdiction, in your opinion:**

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li><input type="checkbox"/> Flood-prone Property Acquisition &amp; Structure Demolition /Relocation</li> <li><input type="checkbox"/> Flood-Prone Structure Elevation</li> <li><input type="checkbox"/> Dry Floodproofing of Historical Residential Structures and/or Non-residential Structures</li> <li><input type="checkbox"/> Minor Localized Flood Reduction Projects (storm water management or localized flood control projects)</li> <li><input type="checkbox"/> Structural Retrofitting of Existing Buildings to Add a Tornado Safe Room</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Retrofitting of Existing Buildings, and Facilities from Wind Damage.</li> <li><input type="checkbox"/> New Tornado Safe Room Construction</li> <li><input type="checkbox"/> Electrical Utilities Infrastructure Retrofit</li> <li><input type="checkbox"/> Soil Erosion Stabilization</li> <li><input type="checkbox"/> Wildfire Mitigation</li> <li><input type="checkbox"/> Other (please specify) _____</li> </ul> |
|--|---|

5. Please comment on any other issues that the Nodaway County Hazard Mitigation Planning Committee should consider in developing a strategy to reduce future losses caused by hazard events.

**Return / Contact Information:** Amy Dowis, Regional Planner Northwest Missouri Regional Council of Governments  
**phone:** 660-582-5121, ext. 3      **fax:** 660-582-7264  
 114 West Third Street, Maryville, MO 64468



# Northwest Missouri Regional Council of Governments

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## NEWS

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FOR IMMEDIATE RELEASE  
February 13, 2023

Amy Dowis, Regional Planner  
660-582-5121, ext. 3

### Nodaway County Hazard Mitigation Plan Kickoff Meeting

The Northwest Missouri Regional Council of Governments (RCOG) is hosting the first gathering in a series of meetings focusing on the 5-year update for Nodaway County's Multi-jurisdictional Hazard Mitigation Plan. **The Kickoff meeting will be held Wednesday, March 1, at 4 p.m., at the Maryville Public Safety Building, located at 101 N. Vine, Maryville.** All interested citizens and public officials of Nodaway County are invited to attend.

Nodaway County is susceptible to many types of natural hazards. Tornadoes, winter storms, and flooding have shaped the landscape, history, and economy of the county. Hazard mitigation planning is the process of developing sustained actions to reduce or eliminate the long-term risks associated with these potential disasters. The plan, funded by the Federal Emergency Management Agency and the communities of Nodaway County, will utilize a committee of first responders, elected officials, and public volunteers to gather community- and county-specific information.

The Hazard Mitigation Plan, currently under revision by the County and RCOG, is a requirement to access federal mitigation funds in the event of a natural disaster. The Committee will discuss existing hazards, community profiles, and the general plan update process as well as reviewing the Risk Assessment.

The Public Survey is still open and can be accessed online at <https://forms.gle/2u8mc8TyYsfqXi6MA>. If you haven't done so, please take a few minutes to complete the survey. Results are incorporated into the plan update.

An RSVP is requested for anyone planning to attend. Please contact Amy Dowis at the Northwest Missouri Regional Council of Governments, (660) 582-5121, ext. 3 or by e-mail at [amy@nwmorcog.org](mailto:amy@nwmorcog.org) with questions and RSVPs.

###



## **Subject: Nodaway County Multi-Jurisdictional Hazard Mitigation Plan Update**

On behalf of Nodaway County, you are invited to the first planning meeting to update the Nodaway County Multi-Jurisdictional Hazard Mitigation Plan.

### **Nodaway County Multi-Jurisdictional Hazard Mitigation Plan Update**

#### **Kickoff Meeting**

**Meeting Date: Wednesday, March 1, 2023**

**Meeting Time: 4:00 P.M.**

**Meeting Place: Maryville Public Safety Building, 101 N. Vine, Maryville**

Nodaway County is beginning the process to update the Nodaway County Multi-Jurisdictional Hazard Mitigation Plan to better protect the people and property of Nodaway County from the effects of natural hazard events. The existing plan was approved by FEMA in September 2018. The plan update will be prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 (Public Law 106-390) and the implementing regulations. These regulations establish the requirements that hazard mitigation plans must meet for Nodaway County and the participating jurisdictions, to be eligible for certain federal disaster assistance and hazard mitigation funding under the Robert T. Stafford Disaster Relief and Emergency Act (Public Law 93-288). Because Nodaway County is subject to many kinds of hazards, access to these federal programs is vital.

#### **What is a Hazard Mitigation Plan?**

A hazard mitigation plan is the result of a planning process which identifies policies and actions that can be implemented over the long term to reduce the risk and future losses resulting from hazard events. The Nodaway County Multi-Jurisdictional Hazard Mitigation Plan Update will address a comprehensive list of natural hazards likely to impact the County. The identified mitigation policies and actions will be based on an assessment of hazards, vulnerabilities, and risks.

The hazard mitigation planning process is also heavily dependent on the participation of representatives from local government agencies and departments, the public, and other stakeholder groups. A Hazard Mitigation Planning Committee will be formed to support this project and will include representatives from the County, cities, school districts, private-non-profit entities, business partners, academic institutions, and other local, state, and federal agencies acting in or serving Nodaway County.

#### **What is My Role in the Planning Process?**

The Northwest Missouri Regional Council of Governments has taken the lead in updating this plan. The point of contact is Amy Dowis, Regional Planner. Steve Houts and Eli Fox round out the team working on this project and are taking the lead conducting research, pulling data, writing the update and facilitating the planning meetings. To successfully complete this project and ensure your organization is eligible for FEMA hazard mitigation assistance funding, we need your participation and input. Jurisdictions (including county and city governments and public-school districts) that do not participate in an approved Hazard Mitigation Plan are **NOT eligible** to apply for FEMA's Hazard Mitigation Assistance grants. Participation in the planning process will include:

- Attending and contributing to the planning committee meetings.
- Providing requested data (as available).
- Complete the Public Survey found online at <https://forms.gle/2u8mc8TyYsfqXi6MA>
- Reviewing and providing comments on plan drafts.
- Advertising, coordinating, and participating in the public input process; and
- Coordinating the formal adoption of the plan.

#### **What can I expect for the planning committee meetings?**

In the coming months, the Northwest Missouri Regional Council of Governments will facilitate a series of planning meetings, as briefly described below. Detailed agendas and information on the context of each meeting or activities performed within each meeting will be provided during the planning process.

- **Project Kick-off Meeting.** This meeting will initialize work with the planning committee including presentation of the federal planning requirements, participation requirements of planning committee members, and the proposed project

work plan and schedule. A plan for public involvement and coordination with other agencies and departments will also be discussed at this initial meeting, especially regarding external agencies, such as state and federal agencies that may have significant interests (property, critical assets and infrastructure) in the County or that have information to help support the planning process. We will also begin talking about the Risk Assessment at this meeting.

- **Risk Assessment/Mitigation Strategy Meeting.** This meeting will pick up where the Kick-off meeting ends. We will review risk assessment results and review/development of mitigation goals and will also include updating of existing mitigation actions and identification and development of new mitigation strategies based upon the risk assessment.

#### **Additional Resources**

The following links provide additional information on hazard mitigation and the planning process.

- **Nodaway County Multi-Jurisdictional Hazard Mitigation Plan, September 2018**  
<https://nwmorcogdotorg.files.wordpress.com/2019/02/nodaway-county-hmp-fema-approved.pdf>
- **The requirements and procedures for state, tribal and local mitigation plans as presented in the Code of Federal Regulations (CFR) at Title 44, Chapter 1, Part 201**  
<https://www.fema.gov/hazard-mitigation-planning-laws-regulations-policies>
- **Frequently Asked Questions regarding hazard mitigation planning**  
<https://www.fema.gov/hazard-mitigation-planning-frequently-asked-questions>
- **Steve has set up an online, one-stop shop for all things relating to the plan update process.**  
<https://nwmorcog.org/nodaway-county-hazard-mitigation-plan-update/>

Nodaway County requests your assistance in forwarding this invitation to others in your jurisdiction. Appropriate participants in the planning committee include, but are not limited to emergency responders, county clerks, city clerks, elected officials, public works directors, floodplain managers, stormwater managers, county and city planners, economic development directors, GIS staff, business partners, private-non-profit representatives, school principals, school facilities directors, and school superintendents.

**If you are unable to attend in person but would like to attend virtually or via a call-in option, please contact Amy and we will try to get that set up.**

***At the Kick-Off Meeting, we will also have an opportunity for you to sign up for individual/small group assistance to complete the tasks required as your jurisdiction's part of the update process.***

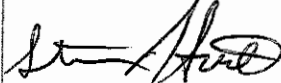
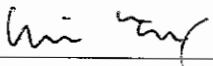
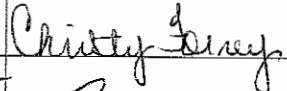
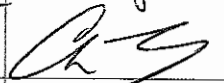
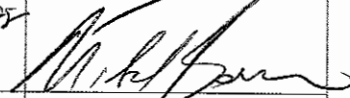
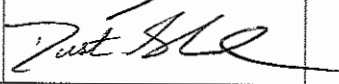

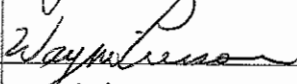
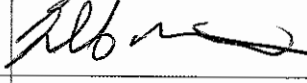

Please confirm your attendance or provide contact information for your designated alternate by responding to Amy Dowis at (660) 582-5121 ext. 3 or amy@nwmorcog.org.

Thank you,

Amy Dowis  
Regional Planner  
Northwest Missouri Regional Council of Governments

# NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE KICKOFF MEETING—SIGN-IN SHEET

<b>Project:</b> Nodaway County, Missouri Multi-Jurisdictional Hazard Mitigation Plan Update	<b>Meeting Date/Time:</b> March 1, 2023 4:00 PM
<b>Facilitator:</b> Amy Dowis, Community and Environmental Planner, NWMRCOG Steve Houts, Program Assistant, NWMORCOG Eli Fox, Intern, NWMORCOG	<b>Place/Room:</b> Maryville Public Safety Building, 101 N Vine, Maryville, MO, 64468

Name	Title	Department/Agency	Email	Phone #	Signature
Steve Houts		NWMORCOG	steve@nwmorcog.org	660 582-2151	
ELI FOX		NWMORCOG	eli@nwmorcog.org	704-839-1622	
Christy Forney	EMD	Nodaway County	cf235@maryvilledps.com	660-562-3209	
CHRIS Turpin	Superintendent	North Nodaway R-6	cturpin@nr6.com	660-254-6105	
Mitch Barnes	Superintendent	West Nodaway	mbarnes@w6rockets.com	816-592-0285	
Dustin Skaglund	Supt	South Nodaway	dustin.skaglund@southnodaway.k12.mo.us	660 541 0629	
Joseph Cronk	Treasurer	Village of Arkoe	jacronk@gmail.com	660 215 2196	
Wayne Pierson	Retired Civilian		MWPierson@cebridge.net	660-562-9810	
Jeff Blackford	Superintendent	Nod-Holt	jblackford@nodholt.org	660 939-2137	
Danell Cronk	Mayor	Arkoe			
Amanda Cullin	lt.	Northwest MO State University Police	acullin@nwmissouri.edu	660-562-1254	





# Nodaway County Multi-jurisdictional Hazard Mitigation Plan

## Plan Update Kick-off Meeting March 1, 2023

Amy Dowis,  
Community & Environmental Planner  
Steve Houts, Program Assistant  
Eli Fox, Intern

Northwest Missouri Regional Council of Governments



# Agenda

- Welcome/Introductions - Amy Dowis NWMORCOG
- 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 Facilities
- Next Steps in the Planning Process
- Next meeting date

## Kick-off

- Review of Program
- Preview of draft Risk Assessment
- Goals Approval/Action Item Preview
- Timesheets-keep track of all time spend on data gathering
- Questionnaire Data: **ASAP**
- Sign-in Sheet-**Please fill out all information**
- In-kind Match Timesheets-**Mileage & tonight's time**



## 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 community process to:
  - Identify the hazards to which they are at risk
  - Assess the potential impacts of those hazards
  - Review goals and actions to reduce impacts
  - Prioritize and implement mitigation actions

## 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 reviewed annually and updated and approved by FEMA every 5 years.
- This is an update to the existing January 2018 Nodaway County Multi-jurisdictional Hazard Mitigation Plan.



# Nodaway County Multi-jurisdictional Hazard Mitigation Plan

## Disaster Declarations including Nodaway County Since 2013

Number	Type	Incident Period	Description
4451	Major	07/09/2019	Severe Storms, Tornadoes, Flooding
4238	Major	08/07/2015	Severe Storms, Straight-Lined Winds Tornadoes, Flooding
4238	Major	5/15 to 7/27/2015	Severe Storms, Tornadoes, Flooding
4200	Major	9/9 to 9/10/2014	Severe Storms, Straight-Lined Winds, Tornadoes, Flooding

Source: FEMA Disaster Declaration for States and Counties

## Approved Hazard Mitigation Plan Establishes Eligibility for FEMA HMA Grants

- Hazard Mitigation Grant Program
  - implement long-term hazard mitigation measures after a major disaster declaration
- ~~Pre-Disaster Mitigation Program~~ BRIC
- Flood Mitigation Assistance Program
  - Appropriation, NFIP insured property, 75% federal & 25% non-federal match

# 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.**

## Building resilient infrastructure and communities (BRIC)

- Annual Appropriation
- Nationally Competitive Grant
- 75% federal & 25% non-federal match
- Applications due to SEMA
  - Each state gets \$600,000
  - SEMA forwards selected applications to FEMA – TBA
- **An approved local mitigation plan is required.**

# Flood Mitigation Assistance Program

- Annual Appropriation
- Sub-applicant must participate in National Flood Insurance Program (NFIP)
- Nodaway County Unincorporated Areas
- Barnard, Burlington Junction, Hopkins, Maryville, Pickering
- NFIP insured property
- 75% federal & 25% non-federal match
- **An approved local mitigation plan is required.**

## Hazard Mitigation Assistance Grants Awarded in Nodaway County

Maryville Acquisition Project 06/29/1994 <b>\$33,610</b>	Acquisition of Private Real Property (Structures and Land) – Riverine - 1993 Flood
Maryville R-II High School Community Safe Room 12/31/2015 <b>\$1,532,226</b>	Safe Room (Tornado and Severe Wind Shelter) - Public Structures Fall 2014 Severe Storms

**\$1,182,780**  
**Total in HMA Grants**  
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

# Multi-Jurisdictional Plan Approach

## Task 1: Determine the Planning Area

- Nodaway County
- Town of Arkoe
- City of Barnard
- City of Burlington Junction
- City of Clearmont
- City of Conception Junction
- City of Elmo
- City of Graham
- Village of Guilford
- City of Hopkins
- City of Maryville
- City of Parnell
- Village of Pickering
- City of Ravenwood
- City of Skidmore

# Multi-Jurisdictional Plan Approach

## Task 1: Determine the Planning Area

- Jefferson C-123 School District
- Maryville R-II School District (& NW Tech School)
- Nodaway-Holt R-VII School District
- North Nodaway County R-VI School District
- Northeast Nodaway County R-V School District
- Northwest Missouri State University (and Horace Mann)
- South Nodaway County R-IV School District
- West Nodaway County R-1 School District

# 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 Managers
- County and City Planners
- Economic Development Directors
- 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

## Benefits of Participating in a Multi-jurisdictional Plan

### 3 KEY COMPONENTS THAT CONTRIBUTE TO NATURAL HAZARD MITIGATION PLANNING



- Enables comprehensive approach to mitigate hazards that affect multiple jurisdictions
- Shares costs and resources
- Avoids duplication of efforts
- Improves coordination/communication among local jurisdictions

## Requirements for Each Participating Jurisdiction

- Designate a representative to serve on the Hazard Mitigation Planning Committee
- Provide data for the development of the updated risk assessment
- Provide data to describe current capabilities
- Update mitigation actions for your jurisdiction
- Inform the public, local officials, and others to comment on the plan
- 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.

# Public Involvement Requirements

## Task 3: Creating an Outreach Strategy

- 1. During Drafting Stage  
Public Survey: [nwmorcog.org](http://nwmorcog.org)
- 2. Prior to approval
  - Risk Assessment on website  
Draft will be available on website
- Other Ideas/Events to Inform the Public?





## Data Collection Questionnaires

### Task 4: Reviewing Community Capabilities

### Task 5: Conduct Risk Assessment

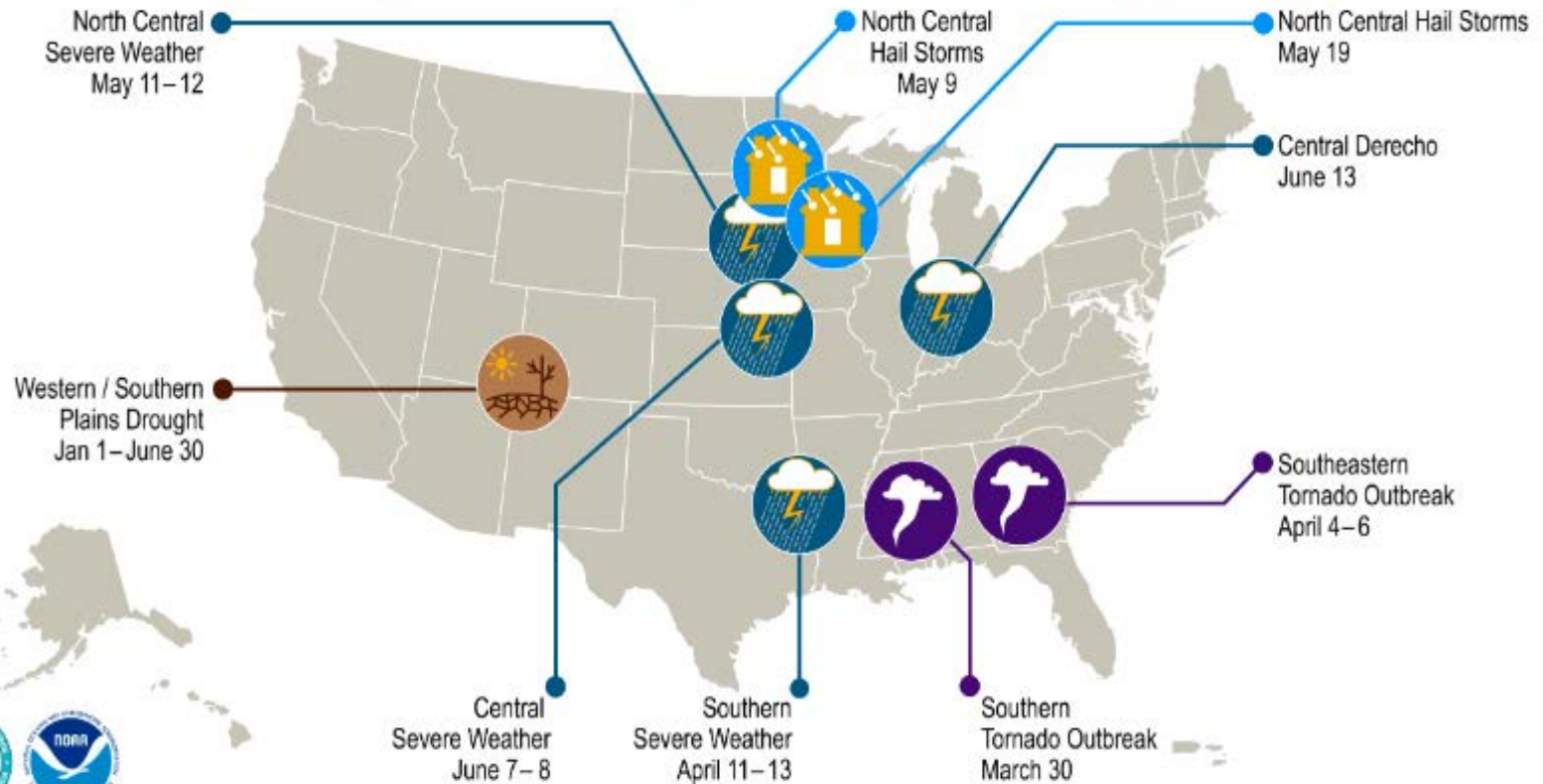
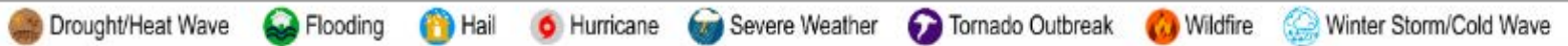
- Separate forms for local governments and schools
- Due to Amy Dowis by March 1, 2023
- Capability Assessment Section
  - Existing Plans/Policies/Ordinances
  - Administrative/Technical Capabilities
  - Fiscal Resources
  - Additional Questions
  - Historic Hazard Events
- Please email or call for individual conference

# Natural Hazards in Nodaway County



# Nodaway County Multi-jurisdictional Hazard Mitigation Plan

## U.S. 2022 Billion-Dollar Weather and Climate Disasters



This map denotes the approximate location for each of the 9 separate billion-dollar weather and climate disasters that impacted the United States January – June of 2022.

## Natural Hazards for Consideration

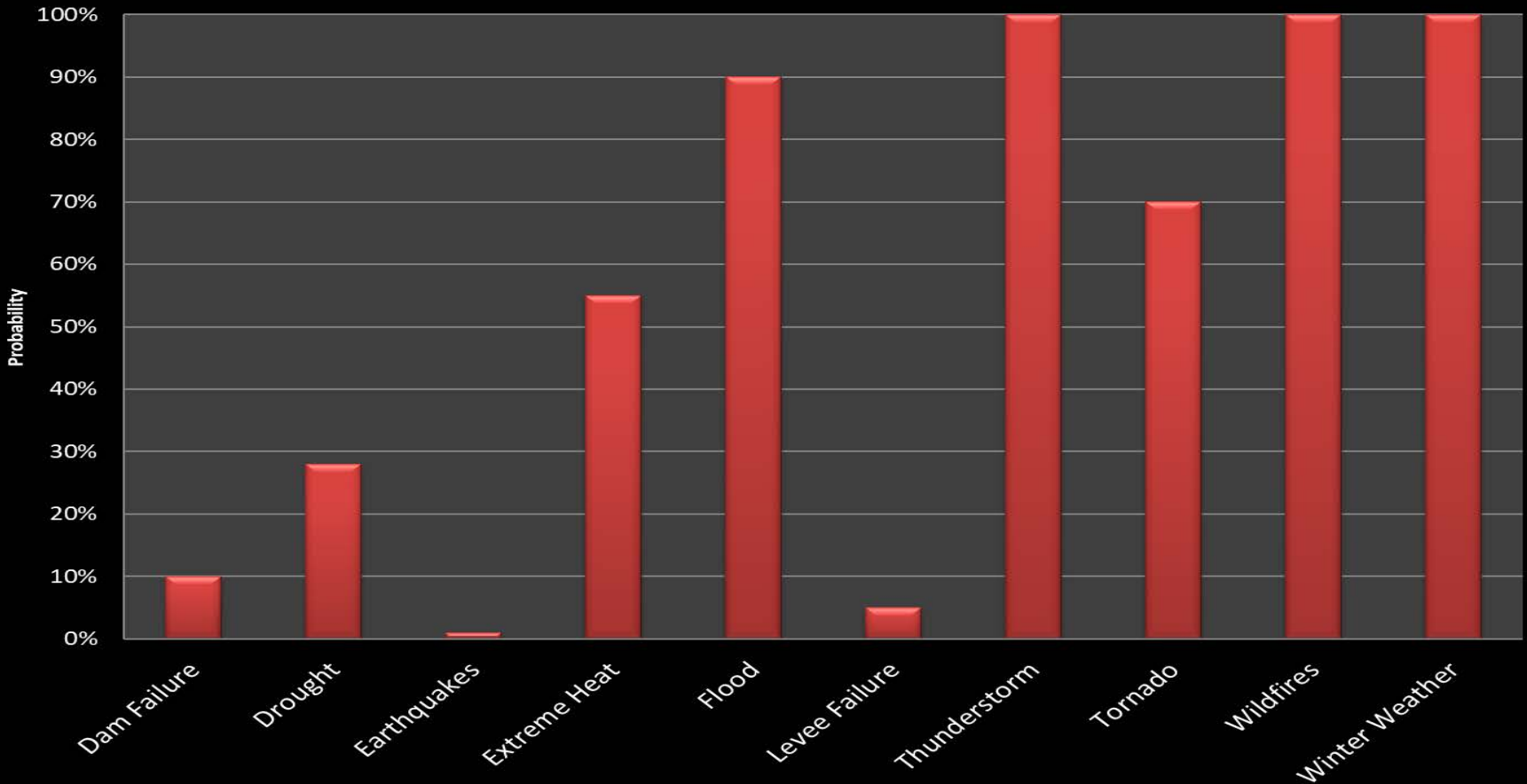
- Dam Failure
- Levee Failure
- Flooding (Flash and Major)
- Fires (Wild)
- Earthquakes

## Natural Hazards for Consideration

- Drought
- Extreme Temperatures
- Thunderstorm/High Winds/Lightning/Hail
- Tornado
- Severe Winter Weather

# Probability of Future Occurrence – 2023 Data

Probability of Occurrence



# Hazard Identification and Risk Assessment

- Hazard Profile
  - Hazard Description
  - Geographic Location
  - Severity/Magnitude/Extent
  - Previous Occurrences
  - Changing Future Conditions Considerations
  - Probability of Future Occurrence
- Vulnerability Assessment
  - Vulnerability Overview
  - Potential Losses to Existing Development
  - Future Development
  - Hazard Summary by Jurisdiction
- Problem Statement

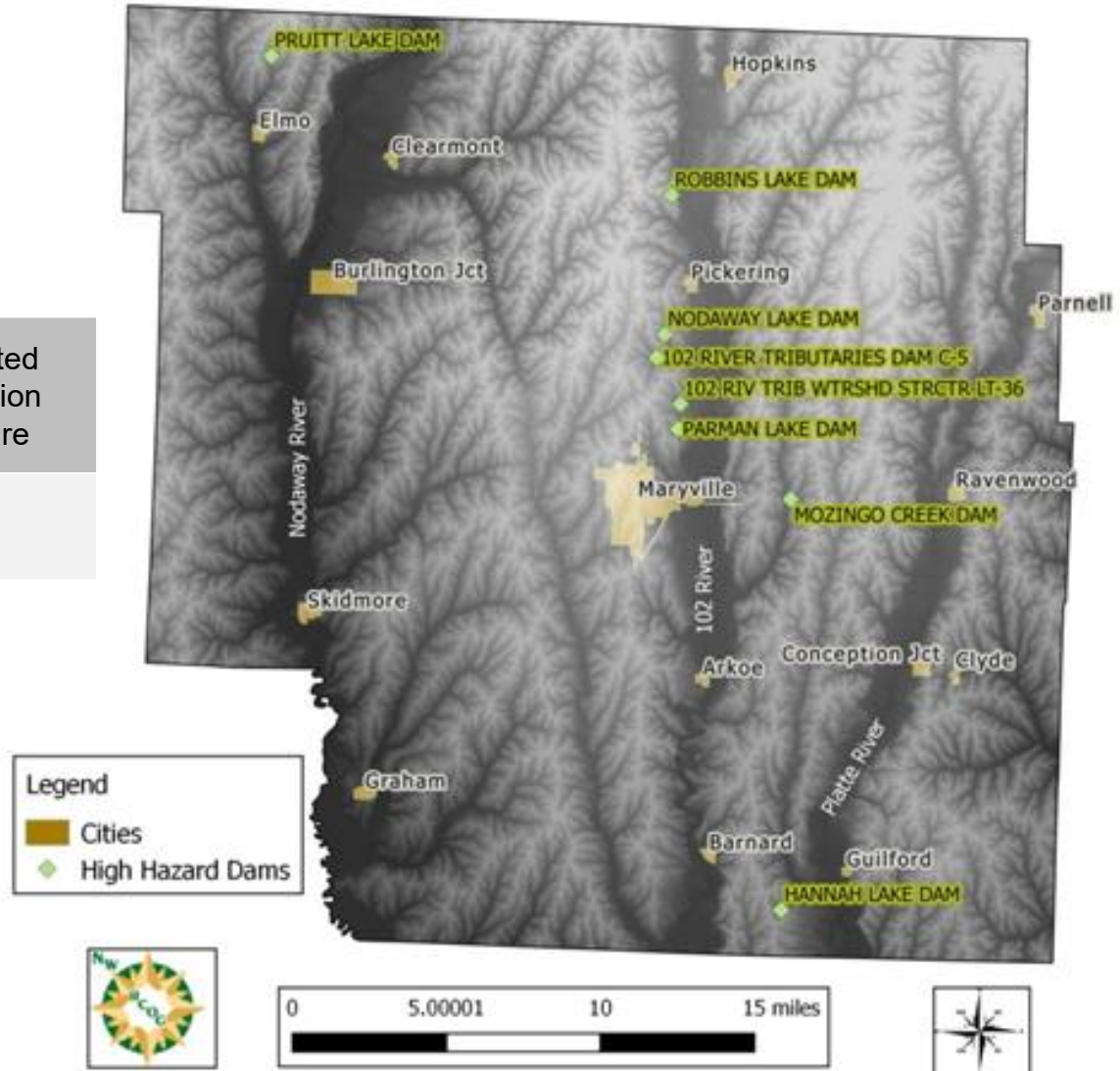
# Nodaway County Multi-jurisdictional Hazard Mitigation Plan

**DAM  
FAILURE**  
101 Dams  
8 High Hazard

Estimated # of buildings	Estimated Total Building exposure	Estimated population exposure
39	\$11,350,283	21

**LEVEE  
FAILURE**  
No federal  
levees in the  
county

**Nodaway County High Hazard Dam Locations**





## Drought

## Extreme Temperatures

Effects on agriculture and drinking water supply

- People at high risk: elderly, homeless
- Utilities: loss of power, frozen pipes
- Agriculture and Transportation

## Severe Winter

Generators

Earthquake low probability

## Wildfires

# Wildfires 2013-2022	Likelihood of Occurrence (#/year)	Total Acres Burned	Average Annual Acreage Burned
205	20.5/year	3,123.54	20.94

# Nodaway County Multi-jurisdictional Hazard Mitigation Plan

## Flooding

Structural Damage	Loss Ratio	Contents Damage	Inventory Loss	Total Direct Loss	Total Income loss	Total Direct and Income Loss
\$10,093,000	0.41%	\$16,674,000	\$928,000	\$27,695,000	\$164,000	\$27,859,000

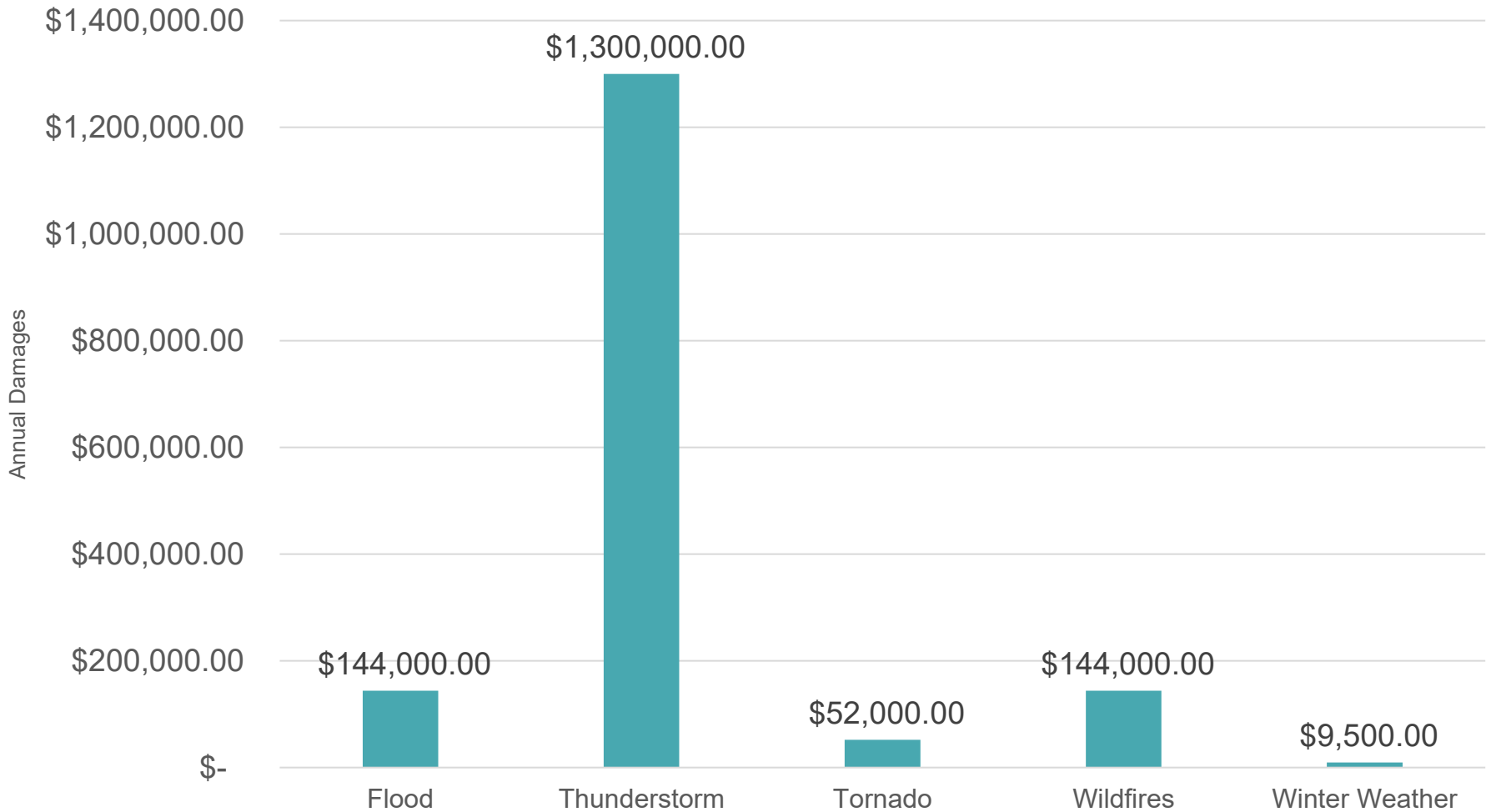
## Severe Thunderstorms

The average annual property and crop loss due to thunderstorm hail, wind, and excessive rain is \$1,372,688

**Tornado**  protect lives  
Warning systems and Safe Rooms

# Nodaway County Multi-jurisdictional Hazard Mitigation Plan

## Average Annual Damage - 2023 Plan



## 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

## 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>•Government buildings</li></ul>	<ul style="list-style-type: none"><li>•Highways &amp; bridges</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>

## Mitigation Goals

### 1 Protect

Protect the lives, property, and livelihoods of all citizens.

### 2 Manage

- Manage growth in designated hazard areas through sustainable policies, principles, and practices

### 3 Ensure

- Ensure continued operation of government and emergency functions in a disaster.

### 4 Maintain

- Maintain economic activities essential to the survival and recovery from natural hazards.

# Nodaway County

## Multi-jurisdictional Hazard Mitigation Plan

Action Worksheet	
<b>Name of Jurisdiction:</b>	
Risk / Vulnerability	
<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.
Action or Project	
<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.
Plan for Implementation	
<b>Responsible Organization/Department:</b>	Which organization will be responsible for tracking this action? Be specific to include the specific department or position within a department.
<b>Action/Project Priority:</b>	Include the STAPLEE score and Priority (H, M, L)
<b>Timeline for Completion:</b>	How many months/years to complete.
<b>Potential Fund Sources:</b>	List specific funding sources that may be used to pay for the implementation of the action.
<b>Local Planning Mechanisms to be Used in Implementation, if any:</b>	
Progress Report	
<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.

County	31
Arkoe	4
Barnard	17
Burlington Jct	9
Clearmont	9
Clyde	4
Conception Jct	4
Elmo	16
Graham	20
Guilford	19
Hopkins	23
Maryville	29
Parnell	13
Pickering	12
Ravenwood	18
Skidmore	21
C123 Jefferson	12
R11 Maryville	6
RVII Nodaway-Holt	6
RVI North Nodaway	8
RV Northeast Nodaway	9
NWMSU	10
RIV South Nodaway	4
RI West Nodaway	8

## Next Steps in the Planning Process

- **ASAP** - Data Collection Questionnaires Due
- Risk Assessment Update Results Available Online
- Comments due within 30 days to our office
- **(Tentative Date)** Individual Meetings
  - Assist with Questionnaires
  - Status Updates for Previous Mitigation Actions
- **(Tentative Date)** 2<sup>nd</sup>/Final Planning Meeting
  - Review/Update Mitigation Goals
  - Status Update Summary and STAPLEE analysis
  - Mitigation Action Implementation Plans for Continuing and New Actions
  - Discuss Plan Maintenance
  - Draft Due to SEMA before May 17 after 30 day comment period



# Thank you for coming tonight!

- Please complete and leave your timesheets with us.
- Contact us for assistance
- [amy@nwmorcog.org](mailto:amy@nwmorcog.org)
- [steve@nwmorcog.org](mailto:steve@nwmorcog.org)
- 660.582.5121 Amy: ext-3 ext-6: Steve

To **Nodaway County Hazard Mitigation Planning Committee**  
 From **Amy Dowis, Regional Planner**  
**Northwest Missouri Regional Council of Governments**  
 Tel / E-mail **660-582-5121, ext. 3 / amy@nwmorcog.org**  
 Date **March 1, 2023**  
 Subject **Minutes from Nodaway County Hazard Mitigation Planning Kickoff Meeting held on March 1, 2023**

This document is a record of attendance and a summary of the issues discussed during the above meeting. The presentation began with an introduction on the purpose of hazard mitigation planning, grant programs linked to an approved plan, and the benefits of a multi-jurisdictional approach. The hazard mitigation planning process was reviewed to include requirements for participation and public involvement and the use of data collection questionnaires. The planning committee participated in a discussion of the hazards that have the potential to impact Nodaway County, including preliminary research on each hazard. The sources for compiling a GIS layer of critical facilities were also discussed and additional sources identified by planning committee members were noted. The meeting concluded with a discussion of the next steps in the planning process. The meeting was held at the **Maryville Public Safety Building, located at 101 N. Vine, Maryville at 4 p.m.**

## Attendees

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<b>Name</b>	<b>Title</b>	<b>Department</b>	<b>Jurisdiction</b>
Darrell Cronk	Mayor	City Admin	Town of Arkoe
Eli Fox	Disaster Mitigation Intern	NWMORCOG	]
Jeff Blackford	Superintendent	School Admin	Nodaway-Holt R-VII School District
Chris Turpin	Superintendent	School Admin	North Nodaway County R-VI School District
Steve Houts	Program Assistant	NWMORCOG	
Amanda Cullen	Interim Police Chief	Campus Safety	Northwest Missouri State University
Dustin Skoglund	Superintendent	School Admin	South Nodaway R-IV School District
Mitch Barnes	Superintendent	School Admin	West Nodaway County R-1 School District
Wayne Pierson	Coordinator, retired	Safety, Health, Environmental	Local Industry
Joyce Cronk	Treasurer	City Admin	Town of Arkoe
Christy Forney	Administrative Officer Emergency Manager	Public Safety County Admin	City of Maryville County of Nodaway
Amy Dowis	Regional Planner	NWMORCOG	

## Introductions

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Amy Dowis, Regional Planner with NWMORCOG, began the meeting by welcoming and thanking the attendees for coming and having all attendees introduce themselves and the jurisdiction or entity they were representing.

## Hazard Mitigation Planning Purpose

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Steve Houts, Program Assistant with NWMORCOG, presented information on the purpose of Hazard Mitigation Planning and the Disaster Mitigation Act of 2000. The attendees were reminded this is an

update of the Nodaway County Hazard Mitigation Plan, previously approved in September 2018. The current plan expires on September 12, 2023.

It was noted due to the rapidly approaching expiration of the current plan, an accelerated strategy of updating the plan was being followed with the Risk Assessment update draft completed prior to this meeting.

## **Grant Programs Linked to Approved Plan**

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Amy Dowis briefly discussed the FEMA Hazard Mitigation Assistance grants that require participation in an approved Hazard Mitigation Plan for jurisdictions to be eligible to apply. These include: Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program. Previous grant awards were noted.

## **Planning Tasks / Multi-Jurisdictional Approach**

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Steve Houts discussed the 9 Planning Steps for effective Hazard Mitigation Planning identified in FEMA's March 2013 *Handbook for Local Hazard Mitigation Planning* and addressed the benefits for jurisdictions participating in this mitigation plan update including improved coordination and communication among local jurisdictions. Impacts of hazards do not stop at jurisdictional boundaries. This multi-jurisdictional approach allows for a more comprehensive risk assessment and resulting mitigation strategy for the entire planning area. The following jurisdictions have been invited to participate as "official participants" in the Nodaway County Multi-jurisdictional Hazard Mitigation Plan Update:

- Town of Arkoe
- City of Barnard
- City of Burlington Junction
- City of Clearmont
- Village of Clyde
- City of Conception Junction
- City of Elmo
- City of Graham
- Village of Guilford
- City of Hopkins
- City of Maryville
- City of Parnell
- City of Pickering (participated as the Village of Pickering in previous updates)
- City of Ravenwood
- City of Skidmore
- Unincorporated Nodaway County
- Jefferson C-123 School District
- Maryville R-II School District (includes the Northwest Missouri Technical School)
- Nodaway-Holt R-VII School District
- North Nodaway County R-VI School District
- Northeast Nodaway County R-V School District
- Northwest Missouri State University
- South Nodaway County R-IV School District
- West Nodaway County R-1 School District

## Participation Requirements

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Amy Dowis also described the role of the HMPC. Each jurisdiction participating in development of the plan must meet the following minimum requirements:

1. Designate a representative to serve on the Nodaway County HMPC, which will meet at least once 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.

Jurisdictions that choose not to participate in development of a FEMA-approved mitigation plan **will not** be eligible applicants for FEMA Hazard Mitigation Assistance Grants.

## Planning for Public Involvement

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The local hazard mitigation plan requirements state that the public needs to have the opportunity to comment on the plan. The public will be given two opportunities to comment on the plan, once during the drafting stage and another when the plan is complete in the final draft stage.

The meeting attendees discussed methods for notifying the public in the plan.

Members will review the draft Risk Assessment which is posted on the NWMORCOG website:

[nwmorcog.org](http://nwmorcog.org)

## Data Collection Questionnaires

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Representatives from local governments and school districts were provided with hard copies of Data Collection Questionnaires. The Data Collection Questionnaire is designed to collect information on existing capabilities within each jurisdiction to implement mitigation initiatives as well as collect information on previous hazard events. The questionnaires are different for local units of government and schools. The Data Collection Questionnaires were reviewed as a group and then meeting participants were given time to review the forms individually and note any questions about the forms.

After a short break, a question/answer session took place to facilitate completion of the forms.

**The deadline for submittal of the Data Collection Guides is |**

## Discussion/Prioritization of Hazards

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Initial research information was presented on the hazards being considered for inclusion in the hazard mitigation plan. Eli Fox discusses the variety of natural disasters that are seen in Nodaway County, followed by the short term and long-term effects of each disaster. Each disaster is possible in the NW

region, but those such as thunderstorms, snowstorms, tornadoes, extreme temperatures, and droughts are more likely to occur and may have the biggest impact on the residents of the area. Eli also included the history of each disaster in the region, by providing quantitative information regarding the amount of damage done. The list of potential natural disaster Nodaway County may face include;

1. Dam Failure
2. Levee failure
3. Flooding
4. Fire
5. Earthquake
6. Drought
7. Extreme temperatures
8. Thunderstorms/high winds/lighting/hail
9. Tornado
10. Severe winter weather

## Critical Facilities

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The Risk Assessment will include information on critical facilities for each jurisdiction. An inventory of the critical facilities will be developed from the Data Collection Questionnaire as well as the following sources: FEMA HAZUS 4.2, Missouri Spatial Data Information Service (MSDIS), Missouri State Emergency Management Agency (SEMA) and the Nodaway County Emergency Management Director (EMD) and meeting participants were asked to identify additional sources of GIS data for the critical facility inventory.

## Next Steps

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Attendees were asked to complete their jurisdiction's Data Collection Questionnaire by 01 March 2023. **The 2nd meeting of the Hazard Mitigation Planning Committee for this plan update will be 15 March 2023 at 1pm.** A draft of the risk assessment update will be provided to the committee for review prior to Meeting #2. The meeting will involve a review of the risk assessment results and an update of the plan's goals. **The 3<sup>rd</sup> and final planning meeting is scheduled for 30 March 2023.** Additional details on this meeting will be provided at a later date.

Hello. Happy Monday! At our Nodaway County Hazard Mitigation Plan kickoff meeting, several in attendance said they prefer the second planning meeting be held in the morning time. So, I have created a Doodle Poll that's being sent to all the county's school districts to help us schedule the next meeting.

The poll will be open until 12 noon Friday, March 10. Please look at it and respond. The days are somewhat limited due to staff schedules within our office, as well. You can access the Doodle at: <https://doodle.com/meeting/participate/id/bWPDg8od>.

Let me know if you have any questions.

Thank you,  
Amy

## **Amy Dowis**

*Regional Planner*

Northwest Missouri Regional Council of Governments

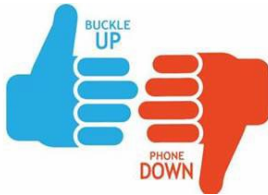
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## Nodaway County HMP Risk Assessment available for review...

Amy Dowis <amy@nwmorcog.org>

Mon 3/6/2023 3:43 PM

To: Nodaway County HMP Update - Stakeholders <NodawayCountyHMPUpdate-Stakeholders@nwmorcog.org>

📎 2 attachments (296 KB)

As of March 1, 2023, for emailing Nodaway County In-kind Match Timesheet.xlsx; Timesheet instructions.jpg;

All,

Just a reminder that the public comment period for the draft of the Nodaway County Risk Assessment ends Thursday, March 30, 2023.

Please take a few minutes before the next meeting to review the Risk Assessment and log your time spent reviewing it on the attached timesheet. You can view the Risk Assessment draft at <https://nwmorcogdotorg.files.wordpress.com/2023/02/nc-draft-risk-assessment-2023.pdf>

Comments can be emailed to me.

Thanks,  
Amy

### Amy Dowis

*Regional Planner*

Northwest Missouri Regional Council of Governments

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Work sessions will be at the Regional Council Office, 114 W. Third Street, Maryville.

**From:** Amy Dowis <[amy@nwmorcog.org](mailto:amy@nwmorcog.org)>

**Sent:** Monday, March 13, 2023 2:14 PM

**To:** Amy Dowis <[amy@nwmorcog.org](mailto:amy@nwmorcog.org)>; [byron@byronclarkconstruction.com](mailto:byron@byronclarkconstruction.com); [cf235@maryvilledps.com](mailto:cf235@maryvilledps.com); [cityofbj@iamotelephone.com](mailto:cityofbj@iamotelephone.com); [cityofhopkins@gmx.com](mailto:cityofhopkins@gmx.com); [cityofparnell.mo@gmail.com](mailto:cityofparnell.mo@gmail.com); [danyellowiederholt@hotmail.com](mailto:danyellowiederholt@hotmail.com); Eli Fox <[eli@nwmorcog.org](mailto:eli@nwmorcog.org)>; [holmesfarmfamily@gmail.com](mailto:holmesfarmfamily@gmail.com); [njnbragg@hotmail.com](mailto:njnbragg@hotmail.com); [nodawaycom@gmail.com](mailto:nodawaycom@gmail.com); [nodclerk@gmail.com](mailto:nodclerk@gmail.com); [rvwdcity@grm.net](mailto:rvwdcity@grm.net); [skidmore@nwmo.net](mailto:skidmore@nwmo.net); [smithrepairllc@yahoo.com](mailto:smithrepairllc@yahoo.com); Steve Houts <[steve@nwmorcog.org](mailto:steve@nwmorcog.org)>; [t\\_coleman.clerk@yahoo.com](mailto:t_coleman.clerk@yahoo.com)

**Subject:** Small Group Work Sessions - Wednesday, March 15

**Importance:** High

All,

Below you will find a schedule for who has signed up to attend which time slot for our individual/small group work sessions this Wednesday, March 15 for the Nodaway County Hazard Mitigation Plan update.

We still have not heard back from Hopkins or Ravenwood but can squeeze you in if you are able to send someone... it just needs to be an elected official.

Nodaway Co HMP Individual Work Groups					
Wednesday, March 15					
Town	Representative	9 a.m.	10:45 a.m.	1 p.m.	2:45 p.m.
Barnard	Teresa Coleman			X	
Burlington Jct	JoAnna Marriott				X
Elmo	Norma Bragg				X
Guilford					
Hopkins					
Parnell	Heather Burns			X	
Ravenwood					
Skidmore	Meagan Morrow			X	
Arkoe	Joyce & Darrell Cronk		X		
Clearmont	Byron Clark				X
Conception Jct	Cletus Lager	X			
Graham	Darrell Johnson			X	
Pickering	Milton and Charles				X

Please let me know if you have any questions or concerns. **We will see you Wednesday!**

Amy

## Amy Dowis

*Regional Planner*

Northwest Missouri Regional Council of Governments

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# NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN



**WORKSHOP**  
**MITIGATION STRATEGY**  
**EDUCATION**  
**SMALL COMMUNITIES**

Project Planner: **NWMORCOG**



# WORKSHOP PURPOSE

- ✓ Review Purpose/Requirements
- ✓ Public Survey Results
- ✓ **Updating the Mitigation Strategy**
  1. **Review Updated Plan Goals**
  2. **Status of Previous Actions**
  3. **Development of New Actions**
  4. **Prioritization of Mitigation Actions**
- ❖ **For Meeting #2 on March 29:**
  - Review Action Changes from these workshops
  - Hazard Mitigation Assistance Grants
  - Plan Maintenance
  - Public Comment and Plan Adoption



# 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**
- Task 7: Review and Adopt the Plan
- Task 8: Keep the Plan Current
- Task 9: Create a Safe and Resilient Community



# PARTICIPATING JURISDICTIONS— REVIEW REQUIREMENTS

- 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.

A puzzle map of Arkansas is shown on the left side of the slide. The puzzle pieces contain various images related to natural disasters: a topographic map, a green landscape, a flooded area, a person in a boat, a large fire, a damaged road, a damaged house, a flooded street, and a damaged building. The puzzle is set against a blue horizontal band that contains the main title.

# UPDATING THE MITIGATION STRATEGY



# MITIGATION STRATEGY

- Goals are general guidelines that explain what you want to achieve. They are long-term, broad, policy-type statements.
- Mitigation Actions are specific actions that help achieve goals.





# PLAN GOALS— UPDATED AT MEETING #1

- 1) Protect the lives, property, and livelihoods of all citizens.
- 2) Manage growth in designated hazard areas through sustainable policies, principles, and practices
- 3) Ensure continued operation of government and emergency functions in a disaster.
- 4) Maintain economic activities essential to the survival and recovery from natural hazards.



# MITIGATION ACTIONS

- Losses from hazards can be reduced if communities take action before the next disaster
- Actions have long term and cumulative benefits
- Some may be low-cost initiatives readily adopted
- Others may be dependent on available funding or best implemented following a disaster
- Relevant to your School District
- Focus on Mitigation-not a response plan
- Not all actions identified through this planning process will be eligible for FEMA grants



# UPDATING/DEVELOPING MITIGATION ACTIONS

- Previous Actions—status updates required for ALL actions from previous plan (FEMA will not approve without this)
- New Actions—add new actions, as appropriate
  - FEMA's Mitigation Ideas Booklet
  - Review Problem Statements from Risk Assessment
  - State Priorities for Hazard Mitigation Assistance Grants
  - Public Opinion from Surveys

**S**pecific  
**M**easurable  
**A**chievable  
**R**elevant  
**T**ime-bound



PREVIOUS ACTIONS  
SEE HANDOUTS



# PROBLEM STATEMENTS FROM RISK ASSESSMENT / PREVIOUS ACTIONS



Any gaps between problems identified in risk assessment and actions addressed for your jurisdiction?



# MITIGATION ACTION PLANS

- Complete for Continuing and New actions
- Provides details for each action

Action Worksheet	
Name of Jurisdiction:	
Risk / Vulnerability	
Hazard(s) Addressed:	
Problem being Mitigated:	
Action or Project	
Applicable Goal Statement:	
Action/Project Number:	
Name of Action or Project:	
Mitigation Category:	
Action or Project Description:	
Estimated Cost:	
Benefits:	
Plan for Implementation	
Responsible Organization/Department:	
Action/Project Priority:	
Timeline for Completion:	
Potential Fund Sources:	
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	
Report of Progress:	



# PRIORITIZING MITIGATION ACTIONS

## ➤ STAPLEE Worksheet (handout):

- Social
- Technical
- Administrative
- Political
- Legal
- Economical
- Environmental

STAPLEE Worksheet		
Name of Jurisdiction:		
Action or Project		
Action/Project Number:	Insert a unique action number for this action for future tracking purposes. This can be a combination of the jurisdiction name, followed by the goal number and action number (i.e. Joplin1.1)	
Name of Action or Project:		
Mitigation Category:	Prevention; Structure and Infrastructure Projects; Natural Systems Protection; Education and Outreach; Emergency Services	
	Evaluation Rating	
STAPLEE Criteria	Definitely YES = 3 Probably NO = 1	Maybe YES = 2 Definitely NO = 0
		Score
S: Is it <b>Socially</b> Acceptable		
T: Is it <b>Technically</b> feasible and potentially successful?		
A: Does the Jurisdiction have the <b>Administrative</b> capacity to execute this action?		
P: Is it <b>Politically</b> acceptable?		
L: Is there <b>Legal</b> authority to implement?		
E: Is it <b>Economically</b> beneficial?		
E: 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?		
STAPLEE SCORE		
Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives will be saved.	
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	
MITIGATION EFFECTIVENESS SCORE		
TOTAL SCORE (STAPLEE + Mitigation Effectiveness)		
<input type="checkbox"/> High Priority (30+ points) <input type="checkbox"/> Medium Priority (25 - 29 points) <input type="checkbox"/> Low Priority (<25 points)		
Completed by (Name, Title, Phone Number) _____		



# THANK YOU!

- Please attend the next public meeting:
  - March 29, 2023 at 1 p.m.
  - Maryville Public Safety Conference Room
- Please review the draft: [nwmorcog.org](http://nwmorcog.org)
- Please return signed adoption resolution









# NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE INDIVIDUAL/SMALL GROUP WORK SESSIONS—SIGN-IN SHEET

<b>Project:</b>	Nodaway County, Missouri Multi-Jurisdictional Hazard Mitigation Plan Update	<b>Meeting Date/Time:</b>	Wednesday, March 15, 2023 9 a.m., 10:45 a.m., 1 p.m., 2:45 p.m.
<b>Facilitator:</b>	Steve Houts & Eli Fox NWMOROCG	<b>Place/Room:</b>	NWMOROCOG Conference Room 114 W. Third Street, Maryville, MO 64468

Name	Title	Department/Agency	Email	Phone #	Signature
Cletus Lager	Mayor				<i>Cletus Lager</i>
Nathalie Lager	resident				<i>Nathalie Lager</i>
Chris Bird	Chief Operator	City of Hopkins	cityofhopkins@gmx.com	660-254-9203	<i>Chris Bird</i>
Darrell Cronk	mayor	Arkoe		660-254-0969	<i>Darrell Cronk</i>
Jaye Cronk	Treasurer	Arkoe	jacronk@gmail.com	660-215-2196	<i>Jaye Cronk</i>
Christy Forney	EMD	Nodaway County	cf235@maryvillehdps.com	660-562-3209	<i>Christy Forney</i>
Hesther Burns	clerk	Parnell	cityofparnell.mo@gmail.com	660-254-0246	<i>Hesther Burns</i>
Teresa Coleman	Clerk	Barnard	t-coleman-clerk@yahoo.com	816-261-0207	<i>Teresa Coleman</i>
Jerry Lager	Chief Operator	Ravenwood	jerrynat79@gmail.com	660-562-8963	<i>Jerry Lager</i>
Meagan Morrow	Clerk	Skidmore	skidmore@nwmco.net	660-928-3281	<i>Meagan Morrow</i>

# NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE INDIVIDUAL/SMALL GROUP WORK SESSIONS—SIGN-IN SHEET









<b>Project:</b> Nodaway County, Missouri Multi-Jurisdictional Hazard Mitigation Plan Update	<b>Meeting Date/Time:</b> Wednesday, March 15, 2023 9 a.m., 10:45 a.m., 1 p.m., 2:45 p.m.
<b>Facilitator:</b> Steve Houts & Eli Fox NWMOROCG	<b>Place/Room:</b> NWMOROCG Conference Room 114 W. Third Street, Maryville, MO 64468

Name	Title	Department/Agency	Email	Phone #	Signature
Holly Holmes	Clerk	City of Graham	holmesfarmfamily@gmail.com	660-562-7888	
Mitt Sovereign	CLERK	" " PICKERING	cherickett@valloof.com	660-987-3137	
Charles E. Smith	Mayor	City of Pickering	Mayor	36 km	
Noema Bragg	clerk	City of Elma	njinbragg@heatmeter.com	660 742 3321	
Joanna Marriott	Clerk	City of BJ	cityofbj@iamophone.com	660-785-4514	
Byron Clark	Mayor	City of Clearmont	byron@byronclarkconstruction.com	816-390-7151	

# NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

## SCHOOLS' SMALL GROUP WORK SESSION—SIGN-IN SHEET

<b>Project:</b> Nodaway County, Missouri Multi-Jurisdictional Hazard Mitigation Plan Update	<b>Meeting Date/Time:</b> Monday, March 27, 2023 8:30 a.m.
<b>Facilitator:</b> Steve Houts & Eli Fox NWMORCOG	<b>Place/Room:</b> NWMORCOG Conference Room 114 W. Third Street, Maryville, MO 64468

Name	Title	Department/Agency	Email	Phone #	Signature
Tim Jermain	Superintendent	Jefferson C-123	timjermain@jcl23.k12.mo.us	660-944-2316	
Mitch Barnes	Superintendent	West Nodaway R-I	mbarnes@wnrockets.com	816-592-0288	
Brenda Deagan	Superintendent	Northwest Nodaway R-I	bdeagan@nen.k12.mo.us	660-937-3125	
Dustin Skoglund	Superintendent	South Nodaway R-IV	dustinskoglund@southnodaway.k12.mo.us	660-652-3221	
Logan Lightfoot	Superintendent	Maryville R-II	lightfoot@maryville.k12.mo.us	660-562-3155	
Chris Turpin	Superintendent	North Nodaway	cturpin@nncr6.org	660-254-6105	
Jeff Blackford	Superintendent	Nodaway - Holt	jblackford@nodholt.org	660-939-2137	
Amanda Cullin	Lieutenant	Northwest MO State University	acullin@nwm150001.edu	660-562-1254	
Steve Houts		NWMORCOG			
Eli Fox		NWMORCOG			

Amy Dowis

NWMORCOG

The jurisdictions in Nodaway County are currently updating their Multi-Jurisdictional Hazard Mitigation Plan. As you may be aware, the Disaster Mitigation Act of 2000 requires counties, municipalities, and public school districts to participate in an approved Hazard Mitigation Plan to be eligible for certain federal hazard mitigation funding programs. Nodaway County has formed a planning committee consisting of representatives from the county, all incorporated cities, and public school districts to participate in development of the plan update.

Because your business/agency/entity (townships, fire districts, etc.) is directly or indirectly connected to Nodaway County mitigation activities, you are a stakeholder in the process. We are reaching out to stakeholders, such as you, to coordinate with those who may bring additional information to the planning process and associated hazard issues within Nodaway County. During this meeting, we will discuss key issues from the risk assessment and participate in a facilitated discussion of the mitigation strategy including continuing mitigation actions identified in the previous plan as well as identification of any new mitigation actions that should be added to the mitigation strategy to ensure a comprehensive approach to hazard mitigation. In addition, action implementation details will be discussed for both continuing and new actions.

Your attendance is requested at the upcoming planning meeting:

**Nodaway County Multi-jurisdictional Hazard Mitigation Plan Update Meeting #2**  
**Wednesday, March 29, 2023**  
**Meeting Time: 1 p.m.**  
**Maryville Public Safety Building, 101 N. Vine, Maryville**

Please confirm your attendance or provide contact information for your designated alternate by responding to Amy Dowis at 660-582-5121, ext. 3 or [amy@nwmorcog.org](mailto:amy@nwmorcog.org).

Thanks,

## **Amy Dowis**

*Regional Planner*

Northwest Missouri Regional Council of Governments

114 W. Third

Maryville, MO 64468

Phone: 660-582-5121 ext. 3

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## Nodaway County Multi-Jurisdictional Hazard Mitigation Plan Update Meeting #2

Amy Dowis <amy@nwmorcog.org>

Mon 3/27/2023 9:31 AM

To: Nodaway County HMP Update - Stakeholders <NodawayCountyHMPUpdate-Stakeholders@nwmorcog.org>

### Stakeholders, you are invited to Nodaway County Multi-Jurisdictional Hazard Mitigation Plan Update Meeting #2

This public meeting is open to all public officials, residents, and stakeholders in Nodaway County. If you have an interest in making Nodaway County a safer place, please join us for this informative Hazard Mitigation meeting. Through the planning meetings, we are working to update risk assessments and mitigation strategies for various natural hazards that impact Nodaway County. The overall purpose is to identify mitigation measures to reduce or eliminate long-term risk from natural hazard events to the people and property in Nodaway County. The planning meeting will be held at the Maryville Public Safety Building, 101 N. Vine, Maryville, starting at 1 p.m. on Wednesday, March 29, 2023.

During this meeting, we will discuss key issues from the risk assessment and participate in a facilitated discussion of the mitigation strategy including continuing mitigation actions identified in the previous plan as well as identification of any new mitigation actions that should be added to the mitigation strategy to ensure a comprehensive approach to hazard mitigation. In addition, action implementation details will be discussed for both continuing and new actions.

A RSVP is requested for anyone planning to attend. Please contact Amy Dowis at the Northwest Missouri Regional Council of Governments, (660) 582-5121 ext. 3, or by e-mail at [amy@nwmorcog.org](mailto:amy@nwmorcog.org) with questions and RSVPs.

## Amy Dowis

*Regional Planner*

Northwest Missouri Regional Council of Governments

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Maryville, MO 64468

Phone: 660-582-5121 ext. 3

Serving the counties of Atchison, Gentry, Holt, Nodaway & Worth

[www.nwmorcog.org](http://www.nwmorcog.org)



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# Northwest Missouri

## Regional Council of Governments

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# NEWS

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FOR IMMEDIATE RELEASE  
March 13, 2023

Amy Dowis, Regional Planner  
660-582-5121, ext. 3

### **Nodaway County Multi-Jurisdictional Hazard Mitigation Plan Update Meeting #2 Wednesday, March 29 @ 1 p.m.**

This public meeting is open to all public officials, residents, and stakeholders in Nodaway County. If you have an interest in making Nodaway County a safer place, please join us for this informative Hazard Mitigation meeting. Through the planning meetings, we are working to update risk assessments and mitigation strategies for various natural hazards that impact Nodaway County. The overall purpose is to identify mitigation measures to reduce or eliminate long-term risk from natural hazard events to the people and property in Nodaway County. The planning meeting will be held at the Maryville Public Safety Building, 101 N. Vine, Maryville, starting at 1 p.m.

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###



# NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN



**MEETING #2**  
**MITIGATION STRATEGY**  
**MARCH 29, 2023**

**Project Planners:** Steve Houts & Eli Fox, Northwest Missouri Regional Council of Governments



# MEETING PURPOSE/AGENDA

- Review Purpose/Requirements
- Public Survey Results
- Updating the Mitigation Strategy
  - Review Updated Plan Goals
  - Status of Previous Actions
  - Development of New Actions
  - Prioritization of Mitigation Actions
- Hazard Mitigation Assistance Grants
- Plan Maintenance
- Next Steps





# 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**
- Task 7: Review and Adopt the Plan
- Task 8: Keep the Plan Current
- Task 9: Create a Safe and Resilient Community



# PARTICIPATING JURISDICTIONS— REVIEW REQUIREMENTS

- 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.

# STATUS OF PARTICIPATION REQUIREMENTS

Jurisdictions	Meeting Attendance	Data Collection Guide	Status of Previous Actions
Unincorporated Nodaway County	Y	Y	Y
City of Barnard	Y	Y	Y
City of Burlington Junction	Y	Y	Y
City of Elmo	Y	Y	Y
Village of Guilford	Y	Y	Y
City of Hopkins	Y	Y	Y
City of Maryville	Y	Y	Y
City of Parnell	Y	Y	Y
City of Ravenwood	Y	Y	Y
City of Skidmore	Y	Y	Y
Town of Arkoe	Y	Y	Y
City of Clearmont	Y	Y	Y
Village of Clyde (opted out)	N	N	N
City of Conception Junction	Y	Y	Y



# STATUS OF PARTICIPATION REQUIREMENTS CONT.

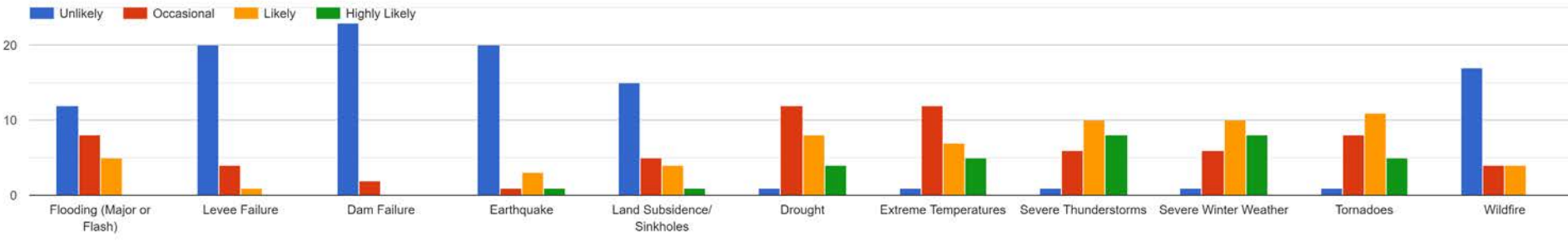
Jurisdictions	Meeting Attendance	Data Collection Guide	Status of Previous Actions
City of Graham	Y	Y	Y
City of Pickering	Y	Y	Y
Jefferson C-123 School	Y	Y	Y
Maryville R-II School	Y	Y	Y
Nodaway-Holt R-VII School	Y	Y	Y
North Nodaway County R-VI School	Y	Y	Y
Northeast Nodaway County R-V School	Y	Y	Y
Northwest Missouri State University	Y	Y	Y
South Nodaway County R-IV School	Y	Y	Y
West Nodaway County R-I School	Y	Y	Y



**PUBLIC SURVEY RESULTS  
25 SURVEYS COMPLETED  
SO FAR!**



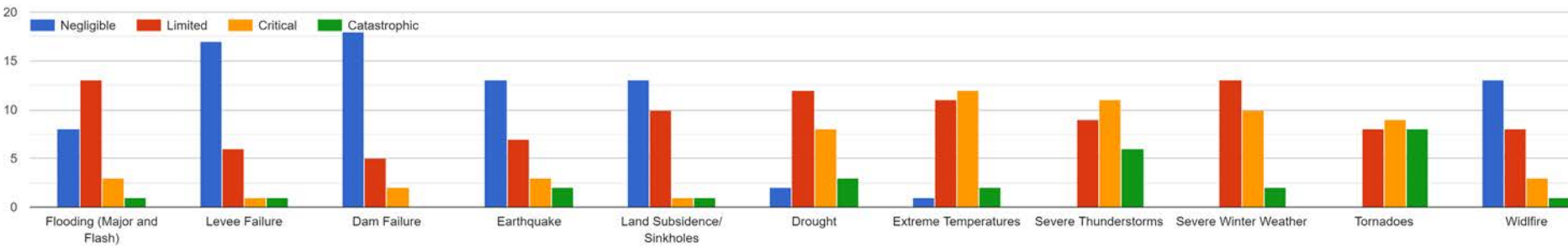
The hazards addressed in the Multi-jurisdictional Hazard Mitigation Plan Update are listed below. Please indicate your opinion on the likelihood for each hazard to impact YOUR JURISDICTION. Please rate EACH hazard as Unlikely, Occasional, Likely, or Highly Likely.



# PUBLIC OPINION ON LIKELIHOOD OF OCCURRENCE



Please indicate your opinion on the potential magnitude of each hazard's impact on YOUR JURISDICTION (identified above). Please rate EACH Hazard as Negligible, Limited, Critical, or Catastrophic.



# PUBLIC OPINION ON POTENTIAL MAGNITUDE OF AN EVENT



A puzzle map of the state of Arkansas, outlined in purple. The puzzle pieces contain various images related to natural disasters: a topographic map, a green landscape, a flooded area with houses, a large waterfall, a person in a boat in floodwaters, a person working on a tree, a road with debris, a large fire, a flooded street, a destroyed house, and a flooded street with a building.

# UPDATING THE MITIGATION STRATEGY



# MITIGATION STRATEGY

- Goals are general guidelines that explain what you want to achieve. They are long-term, broad, policy-type statements.
- Mitigation Actions are specific actions that help achieve goals.



# PLAN GOALS— REVIEWED AT MEETING #1

- 1) Protect the lives, property, and livelihoods of all citizens.
- 2) Manage growth in designated hazard areas through sustainable policies, principles, and practices
- 3) Ensure continued operation of government and emergency functions in a disaster.
- 4) Maintain economic activities essential to the survival and recovery from natural hazards.



# MITIGATION ACTIONS

- Losses from hazards can be reduced if communities act before the next disaster
- Actions have long term and cumulative benefits
- Some may be low-cost initiatives readily adopted
- Others may be dependent on available funding or best implemented following a disaster
- Relevant to your Jurisdiction
- Focus on Mitigation-not a response plan
- Not all actions identified through this planning process will be eligible for FEMA grants



# UPDATING/DEVELOPING MITIGATION ACTIONS

- Previous Actions—status updates required for ALL actions from previous plan (FEMA will not approve without this)
- New Actions—add new actions, as appropriate
  - FEMA's Mitigation Ideas Booklet
  - Review Problem Statements from Risk Assessment
  - State Priorities for Hazard Mitigation Assistance Grants
  - Public Opinion from Surveys

**S**pecific  
**M**easurable  
**A**chievable  
**R**elevant  
**T**ime-bound



# PREVIOUS ACTIONS

TOTAL-CONTINUE-COMPLETED/DELETED-NEW

County	31			
Arkoe	4			
Barnard	17	5	12	1
Burlington Jct	9	5	4	
Clearmont	9	7	2	
Clyde	4			
Conception Jct	4	2	2	1
Elmo	16	2	14	
Graham	20			
Guilford	19			
Hopkins	23			
Maryville	29			
Parnell	13	7	6	1
Pickering	12	5	7	
Ravenwood	18			
Skidmore	21	6	15	

C123 Jefferson	12	4	8	1
RII Maryville	6	2	4	1
RVII Nodaway-Holt	6	2	4	2
RVI North Nodaway	8	3	5	1
RV Northeast Nodaway	9	3	6	1
NWMSU	10			
RIV South Nodaway	5	2	3	2
RI West Nodaway	8	6	2	



# PROBLEM STATEMENTS FROM RISK ASSESSMENT / PREVIOUS ACTIONS

- Natural Flood-Related Hazards
  - Flooding
  - Levee Failure
  - Dam Failure
- Natural Geologic Hazards
  - Earthquake
- Natural Meteorological Hazards
  - Drought
  - Extreme Temperature
  - Severe Thunderstorms
  - Severe Winter Weather
  - Tornadoes
- Natural Other Hazard
  - Wildfire



Any gaps between problems identified in risk assessment and actions addressed for your jurisdiction?



# FLOODING PROBLEM STATEMENTS

**PROBLEM STATEMENT:** The major risks for flooding are along the Platte River, 102 River, Nodaway River and their tributaries.

- City Storm Drain Systems
- Culvert sizing
- Enforce Floodplain Ordinances
- See Levee Failure





# LEVEE FAILURE PROBLEM STATEMENTS

- Considering that significant levee systems do not exist in Nodaway County, the risks from the hazard of levee failure are minimal. A county-wide inventory and assessment of the low-head agricultural levees would help identify problems that could be addressed to help limit future losses to agricultural assets as well as county roads and bridges.



# FLOOD/LEVEE FAILURE PREVIOUS CONTINUING ACTIONS

Consider areas which were subject to damage in past natural hazards. Take inventory and use information in future development plans.

Assess publicly held facilities, distribution systems, etc. for vulnerability to natural hazards. If necessary, providers should make improvements to ensure continued service during a disaster when possible. Improvements may include equipment elevation, backup generators for power, and other infrastructure changes.

Elevate roads and bridges as necessary to maintain dry access. In situations where flood waters tend to wash roads out, construction, reconstruction, or repair can include not only attention to drainage, but also stabilization or armoring of vulnerable shoulders or embankments.



Any Gaps?



# DAM FAILURE PROBLEM STATEMENTS

Based on the data available, most of the damage that would be sustained in a dam failure would be to agricultural assets. Highways and roads could be washed out in a catastrophic failure.

The estimated number of buildings at risk in the county is 39 with a valuation of \$11,350,283.

The county can reduce risks by limiting development in inundation zones. The ability to warn of this hazard should be included in all warning systems to facilitate in the orderly evacuation of any population necessary to avoid putting lives at risk.

- Lack of Emergency Action Plan for the High Hazard Dams in the County
- Lack of routine inspection of dams



# DAM FAILURE

## PREVIOUS CONTINUING ACTIONS

1.2.3 Enhance and expand methods of public notification during disasters

1.4.2 Expand public information campaigns to focus on disaster readiness.

2.1.1 Consider areas which were subject to damage in past natural hazards. Take inventory and use information in future development plans.



Any Gaps?



# EARTHQUAKE PROBLEM STATEMENTS

The risk for damages from earthquakes is possible, but unlikely. The history shows that any earthquakes perceived by the population were only minor shaking causing no damages. Residents should be aware that earthquakes can happen on any active fault, large or small. The largest faults are the Nemaha Fault or across the state along the eastern border is the New Madrid fault. Earthquakes of higher magnitude might be felt in this area from movement on those two faults.

The school districts should educate children about how to respond to an earthquake event because there is no warning and they need to know how to respond to the dangers if an earthquake occurs.

- Many bridges and overpasses located in liquefaction zones.
- Buildings of older construction may be at greater risk.



# EARTHQUAKE PREVIOUS CONTINUING ACTIONS

3.1.4 Improve and expand communication capabilities of all first responder agencies including, but not limited to, fire districts, ambulance districts, and law enforcement.

3.2.1 Provide guidelines to local jurisdictions and agencies to ensure the preservation of records in digital and/or off-site storage facilities.



Any Gaps?



# DROUGHT PROBLEM STATEMENTS

- Some water systems lacking interconnectivity with other sources.

Drought is a moderate risk to farming in any year in all jurisdictions in Nodaway County. It is not a predictable hazard, but it is a hazard that can have lasting impact.

Livestock is particularly susceptible to severe drought and farmers are often obligated to sell off their herds because they do not have access to adequate water supply.

Crop insurance is the best way to provide protection from crop losses in times of drought. Conservation of the water supply, planting drought-resistant hybrid crops, and utilizing moisture-conserving farming methods will help farmers to endure drought conditions as is shown in the historical data presented.



# DROUGHT

## PREVIOUS CONTINUING ACTIONS

2.2.5 Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc. in drought emergencies.

3.1.5 Establish agreements for secondary water sources that may be used during drought conditions.



Any Gaps?





# EXTREME TEMPERATURE PROBLEM STATEMENTS

Shelters with auxiliary power supplies should be available to residents affected by power outages.

All jurisdictions within the county are equally susceptible to damage stemming from a heat wave as these types of events tend to be regional in nature. The large percentage of residents that are over 65 years of age means that many are at risk during extreme heat events. The rural nature of the county does work in its favor, as statistically more deaths occur in urban areas during a heat wave.

- Cooperation with utility companies to ensure the electrical grid can maintain service in extreme heat and cold conditions.
- Increase emergency generator capacity and maintain current back-up systems.



# EXTREME TEMPERATURE PREVIOUS CONTINUING ACTIONS

3.2.4 Assess publicly held facilities, distribution systems, etc. for vulnerability to natural hazards. If necessary, providers should make improvements to ensure continued service during a disaster when possible. Improvements may include equipment elevation, backup generators for power, and other infrastructure changes.

1.2.3 Develop a coordinated response and accommodation schematic for disaster sheltering based on federal guidelines in cooperation with local and state agencies.



Any Gaps?



# SEVERE THUNDERSTORMS PROBLEM STATEMENTS

Early warnings are possibly the best hope for residents when severe weather strikes. Cities that do not already possess warning systems should plan to purchase a system. Additional public awareness also includes coverage by local media sources. Local governments should encourage residents to purchase weather radios to ensure that everyone has sufficient access to information in times of severe weather. Storm shelters are another important means of mitigating the effects of severe thunderstorms. A community-wide shelter program should be adopted for residents who may not have adequate shelter in their homes. Residents should also be encouraged to build their own storm shelters to prepare for emergencies. Early warnings and available safe rooms will reduce the number of residents at-risk of injury or death from this type of hazard.

- Availability of Safe Rooms for all schools
- Sheltering for those without basements or those in mobile homes.
- Large event situations, public parks:



# SEVERE THUNDERSTORMS

## PREVIOUS CONTINUING ACTIONS

- 1.2.2 Continue to upgrade older warning systems in Nodaway County and work towards synchronized activation through centralized law enforcement.
- 1.2.3 Enhance and expand methods of public notification during disasters.
- 2.2.3 Achieve and maintain “Storm Ready” Certification through the National Weather Service.
- 2.2.4 Utilize grant funds and local resources to install storm shelters in locations with insufficient protection including, but not limited to, local recreation areas and public facilities.



Any Gaps?





# SEVERE WINTER WEATHER PREVIOUS CONTINUING ACTIONS

1.4.1 Develop an ongoing campaign to educate the community about seasonal hazards. Coordinate this campaign with a variety of advertising resources to reach the maximum number of people in a timely manner.

1.3.1 Work with the RHSOC, Red Cross, National Guard, and other local agencies to develop an inventory of facilities with generators / emergency power that can be used as shelters in the event of a natural disaster.



Any Gaps?



# TORNADOES

## PROBLEM STATEMENTS

Residents must immediately be aware when an area will be facing a severe weather incident. Jurisdictions that do not already possess warning systems should plan to purchase a system.

Storm shelters are another important means of mitigating the effects of tornadoes. Additional public awareness also includes coverage by local media sources. A community-wide shelter program should be adopted for residents who may not have adequate shelter in their homes to minimize the potential for loss of life.

- Improvements to warning systems as they become available
- Lack of Safe Rooms in all schools and other gathering places.



# TORNADOES

## PREVIOUS CONTINUING ACTIONS

3.2.2 Inspect critical buildings and infrastructure for needed upgrades or retrofits

3.1.4 Improve and expand communication capabilities of all first responder agencies including, but not limited to, fire districts, ambulance districts, and law enforcement.

2.2.4 Utilize grant funds and local resources to install storm shelters in locations with insufficient protection including, but not limited to, local recreation areas and public facilities.

1.1.4 Assess existing facilities including but not limited to government buildings, factories, large retail stores, and stadiums for the location of suitable "safe areas." If available, these "safe areas" should be clearly marked, and employees and visitors should be informed of their location in public facilities.



Any Gaps?





# WILDFIRE PROBLEM STATEMENTS

While wildfires have no history of causing considerable damage in Nodaway County, there is a possibility that a wildfire could happen in any given year. The most-likely type of wildfire would be an out of control agricultural grassfire. Communications to reach residents to inform them of impending danger due to a wildfire can be improved by using text/caster and other county-wide warning systems of National Weather Service issued fire weather watches and red flag warnings. During a wildfire situation, evacuation is essential to save lives. Since wildfires can move very fast if there are high wind conditions, (which are common in Nodaway County) emergency notification of evacuation orders need to be disseminated quickly to provide accurate information to lead residents to safety.



# WILDFIRE

## PREVIOUS CONTINUING ACTIONS

1.2.3 Enhance and expand methods of public notification during disasters

3.2.1 Provide guidelines to local jurisdictions and agencies to ensure the preservation of records in digital and/or off-site storage facilities.

3.1.4 Improve and expand communication capabilities of all first responder agencies including, but not limited to, fire districts, ambulance districts, and law enforcement.

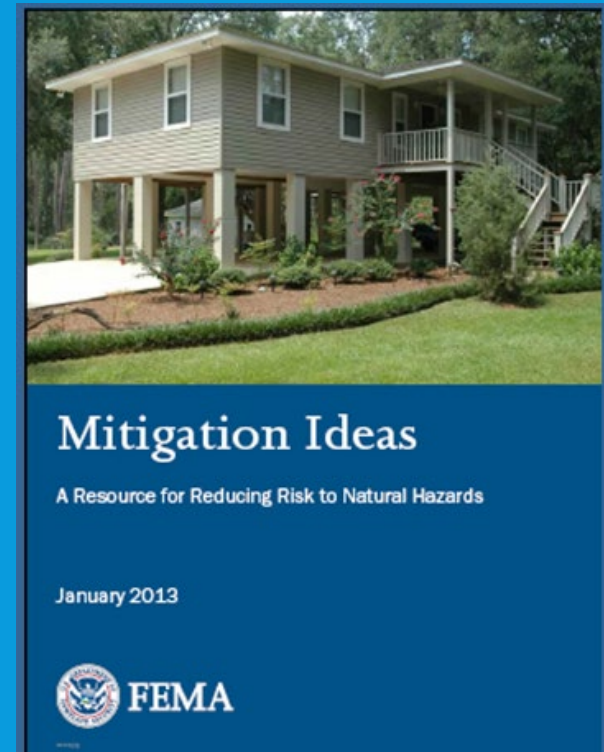


Any Gaps?



# ADDITIONAL RESOURCES

- FEMA's Mitigation Ideas Booklet
- Can be downloaded at:  
[https://www.fema.gov/sites/default/files/2020-06/fema-mitigation-ideas\\_02-13-2013.pdf](https://www.fema.gov/sites/default/files/2020-06/fema-mitigation-ideas_02-13-2013.pdf)





# MITIGATION ACTION PLANS

- Complete for Continuing and New actions
- Provides details for each action

Action Worksheet	
Name of Jurisdiction:	
Risk / Vulnerability	
Hazard(s) Addressed:	
Problem being Mitigated:	
Action or Project	
Applicable Goal Statement:	
Action/Project Number:	
Name of Action or Project:	
Mitigation Category:	
Action or Project Description:	
Estimated Cost:	
Benefits:	
Plan for Implementation	
Responsible Organization/Department:	
Action/Project Priority:	
Timeline for Completion:	
Potential Fund Sources:	
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	
Report of Progress:	





# PLAN MAINTENANCE

- FEMA Regulations require complete plan update every 5 years.
- FEMA requires a formal plan maintenance process to ensure that the mitigation plan remains an active and relevant document
- Who, how, and when will plan be monitored, evaluated, and updated?
- How will public be involved in plan maintenance process?
- How will mitigation strategy be incorporated into other planning mechanisms?



# PLAN IMPLEMENTATION AND MAINTENANCE-HMPC CONSENSUS NEEDED

- Who, how, and when will plan be monitored, evaluated, and updated?
  - Annual Review?, After hazard events?
  - Who will organize?, Who will participate?
  - Update Status of Mitigation Actions?
- How will public be involved in plan maintenance process?
  - Press Release on annual reviews?
  - Other ideas?



# PLAN IMPLEMENTATION AND MAINTENANCE-HMPC CONSENSUS NEEDED

- How will mitigation strategy be incorporated into other planning mechanisms?
  - Review Mitigation Plan during planning process to update other plans?
    - Comprehensive Plans
    - Capital Improvement Plans
    - School Infrastructure Plans
    - School Emergency Plans
  - After review of Mitigation Plan, forward strategy with updates for consideration in other planning mechanisms?





# HAZARD MITIGATION ASSISTANCE (HMA) GRANTS: MISSOURI STATE EMERGENCY MANAGEMENT AGENCY

- Hazard Mitigation Grant Program-HMGP
- Pre-Disaster Mitigation Grants-PDM
- Flood Mitigation Assistance Grants-FMA

For more information on these grants, please visit the FEMA website or contact Heidi Carver, State Hazard Mitigation Officer at 573-526-9116



# OTHER FUNDING SOURCES

- USDA
  - Rural Development Grants
  - Emergency Watershed Protection Program
- U.S. Dept of Commerce
  - Public Works and Economic Dev. Facilities Assistance
- U.S. Dept of Housing and Urban Development
  - Community Development Block Grants
- U.S. Army Corps of Engineers
  - Studies
  - Projects



# COMMENT PERIODS-FULL PLAN DRAFT

- **April 17 – May 17, 2023:** Public Comment Period
  - 30 days
  - Notify others in your jurisdiction/help spread the word
  - Will be posted on the Regional Council's website at [www.nwmorcog.org](http://www.nwmorcog.org)
  - Press releases regarding the final public comment period will be sent to the County's newspapers
  - Emails will be sent to the stakeholder's group and planning committee
  - Comments can be emailed to [amy@nwmorcog.org](mailto:amy@nwmorcog.org)



# HOMework & NEXT STEPS

- **April 2023:** Jurisdictions Adopt Plan
- **April 2023:** Return signed Adoption Resolution to [amy@nwmorcog.org](mailto:amy@nwmorcog.org)
- **April 17-May 17, 2023:** Public Comment Period
- **May 17, 2023:** Submit Plan to SEMA
- **September 2023:** Anticipate FEMA's Approval

# NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

## PUBLIC MEETING #2—SIGN-IN SHEET

<b>Project:</b>	Nodaway County, Missouri Multi-Jurisdictional Hazard Mitigation Plan Update	<b>Meeting Date/Time:</b>	Wednesday, March 29, 2023 1:00 p.m.
<b>Facilitator:</b>	Steve Houts & Eli Fox NWMOROCG	<b>Place/Room:</b>	Maryville Public Safety Conference Room 101 N. Vine Street, Maryville, MO 64468

Name	Title	Department/Agency	Email	Phone #	Signature
Chris Bird	Cof Operator	City of Hopkins	cityofhopk.'ns@gmx.com	660-254 9203	
Joyce Cronk	Treasurer	ARKJC	JACRONK@gmail.com	660-2158196	Joyce Cronk
Danell Cronk	Mayor	ARKJC		660-2546959	Danell Cronk
Jace Pine	Lieutenant	City of Maryville, FD	jp252@maryville.dps.com	8165894411	
Phil Rickabaugh	Fire Chief	City of Maryville	franin-phil@hotmail.com	660 853-8000	
Jared McQueen	Asst Director	NCAD	jmcqueen@ncademail.com	(660)591-1641	Jared McQueen
Tom Patterson	Admin	Nodaway Co Health Dept	tom.patterson@ nodawayhealth.org	660 562 2755	Tom Patterson
Les Linville	Operator	Skidmore		6605826710	Les Linville
Amanda Cullin	Lt	Northwest MO State University	acullin@nwmissouri.edu	660-569-1254	A Cullin
Mitt Sovereign	Propserg		cheresee?? doatleaf.	6609273737	



To **Nodaway County Hazard Mitigation Planning Committee**  
 From **Amy Dowis, Regional Planner**  
**Northwest Missouri Regional Council of Governments**  
 Tel / E-mail **660-582-5121, ext. 3 / amy@nwmorcog.org**  
 Date **March 28, 2023**  
 Subject **Minutes from Nodaway County Hazard Mitigation Planning Meeting #2 held on March 28, 2023**

This document is a record of attendance and a summary of the issues discussed during the above meeting, including: a brief review of the purpose of a Hazard Mitigation Plan, the public survey update for this effort, participation requirements and the status of each jurisdiction, plan update format, sample results of the risk assessment, update of mitigation goals, discussion of status updates for previous mitigation actions, and the next steps in this process. The meeting was held at the **Maryville Public Safety Building, located at 101 N. Vine, Maryville at 1 p.m.**

## Attendees

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Name	Title	Department	Jurisdiction
Chris Bird	Chief Operator	City Works	City of Hopkins
Darrell Cronk	Mayor	City Admin	Town of Arkoe
Joyce Cronk	Treasurer	City Admin	Town of Arkoe
Jace Pine	Lieutenant	Fire & Rescue	City of Maryville
Phil Rickabaugh	Fire Chief	Fire & Rescue	City of Maryville
Jared McQueen	Assistant Director	Ambulance	Nodaway County Ambulance District
Tom Patterson	Administrator	Public Health	Nodaway County Health Center
Les Linville	Chief Operator	City Admin	City Of Skidmore
Milton Sovereign	City Clerk	City Admin	City of Pickering
Amanda Cullen	Interim Police Chief	Campus Police	NWMSU
Logan Lightfoot	Superintendent	School Admin	Maryville R-II Schools
Scott Walk	Commissioner/Flood-plain Administrator	County Admin	Unincorporated Nodaway County
Amy Dowis	Regional Planner	NWMORCOG	
Steve Houts	Program Assistant	NWMORCOG	

## Introductions

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Amy Dowis, Regional Planner with NWMORCOG began the meeting by welcoming and thanking the attendees for coming and having all attendees introduce themselves and the jurisdiction or entity they were representing.

## Purpose/Public Survey/Participation Status

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Steve Houts, Program Assistant with NWMORCOG provided a brief summary of the purpose of the Hazard Mitigation Plan and the Disaster Mitigation Act of 2000 that codified the requirement of local governments to adopt a hazard mitigation plan to maintain eligibility for FEMA Hazard Mitigation Assistance Grants. The nine-task planning process was summarized and participants were informed that at the conclusion of the meeting, the planning committee will have completed at least portions of Tasks 1-6. Amy Dowis also provided a status update and summary of responses to date for the Public Survey that has been disseminated via Google

apps. Planning Committee representatives were encouraged to continue to publicize the results of the surveys and to notify Steve Houts of these efforts so that they can be described in the planning process section of the plan.

A review of the requirements for jurisdictions to officially participate in the Multi-Jurisdictional Hazard Mitigation Plan was provided as well as a table summarizing each jurisdiction's participation to date.

## Mitigation Actions

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The planning committee members were provided a summary of the actions that were included in the previous plan and what changes were made during the Workshop meetings. A discussion of any potential gaps in the proposed actions was held. Concerns of the lack of protective berms around essential facilities and the risk of untethered propane and anhydrous ammonia tanks were voiced but no new actions for these concerns were proposed at this time.

The status updates of all previous actions and any potential new actions are due by April 10. A meeting with the Nodaway County EMD and NWMORCOG staff will review and prioritize actions using the STAPLEE process.

## Next Steps

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The meeting concluded with a discussion of the remaining steps to complete the planning process:

- April 10—All Mitigation Action Forms Due (Continuing & New)
- April 17—Final Draft of Plan Update for Committee Review
- May 17— Final Public Comment Period / State Review
- After SEMA Review— Submit Plan to FEMA





# NORTHWEST MISSOURI REGIONAL COUNCIL OF GOVERNMENTS

ATCHISON \* GENTRY \* HOLT \* NODAWAY \* WORTH

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## NEWS

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FOR IMMEDIATE RELEASE

April 17, 2023

Amy Dowis, Regional Planner

660-582-5121, ext. 3

### **Nodaway County Planning Committee Seeks Public Input**

Nodaway County, MO — The public is encouraged to review and comment on the Nodaway County Multi-jurisdictional Hazard Mitigation Plan Update before it is finalized. The plan includes an updated strategy to reduce damage and losses caused by hazard events. The final draft of the plan will be available online through May 16, 2023. The purpose is to provide information to the public on the Multi-jurisdictional Hazard Mitigation Plan Update as well as gain public input.

Each year, thousands of American families are affected by disasters, and billions of dollars are spent on disaster recovery. Some disasters are predictable, and often, losses and damages can be reduced or eliminated. For these reasons, the Federal Disaster Mitigation Act of 2000 requires communities to develop an approved local hazard mitigation plan. Without such a plan, communities are not eligible for certain federal funding.

Representatives from county departments, the incorporated cities, public school districts, and other mitigation planning stakeholders worked together to develop this plan update. The planning committee addressed hazards ranging from extreme heat and severe winter storms to tornadoes and flooding—and considered the impacts of these events on local communities. Based on the results of an updated risk assessment of the hazards, committee members updated the strategies for their jurisdictions to reduce damages caused by the various hazards.

The planning committee would like input from the public on the updated strategy for Nodaway County. Public comments will be considered by the Hazard Mitigation Planning Committee and incorporated into the plan, as appropriate.

The draft plan will be available for your review, through May 16, 2023, on the Northwest Missouri Regional Council of Government's website at <https://nwmorcog.org/nodaway-county-hazard-mitigation-plan-update/>.

The final plan must be approved by the governing body of each participating jurisdiction, the Missouri State Emergency Management Agency, and FEMA before becoming official. The Northwest Missouri Regional Council of Governments has taken the lead in developing this plan. The points of contact are Amy Dowis, Regional Planner, and Steve Houts, Program Assistant. Public comments may be sent via email to [amy@nwmorcog.org](mailto:amy@nwmorcog.org) or [steve@nwmorcog.org](mailto:steve@nwmorcog.org).

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## Nodaway Co HMP draft posted for Public Comment period...

Amy Dowis <amy@nwmorcog.org>

Mon 4/17/2023 5:18 PM

To: Nodaway County HMP Update - Stakeholders <NodawayCountyHMPUpdate-Stakeholders@nwmorcog.org>

Stakeholders, FYI and please help get the word out...

Thanks,  
Amy

The public is encouraged to review and comment on the Nodaway County Multi-jurisdictional Hazard Mitigation Plan Update before it is finalized. The plan includes an updated strategy to reduce damage and losses caused by hazard events. The final draft of the plan will be available online through May 16, 2023. The purpose is to provide information to the public on the Multi-jurisdictional Hazard Mitigation Plan Update as well as gain public input.

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### **Amy Dowis**

*Regional Planner*

Northwest Missouri Regional Council of Governments

114 W. Third

Maryville, MO 64468

Phone: 660-582-5121 ext. 3

Serving the counties of Atchison, Gentry, Holt, Nodaway & Worth

[www.nwmorcog.org](http://www.nwmorcog.org)

## Adoption Resolutions due SOON

Amy Dowis <amy@nwmorcog.org>

Thu 4/20/2023 9:26 PM

To: Nodaway County HMP Update - Stakeholders <NodawayCountyHMPUpdate-Stakeholders@nwmorcog.org>

Hi all, just wanted to send a quick reminder that the signed Adoption Resolutions... your final requirement for the Nodaway County Hazard Mitigation Plan update... are due back to us by April 25.

Please let me know if you have any questions.

Thanks,  
Amy

### Amy Dowis

*Regional Planner*

Northwest Missouri Regional Council of Governments

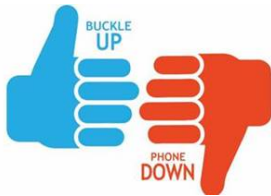
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Missouri TTY users can dial 711

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## Appendix C –STAPLEE Sheets

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# Nodaway County Multi-Jurisdictional Hazard Mitigation Plan

Action: Expand relationships between Emergency Management and local businesses to coordinate disaster solutions and minimize the number of people on the roadways during periods of severe winter weather, flash floods, and other disasters as necessary.	Jurisdiction: <input type="checkbox"/> Nodaway County <input type="checkbox"/> Guilford <input type="checkbox"/> Jefferson C123 <input type="checkbox"/> Arkoe <input type="checkbox"/> Hopkins <input type="checkbox"/> Maryville R2 <input type="checkbox"/> Barnard <input type="checkbox"/> Maryville <input type="checkbox"/> Nod-Holt R7 <input checked="" type="checkbox"/> Burlington Junction <input type="checkbox"/> Parnell <input type="checkbox"/> N Nodaway R6 <input type="checkbox"/> Clearmont <input type="checkbox"/> Pickering <input type="checkbox"/> NE Nodaway R5 <input type="checkbox"/> Conception Junction <input type="checkbox"/> Ravenwood <input type="checkbox"/> S Nodaway R4 <input checked="" type="checkbox"/> Elmo <input type="checkbox"/> Skidmore <input type="checkbox"/> W Nodaway R1 <input type="checkbox"/> Graham <input type="checkbox"/> Northwest MO State University
Action ID: 1.1.3	
<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	<b>SCORE</b>
<b>STAPLEE CRITERIA</b>	
<b>S:</b> Is it Socially acceptable?	3
<b>T:</b> Is it Technically feasible and potentially successful?	3
<b>A:</b> Does the jurisdiction have the Administrative capacity to execute this action?	3
<b>P:</b> Is it Politically acceptable?	3
<b>L:</b> Is there Legal authority to implement?	3
<b>E:</b> Is it Economically beneficial?	1
<b>E:</b> Will the project have a positive impact on the natural environment?	0
Will historic structures be saved or protected?	0
Could it be implemented quickly?	3
<b>STAPLEE SCORE TOTAL</b>	<b>19</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>	<b>Evaluation Rating</b>
Will the implemented action result in lives saved?	Assign 5-10 points based on the likelihood that lives would be saved
Will the implemented action result in a reduction of disaster damages?	Assign 5-10 points based on the relative reduction of disaster damages
<b>MITIGATION EFFECTIVENESS SCORE</b>	<b>36</b>
STAPLEE Score + Mitigation Effectiveness Score	
<b>PRIORITY LEVEL</b>	30+ points <input checked="" type="checkbox"/> HIGH 25-29 points <input type="checkbox"/> MEDIUM less than 25 points <input type="checkbox"/> LOW
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee	

Action: Assess existing facilities including, but not limited to, governments buildings, factories, large retail stores, and stadiums for the location of suitable "safe areas." If available, these "safe areas" should be clearly marked and employees and visitors should be informed of their location in public facilities.		Jurisdiction: <input type="checkbox"/> Nodaway County <input type="checkbox"/> Guilford <input type="checkbox"/> Jefferson C123 <input type="checkbox"/> Arkoe <input type="checkbox"/> Hopkins <input type="checkbox"/> Maryville R2 <input type="checkbox"/> Barnard <input type="checkbox"/> Maryville <input checked="" type="checkbox"/> Nod-Holt R7 <input type="checkbox"/> Burlington Junction <input type="checkbox"/> Parnell <input type="checkbox"/> N Nodaway R6 <input type="checkbox"/> Clearmont <input type="checkbox"/> Pickering <input type="checkbox"/> NE Nodaway R5 <input type="checkbox"/> Conception Junction <input type="checkbox"/> Ravenwood <input type="checkbox"/> S Nodaway R4 <input type="checkbox"/> Elmo <input type="checkbox"/> Skidmore <input type="checkbox"/> W Nodaway R1 <input type="checkbox"/> Graham <input type="checkbox"/> Northwest MO State University		
Action ID:	1.1.4			
<b>STAPLEE CRITERIA</b>		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0		<b>SCORE</b>
S: Is it Socially acceptable?				3
T: Is it Technically feasible and potentially successful?				3
A: Does the jurisdiction have the Administrative capacity to execute this action?				3
P: Is it Politically acceptable?				3
L: Is there Legal authority to implement?				3
E: Is it Economically beneficial?				0
E: Will the project have a positive impact on the natural environment?				0
Will historic structures be saved or protected?				0
Could it be implemented quickly?				3
<b>STAPLEE SCORE TOTAL</b>				<b>18</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>		<b>SCORE</b>
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved		7
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages		5
<b>MITIGATION EFFECTIVENESS SCORE</b>				<b>30</b>
STAPLEE Score + Mitigation Effectiveness Score				
<b>PRIORITY LEVEL</b>		30+ points		<input checked="" type="checkbox"/> HIGH
		25-29 points		<input type="checkbox"/> MEDIUM
		less than 25 points		<input type="checkbox"/> LOW
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee				



Action: Continue to upgrade older warning systems in Nodaway County and work towards synchronized activation through centralized law enforcement agencies.		Jurisdiction:	
		<input checked="" type="checkbox"/> Nodaway County	<input checked="" type="checkbox"/> Guilford
		<input checked="" type="checkbox"/> Arkoe	<input type="checkbox"/> Hopkins
		<input checked="" type="checkbox"/> Barnard	<input type="checkbox"/> Maryville
		<input type="checkbox"/> Burlington Junction	<input type="checkbox"/> Parnell
		<input checked="" type="checkbox"/> Clearmont	<input checked="" type="checkbox"/> Pickering
		<input type="checkbox"/> Conception Junction	<input type="checkbox"/> Ravenwood
		<input checked="" type="checkbox"/> Elmo	<input type="checkbox"/> Skidmore
		<input checked="" type="checkbox"/> Graham	<input type="checkbox"/> Northwest MO State University
Action ID: 1.2.2			
		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	<b>SCORE</b>
<b>STAPLEE CRITERIA</b>			
S: Is it Socially acceptable?			3
T: Is it Technically feasible and potentially successful?			3
A: Does the jurisdiction have the Administrative capacity to execute this action?			2
P: Is it Politically acceptable?			3
L: Is there Legal authority to implement?			3
E: Is it Economically beneficial?			2
E: Will the project have a positive impact on the natural environment?			0
Will historic structures be saved or protected?			0
Could it be implemented quickly?			1
		<b>STAPLEE SCORE TOTAL</b>	<b>17</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	10
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	6
		<b>MITIGATION EFFECTIVENESS SCORE</b>	<b>33</b>
		STAPLEE Score + Mitigation Effectiveness Score	
<b>PRIORITY LEVEL</b>		30+ points	<input checked="" type="checkbox"/> HIGH
		25-29 points	<input type="checkbox"/> MEDIUM
		less than 25 points	<input type="checkbox"/> LOW
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

Action: Enhance and expand methods of public notification concerning impending disasters using social media and other technological advances.		Jurisdiction: <input type="checkbox"/> Nodaway County <input type="checkbox"/> Guilford <input checked="" type="checkbox"/> Jefferson C123 <input type="checkbox"/> Arkoe <input type="checkbox"/> Hopkins <input type="checkbox"/> Maryville R2 <input type="checkbox"/> Barnard <input type="checkbox"/> Maryville <input checked="" type="checkbox"/> Nod-Holt R7 <input type="checkbox"/> Burlington Junction <input type="checkbox"/> Parnell <input checked="" type="checkbox"/> N Nodaway R6 <input type="checkbox"/> Clearmont <input type="checkbox"/> Pickering <input type="checkbox"/> NE Nodaway R5 <input type="checkbox"/> Ravenwood <input checked="" type="checkbox"/> S Nodaway R4 <input type="checkbox"/> Conception Junction <input type="checkbox"/> Skidmore <input checked="" type="checkbox"/> W Nodaway R1 <input type="checkbox"/> Elmo <input checked="" type="checkbox"/> Northwest MO State University <input type="checkbox"/> Graham	
Action ID:	1.2.3		
		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	
<b>STAPLEE CRITERIA</b>			<b>SCORE</b>
S: Is it Socially acceptable?			3
T: Is it Technically feasible and potentially successful?			3
A: Does the jurisdiction have the Administrative capacity to execute this action?			3
P: Is it Politically acceptable?			3
L: Is there Legal authority to implement?			3
E: Is it Economically beneficial?			1
E: Will the project have a positive impact on the natural environment?			0
Will historic structures be saved or protected?			0
Could it be implemented quickly?			2
		<b>STAPLEE SCORE TOTAL</b>	<b>18</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	10
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	5
		<b>MITIGATION EFFECTIVENESS SCORE</b>	<b>33</b>
		STAPLEE Score + Mitigation Effectiveness Score	
<b>PRIORITY LEVEL</b>		30+ points	<input checked="" type="checkbox"/> HIGH
		25-29 points	<input type="checkbox"/> MEDIUM
		less than 25 points	<input type="checkbox"/> LOW
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

Action: Develop a coordinated response and accommodation schematic for disaster sheltering based on federal guidelines in cooperation with local and state agencies.		Jurisdiction: <input type="checkbox"/> Nodaway County <input type="checkbox"/> Guilford <input type="checkbox"/> Jefferson C123 <input type="checkbox"/> Arkoe <input type="checkbox"/> Hopkins <input checked="" type="checkbox"/> Maryville R2 <input type="checkbox"/> Barnard <input type="checkbox"/> Maryville <input type="checkbox"/> Nod-Holt R7 <input type="checkbox"/> Burlington Junction <input type="checkbox"/> Parnell <input type="checkbox"/> N Nodaway R6 <input checked="" type="checkbox"/> Clearmont <input type="checkbox"/> Pickering <input type="checkbox"/> NE Nodaway R5 <input type="checkbox"/> Conception Junction <input type="checkbox"/> Ravenwood <input type="checkbox"/> S Nodaway R4 <input type="checkbox"/> Elmo <input type="checkbox"/> Skidmore <input checked="" type="checkbox"/> W Nodaway R1 <input checked="" type="checkbox"/> Graham <input type="checkbox"/> Northwest MO State University	
Action ID:	1.3.1		
		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	
<b>STAPLEE CRITERIA</b>			<b>SCORE</b>
S: Is it Socially acceptable?			3
T: Is it Technically feasible and potentially successful?			2
A: Does the jurisdiction have the Administrative capacity to execute this action?			2
P: Is it Politically acceptable?			3
L: Is there Legal authority to implement?			3
E: Is it Economically beneficial?			0
E: Will the project have a positive impact on the natural environment?			0
Will historic structures be saved or protected?			0
Could it be implemented quickly?			0
<b>STAPLEE SCORE TOTAL</b>			<b>13</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	10
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	5
<b>MITIGATION EFFECTIVENESS SCORE</b>			<b>28</b>
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>		30+ points	<input type="checkbox"/> HIGH
		25-29 points	<input checked="" type="checkbox"/> MEDIUM
		less than 25 points	<input type="checkbox"/> LOW
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

Action: Work with the Regional Homeland Security Committee, Red Cross, National Guard, and other local agencies to update the inventory of facilities with emergency power that can be used as shelters in the event of a natural disaster.		Jurisdiction:	
<input type="checkbox"/> Nodaway County	<input type="checkbox"/> Guilford	<input type="checkbox"/> Jefferson C123	
<input type="checkbox"/> Arkoe	<input type="checkbox"/> Hopkins	<input type="checkbox"/> Maryville R2	
<input type="checkbox"/> Barnard	<input type="checkbox"/> Maryville	<input type="checkbox"/> Nod-Holt R7	
<input type="checkbox"/> Burlington Junction	<input type="checkbox"/> Parnell	<input type="checkbox"/> N Nodaway R6	
<input checked="" type="checkbox"/> Clearmont	<input type="checkbox"/> Pickering	<input type="checkbox"/> NE Nodaway R5	
<input type="checkbox"/> Conception Junction	<input type="checkbox"/> Ravenwood	<input type="checkbox"/> S Nodaway R4	
<input type="checkbox"/> Elmo	<input type="checkbox"/> Skidmore	<input type="checkbox"/> W Nodaway R1	
<input type="checkbox"/> Graham	<input type="checkbox"/> Northwest MO State University		
Action ID:	1.3.2		
<b>STAPLEE CRITERIA</b>		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	<b>SCORE</b>
S: Is it Socially acceptable?			3
T: Is it Technically feasible and potentially successful?			3
A: Does the jurisdiction have the Administrative capacity to execute this action?			3
P: Is it Politically acceptable?			3
L: Is there Legal authority to implement?			3
E: Is it Economically beneficial?			2
E: Will the project have a positive impact on the natural environment?			0
Will historic structures be saved or protected?			0
Could it be implemented quickly?			2
<b>STAPLEE SCORE TOTAL</b>			<b>19</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?	Assign 5-10 points based on the likelihood that lives would be saved		6
Will the implemented action result in a reduction of disaster damages?	Assign 5-10 points based on the relative reduction of disaster damages		5
<b>MITIGATION EFFECTIVENESS SCORE</b>			<b>30</b>
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>	30+ points	<input type="checkbox"/> HIGH	
	25-29 points	<input checked="" type="checkbox"/> MEDIUM	
	less than 25 points	<input type="checkbox"/> LOW	
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

Action: Develop an ongoing campaign to education the community about seasonal hazards. Coordinate this campaign with a variety of media types and advertising resources in order to maximize public outreach.		Jurisdiction: <input type="checkbox"/> Nodaway County <input type="checkbox"/> Guilford <input checked="" type="checkbox"/> Jefferson C123 <input type="checkbox"/> Arkoe <input checked="" type="checkbox"/> Hopkins <input type="checkbox"/> Maryville R2 <input type="checkbox"/> Barnard <input type="checkbox"/> Maryville <input type="checkbox"/> Nod-Holt R7 <input type="checkbox"/> Burlington Junction <input checked="" type="checkbox"/> Parnell <input type="checkbox"/> N Nodaway R6 <input checked="" type="checkbox"/> Clearmont <input type="checkbox"/> Pickering <input checked="" type="checkbox"/> NE Nodaway R5 <input type="checkbox"/> Conception Junction <input checked="" type="checkbox"/> Ravenwood <input type="checkbox"/> S Nodaway R4 <input checked="" type="checkbox"/> Elmo <input checked="" type="checkbox"/> Skidmore <input type="checkbox"/> W Nodaway R1 <input type="checkbox"/> Graham <input type="checkbox"/> Northwest MO State University	
Action ID:	1.4.1		
<b>STAPLEE CRITERIA</b>		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	<b>SCORE</b>
<b>S:</b> Is it Socially acceptable?			3
<b>T:</b> Is it Technically feasible and potentially successful?			3
<b>A:</b> Does the jurisdiction have the Administrative capacity to execute this action?			3
<b>P:</b> Is it Politically acceptable?			3
<b>L:</b> Is there Legal authority to implement?			3
<b>E:</b> Is it Economically beneficial?			1
<b>E:</b> Will the project have a positive impact on the natural environment?			0
Will historic structures be saved or protected?			0
Could it be implemented quickly?			3
<b>STAPLEE SCORE TOTAL</b>			<b>19</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	7
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	5
<b>MITIGATION EFFECTIVENESS SCORE</b>			<b>31</b>
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>		30+ points	<input checked="" type="checkbox"/> HIGH
		25-29 points	<input type="checkbox"/> MEDIUM
		less than 25 points	<input type="checkbox"/> LOW
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

Action: Inform citizens who reside in or own properties in the floodplain about flood insurance and how to reduce their risk through mitigation actions such as structure elevation.		Jurisdiction:	
<input type="checkbox"/> Nodaway County	<input type="checkbox"/> Guilford	<input type="checkbox"/> Jefferson C123	
<input type="checkbox"/> Arkoe	<input checked="" type="checkbox"/> Hopkins	<input type="checkbox"/> Maryville R2	
<input checked="" type="checkbox"/> Barnard	<input type="checkbox"/> Maryville	<input type="checkbox"/> Nod-Holt R7	
<input checked="" type="checkbox"/> Burlington Junction	<input type="checkbox"/> Parnell	<input type="checkbox"/> N Nodaway R6	
<input type="checkbox"/> Clearmont	<input type="checkbox"/> Pickering	<input type="checkbox"/> NE Nodaway R5	
<input type="checkbox"/> Conception Junction	<input checked="" type="checkbox"/> Ravenwood	<input type="checkbox"/> S Nodaway R4	
<input type="checkbox"/> Elmo	<input type="checkbox"/> Skidmore	<input type="checkbox"/> W Nodaway R1	
<input type="checkbox"/> Graham	<input type="checkbox"/> Northwest MO State University		
Action ID:	2.1.2		
<b>STAPLEE CRITERIA</b>		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	<b>SCORE</b>
S: Is it Socially acceptable?			3
T: Is it Technically feasible and potentially successful?			3
A: Does the jurisdiction have the Administrative capacity to execute this action?			3
P: Is it Politically acceptable?			3
L: Is there Legal authority to implement?			3
E: Is it Economically beneficial?			3
E: Will the project have a positive impact on the natural environment?			3
Will historic structures be saved or protected?			2
Could it be implemented quickly?			3
<b>STAPLEE SCORE TOTAL</b>			<b>26</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?	Assign 5-10 points based on the likelihood that lives would be saved		8
Will the implemented action result in a reduction of disaster damages?	Assign 5-10 points based on the relative reduction of disaster damages		10
<b>MITIGATION EFFECTIVENESS SCORE</b>			<b>44</b>
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>	30+ points	<input checked="" type="checkbox"/> HIGH	
	25-29 points	<input type="checkbox"/> MEDIUM	
	less than 25 points	<input type="checkbox"/> LOW	
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

Action: Review and revise floodplain regulations to meet the state and federal regulations for NFIP compliance. Monitor development in Special Flood Hazard Areas (SFHAs), including mapping updates, to ensure compliance with local floodplain management ordinances.		Jurisdiction:	
		<input checked="" type="checkbox"/> Nodaway County	<input type="checkbox"/> Guilford
		<input type="checkbox"/> Arkoe	<input checked="" type="checkbox"/> Hopkins
		<input type="checkbox"/> Barnard	<input checked="" type="checkbox"/> Maryville
		<input checked="" type="checkbox"/> Burlington Junction	<input type="checkbox"/> Parnell
		<input type="checkbox"/> Clearmont	<input checked="" type="checkbox"/> Pickering
		<input type="checkbox"/> Conception Junction	<input checked="" type="checkbox"/> Ravenwood
		<input type="checkbox"/> Elmo	<input type="checkbox"/> Skidmore
		<input type="checkbox"/> Graham	<input type="checkbox"/> Northwest MO State University
Action ID: 2.2.1			
		Evaluation Rating Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	
<b>STAPLEE CRITERIA</b>		<b>SCORE</b>	
<b>S:</b> Is it Socially acceptable?		3	
<b>T:</b> Is it Technically feasible and potentially successful?		3	
<b>A:</b> Does the jurisdiction have the Administrative capacity to execute this action?		3	
<b>P:</b> Is it Politically acceptable?		3	
<b>L:</b> Is there Legal authority to implement?		3	
<b>E:</b> Is it Economically beneficial?		3	
<b>E:</b> Will the project have a positive impact on the natural environment?		2	
Will historic structures be saved or protected?		1	
Could it be implemented quickly?		1	
<b>STAPLEE SCORE TOTAL</b>		<b>22</b>	
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>SCORE</b>	
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	
<b>MITIGATION EFFECTIVENESS SCORE</b>		<b>35</b>	
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>		30+ points	
		25-29 points	
		less than 25 points	
		<input checked="" type="checkbox"/> HIGH	
		<input type="checkbox"/> MEDIUM	
		<input type="checkbox"/> LOW	
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

Action: Provide an effective warning system to alert citizens in flood prone areas and on low-lying roadways when flooding is imminent.		Jurisdiction:	
		<input type="checkbox"/> Nodaway County	<input checked="" type="checkbox"/> Guilford
		<input type="checkbox"/> Arkoe	<input type="checkbox"/> Hopkins
		<input checked="" type="checkbox"/> Barnard	<input type="checkbox"/> Maryville
		<input type="checkbox"/> Burlington Junction	<input type="checkbox"/> Parnell
		<input type="checkbox"/> Clearmont	<input type="checkbox"/> Pickering
		<input type="checkbox"/> Conception Junction	<input checked="" type="checkbox"/> Ravenwood
		<input checked="" type="checkbox"/> Elmo	<input type="checkbox"/> Skidmore
		<input checked="" type="checkbox"/> Graham	<input type="checkbox"/> Northwest MO State University
Action ID: 2.2.2			
		Evaluation Rating Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	
<b>STAPLEE CRITERIA</b>		<b>SCORE</b>	
<b>S:</b> Is it Socially acceptable?		3	
<b>T:</b> Is it Technically feasible and potentially successful?		3	
<b>A:</b> Does the jurisdiction have the Administrative capacity to execute this action?		3	
<b>P:</b> Is it Politically acceptable?		3	
<b>L:</b> Is there Legal authority to implement?		3	
<b>E:</b> Is it Economically beneficial?		3	
<b>E:</b> Will the project have a positive impact on the natural environment?		0	
Will historic structures be saved or protected?		0	
Could it be implemented quickly?		3	
<b>STAPLEE SCORE TOTAL</b>		<b>21</b>	
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	
<b>SCORE</b>			
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	
<b>MITIGATION EFFECTIVENESS SCORE</b>		<b>36</b>	
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>		30+ points	
		25-29 points	
		less than 25 points	
		<input checked="" type="checkbox"/> HIGH	
		<input type="checkbox"/> MEDIUM	
		<input type="checkbox"/> LOW	
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			



Action: Achieve and maintain "Storm Ready" Certification through the National Weather Service.		<input checked="" type="checkbox"/> Nodaway County <input type="checkbox"/> Arkoe <input type="checkbox"/> Barnard <input type="checkbox"/> Burlington Junction <input type="checkbox"/> Clearmont <input type="checkbox"/> Clyde <input type="checkbox"/> Conception Junction <input type="checkbox"/> Elmo <input type="checkbox"/> Graham		Jurisdiction: <input type="checkbox"/> Guilford <input type="checkbox"/> Hopkins <input type="checkbox"/> Maryville <input type="checkbox"/> Parnell <input type="checkbox"/> Pickering <input type="checkbox"/> Ravenwood <input type="checkbox"/> Skidmore <input type="checkbox"/> Northwest MO State University		<input type="checkbox"/> Jefferson C123 <input type="checkbox"/> Maryville R2 <input type="checkbox"/> Nod-Holt R7 <input type="checkbox"/> N Nodaway R6 <input type="checkbox"/> NE Nodaway R5 <input type="checkbox"/> S Nodaway R4 <input type="checkbox"/> W Nodaway R1	
Action ID:	2.2.3						
			<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0				
<b>STAPLEE CRITERIA</b>					<b>SCORE</b>		
S: Is it Socially acceptable?					3		
T: Is it Technically feasible and potentially successful?					3		
A: Does the jurisdiction have the Administrative capacity to execute this action?					3		
P: Is it Politically acceptable?					3		
L: Is there Legal authority to implement?					3		
E: Is it Economically beneficial?					2		
E: Will the project have a positive impact on the natural environment?					0		
Will historic structures be saved or protected?					0		
Could it be implemented quickly?					3		
			<b>STAPLEE SCORE TOTAL</b>		<b>20</b>		
<b>MITIGATION EFFECTIVENESS CRITERIA</b>			<b>Evaluation Rating</b>		<b>SCORE</b>		
Will the implemented action result in lives saved?			Assign 5-10 points based on the likelihood that lives would be saved		6		
Will the implemented action result in a reduction of disaster damages?			Assign 5-10 points based on the relative reduction of disaster damages		5		
			<b>MITIGATION EFFECTIVENESS SCORE</b>		<b>31</b>		
			STAPLEE Score + Mitigation Effectiveness Score				
			<b>PRIORITY LEVEL</b>		<input checked="" type="checkbox"/> 30+ points <b>HIGH</b> <input type="checkbox"/> 25-29 points <b>MEDIUM</b> <input type="checkbox"/> less than 25 points <b>LOW</b>		
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee							

Action: Utilize grant funds and local resources to install storm shelters in locations with insufficient protection, including, but not limited to, local recreation areas and public facilities.		Jurisdiction:	
		<input checked="" type="checkbox"/> Nodaway County	<input checked="" type="checkbox"/> Guilford
		<input checked="" type="checkbox"/> Arkoe	<input checked="" type="checkbox"/> Hopkins
		<input checked="" type="checkbox"/> Barnard	<input checked="" type="checkbox"/> Maryville
		<input checked="" type="checkbox"/> Burlington Junction	<input checked="" type="checkbox"/> Parnell
		<input checked="" type="checkbox"/> Clearmont	<input checked="" type="checkbox"/> Pickering
		<input checked="" type="checkbox"/> Conception Junction	<input checked="" type="checkbox"/> Ravenwood
		<input checked="" type="checkbox"/> Elmo	<input checked="" type="checkbox"/> Skidmore
		<input checked="" type="checkbox"/> Graham	<input checked="" type="checkbox"/> Northwest MO State University
Action ID: 2.2.4			
		Evaluation Rating Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	
<b>STAPLEE CRITERIA</b>		<b>SCORE</b>	
S: Is it Socially acceptable?		3	
T: Is it Technically feasible and potentially successful?		3	
A: Does the jurisdiction have the Administrative capacity to execute this action?		3	
P: Is it Politically acceptable?		3	
L: Is there Legal authority to implement?		3	
E: Is it Economically beneficial?		0	
E: Will the project have a positive impact on the natural environment?		0	
Will historic structures be saved or protected?		0	
Could it be implemented quickly?		0	
<b>STAPLEE SCORE TOTAL</b>		<b>15</b>	
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	
<b>MITIGATION EFFECTIVENESS SCORE</b>		<b>30</b>	
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>		30+ points <input checked="" type="checkbox"/> HIGH	
		25-29 points <input type="checkbox"/> MEDIUM	
		less than 25 points <input type="checkbox"/> LOW	
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

Action: Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc. during drought emergencies.		Jurisdiction:	
		<input type="checkbox"/> Nodaway County	<input type="checkbox"/> Guilford
		<input type="checkbox"/> Arkoe	<input checked="" type="checkbox"/> Hopkins
		<input type="checkbox"/> Barnard	<input type="checkbox"/> Maryville
		<input type="checkbox"/> Burlington Junction	<input checked="" type="checkbox"/> Parnell
		<input type="checkbox"/> Clearmont	<input type="checkbox"/> Pickering
			<input type="checkbox"/> Ravenwood
		<input type="checkbox"/> Conception Junction	<input type="checkbox"/> Skidmore
		<input type="checkbox"/> Elmo	<input type="checkbox"/> Northwest MO State University
Action ID: 2.2.5		<input checked="" type="checkbox"/> Graham	
		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	
<b>STAPLEE CRITERIA</b>		<b>SCORE</b>	
S: Is it Socially acceptable?		3	
T: Is it Technically feasible and potentially successful?		3	
A: Does the jurisdiction have the Administrative capacity to execute this action?		2	
P: Is it Politically acceptable?		3	
L: Is there Legal authority to implement?		3	
E: Is it Economically beneficial?		3	
E: Will the project have a positive impact on the natural environment?		3	
Will historic structures be saved or protected?		0	
Could it be implemented quickly?		3	
		<b>STAPLEE SCORE TOTAL</b>	
		23	
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	
		<b>SCORE</b>	
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	
		6	
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	
		8	
		<b>MITIGATION EFFECTIVENESS SCORE</b>	
		37	
		STAPLEE Score + Mitigation Effectiveness Score	
		30+ points	
		<input checked="" type="checkbox"/> HIGH	
		25-29 points	
		<input type="checkbox"/> MEDIUM	
		less than 25 points	
		<input type="checkbox"/> LOW	
		<b>PRIORITY LEVEL</b>	
Completed by: Nodaway County HMP Committee			

Action: Execute and maintain mutual aid agreements with all relevant agencies. Develop written agreements between agencies as documentation.		Jurisdiction: <input checked="" type="checkbox"/> Nodaway County <input type="checkbox"/> Guilford <input type="checkbox"/> Jefferson C123 <input type="checkbox"/> Arkoe <input type="checkbox"/> Hopkins <input type="checkbox"/> Maryville R2 <input type="checkbox"/> Barnard <input checked="" type="checkbox"/> Maryville <input type="checkbox"/> Nod-Holt R7 <input type="checkbox"/> Burlington Junction <input type="checkbox"/> Parnell <input type="checkbox"/> N Nodaway R6 <input type="checkbox"/> Clearmont <input type="checkbox"/> Pickering <input type="checkbox"/> NE Nodaway R5 <input type="checkbox"/> Conception Junction <input type="checkbox"/> Ravenwood <input type="checkbox"/> S Nodaway R4 <input type="checkbox"/> Elmo <input type="checkbox"/> Skidmore <input type="checkbox"/> W Nodaway R1 <input type="checkbox"/> Graham <input type="checkbox"/> Northwest MO State University	
Action ID:	3.1.1		
<b>STAPLEE CRITERIA</b>		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	<b>SCORE</b>
<b>S:</b> Is it Socially acceptable?			3
<b>T:</b> Is it Technically feasible and potentially successful?			3
<b>A:</b> Does the jurisdiction have the Administrative capacity to execute this action?			3
<b>P:</b> Is it Politically acceptable?			3
<b>L:</b> Is there Legal authority to implement?			3
<b>E:</b> Is it Economically beneficial?			3
<b>E:</b> Will the project have a positive impact on the natural environment?			0
Will historic structures be saved or protected?			0
Could it be implemented quickly?			1
<b>STAPLEE SCORE TOTAL</b>			<b>19</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	6
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	7
<b>MITIGATION EFFECTIVENESS SCORE</b>			<b>32</b>
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>		30+ points	<input checked="" type="checkbox"/> <b>HIGH</b>
		25-29 points	<input type="checkbox"/> <b>MEDIUM</b>
		less than 25 points	<input type="checkbox"/> <b>LOW</b>
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

Action: Continually update and monitor the Emergency Operation Plan (EOP) for the county. As part of this process the local HMP will be reviewed annually or after a hazard event.		Jurisdiction: <input checked="" type="checkbox"/> Nodaway County <input type="checkbox"/> Guilford <input type="checkbox"/> Jefferson C123 <input type="checkbox"/> Arkoe <input type="checkbox"/> Hopkins <input type="checkbox"/> Maryville R2 <input type="checkbox"/> Barnard <input checked="" type="checkbox"/> Maryville <input type="checkbox"/> Nod-Holt R7 <input type="checkbox"/> Burlington Junction <input type="checkbox"/> Parnell <input type="checkbox"/> N Nodaway R6 <input type="checkbox"/> Clearmont <input type="checkbox"/> Pickering <input type="checkbox"/> NE Nodaway R5 <input type="checkbox"/> Conception Junction <input type="checkbox"/> Ravenwood <input type="checkbox"/> S Nodaway R4 <input type="checkbox"/> Elmo <input type="checkbox"/> Skidmore <input type="checkbox"/> W Nodaway R1 <input type="checkbox"/> Graham <input type="checkbox"/> Northwest MO State University	
Action ID:	3.1.3		
<b>STAPLEE CRITERIA</b>		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	<b>SCORE</b>
<b>S:</b> Is it Socially acceptable?			3
<b>T:</b> Is it Technically feasible and potentially successful?			3
<b>A:</b> Does the jurisdiction have the Administrative capacity to execute this action?			3
<b>P:</b> Is it Politically acceptable?			3
<b>L:</b> Is there Legal authority to implement?			3
<b>E:</b> Is it Economically beneficial?			3
<b>E:</b> Will the project have a positive impact on the natural environment?			0
Will historic structures be saved or protected?			0
Could it be implemented quickly?			3
<b>STAPLEE SCORE TOTAL</b>			<b>21</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	5
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	5
<b>MITIGATION EFFECTIVENESS SCORE</b>			<b>31</b>
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>		30+ points	<input checked="" type="checkbox"/> <b>HIGH</b>
		25-29 points	<input type="checkbox"/> <b>MEDIUM</b>
		less than 25 points	<input type="checkbox"/> <b>LOW</b>
Completed by: NWMORCOG staff with input from the Nodaway County EMD			

Action: Improve and expand communication capabilities of all first responder agencies including, but not limited to, fire districts, ambulance districts, and law enforcement.		Jurisdiction:	
<input checked="" type="checkbox"/> Nodaway County	<input checked="" type="checkbox"/> Guilford	<input type="checkbox"/> Jefferson C123	
<input type="checkbox"/> Arkoe	<input checked="" type="checkbox"/> Hopkins	<input type="checkbox"/> Maryville R2	
<input checked="" type="checkbox"/> Barnard	<input checked="" type="checkbox"/> Maryville	<input type="checkbox"/> Nod-Holt R7	
<input checked="" type="checkbox"/> Burlington Junction	<input checked="" type="checkbox"/> Parnell	<input type="checkbox"/> N Nodaway R6	
<input checked="" type="checkbox"/> Clearmont	<input type="checkbox"/> Pickering	<input type="checkbox"/> NE Nodaway R5	
<input type="checkbox"/> Conception Junction	<input checked="" type="checkbox"/> Ravenwood	<input type="checkbox"/> S Nodaway R4	
<input type="checkbox"/> Elmo	<input checked="" type="checkbox"/> Skidmore	<input type="checkbox"/> W Nodaway R1	
<input type="checkbox"/> Graham	<input type="checkbox"/> Northwest MO State University		
Action ID: 3.1.4			
<b>STAPLEE CRITERIA</b>		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	<b>SCORE</b>
S: Is it Socially acceptable?			3
T: Is it Technically feasible and potentially successful?			3
A: Does the jurisdiction have the Administrative capacity to execute this action?			3
P: Is it Politically acceptable?			3
L: Is there Legal authority to implement?			3
E: Is it Economically beneficial?			1
E: Will the project have a positive impact on the natural environment?			0
Will historic structures be saved or protected?			0
Could it be implemented quickly?			0
<b>STAPLEE SCORE TOTAL</b>			<b>16</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?	Assign 5-10 points based on the likelihood that lives would be saved		7
Will the implemented action result in a reduction of disaster damages?	Assign 5-10 points based on the relative reduction of disaster damages		8
<b>MITIGATION EFFECTIVENESS SCORE</b>			<b>31</b>
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>	30+ points	<input checked="" type="checkbox"/> HIGH	
	25-29 points	<input type="checkbox"/> MEDIUM	
	less than 25 points	<input type="checkbox"/> LOW	
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

Action: Develop agreements for secondary water sources that may be used during drought conditions.		Jurisdiction: <input checked="" type="checkbox"/> Nodaway County <input type="checkbox"/> Guilford <input type="checkbox"/> Jefferson C123 <input type="checkbox"/> Arkoe <input type="checkbox"/> Hopkins <input checked="" type="checkbox"/> Maryville R2 <input checked="" type="checkbox"/> Barnard <input checked="" type="checkbox"/> Maryville <input type="checkbox"/> Nod-Holt R7 <input type="checkbox"/> Burlington Junction <input type="checkbox"/> Parnell <input type="checkbox"/> N Nodaway R6 <input checked="" type="checkbox"/> Clearmont <input type="checkbox"/> Pickering <input type="checkbox"/> NE Nodaway R5 <input type="checkbox"/> Conception Junction <input type="checkbox"/> Ravenwood <input type="checkbox"/> S Nodaway R4 <input type="checkbox"/> Elmo <input type="checkbox"/> Skidmore <input type="checkbox"/> W Nodaway R1 <input checked="" type="checkbox"/> Graham <input type="checkbox"/> NorthwestMO State University	
Action ID:	3.1.5		
<b>STAPLEE CRITERIA</b>		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	<b>SCORE</b>
S: Is it Socially acceptable?			3
T: Is it Technically feasible and potentially successful?			3
A: Does the jurisdiction have the Administrative capacity to execute this action?			3
P: Is it Politically acceptable?			3
L: Is there Legal authority to implement?			3
E: Is it Economically beneficial?			3
E: Will the project have a positive impact on the natural environment?			3
Will historic structures be saved or protected?			0
Could it be implemented quickly?			2
<b>STAPLEE SCORE TOTAL</b>			<b>23</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	8
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	8
<b>MITIGATION EFFECTIVENESS SCORE</b>			<b>39</b>
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>	30+ points	<input checked="" type="checkbox"/> HIGH	
	25-29 points	<input type="checkbox"/> MEDIUM	
	less than 25 points	<input type="checkbox"/> LOW	
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

Action: Provide guidelines to local jurisdictions and agencies to ensure the preservation of records in digital and/or off-site storage facilities.		Jurisdiction:	
<input checked="" type="checkbox"/> Nodaway County	<input checked="" type="checkbox"/> Guilford	<input checked="" type="checkbox"/> Jefferson C123	
<input type="checkbox"/> Arkoe	<input checked="" type="checkbox"/> Hopkins	<input type="checkbox"/> Maryville R2	
<input checked="" type="checkbox"/> Barnard	<input type="checkbox"/> Maryville	<input type="checkbox"/> Nod-Holt R7	
<input checked="" type="checkbox"/> Burlington Junction	<input checked="" type="checkbox"/> Parnell	<input checked="" type="checkbox"/> N Nodaway R6	
<input type="checkbox"/> Clearmont	<input checked="" type="checkbox"/> Pickering	<input type="checkbox"/> NE Nodaway R5	
<input type="checkbox"/> Conception Junction	<input checked="" type="checkbox"/> Ravenwood	<input type="checkbox"/> S Nodaway R4	
<input type="checkbox"/> Elmo	<input type="checkbox"/> Skidmore	<input checked="" type="checkbox"/> W Nodaway R1	
<input checked="" type="checkbox"/> Graham	<input type="checkbox"/> Northwest MO State University		
Action ID:	3.2.1		
<b>STAPLEE CRITERIA</b>		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	<b>SCORE</b>
S: Is it Socially acceptable?			3
T: Is it Technically feasible and potentially successful?			2
A: Does the jurisdiction have the Administrative capacity to execute this action?			3
P: Is it Politically acceptable?			3
L: Is there Legal authority to implement?			3
E: Is it Economically beneficial?			3
E: Will the project have a positive impact on the natural environment?			0
Will historic structures be saved or protected?			0
Could it be implemented quickly?			2
<b>STAPLEE SCORE TOTAL</b>			<b>19</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	5
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	6
<b>MITIGATION EFFECTIVENESS SCORE</b>			<b>30</b>
<b>STAPLEE Score + Mitigation Effectiveness Score</b>			
<b>PRIORITY LEVEL</b>		30+ points	<input checked="" type="checkbox"/> HIGH
		25-29 points	<input type="checkbox"/> MEDIUM
		less than 25 points	<input type="checkbox"/> LOW
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			



Action: Inspect critical buildings and infrastructure for needed upgrades or retrofits.		Jurisdiction:	
<input type="checkbox"/> Nodaway County	<input checked="" type="checkbox"/> Guilford	<input checked="" type="checkbox"/> Jefferson C123	
<input type="checkbox"/> Arkoe	<input checked="" type="checkbox"/> Hopkins	<input type="checkbox"/> Maryville R.2	
<input type="checkbox"/> Barnard	<input type="checkbox"/> Maryville	<input checked="" type="checkbox"/> Nod-Holt R.7	
<input type="checkbox"/> Burlington Junction	<input checked="" type="checkbox"/> Parnell	<input type="checkbox"/> N Nodaway R.6	
<input type="checkbox"/> Clearmont	<input type="checkbox"/> Pickering	<input checked="" type="checkbox"/> NE Nodaway R.5	
<input type="checkbox"/> Clyde	<input type="checkbox"/> Ravenwood	<input type="checkbox"/> S Nodaway R.4	
<input type="checkbox"/> Conception Junction	<input checked="" type="checkbox"/> Skidmore	<input type="checkbox"/> W Nodaway R.1	
<input type="checkbox"/> Elmo	<input type="checkbox"/> Northwest MO State University		
<input checked="" type="checkbox"/> Graham			
Action ID: 3.2.2	<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0		<b>SCORE</b>
<b>STAPLEE CRITERIA</b>			
S: Is it Socially acceptable?			3
T: Is it Technically feasible and potentially successful?			3
A: Does the jurisdiction have the Administrative capacity to execute this action?			3
P: Is it Politically acceptable?			3
L: Is there Legal authority to implement?			3
E: Is it Economically beneficial?			1
E: Will the project have a positive impact on the natural environment?			0
Will historic structures be saved or protected?			2
Could it be implemented quickly?			0
<b>STAPLEE SCORE TOTAL</b>			<b>18</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	7
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	7
<b>MITIGATION EFFECTIVENESS SCORE</b>			<b>32</b>
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>	30+ points		<input checked="" type="checkbox"/> HIGH
	25-29 points		<input type="checkbox"/> MEDIUM
	less than 25 points		<input type="checkbox"/> LOW
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

Action: Elevate roads and bridges as necessary to maintain dry access. In situations where flood waters tend to wash roads out, construction, reconstruction, or repair can include not only attention to drainage, but also stabilization or armoring of vulnerable shoulders or embankments.		Jurisdiction:	
<input checked="" type="checkbox"/> Nodaway County	<input type="checkbox"/> Guilford	<input type="checkbox"/> Jefferson C123	
<input checked="" type="checkbox"/> Arkoe	<input checked="" type="checkbox"/> Hopkins	<input type="checkbox"/> Maryville R2	
<input type="checkbox"/> Barnard	<input type="checkbox"/> Maryville	<input type="checkbox"/> Nod-Holt R7	
<input type="checkbox"/> Burlington Junction	<input type="checkbox"/> Parnell	<input type="checkbox"/> N Nodaway R6	
<input type="checkbox"/> Clearmont	<input type="checkbox"/> Pickering	<input type="checkbox"/> NE Nodaway R5	
<input type="checkbox"/> Conception Junction	<input type="checkbox"/> Ravenwood	<input type="checkbox"/> S Nodaway R4	
<input checked="" type="checkbox"/> Elmo	<input type="checkbox"/> Skidmore	<input type="checkbox"/> W Nodaway R1	
<input checked="" type="checkbox"/> Graham	<input type="checkbox"/> Northwest MO State University		
Action ID:	3.2.3		
<b>STAPLEE CRITERIA</b>		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	<b>SCORE</b>
<b>S:</b> Is it Socially acceptable?			3
<b>T:</b> Is it Technically feasible and potentially successful?			3
<b>A:</b> Does the jurisdiction have the Administrative capacity to execute this action?			3
<b>P:</b> Is it Politically acceptable?			3
<b>L:</b> Is there Legal authority to implement?			3
<b>E:</b> Is it Economically beneficial?			2
<b>E:</b> Will the project have a positive impact on the natural environment?			2
Will historic structures be saved or protected?			0
Could it be implemented quickly?			1
<b>STAPLEE SCORE TOTAL</b>			<b>20</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?	Assign 5-10 points based on the likelihood that lives would be saved		5
Will the implemented action result in a reduction of disaster damages?	Assign 5-10 points based on the relative reduction of disaster damages		8
<b>MITIGATION EFFECTIVENESS SCORE</b>			<b>33</b>
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>	30+ points	<input checked="" type="checkbox"/> HIGH	
	25-29 points	<input type="checkbox"/> MEDIUM	
	less than 25 points	<input type="checkbox"/> LOW	
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

Action: Assess publicly-held facilities, distribution systems, etc. for vulnerability to natural hazards. If necessary, providers should make improvements to ensure continued service during a disaster when possible. Improvements may include equipment elevation, backup generators for power, and other infrastructure changes.		Jurisdiction: <input checked="" type="checkbox"/> Nodaway County <input type="checkbox"/> Guilford <input type="checkbox"/> Jefferson C123 <input type="checkbox"/> Arkoe <input type="checkbox"/> Hopkins <input type="checkbox"/> Maryville R2 <input type="checkbox"/> Barnard <input checked="" type="checkbox"/> Maryville <input type="checkbox"/> Nod-Holt R7 <input type="checkbox"/> Burlington Junction <input type="checkbox"/> Parnell <input type="checkbox"/> N Nodaway R6 <input type="checkbox"/> Clearmont <input type="checkbox"/> Pickering <input type="checkbox"/> NE Nodaway R5 <input type="checkbox"/> Conception Junction <input checked="" type="checkbox"/> Ravenwood <input type="checkbox"/> S Nodaway R4 <input type="checkbox"/> Elmo <input type="checkbox"/> Skidmore <input checked="" type="checkbox"/> W Nodaway R1 <input type="checkbox"/> Graham <input type="checkbox"/> Northwest MO State University		
Action ID:	3.2.4			
<b>STAPLEE CRITERIA</b>		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0		<b>SCORE</b>
S: Is it Socially acceptable?				3
T: Is it Technically feasible and potentially successful?				3
A: Does the jurisdiction have the Administrative capacity to execute this action?				3
P: Is it Politically acceptable?				3
L: Is there Legal authority to implement?				3
E: Is it Economically beneficial?				2
E: Will the project have a positive impact on the natural environment?				2
Will historic structures be saved or protected?				0
Could it be implemented quickly?				0
<b>STAPLEE SCORE TOTAL</b>				<b>19</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>		<b>SCORE</b>
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved		5
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages		8
<b>MITIGATION EFFECTIVENESS SCORE</b>				<b>32</b>
STAPLEE Score + Mitigation Effectiveness Score				
<b>PRIORITY LEVEL</b>		30+ points		<input checked="" type="checkbox"/> HIGH
		25-29 points		<input type="checkbox"/> MEDIUM
		less than 25 points		<input type="checkbox"/> LOW
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee				

Action: Utilize grant funds and county resources to purchase and install back-up generators for critical infrastructure sites including, but not limited to, water and wastewater treatment facilities and sheltering sites.		Jurisdiction:	
		<input checked="" type="checkbox"/> Nodaway County	<input checked="" type="checkbox"/> Guilford
		<input type="checkbox"/> Arkoe	<input checked="" type="checkbox"/> Hopkins
		<input type="checkbox"/> Barnard	<input checked="" type="checkbox"/> Maryville
		<input type="checkbox"/> Burlington Junction	<input checked="" type="checkbox"/> Parnell
		<input type="checkbox"/> Clearmont	<input checked="" type="checkbox"/> Pickering
		<input checked="" type="checkbox"/> Conception Junction	<input checked="" type="checkbox"/> Ravenwood
		<input checked="" type="checkbox"/> Elmo	<input checked="" type="checkbox"/> Skidmore
		<input checked="" type="checkbox"/> Graham	<input type="checkbox"/> W Nodaway R1
		<input checked="" type="checkbox"/> Jefferson C123	
		<input checked="" type="checkbox"/> Maryville R2	
		<input checked="" type="checkbox"/> Nod-Holt R7	
		<input checked="" type="checkbox"/> N Nodaway R6	
		<input checked="" type="checkbox"/> NE Nodaway R5	
		<input checked="" type="checkbox"/> S Nodaway R4	
		<input type="checkbox"/> Northwest MO State University	
Action ID:	3.2.5		
<b>STAPLEE CRITERIA</b>		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	<b>SCORE</b>
S: Is it Socially acceptable?			3
T: Is it Technically feasible and potentially successful?			3
A: Does the jurisdiction have the Administrative capacity to execute this action?			3
P: Is it Politically acceptable?			3
L: Is there Legal authority to implement?			3
E: Is it Economically beneficial?			3
E: Will the project have a positive impact on the natural environment?			0
Will historic structures be saved or protected?			0
Could it be implemented quickly?			1
<b>STAPLEE SCORE TOTAL</b>			<b>19</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	7
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	5
<b>MITIGATION EFFECTIVENESS SCORE</b>			<b>31</b>
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>		30+ points	<input checked="" type="checkbox"/> HIGH
		25-29 points	<input type="checkbox"/> MEDIUM
		less than 25 points	<input type="checkbox"/> LOW
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

Action: Provide resources for the development and maintenance of disaster plans for local businesses, schools, hospitals, and other entities as necessary that are coordinated with community disaster plans.		Jurisdiction:	
		<input type="checkbox"/> Nodaway County	<input type="checkbox"/> Guilford
		<input type="checkbox"/> Arkoe	<input type="checkbox"/> Hopkins
		<input type="checkbox"/> Barnard	<input type="checkbox"/> Maryville
		<input type="checkbox"/> Burlington Junction	<input type="checkbox"/> Parnell
		<input type="checkbox"/> Clearmont	<input type="checkbox"/> Pickering
		<input type="checkbox"/> Clyde	<input type="checkbox"/> Ravenwood
		<input type="checkbox"/> Conception Junction	<input checked="" type="checkbox"/> Skidmore
		<input type="checkbox"/> Elmo	<input checked="" type="checkbox"/> W Nodaway R1
		<input checked="" type="checkbox"/> Graham	<input type="checkbox"/> NorthwestMO State University
Action ID:	4.1.1		
<b>STAPLEE CRITERIA</b>		<b>Evaluation Rating</b> Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	<b>SCORE</b>
S: Is it Socially acceptable?			3
T: Is it Technically feasible and potentially successful?			3
A: Does the jurisdiction have the Administrative capacity to execute this action?			3
P: Is it Politically acceptable?			3
L: Is there Legal authority to implement?			3
E: Is it Economically beneficial?			2
E: Will the project have a positive impact on the natural environment?			0
Will historic structures be saved or protected?			0
Could it be implemented quickly?			2
<b>STAPLEE SCORE TOTAL</b>			<b>19</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	5
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	5
<b>MITIGATION EFFECTIVENESS SCORE</b>			<b>29</b>
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>		30+ points	<input type="checkbox"/> HIGH
		25-29 points	<input checked="" type="checkbox"/> MEDIUM
		less than 25 points	<input type="checkbox"/> LOW
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

Action: All area employers and schools will educate employees and students of disaster plans. Employees and students should understand their roles and responsibilities during a natural hazard event.		Jurisdiction: <input type="checkbox"/> Nodaway County <input type="checkbox"/> Guilford <input type="checkbox"/> Jefferson C123 <input type="checkbox"/> Arkoe <input type="checkbox"/> Hopkins <input checked="" type="checkbox"/> Maryville R2 <input type="checkbox"/> Barnard <input type="checkbox"/> Maryville <input type="checkbox"/> Nod-Holt R7 <input type="checkbox"/> Burlington Junction <input type="checkbox"/> Parnell <input type="checkbox"/> N Nodaway R6 <input type="checkbox"/> Clearmont <input type="checkbox"/> Pickering <input type="checkbox"/> NE Nodaway R5 <input type="checkbox"/> Conception Junction <input type="checkbox"/> Ravenwood <input checked="" type="checkbox"/> S Nodaway R4 <input type="checkbox"/> Elmo <input type="checkbox"/> Skidmore <input type="checkbox"/> W Nodaway R1 <input type="checkbox"/> Graham <input type="checkbox"/> Northwest MO State University	
Action ID:	4.1.2		
<b>STAPLEE CRITERIA</b>		Evaluation Rating Definitely Yes = 3 Maybe Yes = 2 Probably No = 1 Definitely No = 0	<b>SCORE</b>
S: Is it Socially acceptable?			3
T: Is it Technically feasible and potentially successful?			3
A: Does the jurisdiction have the Administrative capacity to execute this action?			3
P: Is it Politically acceptable?			3
L: Is there Legal authority to implement?			3
E: Is it Economically beneficial?			0
E: Will the project have a positive impact on the natural environment?			0
Will historic structures be saved or protected?			0
Could it be implemented quickly?			2
<b>STAPLEE SCORE TOTAL</b>			<b>17</b>
<b>MITIGATION EFFECTIVENESS CRITERIA</b>		<b>Evaluation Rating</b>	<b>SCORE</b>
Will the implemented action result in lives saved?		Assign 5-10 points based on the likelihood that lives would be saved	6
Will the implemented action result in a reduction of disaster damages?		Assign 5-10 points based on the relative reduction of disaster damages	5
<b>MITIGATION EFFECTIVENESS SCORE</b>			<b>28</b>
STAPLEE Score + Mitigation Effectiveness Score			
<b>PRIORITY LEVEL</b>		30+ points	<input type="checkbox"/> HIGH
		25-29 points	<input checked="" type="checkbox"/> MEDIUM
		less than 25 points	<input type="checkbox"/> LOW
Completed by: NWMORCOG staff with input from the Nodaway County EMD and HMP committee			

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## Appendix D – Resolutions



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## Signed Resolutions

Unincorporated Nodaway County .....	1
Town of Arkoe .....	2
City of Barnard .....	3
City of Burlington Junction.....	4
City of Clearmont .....	5
City of Conception Junction .....	6
City of Elmo .....	7
City of Graham .....	8
Village of Guilford .....	9
City of Hopkins .....	10
City of Maryville .....	11
City of Parnell .....	12
City of Pickering .....	13
City of Ravenwood .....	14
City of Skidmore .....	15
Jefferson C-123 School District .....	16
Maryville R-II School District .....	17
Nodaway-Holt R-VII School District .....	18
North Nodaway County R VI School District .....	19
Northeast Nodaway County R-V School District.....	20
South Nodaway County R-IV School District.....	21
West Nodaway County R-I School District .....	22
Northwest Missouri State University .....	23

Unincorporated Nodaway County

Unincorporated Nodaway County, Missouri RESOLUTION NO. 05022023

A RESOLUTION OF THE UNINCORPORATED NODAWAY COUNTY ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS the Unincorporated Nodaway County recognizes the threat that natural hazards pose to people and property within the Unincorporated Nodaway County; and

WHEREAS the Unincorporated Nodaway County has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Nodaway 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 Unincorporated Nodaway County from the impacts of future hazards and disasters; and

WHEREAS the Unincorporated Nodaway County recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Unincorporated Nodaway County will endeavor to integrate the Plan into the comprehensive planning process and

WHEREAS adoption by the Unincorporated Nodaway County demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Plan

NOW THEREFORE, BE IT RESOLVED BY THE UNINCORPORATED NODAWAY COUNTY, in the State of Missouri, THAT:

In accordance with the Unincorporated Nodaway County local government rules, the Unincorporated Nodaway County adopts the final FEMA-approved plan.

ADOPTED by a vote of 3 in favor and 0 against, and 0 abstaining, this 2<sup>nd</sup> day of MAY, 2023.

By (Sig.): [Signature]  
Print name: BILL WALKER

ATTEST:  
By (Sig.): [Signature]  
Print name: CHRIS A. BUONS

APPROVED AS TO FORM:  
By (Sig.): [Signature]  
Print name: SCOTT A WALKER

Town of Arkoe

Town of Arkoe, Missouri RESOLUTION NO. \_\_\_\_\_

A RESOLUTION OF THE TOWN OF ARKOE ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS the Town of Arkoe recognizes the threat that natural hazards pose to people and property within the Town of Arkoe; and

WHEREAS the Town of Arkoe has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Nodaway 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 Town of Arkoe from the impacts of future hazards and disasters; and

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

WHEREAS adoption by the Town of Arkoe demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Plan

NOW THEREFORE, BE IT RESOLVED BY THE TOWN OF ARKOE, in the State of Missouri, THAT:  
In accordance with the Town of Arkoe local government rules, the Town of Arkoe adopts the final FEMA-approved plan.

ADOPTED by a vote of 4 in favor and 0 against, and 1 abstaining, this 24 day of April, 2023.

By (Sig.): Darrell Cronk  
Print name: Darrell Cronk

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

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

City of Barnard

City of Barnard, Missouri RESOLUTION NO. 04-12-2023

**A RESOLUTION OF THE CITY OF BARNARD ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN**

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

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

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

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

NOW THEREFORE, BE IT RESOLVED BY THE CITY OF BARNARD, in the State of Missouri, THAT:

In accordance with the City of Barnard local government rules, the City of Barnard adopts the final FEMA-approved plan.

ADOPTED by a vote of 4 in favor and 0 against, and 0 abstaining, this 12 day of April, 2023.

By (Sig): [Signature]  
Print name: GLENN MILLER

ATTEST:  
By (Sig.): [Signature]  
Print name: Terese Coleman

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

City of Burlington Junction

City of Burlington Junction, Missouri RESOLUTION NO. \_\_\_\_\_

A RESOLUTION OF THE CITY OF BURLINGTON JUNCTION ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS the City of Burlington Junction recognizes the threat that natural hazards pose to people and property within the City of Burlington Junction: and

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


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

WHEREAS adoption by the City of Burlington Junction demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Plan

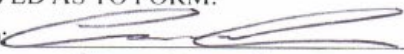
NOW THEREFORE, BE IT RESOLVED BY THE CITY OF BURLINGTON JUNCTION, in the State of Missouri, THAT:

In accordance with the City of Burlington Junction local government rules, the City of Burlington Junction adopts the final FEMA-approved plan.

ADOPTED by a vote of 4 in favor and 0 against, and 0 abstaining, this 12<sup>th</sup> day of April, 2023.

By (Sig):   
Print name: Christopher Cook

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

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

City of Clearmont

City of Clearmont, Missouri RESOLUTION NO. 147

**A RESOLUTION OF THE CITY OF CLEARMONT ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN**

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

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

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

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

NOW THEREFORE, BE IT RESOLVED BY THE CITY OF CLEARMONT, in the State of Missouri, THAT:

In accordance with the City of Clearmont local government rules, the City of Clearmont adopts the final FEMA-approved plan.

ADOPTED by a vote of 3 in favor and 0 against, and 0 abstaining, this 16<sup>th</sup> day of May, 2023.

By (Sig): Byron A. Clark  
Print name: Byron A. Clark

ATTEST:  
By (Sig.): Linda Babcock  
Print name: Linda Babcock

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

City of Conception Junction

City of Conception Junction, Missouri RESOLUTION NO. 2023C

A RESOLUTION OF THE CITY OF CONCEPTION JUNCTION ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

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

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

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

WHEREAS adoption by the City of Conception Junction demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Plan

NOW THEREFORE, BE IT RESOLVED BY THE CITY OF CONCEPTION JUNCTION, in the State of Missouri, THAT:

In accordance with the City of Conception Junction local government rules, the City of Conception Junction adopts the final FEMA-approved plan.

ADOPTED by a vote of 4 in favor and 0 against, and 0 abstaining, this 3 day of April, 2023.

By (Sig): Cletus Luger  
Print name: Cletus Luger

ATTEST:  
By (Sig.): Tammy Bibeey  
Print name: Tammy Bibeey

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



City of Elmo

City of Elmo, Missouri RESOLUTION NO. 4/19/23

A RESOLUTION OF THE CITY OF ELMO ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

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

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

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

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

NOW THEREFORE, BE IT RESOLVED BY THE CITY OF ELMO, in the State of Missouri, THAT: In accordance with the City of Elmo local government rules, the City of Elmo adopts the final FEMA-approved plan.

ADOPTED by a vote of 4 in favor and 0 against, and 0 abstaining, this 14 day of April, 2023.

By (Sig): Norma Brigg Clerk  
Print name: Norma Brigg Clerk

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

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

City of Graham, Missouri RESOLUTION NO. 2023-1

A RESOLUTION OF THE CITY OF GRAHAM ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

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

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

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

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

NOW THEREFORE, BE IT RESOLVED BY THE CITY OF GRAHAM, in the State of Missouri, THAT:  
In accordance with the City of Graham local government rules, the City of Graham adopts the final FEMA-approved plan.

ADOPTED by a vote of 3 in favor and 0 against, and 0 abstaining, this 24<sup>th</sup> day of April, 2023.

By (Sig.): Holly Holmes, Clerk  
Print name: Holly Holmes

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

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

Village of Guilford

Village of Guilford, Missouri RESOLUTION NO. 01050423

A RESOLUTION OF THE VILLAGE OF GUILFORD ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS the Village of Guilford recognizes the threat that natural hazards pose to people and property within the Village of Guilford; and

WHEREAS the Village of Guilford has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Nodaway County Multi-Jurisdictional Hazard Mitigation Plan, hereafter referred to as the Plan, in accordance with the Disaster Mitigation Act of 2000; and

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

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

WHEREAS adoption by the Village of Guilford demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Plan

NOW THEREFORE, BE IT RESOLVED BY THE VILLAGE OF GUILFORD, in the State of Missouri, THAT:

In accordance with the Village of Guilford local government rules, the Village of Guilford adopts the final FEMA-approved plan.

ADOPTED by a vote of 4 in favor and 0 against, and 0 abstaining, this 4<sup>th</sup> day of May, 2023.

By (Sig): Danyell R. Wiederholt  
Print name: Danyell Wiederholt

ATTEST:  
By (Sig.): Don W Bagley  
Print name: DON W BAGLEY

APPROVED AS TO FORM:

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

City of Hopkins

City of Hopkins, Missouri RESOLUTION NO. 115

A RESOLUTION OF THE CITY OF HOPKINS ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

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

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

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

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

NOW THEREFORE, BE IT RESOLVED BY THE CITY OF HOPKINS, in the State of Missouri, THAT: In accordance with the City of Hopkins local government rules, the City of Hopkins adopts the final FEMA-approved plan.

ADOPTED by a vote of 4 in favor and 0 against, and 0 abstaining, this 3 day of April, 2023.

By (Sig.): Theodore Phipps  
Print name: Theodore Phipps (City Clerk)

ATTEST:  
By (Sig.): Matt Wray  
Print name: Matt Wray "Mayor"

APPROVED AS TO FORM:

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

BILL NO. 2023\*41

RESOLUTION NO. 738

**A RESOLUTION OF THE CITY OF MARYVILLE ADOPTING THE  
NODAWAY COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD  
MITIGATION PLAN**

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

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

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

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

**NOW THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF MARYVILLE, MISSOURI:**

In accordance with the City of Maryville local government rules, the City of Maryville adopts the final FEMA-approved plan.

**PASSED AND ADOPTED** this 24<sup>th</sup> day of April, 2023.

  
Tye Parsons, Mayor

Attest:

  
Stacy Wood, City Clerk

City of Parnell, Missouri RESOLUTION NO. 001 - 2023  
Bill 001

A RESOLUTION OF THE CITY OF PARNELL ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

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

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

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

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

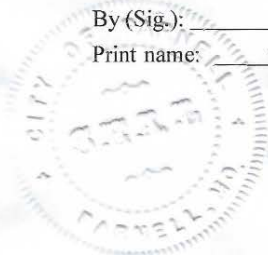
NOW THEREFORE, BE IT RESOLVED BY THE CITY OF PARNELL, in the State of Missouri, THAT:  
In accordance with the City of Parnell local government rules, the City of Parnell adopts the final FEMA-approved plan.

ADOPTED by a vote of 4 in favor and 0 against, and 0 abstaining, this 12<sup>th</sup> day of April, 2023.

By (Sig.): Greg C Welch  
Print name: Greg C Welch, Mayor

ATTEST:  
By (Sig.): Heather A Burns, City Clerk  
Print name: Heather A Burns

APPROVED AS TO FORM:  
By (Sig.): Heather A Burns  
Print name: Heather A Burns



City of Pickering, Missouri RESOLUTION NO. 170-23

A RESOLUTION OF THE CITY OF PICKERING ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

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

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

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

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

NOW THEREFORE, BE IT RESOLVED BY THE CITY OF PICKERING, in the State of Missouri, THAT:

In accordance with the City of Pickering local government rules, the City of Pickering adopts the final FEMA-approved plan.

ADOPTED by a vote of 4 in favor and 0 against, and 0 abstaining, this 1 day of May, 2023.

By (Sig): Charles F. Smith  
Print name: Charles F. Smith

ATTEST:  
By (Sig.): Milton L. Sovereign  
Print name: MILTON L. SOVEREIGN

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

City of Ravenwood, Missouri RESOLUTION NO. \_\_\_\_\_

**A RESOLUTION OF THE CITY OF RAVENWOOD ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN**

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

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

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

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

NOW THEREFORE, BE IT RESOLVED BY THE CITY OF RAVENWOOD, in the State of Missouri, THAT:

In accordance with the City of Ravenwood local government rules, the City of Ravenwood adopts the final FEMA-approved plan.

ADOPTED by a vote of 3 in favor and 0 against, and 0 abstaining, this 3 day of MAY, 2023.

By (Sig.): [Signature]

Print name: Brian W. Seaman

ATTEST:

By (Sig.): [Signature]

Print name: Taylor Spive

APPROVED AS TO FORM:

By (Sig.): \_\_\_\_\_

Print name: \_\_\_\_\_



City of Skidmore

City of Skidmore, Missouri RESOLUTION NO. \_\_\_\_\_

**A RESOLUTION OF THE CITY OF SKIDMORE ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN**

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

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

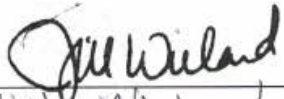
WHEREAS the City of Skidmore recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the City of Skidmore will endeavor to integrate the Plan into the comprehensive planning process and

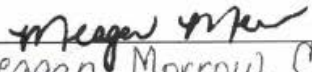
WHEREAS adoption by the City of Skidmore demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Plan

NOW THEREFORE, BE IT RESOLVED BY THE CITY OF SKIDMORE, in the State of Missouri, THAT:

In accordance with the City of Skidmore local government rules, the City of Skidmore adopts the final FEMA-approved plan.

ADOPTED by a vote of 4 in favor and 0 against, and 0 abstaining, this 13<sup>th</sup> day of April, 2023.

By (Sig.):   
Print name: Jill Wieland, Mayor

ATTEST:  
By (Sig.):   
Print name: Meagan Morrow, City Clerk

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

Jefferson C-123 School District

Jefferson C-123 School District, Missouri RESOLUTION NO. \_\_\_\_\_

A RESOLUTION OF THE JEFFERSON C-123 SCHOOL DISTRICT ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS the Jefferson C-123 School District recognizes the threat that natural hazards pose to people and property within the Jefferson C-123 School District; and

WHEREAS the Jefferson C-123 School District has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Nodaway 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 Jefferson C-123 School District from the impacts of future hazards and disasters; and

WHEREAS the Jefferson C-123 School District recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Jefferson C-123 School District will endeavor to integrate the Plan into the comprehensive planning process and

WHEREAS adoption by the Jefferson C-123 School District demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Plan

NOW THEREFORE, BE IT RESOLVED BY THE JEFFERSON C-123 SCHOOL DISTRICT, in the State of Missouri, THAT:

In accordance with the Jefferson C-123 School District local government rules, the Jefferson C-123 School District adopts the final FEMA-approved plan.

ADOPTED by a vote of 6 in favor and 0 against, and 0 abstaining, this 18 day of April, 2023.

By (Sig.): [Signature]  
Print name: Jim Jerman

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

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

Maryville R-II School District

Maryville R-II School District, Missouri

A RESOLUTION OF THE MARYVILLE R-II SCHOOL DISTRICT ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS the Maryville R-II School District recognizes the threat that natural hazards pose to people and property within the Maryville R-II School District; and

WHEREAS the Maryville R-II School District has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Nodaway 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 Maryville R-II School District from the impacts of future hazards and disasters; and

WHEREAS the Maryville R-II School District recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Maryville R-II School District will endeavor to integrate the Plan into the comprehensive planning process and

WHEREAS adoption by the Maryville R-II School District demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Plan

NOW THEREFORE, BE IT RESOLVED BY THE MARYVILLE R-II SCHOOL DISTRICT, in the State of Missouri, THAT:

In accordance with the Maryville R-II School District local government rules, the Maryville R-II School District adopts the final FEMA-approved plan.

ADOPTED by a vote of 6 in favor and 0 against, and 0 abstaining, this 18<sup>th</sup> day of April, 2023.

By (Sig): [Signature]  
Print name: Logan Lightfoot

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

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

Nodaway-Holt R-VII School District

Nodaway-Holt R-VII School District, Missouri RESOLUTION NO. - NHR7

A RESOLUTION OF THE NODAWAY-HOLT R-VII SCHOOL DISTRICT ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS the Nodaway-Holt R-VII School District recognizes the threat that natural hazards pose to people and property within the Nodaway-Holt R-VII School District; and

WHEREAS the Nodaway-Holt R-VII School District has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Nodaway 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 Nodaway-Holt R-VII School District from the impacts of future hazards and disasters; and

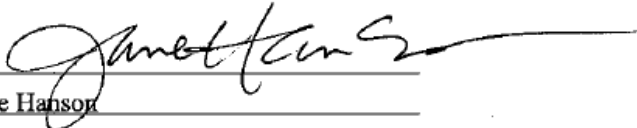
WHEREAS the Nodaway-Holt R-VII School District recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Nodaway-Holt R-VII School District will endeavor to integrate the Plan into the comprehensive planning process and

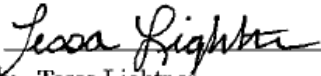
WHEREAS adoption by the Nodaway-Holt R-VII School District demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Plan

NOW THEREFORE, BE IT RESOLVED BY THE NODAWAY-HOLT R-VII SCHOOL DISTRICT, in the State of Missouri, THAT:

In accordance with the Nodaway-Holt R-VII School District local government rules, the Nodaway-Holt R-VII School District adopts the final FEMA-approved plan.

ADOPTED by a vote 7 in favor 0 against, and 0 abstaining, this 19 day of April, 2023.

By (Sig.):   
Print name: Jane Hanson

ATTEST:  
By (Sig.):   
Print name: Tessa Lightner

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

North Nodaway County R VI School District

North Nodaway County R-VI School District, Missouri RESOLUTION NO. \_\_\_\_\_

A RESOLUTION OF THE NORTH NODAWAY COUNTY R-VI SCHOOL DISTRICT ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS the North Nodaway County R-VI School District recognizes the threat that natural hazards pose to people and property within the North Nodaway County R-VI School District; and

WHEREAS the North Nodaway County R-VI School District has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Nodaway 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 North Nodaway County R-VI School District from the impacts of future hazards and disasters; and

WHEREAS the North Nodaway County R-VI School District recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the North Nodaway County R-VI School District will endeavor to integrate the Plan into the comprehensive planning process and

WHEREAS adoption by the North Nodaway County R-VI School District demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Plan

NOW THEREFORE, BE IT RESOLVED BY THE NORTH NODAWAY COUNTY R-VI SCHOOL DISTRICT, in the State of Missouri, THAT:

In accordance with the North Nodaway County R-VI School District local government rules, the North Nodaway County R-VI School District adopts the final FEMA-approved plan.

ADOPTED by a vote of 7 in favor and 0 against, and 0 abstaining, this 12<sup>th</sup> day of April, 2023.

By (Sig): [Signature]  
Print name: CHRIS FORSTER C TURPIN  
Superintendent

ATTEST:  
By (Sig.): [Signature]  
Print name: Tiffany Whipple  
Board Secretary

APPROVED AS TO FORM:  
By (Sig.): [Signature]  
Print name: Vicki J. Riley  
Board President

Northeast Nodaway County R-V School District

Northeast Nodaway County R-V School District, Missouri RESOLUTION NO. \_\_\_\_\_

A RESOLUTION OF THE NORTHEAST NODAWAY COUNTY R-V SCHOOL DISTRICT  
ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS the Northeast Nodaway County R-V School District recognizes the threat that natural hazards pose to people and property within the Northeast Nodaway County R-V School District; and

WHEREAS the Northeast Nodaway County R-V School District has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Nodaway 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 Northeast Nodaway County R-V School District from the impacts of future hazards and disasters; and

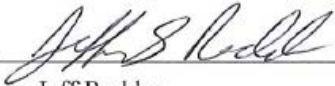
WHEREAS the Northeast Nodaway County R-V School District recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Northeast Nodaway County R-V School District will endeavor to integrate the Plan into the comprehensive planning process and


WHEREAS adoption by the Northeast Nodaway County 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 NORTHEAST NODAWAY COUNTY R-V SCHOOL DISTRICT, in the State of Missouri, THAT:

In accordance with the Northeast Nodaway County R-V School District local government rules, the Northeast Nodaway County R-V School District adopts the final FEMA-approved plan.

ADOPTED by a vote of 7 in favor and 0 against, and 0 abstaining, this 12th day of April, 2023.

By (Sig):   
Print name: Jeff Redden

ATTEST:  
By (Sig.):   
Print name: DeAnn Redden

South Nodaway County R-IV School District

South Nodaway County R-IV School District, Missouri RESOLUTION NO. \_\_\_\_\_

A RESOLUTION OF THE SOUTH NODAWAY COUNTY R-IV SCHOOL DISTRICT ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS the South Nodaway County R-IV School District recognizes the threat that natural hazards pose to people and property within the South Nodaway County R-IV School District; and

WHEREAS the South Nodaway County R-IV School District has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Nodaway 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 South Nodaway County R-IV School District from the impacts of future hazards and disasters; and


WHEREAS the South Nodaway County R-IV School District recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the South Nodaway County R-IV School District will endeavor to integrate the Plan into the comprehensive planning process and

WHEREAS adoption by the South Nodaway County R-IV School District demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Plan

NOW THEREFORE, BE IT RESOLVED BY THE SOUTH NODAWAY COUNTY R-IV SCHOOL DISTRICT, in the State of Missouri, THAT:

In accordance with the South Nodaway County R-IV School District local government rules, the South Nodaway County R-IV School District adopts the final FEMA-approved plan.

ADOPTED by a vote of 6 in favor and 0 against, and 0 abstaining, this 18<sup>th</sup> day of April, 2023.

By (Sig.):   
Print name: Dustin Skoglund

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

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

West Nodaway County R-I School District

West Nodaway County R-I School District, Missouri RESOLUTION NO. \_\_\_\_\_

A RESOLUTION OF THE WEST NODAWAY COUNTY R-I SCHOOL DISTRICT ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS the West Nodaway County R-I School District recognizes the threat that natural hazards pose to people and property within the West Nodaway County R-I School District; and

WHEREAS the West Nodaway County R-I School District has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Nodaway 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 West Nodaway County R-I School District from the impacts of future hazards and disasters; and

WHEREAS the West Nodaway County R-I School District recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the West Nodaway County R-I School District will endeavor to integrate the Plan into the comprehensive planning process and

WHEREAS adoption by the West Nodaway County R-I School District demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Plan

NOW THEREFORE, BE IT RESOLVED BY THE WEST NODAWAY COUNTY R-I SCHOOL DISTRICT, in the State of Missouri, THAT:

In accordance with the West Nodaway County R-I School District local government rules, the West Nodaway County R-I School District adopts the final FEMA-approved plan.

ADOPTED by a vote of 7 in favor and 0 against, and 0 abstaining, this 12<sup>th</sup> day of April, 2023.

By (Sig): [Signature]  
Print name: Scott Conn

ATTEST:  
By (Sig.): [Signature]  
Print name: Mitch Barnes

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



Northwest Missouri State University

Northwest Missouri State University, Maryville, Missouri RESOLUTION NO. \_\_\_\_\_

A RESOLUTION OF NORTHWEST MISSOURI STATE UNIVERSITY ADOPTING THE NODAWAY COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS the Northwest Missouri State University recognizes the threat that natural hazards pose to people and property within the Northwest Missouri State University; and

WHEREAS the Northwest Missouri State University has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Nodaway 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 Northwest Missouri State University from the impacts of future hazards and disasters; and

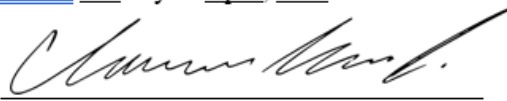
WHEREAS the Northwest Missouri State University recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Northwest Missouri State University will endeavor to integrate the Plan into the comprehensive planning process and

WHEREAS adoption by the Northwest Missouri State University demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Plan

NOW THEREFORE, BE IT RESOLVED BY THE NORTHWEST MISSOURI STATE UNIVERSITY, in the State of Missouri, THAT:

In accordance with the Northwest Missouri State University local rules, the Northwest Missouri State University adopts the final FEMA-approved plan.

ADOPTED this 24<sup>th</sup> day of April, 2023.

By (Sig): 

Print name: Dr. Clarence Green, Interim President,

Northwest Missouri State University