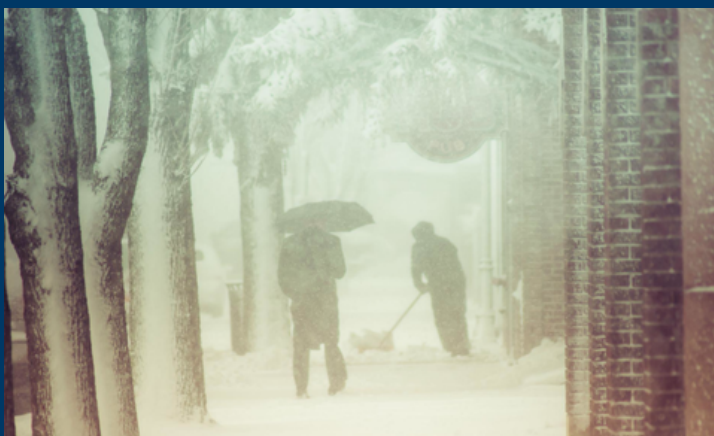


Roseau County 2024 Hazard Mitigation Plan



Roseau County Minnesota

2024 Hazard Mitigation Plan

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Section 1 – Introduction

1.1 Hazard Mitigation Planning in Minnesota

Hazard mitigation planning refers to any sustained action to reduce or eliminate long-term risk to human life and property from natural disasters. The Federal Emergency Management Agency (FEMA) has made reducing hazards one of its primary goals, and a primary mechanism in achieving this goal is both the hazard mitigation planning process and the subsequent implementation of resulting projects, measures, and policies (FEMA, 2023b).

Since 1980, damages from natural disasters in the U.S. exceeded \$2.72 trillion. 2023 saw a record 28 separate billion-dollar weather and climate disaster events in the United States, breaking the previous record of 22 events set in 2020. Minnesota alone has experienced 59 separate billion-dollar disasters since 1980 (NCEI, 2024). Hazard mitigation planning is an effective process to prepare communities and lessen the impact of loss of life and property from future disasters. Although mitigation efforts will not eliminate all disasters, government at all levels should strive to be as prepared as possible for a disaster for the well-being of its residents.

The Hazard Mitigation Plan (HMP) is a requirement of the Federal Disaster Mitigation Act of 2000. The development of a local government plan is required to maintain eligibility for federal hazard mitigation grant funding programs. To be eligible for future mitigation funds, communities must adopt an HMP.

Researchers at the National Institute of Building Sciences looked at the results of 23 years of federally funded mitigation grants provided by FEMA, the U.S. Economic Development Administration (EDA), and the U.S. Department of Housing and Urban Development (HUD). Their findings revealed that for every \$1 spent on hazard mitigation funding in the nation, \$6 is saved in future disaster costs (Multi-Hazard Mitigation Council, 2019).

Roseau County is vulnerable to a variety of natural hazards that threaten the loss of life and property. Hazards such as tornadoes, flooding, wildfires, blizzards, straight-line winds, and droughts can potentially inflict vast economic loss and personal hardship.

This planning document is accompanied by a website that allows for easy stakeholder and community engagement, as well as interactive maps, dashboards, and infographics.

A broad overview of this companion website's features is as follows:

- About HMP Planning
- County Profile
- Natural Hazard Profiles
- Climate Change
- Mitigation Actions

[Roseau County HMP Website](#)

1.1.1 Scope

U-Spatial, University of Minnesota, was contracted by Minnesota Homeland Security and Emergency Management using FEMA Pre-Disaster Mitigation (PDM) grant funds to work with Roseau County Emergency Management to facilitate an update to the 2015 Roseau County HMP. U-Spatial brings extensive geographic data analysis skills and hazard risk assessment expertise to the process. U-Spatial also employed the services of Hundrieser Consulting LLC for county and stakeholder outreach as well as mitigation action development related to this plan.

This HMP evaluates and prioritizes the major natural hazards affecting Roseau County as determined by frequency of event, economic impact, deaths, and injuries. Mitigation recommendations are based on input from state and local agencies, the public, and national best practices.

This is a multi-jurisdictional plan that covers Roseau County, including the cities of Badger, Greenbush, Roosevelt, Roseau, Strathcona, and Warroad. The Roseau County mitigation activities identified in this plan also incorporate the concerns and needs of townships, school districts, and other participating entities.

Members from each of these jurisdictions actively participated in the planning process by assisting with public outreach, attending planning team meetings, providing local information, identifying mitigation actions, and reviewing the plan document (see Appendix C). The information in these forms was used to help identify mitigation actions for local implementation (see also Section 2.2). Each jurisdiction will adopt the plan by resolution after the plan is approved by FEMA. County and local city resolutions will be added by Roseau County after final approval by FEMA (see Appendix B).

Roseau County has specified the following goals for this plan update:

- Include more recent data documenting the critical infrastructure and hazards faced by Roseau County.
- Reformat and reorganize the plan to reflect definitions of hazards as expressed in the 2024 Minnesota State Hazard Mitigation Plan.
- Reflect current hazard mitigation priorities in Roseau County.
- Encourage recipients and sub-recipients of hazard mitigation grants to consider climate change adaptation, resiliency, and equity in their planning efforts.

1.1.2 Hazard Mitigation Definition

Hazard mitigation may be defined as any action taken to eliminate or reduce the long-term risk to human life and property from natural hazards. The benefits of hazard mitigation planning include the following:

- saving lives, protecting the health of the public, and reducing injuries
- preventing or reducing property damage
- reducing economic losses
- minimizing social dislocation and stress
- reducing agricultural losses
- maintaining critical facilities in functioning order

- protecting infrastructure from damage
- protecting mental health
- reducing legal liability of government and public officials

1.2 State Administration of Mitigation Grants

FEMA currently has three mitigation grant programs that are administered by the State of Minnesota: the Hazard Mitigation Grant Program (HMGP), the Building Resilient Infrastructure and Communities (BRIC) program, and the Flood Mitigation Assistance (FMA) program. The HMGP, BRIC, and FMA programs are administered through the state of Minnesota Department of Public Safety Homeland Security Emergency Management (HSEM) Division. All applicants must have or be covered under an approved Hazard Mitigation Plan. Eligible applicants include state and local governments, certain private non-profit organizations or institutions, and tribal communities.

Section 2 – Public Planning Process

2.1 Planning Team Information

The Roseau County HMP planning team is headed by the Roseau County emergency manager, who is the primary point of contact. Planning team members include representatives from public and governmental sectors. Table 1 identifies the planning team individuals and the organizations they represent

[Find the planning team members on the Roseau County HMP website](#)

Table 1. Hazard Mitigation Planning (HMP) Team

Name	Agency/Organization	Participant Title
Sue Grafstrom	Roseau County Homeland Security Emergency Management	Co-Director
Dan Davidson	Roseau County Homeland Security Emergency Management	Co-Director
Steve Gust	Roseau County Sheriff's Office	County Sheriff
Jack Swanson	Roseau County	Commissioner
Glenda Phillipe	Roseau County	Commissioner
Chris Stauffer	Roseau County	Technology Administrator
Martie Monsrud	Roseau County	Auditor
Karla Langaas	Roseau County	Social Services Director
Angie Swenson	City of Badger	City Clerk/Treasurer
Todd Peterson	City of Roseau	Community Development Coordinator
Kathy Lovelace	City of Warroad	City Administrator
Wade Steinbring	City of Warroad Police Department	Police Chief
Leon Huot	City of Roseau Fire Dept.	Chief
Thomas Lund	Laona Township	Clerk
Adam Tesarek	Mickinock Township	Supervisor
Jason Schneider	Mickinock Township	Supervisor
Julie Pahlen	LifeCare Medical Center	Emergency Preparedness
James Dinsch	LifeCare Medical Center	Director of EMS
Paula Hedlund	LifeCare Medical Center	Director of Community Health
Kevin Ricke	Badger Public Schools	Superintendent + Principal K-12
Daniel Carpenter	Badger ISD #676	Superintendent
Dan Money	Two Rivers Watershed District	Administrator
Michele Heaver	The Salvation Army	Divisional Emergency Disaster Services Director
Adam Fisher	MN DNR Forestry	Warroad Area Forestry Supervisor
Jennifer Olson	MN HSEM	Regional Program Coordinator
Christopher Muller	Beltrami County Emergency Management	Emergency Management Director
Scot Olson	Kittson County Emergency Management	Emergency Management Director

2.2 Review of Existing Plans, Capabilities & Vulnerabilities

Roseau County and its local communities utilized a variety of planning documents to direct plan development. These documents included a Comprehensive/Master Plan, Emergency Operations Plan, Transportation Plan, etc. (see Section 5.1.3 and Appendix D). The planning process also incorporated the existing natural hazard mitigation elements from previous planning efforts. In addition, the 2024 Minnesota All-Hazard Mitigation Plan was consulted.

In the development of the Roseau County HMP, U-Spatial consultants reviewed and incorporated a variety of planning documents that direct community development and influence land use decisions for the county and its jurisdictions. In addition, U-Spatial consultants worked closely with the Roseau County emergency management director and other key county staff and local city officials to collect feedback on local mitigation capabilities and vulnerabilities that either support or hinder the ability to mitigate against natural hazards countywide and at the local level. Following is a summary of the assessment tools used to gather information on local capabilities and vulnerabilities during the planning process:

Capabilities Assessment (hazard-specific): In this assessment, detailed information was collected from Roseau County on current plans and programs in place (i.e., existing programs, plans, or policies) as well as program gaps or deficiencies that currently exist to mitigate against damages caused by each natural hazard addressed in the plan. Section 4 identifies current gaps and deficiencies for mitigation and Section 5.3 describes the mitigation capabilities that are in place by Roseau County to support mitigation.

Local Mitigation Surveys: As part of Roseau County's 2024 HMP update, participating jurisdictions and key county personnel were asked to fill out a Local Mitigation Survey (LMS) form. Questions in the LMS form addressed the following:

- Part A: Hazard Identification, Risk Assessment & Vulnerability Analysis
- Part B: Local Mitigation Capabilities Assessment
- Part C: Local Mitigation Projects
- Part D: Survey Participants

The purpose of the survey was to gather jurisdictionally specific information needed to support the update of the plan and to help inform development of local-level mitigation actions for the next five-year planning cycle (for the full Roseau County LMS report, see Appendix C).

2.3 Planning Process Timeline and Steps

To update the 2015 Roseau County HMP, U-Spatial consultants worked in coordination with Roseau County Emergency Management and members of the planning team. The updated plan includes new data documenting the types of hazards faced by Roseau County residents and emergency planning officials as well as new thinking on how to address these hazards.

2.3.1 Roseau County Stakeholder Coordination

Two planning team meetings took place via Zoom video conference hosted by U-Spatial. Meeting participants included representatives from Roseau County, city and township governments, neighboring jurisdictions, and other key stakeholders. Appendix F provides documentation of stakeholder outreach and participation in the plan update

Survey forms to acquire mitigation ideas and feedback remain available on the HMP website

To provide the opportunity for public input, Roseau County issued two news releases announcing the plan update and inviting public review and feedback on the draft plan. The news release provided information on where to view the plan and submit comments. The County HMP website, hosted by U-Spatial, and the feedback and mitigation action ideas survey will remain available through the five-year planning period to foster public engagement. Table 2 documents dates of Hazard Mitigation update meetings and public outreach. The public feedback period for the draft plan was open from 10/28/24 to 11/11/24, for a period of 15 days. Appendix G provides documentation of the public outreach for feedback on the draft plan by Roseau County and jurisdictions.

Table 2. Roseau County hazard mitigation update meetings and public outreach

Event	Date	Appendix
Kickoff Webinar	4/28/23	Appendix F, Planning Team Meetings
News Release #1	6/7/23	Appendix G, Public Outreach & Engagement Documentation
Planning Team Meeting #1	12/11/23	Appendix F, Planning Team Meetings
Planning Team Meeting #2	10/9/24	Appendix F, Planning Team Meetings
News Release #2	10/28/24	Appendix G, Public Outreach & Engagement Documentation

At the close of the public outreach period, the U-Spatial consultants worked with the Roseau County Emergency Manager and members of the planning team to incorporate feedback from the public into the HMP.

For more information on the planning process, see Sections 5 and 6.

2.3.2 Overview of Jurisdictional Participation

Throughout the planning process, Roseau County and the U-Spatial team worked to engage representatives from the county and each city in the update of the plan. Key activities for jurisdictions included assisting with public outreach, participating in planning team meetings, providing local-level information, reviewing and providing feedback to the plan update.

U-Spatial and Roseau County actively used the following methods to engage jurisdictions in the HMP plan update process:

- **Zoom Video Conferencing:** Planning team meetings were conducted via Zoom video conferencing hosted by U-Spatial. Virtual meetings proved to be a beneficial addition to the planning process, resulting in a high turnout from jurisdictional representatives and other

stakeholders, as well as providing the ability for presenters to collect, respond to, and document feedback from participants through Zoom functions such as surveys, chat, and Q&A.

- **Email Correspondence:** Email was a primary tool used to communicate with representatives from Roseau County, municipal governments, and other stakeholders. Emails were used to distribute news releases for public outreach, to invite participation in meetings and to share meeting summaries, as well as to request local information and final review of the draft plan. Email proved to be an effective tool that resulted in increased jurisdictional participation and collection of locally specific information. Email was also used by the public to submit feedback to Roseau County following news releases on the HMP.
- **Phone Calls:** Phone calls were frequently used to conduct direct outreach or follow-up to jurisdictions to ensure participation or to collect information via one-on-one interviews. Phone calls proved to be an effective tool that resulted in increased jurisdictional participation and collection of quality information. Phone calls were especially useful in engaging very small communities that had limited staff or technological capabilities.

Cities participating in Roseau County HMP update varied by population and associated government resources to participate in the planning process (e.g., personnel, time, and technology). Rural communities with smaller populations (under 500) typically had part-time elected officials, limited-to-no city staff, and reduced city hall hours in which to conduct business. Roseau County and U-Spatial were sensitive to these local challenges and worked to help these local governments to participate using the methods that worked best to accommodate them, such as phone interviews to complete local mitigation survey forms (see Appendix C).

Table 3 provides an overview of each city's participation in the Roseau County HMP update planning process and a reference to supporting documentation.

Table 3. Jurisdictional participation in the planning process

Jurisdiction (2022 Est. Population, Esri)	News Release #1	Planning Team Mtg. #1	Local Mitigation Survey	Mitigation Action Charts	Planning Team Mtg. #2	News Release #2 & Plan Review
Supporting Documentation	App. G	App. F	App. C	Sec. 5.3 App. H	App. F	App. G
Roseau County (15,192)	X	X	X	X	X	
City of Badger (431)	X		X	X	X	
City of Greenbush (681)	X		X	X		
City of Roosevelt (153)	X		X	X		
City of Roseau (2,681)	X	X	X	X	X	
City of Strathcona (25)	X					
City of Warroad (1,820)	X	X	X	X	X	
Neighboring Jurisdictions:						
Kittson County		X			X	
Lake of the Woods County						
Beltrami County					X	
Marshall County						
Red Lake Reservation						

Section 3 – Risk Assessment and Vulnerability Analysis

The goal of mitigation is to reduce or eliminate the future impacts of a hazard, including loss of life, property damage, disruption to local and regional economies, and the expenditure of public and private funds for recovery. Sound mitigation practices must be based on sound risk assessment. A risk assessment involves quantifying the potential loss resulting from a disaster by assessing the vulnerability of buildings, infrastructure, and people.

The risk assessments in this plan are based on widely accepted tools and databases, consultation with hazard mitigation planning expertise at FEMA and HSEM, and technical guidance from the MN DNR State Climatology Office. Geographic Information System (GIS) tools are used throughout to demonstrate geographically based risk and vulnerabilities.

3.1 Natural Hazard Identification

This assessment identifies the characteristics of natural hazard events, the severity of the risk, the likelihood of these events occurring, and the vulnerability of each jurisdiction’s population and assets.

[See a list of all natural hazards covered in the 2024 HMP](#)

The cornerstone of risk assessment is identifying the hazards that affect jurisdictions. Listed below are the natural hazards addressed in the 2024 Minnesota State Hazard Mitigation Plan:

Flooding	Lightning	Drought
Dam/Levee Failure	Winter Storms	Extreme Heat
Wildfires	Landslides (Erosion and	Extreme Cold
Windstorms	Mudslides)	Earthquakes
Tornadoes	Land Subsidence (Sinkholes	Coastal Erosion & Flooding
Hail	and Karst)	

3.1.1 Hazard Prioritization

As part of the plan update process, the planning team reviewed, updated, and prioritized the hazards faced by residents of Roseau County, updated the existing mitigation actions published in the 2015 HMP, and proposed new mitigation actions.

The team examined the hazards identified in the 2015 HMP and adjusted them to reflect the definitions of natural hazards used in the 2024 Minnesota State Hazard Mitigation Plan.

While the focus of this HMP is on natural hazards, planning took place with the understanding that many non-natural hazards could occur as a result of natural disasters (e.g., disruption in electrical service due to downed powerlines from heavy snow, ice storms, or high wind events).

The prioritization of hazards for the Roseau County HMP Update (Table 4) was based on group review and discussion of the natural hazards that pose risk to the county during the HMP Planning Team Meeting #1. In the review of each hazard, the group was asked to consider if the risk to severe natural hazards had increased or decreased since the last plan, and if this affected their priority level to mitigate against that hazard. Appendix F provides the discussion notes from the meeting.

Table 4. Prioritization of hazards for 2024 Roseau County HMP Update

Natural Hazards	Current Priority
Flooding	High
Winter Storms	Moderate
Windstorms	Moderate
Hailstorms	Moderate
Tornadoes	Moderate
Extreme Cold	Moderate
Extreme Heat	Moderate
Wildfire	Moderate
Landslides	Low
Lightning	Low
Drought	Low
Dam Failure	Low

3.1.2 FEMA- and Minnesota-Declared Disasters and Assistance

Another historical perspective is derived from FEMA-declared disasters. Between 1957 and July 2024, 26 federal disasters and two emergencies were declared in Roseau County; see details on the [Roseau County HMP website](#).

Minnesota Statutes Chapter 12A established a framework for state agencies to help communities recover from disaster. In 2014, Governor Mark Dayton signed legislation establishing the state's Disaster Assistance Contingency Account to assist local communities after a natural disaster when federal aid is not available. Damage required to declare a disaster is half the threshold of the federal/FEMA public assistance (only) program threshold (MN HSEM, 2019). Roseau County has been included in one State Disaster Declaration.

The Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC), and Flood Mitigation Assistance (FMA) Program are FEMA-administered hazard mitigation assistance programs that provide funding for eligible mitigation planning and projects that reduce disaster losses and protect life and property from future disaster damages (FEMA, 2021). Table 5 lists the projects in the county funded by a hazard mitigation assistance program.

Table 5. Historical hazard mitigation funding awarded in Roseau County

Project Identifier	Sub-Grantee	Project Type	Project Total	Federal Share
DR-1175-0050-R	City of Warroad	300.3: Vegetation Management - Wind	\$3,765	\$1,439

Project Identifier	Sub-Grantee	Project Type	Project Total	Federal Share
DR-1419-0022-R	Roseau	401.1: Water and Sanitary Sewer System Protective Measures	\$2,570,000	\$1,927,500
DR-1982-0006-P	Roseau County	91.1: Local Multihazard Mitigation Plan	\$26,399	\$17,730
DR-1419-0021-R	Roseau County	200.1: Acquisition of Private Real Property (Structures and Land) - Riverine	\$211,733	\$53,256
DR-1419-0014-R	Warroad	401.1: Water and Sanitary Sewer System Protective Measures	\$83,040	\$62,280

SOURCE: (FEMA, 2023c)

3.2 Community Vulnerability

The degree to which a person is vulnerable to the impacts of a hazard depends on how well they can react before, during, and after a hazardous event. The Centers for Disease Control and Prevention (CDC) Agency for Toxic Substances & Disease Registry (ATSDR) defines social vulnerability as “...the resilience of communities when confronted by external stresses on human health, stresses such as natural or human-caused disasters, or disease outbreaks” (ATSDR, 2020). Exacerbating these stressors are the increasing number of extreme weather events attributed to Minnesota’s changing climate (MPCA, 2018).

The ATSDR created the CDC Social Vulnerability Index (SVI) to help identify vulnerable communities that need support in preparing for hazards or recovering from disaster. The CDC SVI is created at the census tract level using American Community Survey (ACS) five-year data.

The SVI is included in the FEMA National Risk Index (NRI) and presented on the webpage for each hazard. Additionally, at-risk populations are summarized for each jurisdiction in the county profile page. Vulnerable attributes of a population are addressed with each natural hazard.

[Explore population vulnerability on the Roseau County HMP Website](#)

3.3 Climate Change

Minnesota’s climate change summary is informed primarily by the Midwest Chapter of the Fifth National Climate Assessment (NCA5) dated November 2023 and with interpretations from the MN DNR State Climatology Office (Wilson et al., 2023).

Rising global temperatures and the resulting increases in atmospheric moisture from evaporation of ocean waters have allowed Minnesota to become warmer, wetter, and more humid during the past several decades. The ten combined warmest and wettest years between 1895 and 2022 all occurred since 1998. Nights have warmed faster than days since 1970, and winter has warmed several times faster than summer. Even with the drought conditions of the early 2020s in Minnesota, heavy precipitation continues to show long-term increases, with damaging rain and snowfall events reported somewhere in the state each year of the decade through 2023. Despite no increase in the highest

temperatures of summer, maximum annual heat index values (one measure of how hot it feels) have been rising across the state because of increased humidity during heat waves.

Even though periods of intense growing-season drought have defined the climate of the early 2020s in much of Minnesota, long-term increases in annual precipitation have continued because of heavy and even record-setting precipitation during the cold season. For instance, record-dry conditions during May through mid-August of 2021 led to parts of northwestern and northern Minnesota reaching “Exceptional Drought”—the worst category on the US Drought Monitor. A shift to a stormy pattern during the following winter and spring, however, produced unprecedented precipitation between December in May in the exact same areas, with historic flooding along the Rainy River.

The observed changes in our climate have altered growing seasons, damaged forests, challenged natural resource management, limited recreational opportunities, destroyed infrastructure, and affected the conditions of lakes, rivers, wetlands, and groundwater aquifers that provide water for drinking and agriculture. Climate models project that temperature and precipitation increases will continue in Minnesota through the 21st century, with hotter summers and increased drought severity during dry periods as well.

To help the public understand how the changing climate has affected and is expected to affect the behavior of common weather hazards in the Minnesota, the MN DNR State Climatology Office developed graphical summaries of the scientific confidence associated with each hazard’s relationship to climate change (Table 6 and Table 7). Climate change in Minnesota has by far the strongest associations with (1) sharp declines in the frequency and severity of extreme cold outbreaks, tied to a persistent warming of winters, and (2) sharp increases in the frequency and intensity of extreme precipitation events. For instance, from 1970 through 2023, Minnesota’s winters warmed at a rate of almost one degree F per decade, and approximately three-four times faster than summer. During that same period, the coldest night of the year has warmed almost twice as fast as winter as a whole—up to two degrees F per decade (or 20 degrees F per century).

Despite major losses to cold extremes, the warming climate and increased abundance of atmospheric moisture has led to an uptick in many heavy snowfall metrics across Minnesota, leading to moderately high confidence that the changing climate is increasing heavy snowfall events—even as other winter characteristics decline. The intensity and frequency of tornadoes and severe convective storms are weakly connected at best to recent climate changes, and since the 1950s, despite superior detection and verification capabilities, the number of damaging tornadoes rated at least F-2 or EF-2 in Minnesota has shown no increases. Dramatic changes in the seasonal and geographical ranges of severe convective weather have, on the other hand, already affected Minnesota. In 2021, a damaging tornado crossed the Boundary Waters into Canada, becoming the latest on record so far north in the state. Then, on December 15th, an outbreak of destructive thunderstorm winds and over 20 tornadoes struck the southeastern parts of the state, producing the latest tornadoes on record by 29 days.

The climatic picture is expected to change further beyond the 2020s and especially as Minnesota approaches the middle of the 21st century (Table 7). Dramatic losses in extreme cold and additional increases in heavy and extreme precipitation are expected to remain the state’s leading climate change symptoms. Although Minnesota has not yet observed increases in the frequency, severity, or duration of summertime high temperatures or drought (through 2023), climate model projections

summarized in NCA5 indicate that heat waves are all but certain to increase by mid-century. A 2018 study conducted by NOAA scientists indicates that by the 2050s, heat waves in Minnesota will be more attributable to climate change than to natural variability (Lopez et al., 2018).

Table 6. Confidence that climate change has already impacted common Minnesota weather/climate hazards

Confidence	Hazard	Recent & Current Observations
Highest	Extreme cold	Rapid decline in severity & frequency
	Extreme rainfall and heavy snowfall	Becoming larger and more frequent
Moderately High	Humid heat waves	Some increase in maximum dew point and Heat Index values since 1980
Moderately Low	Tornadoes, hail, thunderstorm winds	Intensity and frequency unchanged, but seasons expanding aggressively
Low	Drought and dry spells	Intense & major episodes in early 2020s but no long-term trend
Lowest	Summer high temperature extremes	Highest temperatures still well within historical ranges, and number of hot days increasing only slightly in isolated locations

SOURCE: (BLUMENFELD, K. MINNESOTA STATE CLIMATOLOGY OFFICE, PERSONAL COMMUNICATION, DECEMBER 21, 2023)

Table 7. Confidence that climate change will impact common Minnesota weather/climate hazards through 2070

Confidence	Hazard	Expectations through 2070
Highest	Extreme cold	Continued rapid decrease in severity and frequency
	Extreme rainfall	Unprecedented events more common
High	Heat waves	Summer high temperatures, maximum dew point and heat index values all projected to increase
Moderately High	Drought	Increased severity likely as summer heat increases; frequency and duration projections unclear
Moderately Low	Heavy snowfall	Greater extremes, but events less frequent as winter rain increases
	Tornadoes, hail, thunderstorm winds	Intensity and frequency unclear but continued seasonal expansion and larger “outbreaks” possible

SOURCE: (BLUMENFELD, K. MINNESOTA STATE CLIMATOLOGY OFFICE, PERSONAL COMMUNICATION, DECEMBER 21, 2023)

3.3.1 Climate Change Impacts and Resilience Planning

The NCA5 states that even if the world decarbonizes rapidly, the Nation will continue to face climate impacts and risks. Adequately and equitably addressing these risks involves longer-term inclusive planning, investments in transformative adaptation, and mitigation approaches that consider equity and justice. In the Midwest, rising temperatures, extreme precipitation, drought, and other climate-related events are impacting agriculture, ecosystems, cultural practices, health, infrastructure, and waterways. Communities, Indigenous Peoples, governments, and businesses are embracing adaptation approaches that include climate-smart agriculture, improved landscape management, innovative green infrastructure financing, and collaborative decision-making.

NCA5 includes these key messages for the Midwest region ([Chapter 24: Midwest](#)):

- Changes in precipitation extremes, timing of snowmelt, and early-spring rainfall are expected to pose greater challenges for crop and animal agriculture, including increased pest and disease transmission, muddier pastures, and further degradation of water quality. Climate-smart agriculture and other adaptation techniques provide a potential path toward environmental and economic sustainability.
- Increasing incidence of flooding and drought is expected to further alter aquatic ecosystems, while terrestrial ecosystems are being reshaped by rising temperatures and decreasing snow and ice cover. In response, communities are adapting their cultural practices and the ways they manage the landscape, preserving and protecting ecosystems and the services they provide.
- Climate change has wide-ranging effects on lives and livelihoods. Mitigation and adaptation strategies, such as expanded use of green infrastructure, heat-health early warning systems, and improved stormwater management systems, when developed in collaboration with affected communities, have the potential to improve individual and community health.
- Increases in temperatures and extreme precipitation events are already challenging aging infrastructure and are expected to impair surface transportation, water navigation, and the electrical grid. Shifts in the timing and intensity of rainfall are expected to disrupt transportation along major rivers and increase chronic flooding. Green infrastructure and public and private investments may mitigate losses, provide relief from heat, and offer other ways to adapt the built environment to a changing climate.
- Climate-related changes to water quantity and quality are increasing the risks to ecosystem health, adequate food production, surface water and groundwater uses, and recreation (high confidence). Projected increases in droughts, floods, and runoff events across the Mississippi River basin and the Great Lakes will adversely impact ecosystems through increased erosion, harmful algal blooms, and expansion of invasive species.

Key messages from the NCA5 are indicated in green throughout this document.

3.3.2 Health Impacts of Climate Change in Minnesota

Climate change already impacts our health, and these impacts are expected to worsen in the years ahead. The risks are especially high for Minnesotans who are less able to cope due to their age, income, housing insecurity, preexisting health conditions, and more.

Heat, air pollution (including wildfire smoke and allergens like pollen), extreme precipitation, floods, droughts, and ecosystem changes are all “climate hazards” that impact our health. Some of these climate hazards have a direct effect, like a heat-related illness from a heatwave, while some have an indirect impact, like exacerbation of asthma from mold growth in a flooded basement.

Heat

Minnesotans will experience a wide range of impacts from the increased frequency and severity of extreme heat events. Higher heat, increased humidity, and longer and more frequent extreme heat events can lead to direct health impacts of dehydration and heatstroke. Untreated heat stroke can lead to death. Heat-related illness directly accounted for 75 deaths in Minnesota from 2000–2022.

Heat can also worsen existing health conditions, such as respiratory and cardiovascular diseases. The people most at risk include those who are more exposed and those who may be more susceptible due to physiological reasons. People more likely to be exposed to heat include outdoor workers in agriculture and construction, student athletes, people who live in cities (due to the heat island effect), people without air conditioning, and unhoused persons.

People at higher risk because of physiological reasons include those with underlying medical conditions, pregnant people, older adults, infants, and young children.

Just as one example of the devastating effects of heat, in the summer of 2011, Minnesota had six days when the heat index was 105 degrees F or higher—and that same summer there were 1,302 emergency department visits and 3 deaths due to heat. What makes these numbers tragic is that heat-related illnesses are preventable.

Indirect impacts of extreme heat include infrastructure failures like roads buckling and power outages; strain on essential services, such as emergency medical services and law enforcement response time due to increases in crime; and disruptions to important social and economic networks, such as school and event cancellations, which reduces access to education, physical activity, and community support.

Air Pollution

In general, we breathe clean air in Minnesota, according to federal standards. But on some days and in some locations, air is unhealthy due to ozone or fine particulate matter. Greenhouse gas emissions can increase air pollution, and rising temperatures can also affect the formation and release of pollutants. Unhealthy air days are expected to become more frequent, and more intense due to climate change.

Climate change is likely to increase three main air contaminants in Minnesota: ozone, particulate matter (including wildfire smoke), and allergens. These air pollutants can cause or exacerbate cardiovascular and respiratory diseases, chronic obstructive pulmonary disease (COPD), allergies, and asthma.

Pollen is intensifying with climate change, and can trigger allergies, asthma attacks, and affect other respiratory conditions. In Minnesota, asthma affects one in 16 children (6.4%) and one in 13 adults (7.4%). People with asthma need to be especially aware of pollen sources and seasons to prevent an allergy-related asthma attack.

There are three pollen seasons in Minnesota: trees, grasses, and weeds. Trees are the first to release pollen, typically starting in early April, grasses usually ramp up pollen release in early June, and weeds

typically begin releasing pollen in mid-June and continue until the first hard frost. Research shows that the growing season for ragweed pollen, which is highly allergenic, has increased by 15 to 25 days in and around Minnesota. The lengthening pollen season is strongly related to climate change characteristics, such as lengthening of the frost-free season and later timing of the first fall frost.

Indirect health effects from air pollution can include reduced visibility on a high smog day, reduced productivity at work or school due to allergies or asthma, and reduced productivity and degradation of crops and water sources, which can lead to economic burdens.

Those most at risk include:

- Children, because they have developing lungs, are outside more, and they play vigorously and inhale more air per pound of body weight compared to adults.
- Adults over 60, because their bodies are aging.
- People with chronic respiratory or cardiovascular disease because they are more susceptible to air pollution.
- Individuals living near other sources of air pollution (such as roadways, freeways, and heavy industry), because they are chronically exposed to air pollution.
- People of color, because they are more likely to be exposed to more air pollution and have a disproportionate burden of heart and lung diseases, which may increase susceptibility.

Extreme Precipitation, Floods, Drought

Rain is falling more frequently in extreme, heavy, localized events, leading to some parts of our state experiencing flooding while other parts experience drought.

Increased frequency and severity of heavy rainfalls can lead to flooding, which results in both direct and indirect health impacts like:

- Injury or even death from drowning.
- Illnesses from being exposed to contaminated drinking water or recreational sources.
- Mental health stress from experiencing the trauma of the event or later from being displaced or dealing with damaged homes and business.
- Respiratory ailments from exposure to mold from flooded basements.
- Carbon monoxide poisoning from exposure to carbon monoxide when using secondary power sources, like generators.
- Flooding can also disrupt economic and social networks and put a strain on essential services.

The people most at risk are Minnesotans who are more likely to be exposed to flood waters, like those who live in a flood plain or near water bodies, or people who cannot easily evacuate or recover from flooding destruction, such as people who do not have reliable transportation, people who can't use the stairs when elevators are out of service, people in wheelchairs, people with disabilities, older adults, and lower income people.

Heavy rain events can cause standing water in backyards or basements. Many homeowners have experienced wet basements, which is mentally and financially stressful, and if mold starts to grow that can become a health problem.

Localized flash flooding can also be a problem where our infrastructure is undersized, and people get caught off guard by flooded roads. This is an important public health safety concern as almost half of

flash flood fatalities occur in vehicles. It takes as little as six inches of fast-moving water to knock over and carry away an adult, and as little as 12 inches can carry away a small car.

Another public health concern with precipitation changes exacerbated by climate change is waterborne disease outbreaks. Heavy downpours can lead to a host of problems, including increased runoff and sewage overflows, which can cause outbreaks of waterborne diseases such as *E. coli* and *Cryptosporidium*. Runoff can carry viruses and other disease-causing agents into wells and recreational waters, contaminating them and causing health problems.

Zoonotic Diseases

Zoonotic diseases or zoonoses are caused by germs like viruses, bacteria, parasites, and fungi that spread between animals and people. Increases in temperatures and changes in rain patterns are changing our ecosystems, which can affect the spread of diseases carried by insects, ticks, rodents, birds, and other animals.

Diseases from ticks include Lyme disease, Anaplasmosis, and Babesiosis. As temperatures increase, disease-transmitting ticks will become active sooner and stay active longer, allowing more time to develop and feed on hosts. Ticks thrive in warm humid environments.

Additionally, there may be a decreased die off over the winter months if temperatures do not get very cold. An increase in winter temperatures can also lead to new tick species moving into and surviving in Minnesota, which can lead to the introduction of new diseases.

People more at risk for diseases carried by insects, ticks, and rodents are people who spend more time outdoors or are more exposed to these pests.

Harmful Algal Blooms

An increase in water temperatures can lead to blue-green algal blooms, which contain toxins that can pose harmful health risks. People or pets who drink or swim in water with dangerous levels of harmful algal bloom (HAB) contamination may experience stomach illness, skin irritation, allergic responses, and damage to the liver and nervous system. In extreme cases, dogs and other animals have died after drinking water containing these toxins.

Harmful algal blooms in Minnesota lakes result from several factors including runoff from fertilizers, discharges from waste treatment plants, warmer waters, and higher temperatures. While HABs can occur naturally, the frequency of outbreaks is increasing in part because human activities create favorable conditions for the blooms.

Zoonotic diseases and HABs can have an indirect health effect when they threaten the livelihoods of people who work in recreation-dependent economies that revolve around camping, fishing, and hunting.

Mental Health

Climate change threatens our mental health through direct exposure to a climate-related disaster (e.g., flooding); through the disruption to a major determinant of health, such as a loss of livelihood or a cultural tradition; and through awareness or uncertainty of climate change as an existential threat. These experiences may overlap and lead to compounded impacts on an individual or even an entire community, such as family farmers burdened with decadal drought who are more likely to commit suicide.

Existing research has associated several mental health conditions with climate change, such as psychological distress, grief reactions, depression, post-traumatic stress disorder, interpersonal conflicts, drug or alcohol abuse, loss of identity, and suicidal ideation.

Vulnerable populations such as children, the elderly, communities of color, and other marginalized communities are most at risk of climate change-related mental health impacts.

3.3.3 Climate Change Adaptation

Climate change adaptation is important for increasing the resilience of communities and the environment. The shocks caused by more extreme weather events and the stressors of longer-term changes to the climate affect all natural systems. For human communities, these impacts challenge the surroundings in which they live, the critically important ecosystem services upon which they depend, public health, local facilities and infrastructure, the safety of their residences, and the viability of their livelihoods. Development trends can further exacerbate both climate impacts and population vulnerability. Communities are only as resilient as the most vulnerable within them.

3.3.4 Climate Change Data and Tools in Minnesota

The University of Minnesota Extension and the University of Minnesota's Water Resources Center coordinate the Minnesota Climate Adaptation Partnership (MCAP), which brings together federal and state agencies, organizations, and individuals statewide with an interest in climate adaptation. MCAP received funding after the 2021 legislative session to develop high-resolution (2.6 mile/4km grid) dynamically downscaled climate projections utilizing the University of Minnesota's Supercomputing Institute. This data is being made publicly accessible via the new [Minnesota CliMAT—Climate Mapping and Analysis Tool](#). This interactive online tool provides highly localized climate projections for Minnesota. MN CliMAT is based on data from the latest generation of global climate models, called [CMIP6](#). With the dynamically downscaled climate projection data, users can visualize even how small cities will likely be impacted in the coming decades (Liess, S. et al., 2023).

More resources are available on the [climate change page](#) of the Roseau County website

3.4 Jurisdictional Change in Risk or Vulnerability Assessment

Jurisdictions in Roseau County have varying vulnerabilities to and concerns about impacts to their communities. Interviews with jurisdictional representatives in addition to the Local Mitigation Survey resulted in some specific concerns (see Appendix C). Participants were asked to provide feedback on how their community's vulnerability to natural hazards had either increased (due to changes such as development) or decreased (due to local mitigation efforts) over the past five years.

At the local jurisdictional level, several communities did note an increase in development over the last five years as a factor for an increase in vulnerability to severe weather or disaster events.

3.4.1 Jurisdictional Responses

As part of the Local Mitigation Survey form, Roseau County Emergency Management and each city jurisdiction were asked to provide a vulnerability assessment that described what structures, systems,

populations, or other community assets were susceptible to damage and loss from specific hazard events. Following are examples of common responses related to noted local vulnerabilities (as preserved in Appendix C: Part A, Question 3) for each jurisdiction. This information was used to help tie local vulnerability back to the exposure of people, buildings, infrastructure, and the environment to the natural hazards listed in Table 4 and to assist local governments in development of related local mitigation actions to reduce risk.

Roseau County

Ice Storms, Blizzards: Much of the county's municipal electrical service consists of overhead power lines and electrical poles. Ice and high winds can make the lines prone to failure. The Roseau County Courthouse and Sheriff's Office has back up power on demand via a large generator.

Windstorms, Tornadoes: The county has multiple mobile home parks that do not have storm shelters and residents are vulnerable to high wind and tornado events. Our municipal and private campgrounds are very active during summer and fall months and campers do not have access to onsite storm shelters. We have experienced power outages from strong wind events that brought down power lines but our local power company is extremely responsive and has restored power very quickly.

Extreme Cold: County residents are susceptible to dangers from extreme cold, especially if the power goes out. Our utility companies are very responsive and there are shelters available in Roseau, Warroad, Greenbush and Badger but the shelters lack backup generator power.

Drought: Roseau County has experienced very dry conditions the past several years as well as Canada directly to the north side of our county. Last summer we saw numerous days with heavy smoke in the air from Canadian wildfires. Wildfires are a constant threat to our large Beltrami Forest as well.

City of Badger

Extreme Cold: More funding needed for low-income residents for heat assistance.

Tornado: More of an alert system to residents. Not sure everyone has social media.

City of Greenbush

Flooding: The city's Welcome Park is vulnerable to flooding every spring. The residents that live off the river take their own precautions on the matter. At the park the river is far enough away to avoid any damage, just safety concerns.

Ice Storms, Blizzards: The City of Greenbush uses Ottertail Power Company for electrical services. During the cold temperatures, and blizzard weather conditions we've experienced power outage due to high winds and fallen trees on the power poles.

Extreme Cold: In the past we have experienced frozen pipes/water services. In 2021 and 2022 the city replaced the watermain on Main Street North and South. Residents living on those streets have not had any issues with freezing lines since.

City of Roosevelt

All-Hazards: We have residents in town who may be more vulnerable to severe weather because they are senior citizens or low-income. We do not have any specific city infrastructure at risk to storm events.

Windstorms, Tornadoes: The city does not have an outdoor warning siren to help warn residents of severe windstorms or tornadoes.

City of Roseau

Flooding: The city has many sanitary lift stations that are prone to flooding when storm sewer capacity is exceeded and urban flooding becomes an issue.

Ice Storms, Blizzards: The city still has many existing overhead electric lines in the older sections of Roseau that are vulnerable to ice buildup and falling trees leaving homeowners without power.

Windstorms, Tornadoes: The city has two mobile home parks without storm shelters housing a significant number of people.

City of Strathcona

No local vulnerabilities to report.

City of Warroad

Flooding: Our city storm sewers are vulnerable to flooding when the lake rises too high causing the city to have to “plug” the opening under the Taylor Road Bridge.

Tornadoes: Though not a common occurrence, we did have extensive damage from a tornado in 2006. We do not have a reliable tornado siren that can reach all areas of town. We must rely on CodeRED as a second source of warning.

Windstorms, Ice Storms: Though we continue to work towards replacing overhead lines with underground, we do still have about 20% of our electric lines overhead. This makes them vulnerable to the wind and ice.

3.4.2 Future Development

Because Roseau County is vulnerable to a variety of natural hazards, the county government—in partnership with the state government—must make a commitment to prepare for the management of these events. Roseau County is committed to ensuring that county elected and appointed officials become informed leaders regarding community hazards so that they are better prepared to set and direct policies for emergency management and county response.

As part of the vulnerability assessment conducted for the Roseau County HMP update, jurisdictions were asked to describe if there were any factors related to population growth, zoning, or development they felt have increased their community’s vulnerability to future severe weather or disaster events. Following is a compilation of common responses as noted in Appendix C: Part A.

Roseau County

The construction of the diversion around the City of Roseau does not mitigate the properties located north of the city where the water flows. We have not experienced an overwhelming amount of water like the 2002 water event that flooded the City of Roseau so we are uncertain to how the downstream area of the diversion project would be affected during another large-scale flooding event.

City of Badger

No increase in vulnerability to report.

City of Greenbush

No increase in vulnerability to report.

City of Roosevelt

No increase in vulnerability to report.

City of Roseau

New owners of the East and West side trailer courts have made improvements to increase the number of housing units in the parks. This increases the number of persons residing in housing units susceptible to tornados and high winds.

City of Strathcona

No increase in vulnerability to report.

City of Warroad

As the city continues to grow, both to the west and to the southeast, both residential neighborhoods are getting further from the city's only tornado siren. Depending on the wind, there are times it can be difficult to hear the siren when deployed.

In the development of local mitigation actions, all jurisdictions were encouraged to consider hazard mitigation strategies that would reduce risk in relation to future development, such as the update of local comprehensive plans, enforcement of ordinances, and incorporation of infrastructure improvements to reduce local vulnerabilities (see Appendix H).

The Roseau County emergency management director will work to keep the jurisdictions covered by the HMP engaged and informed during the plan's cycle. By keeping jurisdictional leaders involved in the monitoring, evaluation, and update of the HMP, they will keep their local governments aware of the hazards that face their communities and how to mitigate those hazards through planning and project implementation.

Section 6 of this plan further outlines the process by which Roseau County will address the maintenance of this plan, including monitoring, evaluation, and update of the plan, as well as implementation and continued public involvement.

Section 4 – Hazards

As part of the risk assessment, each natural hazard that poses risk to the county was independently reviewed for its past hazard history, relationship to future trends, and jurisdictional vulnerability to future events. A capabilities assessment was also conducted by the county to review the plans and programs that are in place or that are lacking (program gaps or deficiencies) for the implementation of mitigation efforts, as related to each natural hazard. An assessment was also conducted for local jurisdictions to identify the plans, policies, programs, staff, and funding they have in place in order to incorporate mitigation into other planning mechanisms (see Section 5.1 and Appendix C).

[Read more about natural hazard prioritization and view interactive information on all hazards](#)

Hazards that were deemed by Roseau County to be of moderate to high risk are addressed in the following hazard profiles. Hazards that were determined to be of low risk or without substantive mitigation actions to address them are not required to be included.

4.1 Flooding

Flooding is the most significant and costly natural hazard in Minnesota. Sixteen of the 29 federal disaster declarations in Roseau County included flooding. The most recent federal disaster declaration was in the spring of 2023, DR-4722.

On June 9-10, 2002, northwest Minnesota's [most severe flash-flood on record](#) affected areas from the Red River to Lake of the Woods and the Canadian border. Areas received 6-12 inches of rain, with even more reported in isolated spots. The rain produced catastrophic flooding to Roseau and neighboring counties. The deluge washed out roads, closed highways, flooded streams, and left rivers flooding for weeks. The storm produced extensive structural and infrastructural water damage.

Flooding is the highest priority hazard in Roseau County. A major flash floods or riverine flood happens on average once per year between March and September somewhere in the county.

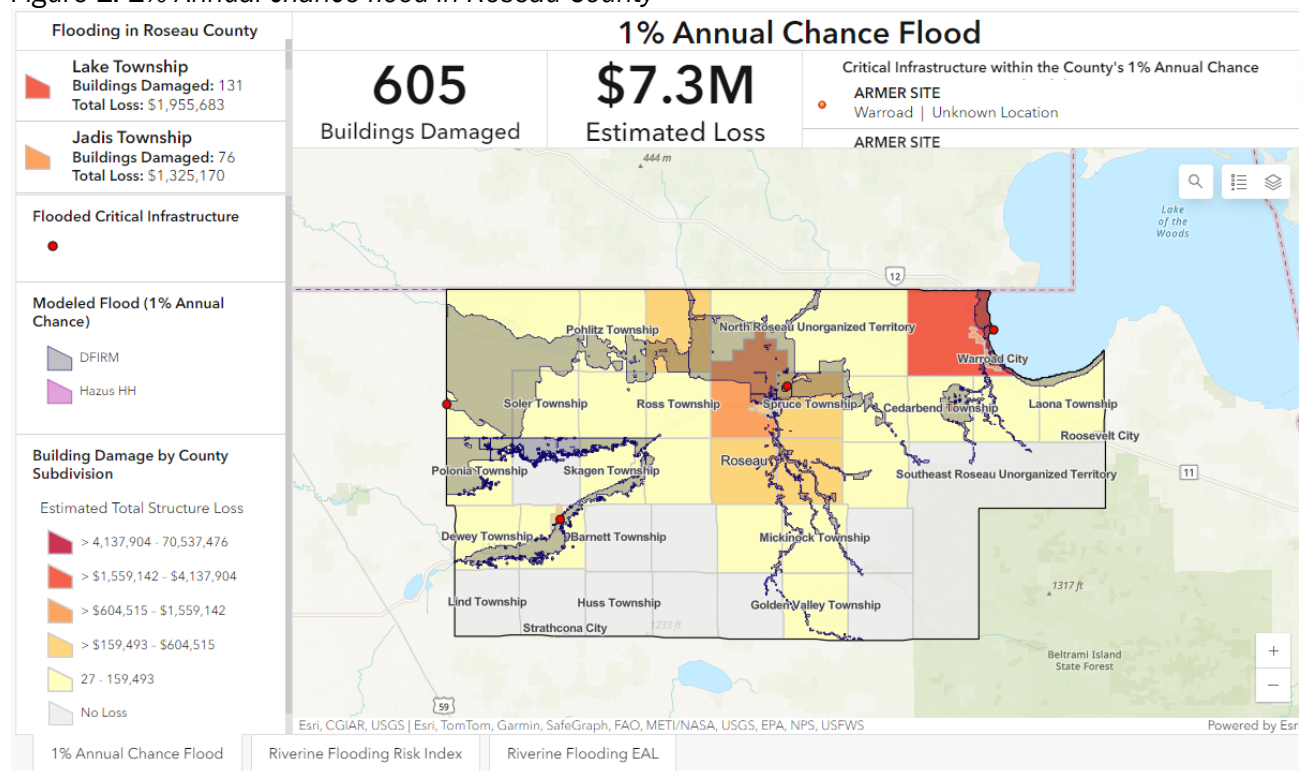
4.1.1 Probability of Occurrence

From 1997 through February 2024, the NCEI Storm Events Database has recorded 12 flood and 11 flash flood events. Roseau County has experienced one flash flood event every 2.3 years and one riverine flood event every 2.5 years on average during this period.

[View interactive maps and see information about flooding history, risk, and vulnerability](#)

Minnesota HSEM has encouraged a potential risk and economic loss analysis for a 1% annual chance flood using the FEMA tool, Hazus for ArcGIS. A Digital Flood Insurance Rate Map (DFIRM) defined the 1% annual chance flood boundary. Where available, stream base flow elevation and cross-section data were used to generate a depth grid with a 10-meter horizontal resolution. The resulting Hazus 1% annual chance floodplain is shown in the Flood Vulnerability dashboard on the Roseau County HMP website (Figure 1), where it is available in an interactive form.

Figure 1. 1% Annual chance flood in Roseau County



4.1.2 Vulnerability

Potential economic loss estimates were based on county-specific building data. Roseau County provided parcel tax and spatial databases that included building valuations, occupancy class, square footage, year built, and number of stories. The quality of the inventory is the limiting factor to a Hazus flood model loss estimation. Best practices were used to use local data and assumptions were made to populate missing (but required) values.

[View at-risk populations in Roseau County](#)

Hazus reports the percent damage of each building in the floodplain, defined by the centroid of each building footprint. After formatting the tax and spatial data, 16,791 points were input to Hazus to represent buildings with a total estimated building plus contents value of \$2.4 billion. Approximately 47% of the buildings (and 56% of the building value) are associated with residential housing.

The estimated loss by occupancy class for the entire county is shown in Table 8.

The distinction between building attributes within a parcel was not known, so the maximum percent damage to a building in that parcel was used to calculate loss estimates for the entire parcel. The sum of all the losses in each census block were aggregated to visualize the loss (see [flood risk map on the HMP website](#)). Please note: It is possible for a building location to report no loss even if it is in the flood boundary. For example, if the water depth is minimal relative to 1st-floor height, there may be 0% damage.

Table 8. Summary of 1% annual chance flood loss estimation by occupancy class

General Occupancy	County Total Buildings	County Building and Contents Value	Floodplain Total Buildings	Floodplain Building + Contents Value	Buildings with damage	Building + Contents Loss
Residential	7,860	\$1,331,848,342	360	\$73,222,500	261	\$4,824,100
Commercial	1008	\$217,613,918	71	\$8,388,800	69	\$1,255,147
Other	7,923	\$842,500,018	501	\$39,321,650	275	\$1,212,013
Totals	16,791	\$2,391,962,278	932	\$120,932,950	605	\$7,291,260

SOURCE: (FEMA, 2023A)

Hazus Critical Infrastructure Loss Analysis

Critical facilities and infrastructure are vital to the public and their incapacitation or destruction would have a significant negative impact on the community. These facilities and infrastructure were identified on the [HMP website](#) and verified by Roseau County.

Buildings identified as essential facilities for the Hazus flood analysis include hospitals, police and fire stations, and schools (often used as shelters). Loss of essential facilities are vulnerable to structural failure, extensive water damage, and loss of facility functionality during a flood, thereby negatively impacting the communities relying on these facilities' services. Fortunately, none of Roseau County's essential facilities included in the Hazus flood analysis are located within the 1% annual chance floodplain.

Extreme precipitation resulting in flooding may overwhelm water infrastructure, disrupt transportation and cause other damage. Particularly where stormwater, sewage and water treatment infrastructure is aging or undersized for more intense rainstorms, extreme rain events may pose both health and ecological risks in addition to costly damage (USGCRP, 2018b).

It is important to identify any critical infrastructure within the 1% annual chance floodplain, given the higher risk of the facility or infrastructure being incapacitated or destroyed during a flood. In Roseau County, two ARMER sites, two wastewater facilities, and Jeff's Super Service disposal facility were found to be at risk in the 1% annual chance flood. The locations were not verified. See the map on the [Roseau County HMP website](#). No other information is available.

Community Vulnerability

Potential economic losses were estimated by Census Minor Civil Division. Lake and Jadis Township would suffer significant estimated losses in the 1% annual chance flood. Warroad City also has a significant number of structures in the flood area. All jurisdictions with buildings identified in the 1% annual chance flood zone can also be viewed on the Roseau County HMP website.

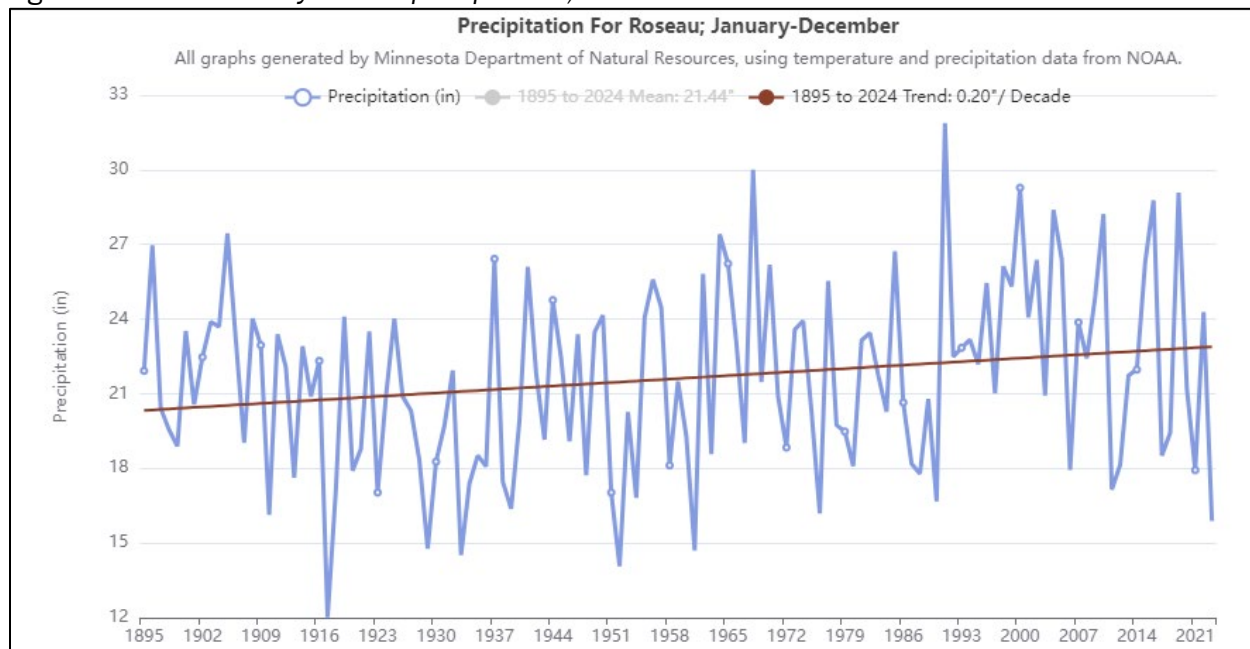
The status of jurisdictional participation in the National Flood Insurance Program and any repetitive loss properties are detailed in Section 5.1.1. National Flood Insurance Program (NFIP).

Section 3.4 provides jurisdictional responses of localized vulnerabilities to specific hazards.

4.1.3 Flooding and Climate Change

Higher temperatures globally have evaporated more surface and ocean water into the atmosphere, which, in turn, has provided more potential moisture for precipitating weather systems. In Roseau County, the result has been increased precipitation, with annual totals increasing at an average rate of just under a quarter inch per decade statewide since 1895 (see Figure 2).

Figure 2. Roseau County annual precipitation, 1895–2022



SOURCE:(MN DNR, 2024b)

Key Message #1 in the Water Chapter of the NCA5 states that climate change will continue to cause profound changes in the water cycle.

Snow cover will decrease and melt earlier and heavier rainfall is leading to increasing flooding (Payton et al., 2023). Additional increases in heavy and extreme precipitation are expected to remain the state's leading climate change symptoms. Heavy rains are now more common in Minnesota and more intense than at any time on record. Long-term observation sites have seen dramatic increases in one-inch rains, three-inch rains, and the size of the heaviest rainfall of the year. Since 2000, Minnesota has seen a significant uptick in devastating, large-area extreme rainstorms as well. Rains that historically would have been in the 98th percentile annually (the largest 2%) have become more common. (MN DNR, 2024a).

This precipitation increase is found in all seasons, but spring and summer are becoming wetter at faster rates than fall and winter. Whereas temperature increases have been greatest in the northern parts of the state, precipitation increases have been well distributed geographically, and have somewhat favored southern Minnesota, which has better access to moisture from the Gulf of Mexico and is more frequently near the “low-level jet” airflow (a relatively fast-moving zone of winds in the lower atmosphere) that influences precipitation production

4.2.1 Probability of Occurrence

To determine the probability of future wildfires, records of previous wildfire events in Roseau County were summed and divided by the dataset's period of record, resulting in the annual relative frequency of wildfires during the period of record. Based on Minnesota DNR records, from January 1985 to June 10, 2021, the relative frequency of wildfire events in the county is 22 per year (MN DNR, 2023). This relative frequency can be used to infer the probability of these events occurring in the future.

4.2.2 Vulnerability

Wildfires jeopardize the built environment, health, and wellbeing of individuals living near its fuel source. Some residents are more vulnerable to air quality conditions of wildfire, including children, older adults, and those with respiratory issues (AirNow, 2021).

Structures located in areas near undeveloped wildland are vulnerable to wildfires. The SILVIS Lab at University of Wisconsin–Madison created a dataset documenting the changes of the wildland–urban interface (WUI) in the United States from 1990 to 2010. Radeloff et al. (2018) define WUI as the area where structures and other human development meet or intermingle with wildland vegetation. With the increase of development in metropolitan fringes and rural areas, the WUI is growing. The expansion of the WUI in recent decades has significant implications for wildfire management and impact as it creates an environment in which fire can readily move between structural and vegetation fuels. Its expansion has increased the likelihood that wildfires will threaten structures and people (Radeloff et al., 2018).

There are two main types of WUI: intermix and interface. Intermix WUI are areas where housing and wildland vegetation intermingle; interface WUI are areas where housing are adjacent to wildland vegetation (Radeloff et al., 2018). Table 9 shows the change of total WUI (intermix and interface) in the county from 2000 to 2020, and the percent of the county's land, housing, and population located in the WUI area. Communities with higher proportions of WUI areas are more vulnerable to wildfires. The percentage of WUI within individual jurisdictions in Roseau County is shown in Table 10.

Table 9. Wildland-Urban Interface (WUI), Roseau County, 2000–2020

	Total WUI 2000	Total WUI 2010	Total WUI 2020	% Change (2000–2020)
Land Area	1.1	1.2	1.2	+9.1%
Housing	14.3	15.3	14.4	–0.7%

SOURCE: (RADELOFF, MOCKRIN, ET AL., 2023)

Table 10. Percentage of land area classified as WUI per jurisdiction in Roseau County

Township / City	Percent WUI
Roosevelt	63.5
Strathcona	57.3
Badger	13.5
Lake	13.2
Greenbush	10.6

SOURCE: (RADELOFF, HELMERS, ET AL., 2023)

All census tracts in Roseau County have a Wildfire Risk Index—the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions—score of above 98, which is higher 99% of census tracts in Minnesota (FEMA, 2023a).

Section 3.4 provides jurisdictional responses to localized vulnerabilities to specific hazards.

4.2.3 Wildfire and Climate Change

The changing climate poses a complex web of issues for wildfire in Minnesota. Climate change likely is affecting the frequency and intensity of Canadian wildfires, similar to its effect on wildfires in the western U.S. and Alaska (Wehner, 2017). Small particulate pollution from smoke plumes has numerous health impacts as described above, and if severe enough can result in spikes of demand for emergency services. Based even on intermediate (RCP4.5) future climate projections, many Midwest counties will experience increased exposure to wildfire smoke (Mills et al., 2018).

According to the NCA5, Key Message #3 in the Midwest Chapter, Climate Adaptation will require innovative collaborations between public health and other sectors such as emergency management (Wilson et al., 2023).

Changes in Minnesota's climate also may be influencing the frequency, severity, and areal coverage of wildfires. For example, warmer winters with inconsistent snow cover, the arrival of wet conditions prior to the growing season, plus early and more frequent thaws, all combine to prolong the exposure of susceptible vegetation to dry conditions, potentially extending the peak wildfire season.

Minnesota's changing climate also may affect fire-damaged areas. For instance, heavy rains in burned areas can lead to erosion and mudslides. Documented and projected increases in the frequency and intensity of heavy and extreme rainfall suggest that Minnesota is becoming and will become more prone to post-fire landscape hazards. Climate change also is having an impact on the pests that damage the health and composition of Minnesota forests, although the ultimate consequences for wildfire are complex and uncertain. Shorter winters are allowing two reproductive cycles of the Eastern Larch Beetle, which has now killed off at least 143,000 acres of mature tamarack forest in Minnesota since 2001 and affected about 535,000 acres to some degree during that period. The decline in severity and frequency of extreme cold may allow more rapid establishment of Emerald Ash Borer to latitudes further north than without climate change. Minnesota forests are home to an estimated 1 billion ash trees. Many of these trees are in nearly pure stands of black ash growing in wet areas. So while the deaths of these lowland species will increase fuel loading, their decreased transpiration will increase water on the ground. The ultimate contribution to wildfire will depend on the interplay between increased precipitation, warming temperatures, extreme heat, and periods of drought as our climate continues to change.

Temperatures are predicted to rise in the state, which could lead to more extreme heat events and associated wildfire risks. As Minnesota's climate changes, weather fluctuations between drought and extreme rain events and increasing temperatures will result in changes to forest composition and/or distribution. These fluctuations can lead to dry conditions that may cause increased fire risk in both grassland and forest environments.

The varied impacts of climate change are complicated by how these changes also interact with and reinforce one another. Drought and heat may both contribute to wildfires, which may in turn lead to changes in plant and animal populations and other ecological shifts. Increasing events of extreme heat and drought can increase the number of wildfires (Blumenfeld, K. Minnesota State Climatology Office, personal communication, January 9, 2019).

4.2.4 Program Gaps and Deficiencies

Roseau County Management identified existing program gaps and deficiencies that make its residents more vulnerable to wildfire. These gaps should be addressed with new mitigation efforts to reduce vulnerability, outlined as follows:

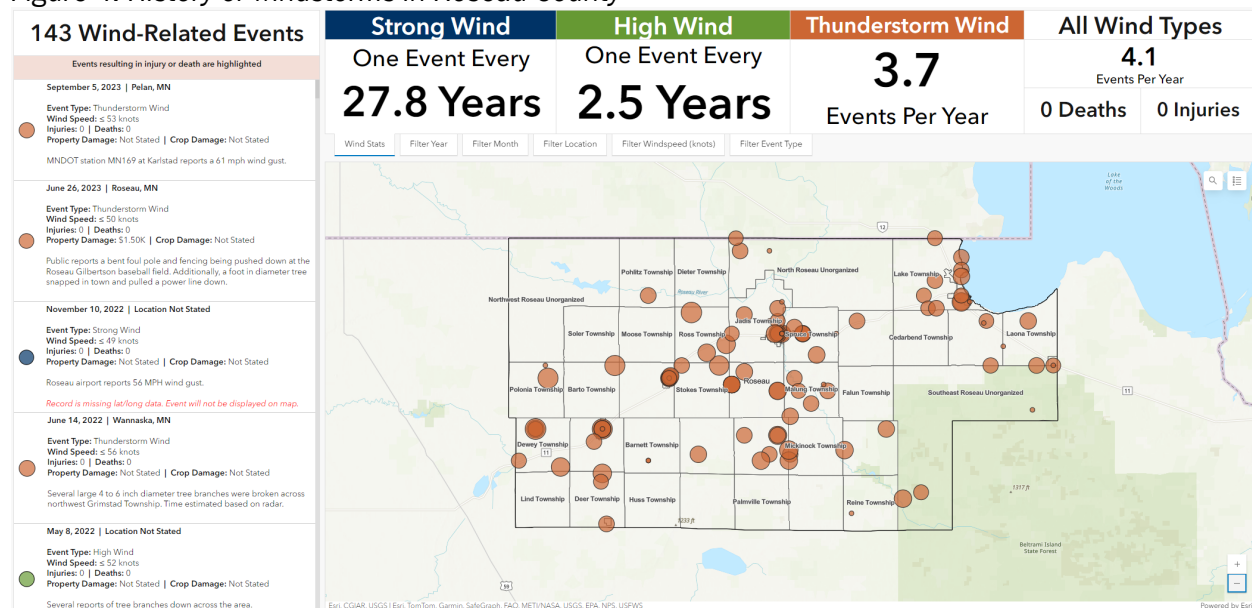
Community Wildfire Protection Plan: Roseau County does not have a CWPP in place. Developing a CWPP in coordination with local fire departments and the MN DNR will allow Roseau County to identify areas of high wildfire risk, targeted wildfire mitigation activities, and allow for greater access to more funding for any follow-up projects identified.

4.3 Windstorms

A windstorm is a wind strong enough to cause damage to trees and buildings and typically exceeding 34 mph (Pielke, 2012). Windstorm events encompass a variety of types of damaging wind. The history of windstorms in Roseau County is shown in Figure 4; an interactive version of this map can be found on the Roseau County HMP website.

[View interactive maps and see information about windstorm history, risk, and vulnerability](#)

Figure 4. History of windstorms in Roseau County



4.3.1 Probability of Occurrence

To determine the probability of future wind-related events in Roseau County, records of previous wind-related events (strong wind, high wind, and thunderstorm wind) in Roseau County were examined since 1996, the period of record all wind events have in common. The relative frequency of all wind-related events from January 1996 to February 2024 is 4.1 per year. These relative frequencies can be used to infer the probability of these events occurring in the future.

4.3.2 Vulnerability

The likelihood of a windstorm event does not vary geographically within the county, but the vulnerability of its residents is not constant. Vulnerability to injury from all kinds of windstorms decreases with adequate warnings, warning time, and sheltering in a reinforced structure. Therefore, residents living in rural areas, living alone or with limited mobility, or living in a manufactured home may be more vulnerable. Also at a higher risk to windstorms are those who work outdoors or do not have permanent housing.

Structural vulnerability depends in part upon the construction of a building and its infrastructure. Residents of mobile homes are more vulnerable to fatality or injury from windstorms because mobile homes are not able to withstand high winds as well as other structural dwellings, with 50 mph (43.4 knots) being the lower limit of wind speeds capable of damaging mobile homes (AMS, 2004). Steps to mitigate these vulnerabilities have been taken by the state, requiring all mobile home parks to provide an evacuation plan, and parks with at least 10 homes licensed after March 1, 1988 to provide a storm shelter (MDH, 2020). However, mobile home parks often do not provide the required storm shelters (Sepic, 2017). Building codes have also changed to improve the strength of new mobile home construction but there are still many older mobile homes in use that do not meet these new standards.

Section 3.4 provides jurisdictional responses to localized vulnerabilities to specific hazards.

4.3.3 Windstorms and Climate Change

Lack of high-quality long-term data sets makes assessment of changes in wind speeds very difficult (Kunkel et al., 2013). In general, one analysis found no evidence of significant changes in wind speed distribution. Other trends in severe storms, including the number of hurricanes and the intensity and frequency of tornadoes, hail, and damaging thunderstorm winds, are uncertain. Since the impact of more frequent or intense storms can be larger than the impact of average temperature, climate scientists are actively researching the connections between climate change and severe storms (USGCRP, 2018a).

According to the NCA5 Key Message #5 in the Climate Trends chapter, extreme events are becoming more frequent.

4.3.4 Program Gaps and Deficiencies

Roseau County Emergency Management identified several program gaps and deficiencies that make its residents more vulnerable to summer storms, including windstorms, that should be addressed with new mitigation efforts to reduce vulnerability. These include:

Above-Ground Power Lines: Most powerlines throughout Roseau County are above ground, exposing them to potential damage from high wind events. The county and local jurisdictions continue to work with utility providers to convert overhead powerlines to underground or to implement other measures to reduce risk of power failure.

Public Education: Ongoing public education is needed during tornado season to inform the public on what is a tornado watch/warning and what to do when outdoor warning sirens are activated. Roseau County and local jurisdictions also need to continue to encourage residents to be aware of and ready for severe storm events that can lead to long-term power outages.

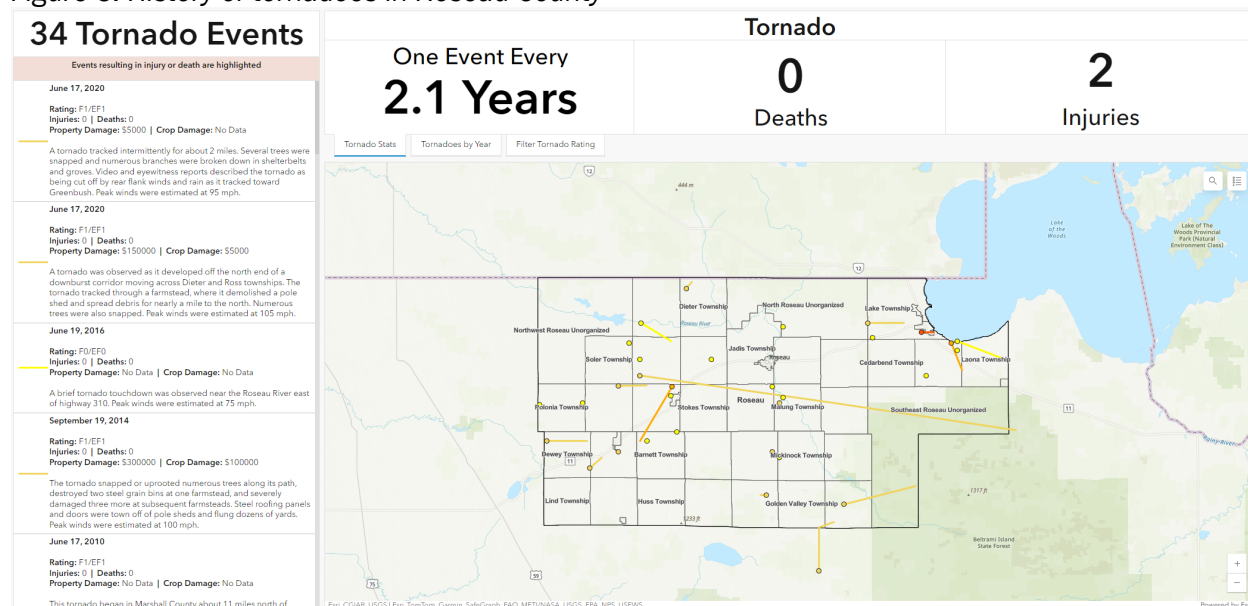
Storm Shelters and Tornado Safe Rooms: There are areas throughout Roseau County without viable storm shelters or tornado safe rooms where there are populations vulnerable to high wind and storm events, such as mobile home parks and campgrounds. A coordinated approach is needed to identify where storm shelters or tornado safe rooms are needed and to evaluate whether new construction or a retrofit of facilities is possible. Finding funding for the implementation of such construction projects is also a barrier.

4.4 Tornadoes

With wind speeds reaching up to 300 mph, tornadoes are one of nature's most violent storms (Hogeback, 2020). The history of tornadoes in Roseau County is shown in Figure 5; an interactive version of this map can be found on the Roseau County HMP website.

[View interactive maps and see information about tornado history, risk, and vulnerability](#)

Figure 5. History of tornadoes in Roseau County



4.4.1 Probability of Occurrence

Estimating the probability of future tornadoes in Roseau County was done using two methods. The first method summed the total number of tornadoes that either touched down in or traveled through the county. This sum was divided by the number of years tornado data was recorded, resulting in the annual relative frequency of tornado occurrences in the county. Based on records in the NCEI Storm Events Database through January 2024, there has been one tornado every 2.1 years in Roseau County. These 34 tornadic events occurred in 20 of the 73 years on record.

Because tornadoes often cross county lines and tornadic frequency may be better understood using events from a larger area, a second method was used to describe the frequency of tornadic events within a 50-mile radius of any location within the county. A grid of 900 square-meter cells was used to cover Minnesota and 50 miles beyond its border. From the center of each cell, the number of tornadoes that intersected a 50-mile radius was counted. Each cell was assigned a total tornado line count, which was then divided by the tornado dataset's period of record, resulting in the annual relative frequency of tornadoes occurring within 50 miles of the respective cell.

For any location in Roseau County, there was an annual frequency of <1–3 tornadoes within a 50-mile radius. The historical frequency was higher in the southwest than the northeast. These relative frequencies can be used to infer the probability of these events occurring in the future.

4.4.2 Vulnerability

The likelihood of a tornado does not vary significantly across geography within Roseau County; however, certain populations may be more vulnerable and less resilient to the impacts of a tornado. In general, tornado casualties decrease when people receive adequate warnings with sufficient time to seek shelter in a reinforced structure. Because communication is critical before a tornadic event, certain residents may be more negatively impacted by a tornado, including those living in rural areas, individuals with limited mobility, people who do not live near an outdoor warning siren, or those who do not use social media. Section 3.4 provides jurisdictional responses of localized vulnerabilities to specific hazards.

[View at-risk populations in Roseau County](#)

People living in mobile homes are particularly vulnerable to tornadoes due to them not being able to withstand the strong winds produced by a tornado. An analysis by the Associated Press of NOAA storm data found that since 1996, 53% of tornado fatalities in the United States were people who remained within or attempted to flee from mobile homes (Borestein et al., 2023). While Minnesota law requires most mobile home parks to have storm shelters, many do not (Raiche, 2022).

4.4.3 Tornadoes and Climate Change

Minnesota's climate is undergoing distinct changes, but as reported by the MN DNR State Climatology Office, these changes are only weakly connected to increases in tornadoes or severe convective storms. Minnesota, like all parts of the U.S., has seen increases in the weakest class of tornadoes (rated F-0 or EF-0), but these increases are known to be linked to improved spotting, detection, and verification procedures within the National Weather Service.

When examining tornadoes that cause significant structural damage and are rated EF-2 or above, Minnesota has seen no recent trends towards increasing frequencies—whether measured as raw counts, or as days with one or more of these tornadoes (MN DNR, 2019).

The tornado trends in Minnesota match those found nationally. NCA5 states that while the average annual number of tornadoes appears to have remained relatively constant, there is evidence that tornado outbreaks have become more frequent, tornado seasons are extending into later in the fall, and that tornado strength has increased (Marvel et al., 2023). An October 10, 2021 tornado in the Boundary Waters Canoe Area Wilderness became the latest on record so far north in the state. Then, on December 15, 2021, an outbreak of destructive thunderstorm winds and over 20 tornadoes struck the southeastern parts of the state, producing the latest tornadoes on record by 29 days (Blumenfeld, K. Minnesota State Climatology Office, personal communication, December 21, 2023).

According to the NCA5 Key Message #5 in the Climate Trends chapter, extreme events are becoming more frequent.

However, climate scientists are unclear about whether the recent statistical behavior of these severe convective storm events has any relationship with the changing climate. This uncertainty results from the fact that tornadoes and their parent thunderstorms operate on smaller scales and more localized processes than the global climate. There has been some indication that, on a national basis, tornadoes are being clustered into fewer days, suggesting a greater tendency towards outbreaks. Scientific modelling studies indicate that the meteorological conditions supportive of severe thunderstorms should increase in the future, but it is unclear whether the specific conditions required for the formation of tornadoes, and particularly significant tornadoes, will increase (Kossin, 2017). Until more studies are completed, the Minnesota State Climatology Office recommends assuming that tornadoes will remain an important and dangerous part of Minnesota's climate, even if they do not increase in frequency or severity in response to changing climatic conditions.

4.4.4 Program Gaps and Deficiencies

Roseau County Emergency Management identified that there are several program gaps and deficiencies that make its residents more vulnerable to summer storms, including tornadoes, that should be addressed with new mitigation efforts to reduce vulnerability. These include:

Above-Ground Power Lines: Most powerlines throughout Roseau County are above ground, exposing them to potential damage from high wind events. The county and local jurisdictions continue to work with utility providers to convert overhead powerlines to underground or to implement other measures to reduce risk of power failure.

Public Education: Ongoing public education is needed during tornado season to inform the public on what is a tornado watch/warning and what to do when outdoor warning sirens are activated. Roseau County and local jurisdictions also need to continue to encourage residents to be aware of and ready for severe storm events that can lead to long-term power outages.

Storm Shelters and Tornado Safe Rooms: There are areas throughout Roseau County without viable storm shelters or tornado safe rooms where there are populations vulnerable to high wind and storm events, such as mobile home parks and campgrounds. A coordinated approach is needed to identify

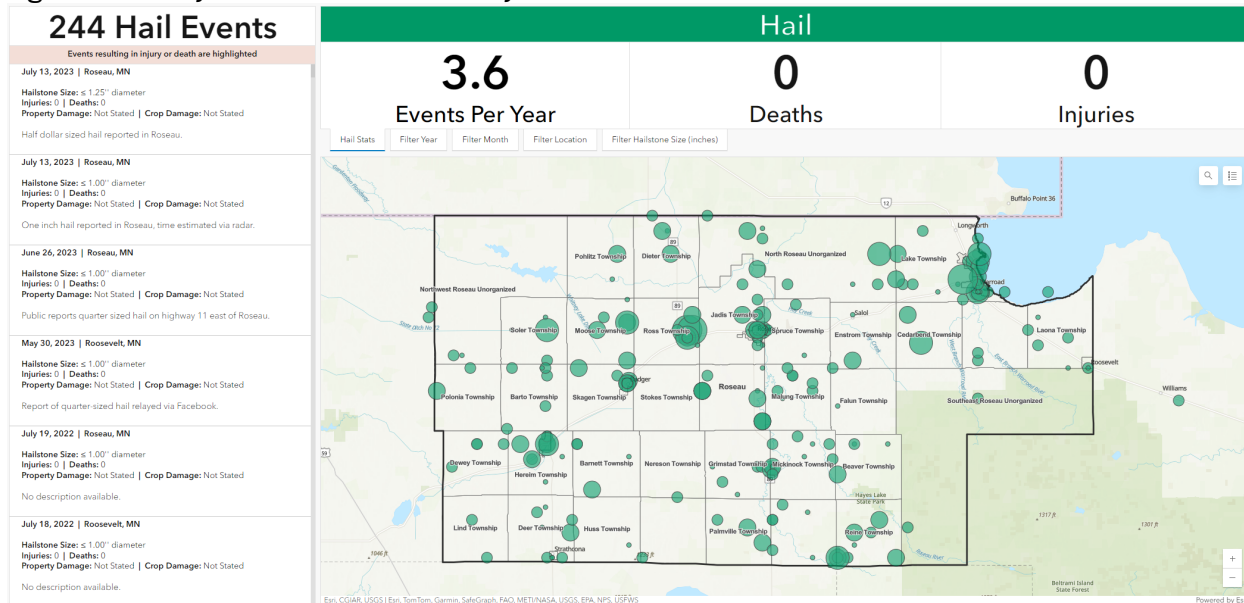
where storm shelters or tornado safe rooms are needed and to evaluate whether new construction or a retrofit of facilities is possible. Finding funding for the implementation of such construction projects is also a barrier.

4.5 Hail

Hailstorms occur throughout the year though are most frequent between May and August (NWS, 2020). Although hailstorms rarely cause injury or loss of life, they do cost Minnesota nearly \$16 million in property and crop damage each year (CEMHS, 2023). In 2017, 44% of properties in Minnesota were affected by damaging hail events (Samanta & Wu, 2017). The history of hail in Roseau County is shown in Figure 6; an interactive version of this map can be found on the Roseau County HMP website.

[View interactive maps and see information about hail history, risk, and vulnerability](#)

Figure 6. History of hail in Roseau County



4.5.1 Probability of Occurrence

To determine the probability of future hailstorms in Roseau County, records of previous hail events in the county were examined for the period of record. From January 1955 through January 2024, the relative frequency of hail events was 3.6 per year. This relative frequency can be used to infer the probability of hail events occurring in the future. Please note that public reports of hail are often secondary to those of thunderstorm winds or tornadoes because if either damaging winds or tornadoes occur, the damaging wind and/or tornado are more important to the reporter and may result in underreporting of hail events.

4.5.2 Vulnerability

Roseau County's agricultural lands and structures are vulnerable to hail damage and its residents to injury and possibly death. Data from the Spatial Hazard Events and Losses Database for the United States (SHELDUS) was examined to identify the county's monetary losses due to hail damage to crops, property, injury, and death. From 1960 through 2022 Roseau County reported \$1,418,420.68 in hail damages (2021 ADJ), ranking 79th among Minnesota counties in total hail damages. Roseau County's losses are primarily due to crop damage reported at \$1,057,054.23, followed by \$361,366.46 property damages. Crop indemnity payments due to hail totaled \$2,954,474.35 (2021 ADJ) for the period of record spanning 1989–2022 (CEMHS, 2023).

Within Roseau County, the vulnerability of jurisdictions to hailstorms does not vary geographically. As with all summer storms, those who work outdoors or do not have permanent housing are at greater risk during hailstorms.

Section 3.4 provides jurisdictional responses of localized vulnerabilities to specific hazards.

4.5.3 Hail and Climate Change

Trends in severe storms, including the numbers of hail and damaging thunderstorm winds are uncertain. Since the impact of more frequent or intense storms can be larger than the impact of average temperature, climate scientists are actively researching the connections between climate change and severe storms (Marvel et al., 2023). The NCA reports that in Minnesota's neighboring Great Plains region, hail size, frequency of large hail, and length of hail season are projected to increase through the rest of this century (Knapp et al., 2023). The occurrence of very heavy precipitation has increased in Minnesota in recent decades, and future projections also indicate this will continue (Blumenfeld, K. Minnesota State Climatology Office, personal communication, December 21, 2023).

According to the NCA5 Key Message #5 in the Climate Trends chapter, extreme events are becoming more frequent.

4.5.4 Program Gaps and Deficiencies

Above-Ground Power Lines: Most powerlines throughout Roseau County are above ground, exposing them to potential damage from high wind events. The county and local jurisdictions continue to work with utility providers to convert overhead powerlines to underground or to implement other measures to reduce risk of power failure.

Public Education: Ongoing public education is needed during tornado season to inform the public on what is a tornado watch/warning and what to do when outdoor warning sirens are activated. Roseau County and local jurisdictions also need to continue to encourage residents to be aware of and ready for severe storm events that can lead to long-term power outages.

Storm Shelters and Tornado Safe Rooms: There are areas throughout Roseau County without viable storm shelters or tornado safe rooms where there are populations vulnerable to high wind and storm events, such as mobile home parks and campgrounds. A coordinated approach is needed to identify

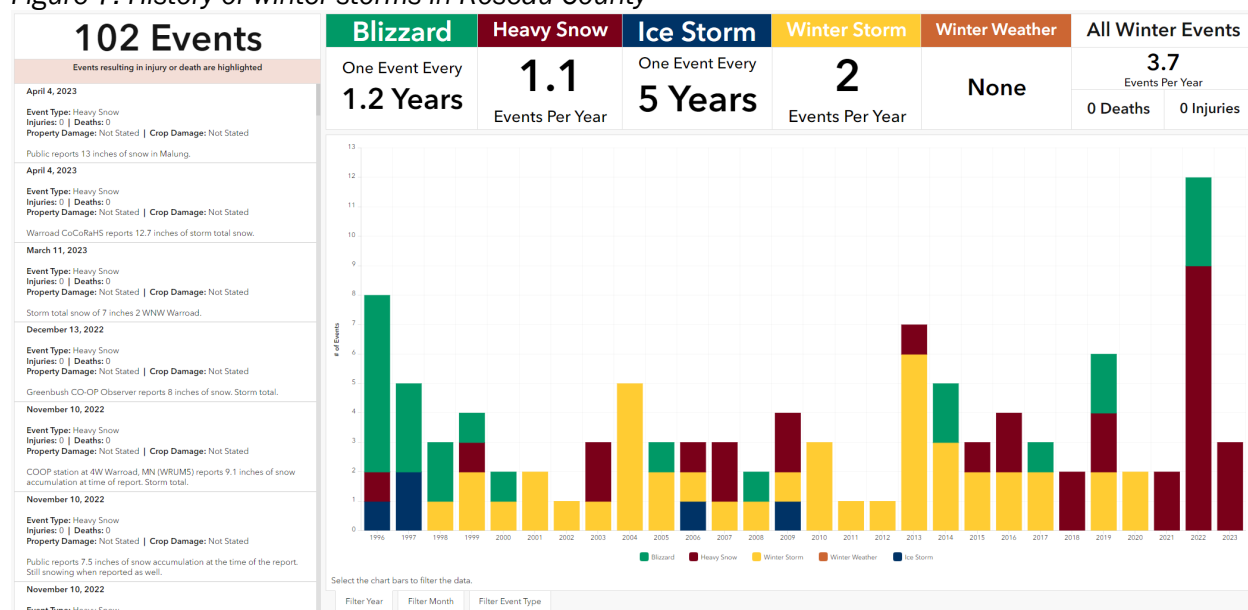
where storm shelters or tornado safe rooms are needed and to evaluate whether new construction or a retrofit of facilities is possible. Finding funding for the implementation of such construction projects is also a barrier.

4.6 Winter Storms

Winter storms encompass a number of winter weather events which the National Weather Service (NWS) organizes into the following categories: blizzard, heavy snow, ice storm, winter storm, and winter weather. Winter weather events are common in Minnesota and can be costly. According to the Spatial Hazard Events and Losses Database (SHELDUS), winter weather events in Minnesota have cost more than \$1.02 billion in damages since 1960 (CEMHS, 2023). The history of winter storms in Roseau County is shown in Figure 7; an interactive version of this map can be found on the Roseau County HMP website.

[View interactive maps and see information about winter storm history, risk, and vulnerability](#)

Figure 7. History of winter storms in Roseau County



4.6.1 Probability of Occurrence

To determine the probability of future winter-related storm events in Roseau County, records of previous events (blizzards, heavy snows, ice storms, winter storms, and winter weather) were summed and divided by the dataset's period of record, resulting in the annual relative frequency of winter-related storms. Based on records in the NCEI Storm Events Database through January 2024, the relative frequency of winter-related storm events in Roseau County is 3.7 per year. This relative frequency can infer the probability of these events occurring in the future.

4.6.2 Vulnerability

Transportation systems, electrical distribution systems, and structures are vulnerable to winter storms throughout the county. These events do not vary geographically within the county; all jurisdictions are equally vulnerable. While it is highly likely these events will continue occurring annually, the amount of snow and ice and number of winter-related storm events to occur each year are unpredictable. Citizens living in climates such as these must always be prepared for situations that put their lives or property at risk. It is important that extra consideration be given to the vulnerable populations discussed in Section 3.2. Section 3.4 provides jurisdictional responses of localized vulnerabilities to specific hazards.

4.6.3 Winter Storms and Climate Change

Historically, winter storms have had a large impact on public safety in Minnesota. If the frequency of snowstorms and annual total snowfalls increase, as anticipated effects of Climate Change, the effects on public safety will also increase. Pressures on energy use, reduced reliability of services, potential outages, and potential rise in household energy costs are major climate change risks to public health that can occur from winter weather.

Table 7 in Section 3.3 discusses confidence that climate change will impact common Minnesota weather/climate hazards beyond 2025, there is some weak evidence that warming winters may make heavy snowfall events less frequent as winter warms.

4.6.4 Program Gaps and Deficiencies

Roseau County Emergency Management identified several program gaps and deficiencies that make its residents more vulnerable to severe winter storms. The following gaps and deficiencies should be addressed with new mitigation efforts to reduce that vulnerability:

Above-Ground Power Lines: Most powerlines throughout Roseau County are above ground, exposing them to impacts/damage from winter high wind and ice events, potentially leading to localized or extensive power outages.

Public Education: Ongoing public education is needed to encourage residents to be ready for long-term power outages or to be snowed in during dangerous winter events such as ice storms and blizzards.

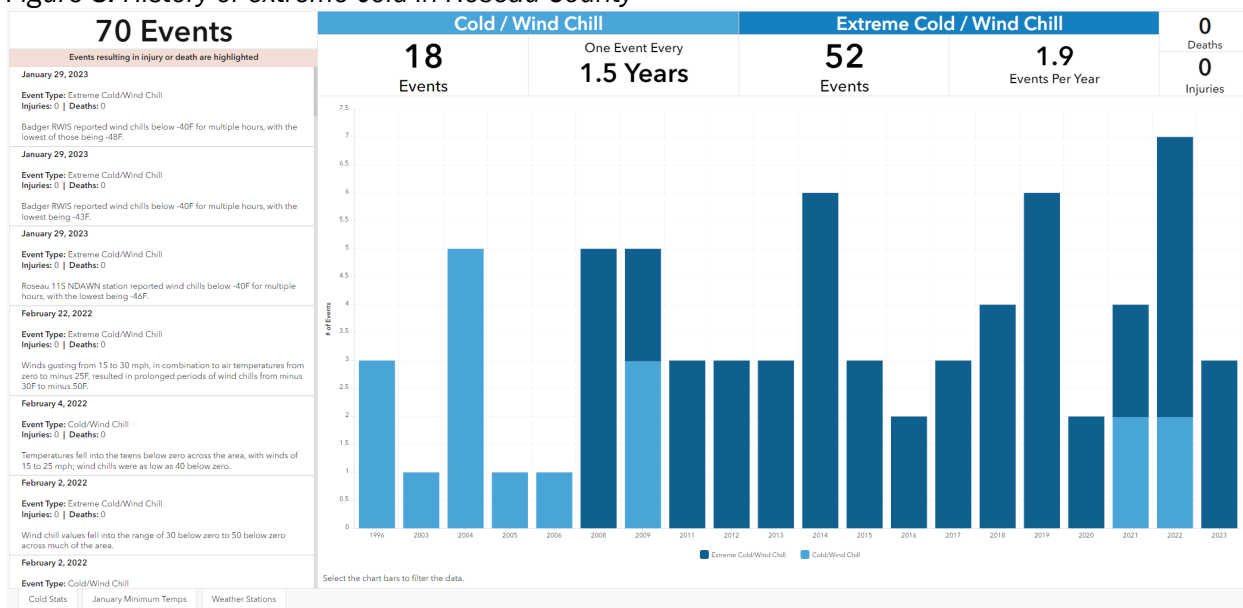
Backup Power: Not all designated shelter facilities have generator back-up power to provide the ability to care for residents if displaced during a severe winter event coupled with an extended power outage.

4.7 Extreme Cold

Due to Minnesota's position in the middle of the continent and subsequent climate, the state may experience extremely frigid temperatures in winter. Winter in Roseau County can be especially dangerous when low temperatures and wind create arctic-like wind chills. The history of extreme cold in Roseau County is shown in Figure 8; an interactive version of this dashboard can be found on the Roseau County HMP website.

[View interactive maps and see information about extreme cold history, risk, and vulnerability](#)

Figure 8. History of extreme cold in Roseau County



4.7.1 Probability of Occurrence

To determine the probability of future cold-related events in Roseau County, records of previous cold/wind chill and extreme cold/wind chill events were summed and divided by the dataset's period of record, resulting in the annual relative frequency. Based on records in the NCEI Storm Events Database through January 2024, the relative frequency of extreme cold/wind chill events in Roseau County is 1.9 per year. (NCEI, 2023). This relative frequency can be used to infer the probability of these events occurring in the future.

4.7.2 Vulnerability

The risk of extreme cold does not vary geographically within the county. Citizens living in climates such as these must always be prepared for situations that put their lives or property at risk. The youngest and more elderly residents, homeless persons, individuals with chronic medical conditions, and those who are working or recreating outdoors are most at risk for frostbite and hypothermia (MDH, 2021).

[View at-risk populations in Roseau County](#)

It is not always the depth of the cold that poses a threat but rather unpreparedness for the cold, such as an individual with a vehicle breakdown who lacks a personal winter safety kit in the vehicle. The cost of propane can make rural residents more vulnerable to issues with extreme cold. A propane shortage and resulting crisis, such as that which occurred in 2014, may increase the cost of heating homes and farms to a prohibitive amount (Eaton, 2014). The Minnesota Department of Commerce presents options and suggestions for homeowners who use propane [on their website](#).

The CDC publication “Extreme Cold: A Prevention Guide to Promote Your Personal Health and Safety” outlines preparation measures that individuals can take to reduce their vulnerability to extreme cold. Highlights in this document include advice about travel preparations, securing your home water supply, and safety during recreation (CDC, 2021).

Section 3.4 provides jurisdictional responses of localized vulnerabilities to extreme cold.

4.7.3 Extreme Cold and Climate Change

Although climate research indicates that Minnesota’s average winter lows are rising rapidly, and our coldest days of winter are now warmer than we have ever recorded, cold temperatures have always been a part of Minnesota’s climate, and extreme cold events will continue.

As the climate changes, an increase in extreme precipitation or storm events could lead to a higher risk of residents being exposed to cold temperatures during power outages or other storm-related hazards. Extreme and changing temperatures are already challenging aging infrastructure and are expected to impair surface transportation and the electrical grid.

Key Message #4 in NCA5 in the Midwest Chapter states that green infrastructure and public and private investments may mitigate losses, provide relief from heat, and offer other ways to adapt the built environment to a changing climate.

4.7.4 Program Gaps and Deficiencies

Roseau County Emergency Management identified several program gaps and deficiencies that make its residents more vulnerable to extreme cold. The following gaps and deficiencies should be addressed with new mitigation efforts to reduce that vulnerability:

Generators for Backup Power to Critical Facilities & Shelters: Not all healthcare and other critical facilities utilized for the care of residents & visitors, including designated severe weather/emergency shelters (schools, churches, etc.) have backup power to run heating systems in the event of a power outage.

Public Education: Ongoing public education is needed to encourage residents to be prepared for extreme weather, including power outages during periods of extreme cold. Roseau County Emergency Management continues to do public education through the local schools, senior and health care centers, and local government for severe weather awareness.

4.8 Extreme Heat

Extreme heat is the combination of very high temperatures and exceptionally humid conditions. Roseau County’s agricultural lands and structures are vulnerable to heat damage and its residents to injury, exacerbation of pre-existing chronic conditions, and even death (Moss, 2017). Medical costs related to extreme heat can be enormous, and with extreme heat estimated to create \$1 billion in health care-related costs in the United States in 2023 (Center for American Progress, 2023). In 2023 in Minnesota, 682 people went to the emergency department and two died from heat-related illness (MDH, 2024).

When the atmospheric moisture content is high, the rate of perspiration from the body decreases and the human body feels warmer (NWS, 2021). Heat stress can be indexed by combining the effects of temperature and humidity. Data from the Spatial Hazard Events and Losses Database (SHELDUS) for the United States was examined to identify the county's monetary losses due to heat damage to crops. Ranking 59th among Minnesota counties in crop indemnity payments, heat-related losses for Roseau County totaled over \$507,196.06 (2021 ADJ) for the period of record spanning 1989 to 2022 (CEMHS, 2023).

4.8.1 Probability of Occurrence

Based on records in the Midwestern Regional Climate Center (MRCC) that date back to 1991, the average daily maximum temperature for July in Roseau County has historically been in the 78–79 °F range (MRCC, 2021), which is below the 90 °F for 2–3 days criteria for “extreme” heat events (FEMA, 2024). However, the nearest weather station to Roseau County, Argyle Station in Marshall County, reported daily maximum temperatures above 90 °F a total of 252 times since 1991, an average of eight days per year. This historical average can be used to infer future events, although climate change projections show an increase in the number of days that exceed 90 °F by mid-century (see Section 4.8.3).

4.8.2 Vulnerability

The Minnesota Department of Health released a 2012 Minnesota Extreme Heat Toolkit, to help local governments prepare for extreme heat events. In their toolkit, they note extreme heat events are often dubbed “silent killers” because deaths and illnesses from these events are often misunderstood and underreported. Minnesota has no official system to report deaths and illnesses linked to extreme heat (MDH, 2012). It is important to not underestimate the danger of extreme heat events within the state.

Key Message #3 in the Midwest Chapter of the NCA5 states that Mitigation and adaptation strategies, such as expanded use of green infrastructure and heat-health early warning systems, have the potential to improve both individual and community health (Wilson et al., 2023).

The impact extreme heat has on individuals is not equal. According to the Center for Disease Control and Prevention (CDC), population groups more vulnerable to extreme heat include:

- Older adults (≥65 years old). The elderly cannot easily adjust to sudden changes in temperature and are more likely to have a chronic medical condition or take medication affecting their body's ability to control its temperature.
- Infants and children. Young children and infants have limited control with their surroundings and rely on others to keep them cool and hydrated.
- Individuals with chronic health conditions. These individuals are less likely to respond to changes in temperature, may be taking a medication which exacerbates the effects of extreme heat, or have a condition which is a risk-factor for heat-related illness (e.g., heart disease, mental illness, poor blood circulation, and obesity).
- People with low income. These individuals may not be able to afford to properly cool their home and may face transportation challenges when trying to access cooling shelters.

- Athletes and people working outdoors. Both groups are likely to exert energy while being exposed to the heat (CDC, 2020).

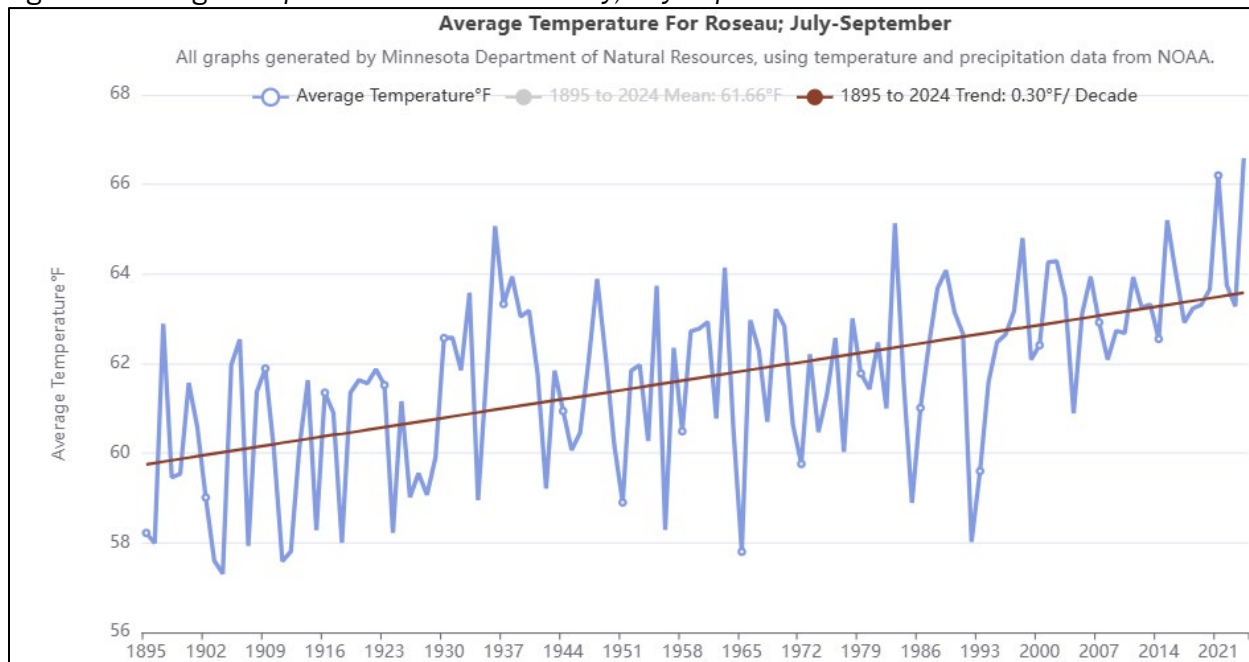
[View at-risk populations in Roseau County](#)

Warming temperatures will continue to increase the risk of extreme heat, especially among these already vulnerable populations. Section 3.4 provides jurisdictional responses of localized vulnerabilities to extreme heat.

4.8.3 Extreme Heat and Climate Change

Minnesota's annual average temperature has increased more than 3 °F since record-keeping began in 1895, and nine of Minnesota's hottest 16 years on record have occurred since the year 2000 (MCAP, 2024). In Roseau County, the average temperature from July to September has increased 0.3 degrees Fahrenheit per decade since 1895.

Figure 9. Average Temperature in Roseau County, July-September.



(MN DNR, 2024b)

Climate models project that temperature and precipitation increases will continue in Minnesota through the 21st century, with hotter summers and increased drought severity during dry periods as well. Already, the maximum annual heat index values have been rising across the state, because increased humidity during heat waves (Blumenfeld, K. Minnesota State Climatology Office, personal communication, December 21, 2023).

The average number of days per year with temperatures over 95 °F under a high carbon emissions (SSP 585), mid-century

(2040–2059) scenario is illustrated in the [Climate Dashboard](#) on the Plan website

On average, by mid-century (2040–2059) Roseau County may reach 4.84 more days/year of temperature greater than 95 °F compared to the historical (1995–2014) simulations average of 1.1 days/year in a high emissions scenario (Liess, S. et al., 2023).

Greenhouse gas concentrations will continue rising through the century, and the air's ability to trap heat from the earth's surface will increase accordingly. Warming of the atmosphere will evaporate even more water into the air, further limiting the amount of cooling Minnesota will be able to achieve at night and during the winter. As warmer winters and warmer baseline conditions transition into summer, it will be much easier to attain extreme heat (ICAT, 2017).

4.8.4 Program Gaps and Deficiencies

Roseau County Emergency Management identified several program gaps and deficiencies that make its residents more vulnerable to extreme heat. The following gaps and deficiencies should be addressed with new mitigation efforts to reduce that vulnerability:

Generators for Backup Power to Critical Facilities & Shelters: Not all healthcare and other critical facilities utilized for the care of residents & visitors, including designated severe weather/emergency shelters (schools, churches, etc.) have backup power to run cooling systems in the event of a power outage.

4.9 Dam Failure

The MN DNR Dam Safety Program has the mission of protecting the life and safety of people by ensuring that dams are safe. Minnesota's Dam Safety Program sets minimum standards for dams and regulates the design, construction, operation, repair, and removal of both privately and publicly (non-federal) owned dams (MN DNR, 2020). The federal government is responsible for regulating and maintaining dam safety of federally owned dams. No single agency regulates all federally owned dams. 42% of federal dams are owned and managed by the U.S. Army Corp of Engineers (USACE) and the Bureau of Reclamation. The remaining federal dams are owned and managed by other federal agencies, including the Fish and Wildlife Service, Forest Service, the Department of Defense, and the Bureau of Indian Affairs, among others (Normand, 2019). The Federal Energy Regulatory Commission (FERC) Dam Safety Program is the largest dam safety program in the U.S. The Commission works with federal and state agencies to ensure and promote dam safety of over 3,000 dams across the U.S. The Commission inspects projects on an unscheduled basis to investigate potential dam safety problems; complaints about constructing and operating a project; safety concerns related to natural disasters; and issues concerning compliance with the term and conditions of a license (FERC, 2020).

The National Dam Inventory reports that there are eight dams in Roseau County. Dams are mapped on the [MN State 2024 HMP website](#). Roseau County had no dams classified as High Hazard Dams, two dams classified as Significant Hazard Dams, and six dams classified as Low Hazard Dams. No dams have been removed.

4.12.1 Probability of Occurrence

Extreme precipitation is only one factor contributing to dam failure, and the possibility of failure is dam-specific, relating to both environmental and structural conditions. There are six noted dam incidents in Roseau County, four related to structural inadequacy. In 1990, the other two incidents occurred—Roseau River Wildlife Management Area Pool 1 experienced an upstream slope failure, and Nereson WMA experienced major damage to its intake structure. These were both dams of Low Hazard Potential. Total dam failures are extremely unlikely if the dam is maintained in compliance with Minnesota’s Dam Safety Program. The likelihood of failure in Roseau County is low.

4.12.2 Vulnerability

Although dam regulatory authorities differ between various federal and state agencies, all authorities attempt to classify dams according to the potential impacts from a dam failure or mis-operation. In response to the numerous classification systems, FEMA’s Interagency Committee on Dam Safety created a downstream hazard potential classification system that is adaptable to any agency’s current system. Table 11 provides an overview of the main criteria agencies consider when determining a dam’s downstream hazard potential. This classification system does not imply that the dam is unsafe, but rather categorizes dams based on the probable loss of human life and the impacts on economic, environmental, and lifeline interests (FEMA, 2004).

Table 11. Downstream hazard potential classification criteria

Hazard Potential Classification	Loss of Human Life	Economic, Environmental, Lifeline Losses
Class III (Low)	None expected	Low and generally limited to owner
Class II (Significant)	None expected	Yes
Class I (High)	Probable - one or more expected.	Yes (but not necessary for this classification)

SOURCE: (USACE, 2008)

Dams for which a hazard potential has not been designated, or is not provided, are classified as “Undetermined.”

An Emergency Action Plan (EAP) is a document that identifies potential emergency conditions at a dam and specifies preplanned actions to be followed during a dam failure to minimize property damage or loss of life. An EAP is required for Class I dams and strongly recommended for Class II dams (MN DNR, 2020).

4.12.3 Dam Failure and Climate Change

Dams are designed based on assumptions about a river’s annual flow behavior that will determine the volume of water behind the dam and flowing through the dam at any one time. Changes in weather patterns due to climate change may change the hydrograph or expected flow pattern. Spillways are put in place on dams as a safety measure in the event of the reservoir filling too quickly. Spillway overflow events are mechanisms that also result in increased discharges downstream. It is conceivable that bigger rainfalls at earlier times in the year could threaten a dam’s designed margin of safety, causing dam operators to release greater volumes of water earlier in a storm cycle in order

to maintain the required margins of safety. Such early releases of increased volumes can increase flood potential downstream.

Climate change may increase the probability of design failures. Some spillways may not be large enough to convey the increased flow pattern. An undersized spillway could lead to dam overtopping and failure.

The partial failure of the Rapidan Dam in Blue Earth County in June of 2024 highlighted the growing threat climate change poses to the country's aging infrastructure as extreme weather becomes more common and severe. The Rapidan Dam is a Significant Hazard Dam in "poor" condition. About 20% of Minnesota's Significant and High Hazard Potential Dams are in "fair" or "poor" condition, with a few in "undefined" condition, and about 70% of these dams were built before 1970 (USACE, 2024). These older dams are growing increasingly taxed by extreme weather, especially in the Midwest (Harrison, 2024). Climate change is adding a new level of uncertainty that needs to be considered with respect to assumptions made during the dam construction.

While the Rapidan Dam partial failure did not result in mass inundation, it sent an estimated 11.6 million cubic yards of sediment downstream. The sediment was high in phosphorus and nitrogen because of nearby agricultural runoff. The impacts to the fish habitat and ecology of the stream may not be known for years (MPR News, 2024). The sediment loading behind older dams adds another compounding threat of dam failure to the stream and structures below.

4.12.4 Program Gaps and Deficiencies

Roseau County Emergency Management did not identify any program gaps or deficiencies that make its citizens more vulnerable to dam failure.

Section 5 – Mitigation Strategy

The goal of mitigation is to protect lives and reduce the impacts of future hazard events including property damage, disruption to local and regional economies, the amount of public and private funds spent to assist with recovery, and to build disaster-resistant communities. Mitigation actions and projects should be based on a well-constructed risk assessment, provided in Section 3 of this plan. Mitigation should be an ongoing process adapting over time to accommodate a community's needs.

5.1 Community Capability Assessments

The capability assessment identifies current activities and existing planning tools used to mitigate hazards. The capability assessment identifies the policies, regulations, procedures, programs and projects that contribute to the lessening of disaster damages. The assessment also provides an evaluation of these capabilities to determine whether the activities can be improved in order to more effectively reduce the impact of future hazard events. The following sections identify existing plans and mitigation capabilities within all of the communities:

- Appendix D: Lists the plans and programs in place in Roseau County as related to hazard mitigation.
- Appendix C: As part of the Roseau County HMP update, the county and city governments were asked to participate in filling out a “Local Mitigation Survey” (LMS) form to report on their current mitigation capabilities and program gaps. Appendix C provides the LMS reports gathered for Roseau County.

Information from the capability assessments was used to support development of local mitigation actions for implementation over the next five years (see column *Comments on Implementation & Integration*).

5.1.1 National Flood Insurance Program (NFIP)

The NFIP is a federal program created by Congress to mitigate future flood losses nationwide through sound, community-enforced building and zoning ordinances and to provide access to affordable, federally backed flood insurance protection for property owners. The NFIP is designed to provide an insurance alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods. Participation in the NFIP is based on an agreement between local communities and the federal government that states that if a community will adopt and enforce a floodplain management ordinance to reduce future flood risks to new construction in Special Flood Hazard Areas (SFHAs), the federal government will make flood insurance available within the community as a financial protection against flood losses.

Table 12 lists and describes jurisdictional participation in the National Flood Insurance Program (NFIP).

Table 12. NFIP participation in Roseau County

FEMA Plan Requirements Plan Review Tool, Section C2		Description
Name of Community		Roseau County
Participation in the NFIP		Participating – Entry date 01/02/1980
FEMA Map		FEMA-mapped high-risk areas
Current Effective Map Date		04/19/2017
Potential Buildings Damaged in Floodplain (including all townships and cities)		605
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 03/28/2017	
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	4/11/2017	
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	Roseau County enforces requirements of the NFIP through the county's floodplain ordinance (Roseau County Floodplain Management Ordinance, Ordinance #29), adopted 03/28/2017 and made effective 4/11/2017 (date of publication). This ordinance establishes the floodplain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts of Name County. The Roseau County Environmental Services Department maintains and enforces the floodplain management ordinance for the county.	
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Jeff Pelowski, Roseau County Environmental Services Director	
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the county would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The county would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.	
Name of Community		City of Badger
Participation in the NFIP		Participating – Entry date 08/08/1984
FEMA Map		FEMA-mapped high-risk areas
Current Effective Map Date		04/19/2018
Potential Buildings Damaged in Floodplain		2
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 3/8/2017	

FEMA Plan Requirements Plan Review Tool, Section C2		Description
2.	Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	3/8/2017
3.	Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Badger enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 3/8/2017 and made effective 3/22/2017 (date of publication). This ordinance regulates development in the flood hazard areas of the city.
4.	Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Angie Gregerson, City Clerk
5.	Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.
Name of Community		City of Greenbush
Participation in the NFIP		Participating – Entry date 09/30/1982
FEMA Map		FEMA-mapped high-risk areas
Current Effective Map Date		04/19/2017
Potential Buildings Damaged in Floodplain		17
1.	Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 2/21/2017
2.	Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	2/21/2017
3.	Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Greenbush enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 2/21/2017 and made effective 3/1/2017 (date of publication). This ordinance regulates development in the flood hazard areas of the city.
4.	Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Lynsi Hansen, City Clerk-Treasurer
5.	Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.
Name of Community		City of Roseau
Participation in the NFIP		Participating – Entry date 09/29/1978

FEMA Plan Requirements Plan Review Tool, Section C2		Description
FEMA Map		FEMA-mapped high-risk areas
Current Effective Map Date		04/19/2017
Potential Buildings Damaged in Floodplain		2
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 4/4/2017	
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	4/4/2017	
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Roseau enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 4/4/2017 and made effective 4/8/2017 (date of publication). This ordinance regulates development in the flood hazard areas of the city.	
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Brad Bail, Building Official	
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.	
Name of Community		City of Warroad
Participation in the NFIP		Participating – Entry date 12/04/1979
FEMA Map		FEMA-mapped high-risk areas
Current Effective Map Date		04/19/2017
Potential Buildings Damaged in Floodplain		44
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 3/31/2017	
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	3/31/2017	
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Warroad enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 3/31/2017 and made effective 4/4/2017 (date of publication). This ordinance regulates development in the flood hazard areas of the city.	

FEMA Plan Requirements Plan Review Tool, Section C2	Description
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Kathy Lovelace, City Administrator
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.
Name of Community	City of Strathcona
Participation in the NFIP	NOT Participating
FEMA Map	No FEMA-mapped high-risk areas 4/19/2017 NSFHA (No Special Flood Hazard Area)
Name of Community	City of Roosevelt
Participation in the NFIP	Not Participating
FEMA Map	No FEMA-mapped high-risk areas 4/19/2017 NSFHA (No Special Flood Hazard Area)

SOURCE: (CEIL STRAUSS, MN FLOODPLAIN MANAGER, PERSONAL COMMUNICATION, SEPTEMBER 22, 2023)

Repetitive loss properties are defined as properties that have had two or more flood insurance claims of \$1,000 or more in any rolling 10-year period. Property owners are asked to consider mitigation activities such as acquisition, relocation, or elevation, among other options. FEMA's Repetitive Loss (RL) properties strategy is to eliminate or reduce the damage to property and the disruption to life caused by repeated flooding of the same properties. Property owners are notified of their status by FEMA.

A Severe Repetitive Loss (SRL) property is defined as a residential property that is covered under an NFIP flood insurance policy and:

- a) That has at least four NFIP claim payments (including building and contents) over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or
- b) For which at least two separate claims payments (building payments only) have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building.
- c) For both (a) and (b) above, at least two of the referenced claims must have occurred within any 10-year period and must be greater than 10 days apart.

Roseau County has two RL properties and no SRL properties. The RL properties are both single-family homes with addresses in the City of Roseau.

For more on the areas that flood repeatedly in Roseau County, see the [Roseau County Flooding page](#).

5.1.2 Plans and Ordinances

Roseau County and its incorporated communities have a number of plans and ordinances in place to ensure the safety of residents and the effective operation of communities including a Zoning Ordinance, Floodplain Ordinance, Emergency Operations Plan, and Wellhead Protection Plan.

5.1.3 Plans and Programs in Place to Address Natural Hazards

Roseau County has numerous plans and programs in place to address natural hazards. Some of these programs are specific to a hazard and others address impacts and human safety for many types of events (“All-Hazards”). For the purpose of grouping related natural hazards, “Summer Storms” encompasses Tornadoes, Windstorms, Lightning, and Hail. Following is a description of the plans and programs in place by Roseau County to support mitigation for the hazards addressed in this plan.

All Hazards

All Hazards Emergency Operations Plan: Roseau County Emergency Management maintains an all-hazards Emergency Operations Plan (EOP) which lays out concepts and operating guidelines for all incident management and support functions that may be needed to ensure life safety, incident stabilization, and property preservation during an incident and the transition to recovery.

CodeRED Emergency Notification System and IPAWS: Roseau County maintains the CodeRED Emergency Notification System which allows residents and visitors to sign up (“opt-in”) to receive severe weather alerts targeted to their location, along with other local emergency alerts. A link to sign up for the system is located on the Roseau County Emergency Management website page. Roseau County also uses IPAWS (Integrated Public Alert Warning System), which allows for both targeted and county-wide emergency notifications to both residents and visitors (not an “opt-in” service).

Relationship with National Weather Service: Roseau County has a strong relationship with the Grand Forks, ND National Weather Service (NWS) Forecast Office, having access to all live and on-demand briefings, announcements, and educational opportunities, and contact information for direct collaboration as needed. The county also receives all products/statements issued by the NWS, and in turn shares or incorporates these into its community outreach and public education.

Preparedness Outreach & Public Education: Roseau County Emergency Management utilizes the Roseau County website, Roseau County Facebook page, and local news media to communicate with residents, visitors, schools, and long-term care facilities on emergency preparedness, severe weather, and other hazard conditions throughout the year. The Roseau County Emergency Management website page provides emergency preparedness information and resource links for the public.

Mass Care Sheltering: In the event of a disaster where temporary sheltering is needed, Roseau County Emergency Management works in coordination with Roseau County Social Services

and LifeCare Public Health, the American Red Cross, and local governments/Fire & EMS to provide mass care services as needed. The county EOP includes plans, procedures, and resources available for mass care sheltering.

NOAA Weather Radios: Roseau County Emergency Management promotes the use of NOAA Weather Radios by residents, businesses, schools, long term care facilities, government buildings, faith communities, and other places of common gathering. NOAA Weather Radios broadcast continuous weather information directly from the nearest National Weather Service office, including warnings, watches, forecasts, and other hazard information 24 hours a day, 7 days a week. They are an important tool to be able to receive information, particularly in the event of extended power outages where updates from local media and cell phone apps may not be available.

Backup Power: Roseau County works to ensure the continuity of operations of county government services and critical infrastructure in the event of an extended power outage. County facilities with backup generators include the Roseau County Courthouse and the Roseau County Law Enforcement's Garage and Training Building.

Relationship with LifeCare Medical Center, Altru Clinics, Long-Term Care and Assisted Living: Roseau County Emergency Management has a strong relationship with area health care and senior housing on related emergency planning and preparedness, including support for specific trainings, exercises, equipment, and relay of county-level emergency notifications. Health care and senior care have their own policies, decision-making protocols, and communications plans in place to determine the need to close school and to notify targeted audiences in the event of severe weather, extreme temperatures, or other events that pose risk to patients, residents and staff.

Relationship with LifeCare Public Health: Roseau County HSEM in partnership with LifeCare Public in their responsibility for assuring the overall health of the community. In a disaster, serious potential or actual health problems including: disease prevention, injury prevention, food and water safety, surveillance for illness, deaths and injuries, monitoring the immediate and long-term effects of a health-related event, hazardous chemical or radiological release and the disposal of human remains will be referred to the local public health authority.

Schools Support: Roseau County Emergency Management coordinates with local school districts as needed on related emergency planning and preparedness, including support for specific trainings, exercises, equipment, and relay of county-level emergency notifications. School districts have their own policies, decision-making protocols, and communications plans in place to determine the need to close school and to notify targeted audiences in the event of severe weather, extreme temperatures, or other events that pose risk to students and staff.

Regional Collaboration: Roseau County Emergency Management works closely with the MN HSEM Region 3 regional program coordinator and neighboring county emergency managers on a range of planning, training, and exercises to support all-hazards preparedness, mitigation, response, and recovery capabilities.

Severe Winter Storms

Winter Weather Statements (Watch, Advisory, Warning, etc.): Roseau County Emergency Management works to relay winter weather statements received from the NWS to help alert residents and visitors to hazardous conditions.

Winter Hazard Awareness Week: Roseau County participates in the Winter Hazard Awareness Week campaign sponsored by MN HSEM and the NWS each November. The week-long effort provides specific information each day covering the topics of winter weather, outdoor winter safety, indoor winter safety, and winter driving safety. Roseau County Emergency Management promotes and shares information during the week via social media with communities, schools, churches or other civic programs are encouraged to share locally.

Snow Removal & Ice Control: The Roseau County Highway Department conducts winter road maintenance on county roads in accordance with the Roseau County Snow Removal & Ice Control Policy, effective date: 9/27/2022. Other road jurisdictions conduct winter road maintenance on their respective road systems in accordance with each of their established policy and/or practice.

Severe Summer Storms

Severe Weather Statements (Watch, Advisory, Warning, etc.): Roseau County works to relay severe spring and summer weather statements (such as for thunderstorms, windstorms, or tornadoes) received from the NWS to help alert residents and visitors to hazardous conditions.

Outdoor Warning Sirens: Outdoor warning sirens are located throughout the county and are tested monthly by the Roseau County Sheriff's Office in coordination with local jurisdictions. Warning sirens are owned and maintained by the cities where they are located.

Skywarn Program: Roseau County Emergency Management works with the National Weather Service to offer Storm Spotter training on an annual basis to local fire and law enforcement departments and area residents that wish to be trained as spotters. SkyWarn Storm Spotters help to keep their local communities safe by providing timely and accurate reports of severe weather to their local NWS office.

Severe Weather Awareness Week: Roseau County participates in the Severe Weather Awareness Week campaign sponsored by MN HSEM and the NWS each April. The week-long effort provides specific information each day covering the topics of severe weather alerts and warnings, lightning, hail, floods, tornadoes (with statewide drills), and extreme heat. Each topic covered includes factsheets, checklists, data, and other resources. Roseau County Emergency Management promotes and shares information during the week via social media with communities, schools, churches or other civic programs are encouraged to share locally.

Vegetation Management: The Roseau County Highway Department regularly conducts vegetation management along county roads to reduce the risk of downed trees or branches

resulting from severe spring and summer storm events. Local utility providers also work to manage vegetation near power lines to reduce the risk of downed lines and power outages.

Extreme Cold

Emergency Notifications: Extreme cold temperature warnings are issued by the National Weather Service. Roseau County Emergency Management works to relay extreme cold temperature warnings from the NWS to help alert residents and visitors to hazardous conditions. The Roseau County Emergency Management Office also encourages residents to follow local news or NWS weather applications to receive severe weather and extreme temperature notifications.

Extreme Cold Safety Awareness: Roseau County Emergency Management and Roseau County Public Health promote public awareness of personal safety measure to take during periods of extreme cold, such as sharing information via Facebook posts.

Emergency Sheltering: In the event of an extended power outage coupled with a period of extreme cold, Roseau County Public Health will work with Roseau County Emergency Management and local Fire or EMS agencies as needed to assist vulnerable residents such as the elderly who may need temporary sheltering.

Extreme Heat

Emergency Notifications: Extreme cold temperature warnings are issued by the National Weather Service. Roseau County Emergency Management works to relay extreme cold temperature warnings from the NWS to help alert residents and visitors to hazardous conditions. The Roseau County Emergency Management Office also encourages residents to follow local news or NWS weather applications to receive severe weather and extreme temperature notifications.

Public Education and Awareness: Roseau County Emergency Management and Roseau County Health & Human Services promote public awareness of personal safety measure to take during periods of extreme heat, such as sharing information via Facebook posts.

Emergency Sheltering: In the event of an extended power outage coupled with a period of extreme heat, Roseau County Public Health work with Roseau County Emergency Management and local Fire or EMS agencies as needed to assist vulnerable residents such as the elderly who may need temporary sheltering.

Wildfire

Public Awareness & Emergency Notifications: In event of wildfire, Roseau County Emergency Management works with local law enforcement, local fire departments, the NWS, and the MN DNR to get the word out on the risk of the level of fire danger and any burning restrictions to help keep the public informed and protected.

Burning Restrictions/Permits: Burning restrictions are set by the MN DNR. Burning permits within Roseau County are obtained through the MN DNR website or local office.

Wildland Fire Fighting: Local fire departments respond to woodland or grassland fires within their boundaries or in coordination with other fire departments as needed via mutual aid agreements.

Flooding

National Flood Insurance Program (NFIP): Roseau County has FEMA-mapped high-risk areas and participates in the NFIP. Initial entry date into the program was 01/02/1980.

Floodplain Administrator: The Roseau County Environmental Services (Planning & Zoning) Director is the county's designated Floodplain Administrator, who is responsible to implement the requirements of the NFIP.

Floodplain Ordinance: Roseau County Floodplain Management Ordinance, Ordinance #29, adopted March 28, 2017 establishes the flood plain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts. The Roseau County Environmental Services Office maintains and enforces the floodplain management ordinance for the county. The ordinance is adopted to comply with the rules and regulations of the National Flood Insurance Program codified as 44 Code of Federal Regulations Parts 59 -78, as amended, so as to maintain the community's eligibility in the National Flood Insurance Program.

Floodplain Mapping: Roseau County's current effective FEMA flood map date is 04/19/2017. The county's Environmental Services Department is the repository for the floodplain maps for the county. The ES Dept. assists county residents in determining whether their property is affected by an officially mapped flood area.

Shoreland Ordinance: Roseau County Shoreland Management Ordinance, Ordinance #4, July 1993 establishes allowable uses and development standards in shoreland areas designated within the county. In addition to establishing setback requirements, the ordinance specifies that local shoreland controls must regulate placement of structures in relation to high water elevation for flood protection.

Transportation Plan: The Roseau County Highway Department maintains update of the county's 5-year Transportation Plan (2004-2025) and schedules projects for implementation.

Property Buyout Acquisitions: In 2003, Roseau County conducted 6 home buyouts with FEMA grant funding.

Minnesota Buffer Law: The Roseau SWCD administers the state Buffer Law and provides technical assistance on buffer compliance by landowners. Buffers benefit bank stabilization and reduced erosion and sedimentation into ditches, streams, rivers, and lakes.

Comprehensive Watershed Management Plans (CWMPs): Roseau County has participated in development of the following CWMPs: Lake of the Woods CWMP, Two Rivers Plus CWMP, Roseau River CWMP, Middle Snake Tamarac Rivers CWMP, and Thief River CWMP. These plans address regional watershed planning for water quality improvement as well as measures for flood mitigation.

Dam Failure

No noted plans or programs in place.

5.2 Mitigation Goals

The goals and strategies for natural hazards in the 2024 Minnesota State Hazard Mitigation Plan were adopted for use in the Roseau County Plan. This framework, as outlined below, will allow for integration of the mitigation actions that are listed by Roseau County and its jurisdictions into the state plan. The state will then be able to develop a statewide strategy that will benefit all of Minnesota.

Flooding Goal: Reduce deaths, injuries, property loss and economic disruption due to all types of flooding (riverine, flash, coastal, dam/levee failure).

Wildfire Goal: Reduce deaths, injuries, property loss, natural resource and economic disruption due to wildfires (forest, prairie, grass, and peat bogs).

Windstorms Goal: Reduce deaths, injuries, property loss, and economic disruption due to windstorms.

Hail Goal: Reduce deaths, injuries, property damage, and economic disruption due to hailstorms.

Winter Storms Goal: Reduce deaths, injuries, property loss, and economic disruption due to winter storms (blizzard, ice, and ice storm).

Lightning Goal: Reduce deaths, injuries, property losses, loss of services, and economic disruption due to lightning.

Tornado Goal: Reduce deaths, injuries, property loss, and economic disruption due to tornadoes.

Drought Goal: Reduce economic loss and environmental impacts due to drought.

Extreme Heat Goal: Reduce deaths, injuries, and economic disruption due to extreme heat.

Extreme Cold Goal: Reduce deaths, injuries, and economic disruption due to extreme cold.

Dam/Levee Failure Goal: Reduce deaths, injuries, property loss, natural resource and economic disruption due to dam/levee failure.

Erosion/Landslide/Mudslide Goal: Reduce deaths, injuries, property loss, and economic disruption due to hillside, coastal, bluff: caused primarily by oversaturation of soil.

5.3 Mitigation Action and Project Strategies

The mitigation actions in this plan are summarized into four main strategy types, as described in the FEMA publications *Local Mitigation Planning Handbook* (2013) and *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards* (2013). Minnesota HSEM determined a fifth strategy type for use within the state: Mitigation Preparedness and Response. The strategies and example actions are listed in Table 13.

Table 13. Mitigation strategies and action types

Mitigation Strategy	Description	Example Mitigation Actions
Local Plans and Regulations	These actions include government authorities, policies, or codes, that influence the way land and buildings are developed and built.	<ul style="list-style-type: none"> • Comprehensive plans • Land use ordinances • Planning and zoning • Building codes and enforcement • Floodplain ordinances • NFIP Community Rating System • Capital improvement programs • Open space preservation • Shoreline codes • Stormwater management regulations and master plans
Structure and Infrastructure Projects	<p>These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure.</p> <p>This type of action also involves projects to construct manmade structures to reduce the impact of hazards.</p> <p>Many of these types of actions are projects eligible for funding through the FEMA Hazard Mitigation Assistance program.</p>	<ul style="list-style-type: none"> • Acquisitions and elevations of structures in flood prone areas • Utility undergrounding • Structural retrofits • Floodwalls and retaining walls • Detention and retention structures • Culverts • Safe rooms
Natural Systems Protection	These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.	<ul style="list-style-type: none"> • Sediment and erosion control • Stream corridor restoration • Forest management • Conservation easements • Wetland restoration and preservation

Mitigation Strategy	Description	Example Mitigation Actions
Education and Awareness Programs	These are actions to inform and educate residents, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady or Firewise Communities. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions.	<ul style="list-style-type: none"> • Radio or television spots • Websites with maps and information • Real estate disclosure • Presentations to school groups or neighborhood organizations • Mailings to residents in hazard-prone areas. • StormReady Certification • Firewise Communities
Mitigation Preparedness and Response	This is a State of Minnesota mitigation strategy with the intent of covering preparation and actions that protect life and property during a natural disaster.	<ul style="list-style-type: none"> • Emergency operations plan • Flood fight plans and preparedness • Dam emergency action plans • Warning • Backup power • Emergency capabilities

Local leaders work together with the Roseau County emergency management director to assure that the hazards and mitigation actions included in this plan are accurate and addressed in their jurisdictions. Development of mitigation actions for the county and each city was informed by a community's hazard and risk assessment; identification of local vulnerabilities, and review of capabilities in place to address mitigation. Planning team members, local elected officials and staff from Roseau County and each city actively participated in the development and review of mitigation action charts for implementation through participation in planning team meetings (see Appendix F) and development of Local Mitigation Surveys (see Appendix C). Additional jurisdictional and public feedback was incorporated following news releases inviting public input to the planning process (see Appendix G).

The Roseau County risks and mitigation activities identified also incorporate the concerns and needs of townships, school districts, and other entities participating in this plan. Appendix H contains the jurisdictional mitigation action charts for the cities of Badger, Greenbush, Roosevelt, Roseau, Strathcona, and Warroad.

[See Mitigation Actions for all jurisdictions and provide ongoing feedback on the HMP website](#)

Following is an overview of the mitigation action charts and a description of each element of the chart.

Number (#)

Each mitigation action is identified by a number.

Hazard

Each mitigation action is identified by the natural hazard it relates to. Actions that fall under "All

Hazards” relate to both natural and non-natural hazards. “Severe Winter Storms” includes blizzards, heavy snow, ice storms, winter storms, and winter weather. “Severe Summer Storms” includes windstorms, tornadoes, lightning, and hail.

Mitigation Strategy

Each mitigation action is identified by one of the following five mitigation strategies.

- Local Planning and Regulations
- Structure and Infrastructure Projects
- Natural Systems Protection
- Education and Awareness Programs
- Mitigation Preparedness and Response Support

See Table 12 for a description of each mitigation strategy and related types of actions.

Mitigation Action

Each mitigation action provides a concise, action-oriented description of the action or project to be undertaken. If a mitigation action reduces risk to new or existing buildings/infrastructure, it is noted.

Status

The status of each mitigation action is indicated by one of the following categories:

- New – New actions that have been identified since the last plan.
- Existing – Actions that are carried over from the last plan or have been updated.
- In Progress – Actions from the last plan that are currently being acted upon.

Mitigation actions that have been completed or deleted from the 2015 Roseau County Hazard Mitigation Plan are identified and reported on in Appendix H. Completed and deleted mitigation actions are not carried over into the updated mitigation action chart.

Priority

In the review and discussion of selected mitigation strategies and actions, the planning team ranked mitigation actions by priority for implementation. Table 14 provides criteria that were taken into consideration in the process.

Table 14. Criteria for Mitigation Action Priority Ranking

Ranking	Criteria
High Priority	<ul style="list-style-type: none"> • Methods for reducing risk from the hazard are technically reliable. • The County has experience in implementing mitigation measures. • Mitigation measures are eligible under federal grant programs. • There are multiple mitigation measures for the hazard. • The mitigation measure(s) are known to be cost effective. • The mitigation measures protect lives and property for a long period of time, or are permanent risk reduction solutions.

Ranking	Criteria
Moderate Priority	<ul style="list-style-type: none"> • Mitigation methods are established. • The County has limited experience with the kinds of measures that may be appropriate to mitigate the hazard. • Some mitigation measures are eligible for federal grants. • There is a limited range of effective mitigation measures for the hazard. • Mitigation measures are cost-effective only in limited circumstances. • Mitigation measures are effective for a reasonable period of time.
Low Priority	<ul style="list-style-type: none"> • Methods for reducing risk from the hazard are not well-established, are not proven reliable, or are experimental. • The State or Counties have little or no experience in implementing mitigation measures, and/or no technical knowledge of them. • Mitigation measures are ineligible under federal grant programs. • There is a very limited range of mitigation measures for the hazard, usually only one feasible alternative. • The mitigation measure(s) have not been proven cost effective and are likely to be very expensive compared to the magnitude of the hazard. • The long-term effectiveness of the measure is not known or is known to be relatively poor.

Time frame

Each mitigation action identifies the anticipated timeframe for implementation of the action within the next five-year planning cycle.

- Ongoing – Implementation of the action will require continued application.
- Defined (year) – Implementation of the action will occur within a defined time frame that is noted.
- TBD – The anticipated time frame for implementation of an action is to be determined.

Responsibility

Each mitigation action identifies what personnel, department or agency will be lead for the administration or implementation of the action.

Comments on Implementation & Integration

Each mitigation action provides a description of how the jurisdiction will work to implement the mitigation action and incorporate the activity into other existing planning mechanisms. As part of the plan update process, communities were asked to describe how they will integrate the mitigation actions listed into other planning mechanisms since the last plan update. This can include description of methods for public outreach, enforcement of policies, development of plans, and coordination of key staff and partnership efforts.

Possible Funding

Each mitigation action identifies where potential funding may come from to support implementation of the mitigation activity, such as existing county or city funding, state or federal funding. Projects that may be eligible for future FEMA Hazard Mitigation Assistance grant funding are noted.

5.3.1 Roseau County Mitigation Action Chart

The Roseau County Mitigation Action Chart is provided in Table 15. Appendix H provides the mitigation action charts developed for each city participating in the HMP update.

See Mitigation Actions for all jurisdictions and provide ongoing feedback on the HMP website

Table 15. Roseau County Mitigation Action Chart (2024–2028)

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	EMERGENCY NOTIFICATION Encourage all county residents to sign-up for the county's CodeRED Emergency Notification System.	Existing High Ongoing	Roseau County Emergency Management (RCEM)	Roseau County maintains the CodeRed Emergency Notification System which allows residents and visitors to sign up ("opt-in") to receive severe weather alerts targeted to their location, along with other local emergency alerts. A link to sign up for the system is located on the Roseau County Emergency Management website page.	County Funding
2	All-Hazards	Education & Awareness Programs	PUBLIC OUTREACH Conduct outreach to the public to increase awareness and preparedness for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High Ongoing	RCEM	RCEM utilizes the Roseau County website, Roseau County Facebook page, and local news media to communicate with residents, visitors, schools, and long-term care facilities on emergency preparedness, severe weather, and other hazard conditions throughout the year. The RCEM website page provides emergency preparedness information and resource links for the public, including educational resources on Winter Hazard Awareness and a list of tornado shelter locations in each community. RCEM participates annually in the NWS Severe Weather Awareness weeks and gets that information out to the public.	County Funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
3	All-Hazards	Mitigation Preparedness & Response Support	EOP PLANNING Ensure the county's Emergency Operations Plan (EOP) is updated and addresses policies & procedures needed to support EM functions prior to, during, and following a disaster.	Existing High Ongoing	RCEM	Roseau County Emergency Management maintains an all-hazards Emergency Operations Plan (EOP) which lays out concepts and operating guidelines for all incident management and support functions that may be needed to ensure life safety, incident stabilization, and property preservation during an incident and the transition to recovery. This plan is maintained and updated through a four-year process with HSEM. Roseau County updated their plan in 2024 and met with HSEM staff who signed off on the plan.	County Funding
4	All Hazards	Local Planning & Regulations	FUTURE DEVELOPMENT Incorporate mitigation strategies across county and local government plans and policies that address future growth and new development.	Existing High 2025-2030	GHC Admin, HC Planning., HC Public Works in coord with local gov'ts	Roseau County continues to work closely with surrounding communities to address planning for increased growth and development that will affect emergency response services as well as an increase in vulnerable systems and infrastructure. Roseau County uses its Shoreland Ordinance, Floodplain Ordinance, and Transportation Plan to address long-term planning for future development.	County Funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	All-Hazards	Mitigation Preparedness & Response Support	VULNERABLE POPULATIONS Work with county departments, partner agencies, facilities, and local jurisdictions to address planning and outreach efforts for those considered to be more vulnerable to severe weather events.	Existing High Ongoing	RCEM, LifeCare PH	Relationship with LifeCare Medical Center, Altru Clinics, Long-Term Care and Assisted Living: Roseau County Emergency Management has a strong relationship with area health care and senior housing on related emergency planning and preparedness, including support for specific trainings, exercises, equipment, and relay of county-level emergency notifications. Health care and senior care have their own policies, decision-making protocols, and communications plans in place to determine the need to close school and to notify targeted audiences in the event of severe weather, extreme temperatures, or other events that pose risk to patients, residents and staff. Roseau County Emergency Management participates in numerous joint exercises with Life Care Public Health to ensure effective services can be provided during disaster events.	County Funding other agencies & organizations

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	All-Hazards	Mitigation Preparedness & Response Support	GENERATOR BACKUP POWER Install generators at key county facilities to ensure continuity of operations and services in the event of loss of power.	Existing High Ongoing	RCEM	This is an ongoing effort of RCEM in coordination with other county departments as well as local jurisdictions. There are emergency shelters available in Roseau, Warroad, Greenbush and Badger, but the shelters lack backup generator power. RCEM will work with the local governments and owners of the designated shelter facilities to work on obtaining back up generators. If RCEM can apply for FEMA grant funding to support our list of shelters where they are needed, this is something we may consider doing.	County Funding, Local City Government Funding, Possible FEMA grant funding
7	All-Hazards	Mitigation Preparedness & Response Support	MASS CARE SHELTERING Ensure that plans and designated facilities are in place in order to provide temporary sheltering due to a severe weather or other disaster event.	Existing High 2025-2030	RCEM, RCSS LifeCare PH	In the event of a disaster where temporary sheltering is needed, Roseau County Emergency Management works in coordination with Roseau County Social Services and LifeCare Public Health, the American Red Cross, and local governments/Fire & EMS to provide mass care services as needed. The county EOP includes plans, procedures, and resources available for mass care sheltering.	County Funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
8	Extreme Heat/Cold Temps	Education & Awareness Programs	EXTREME TEMPS PUBLIC OUTREACH Provide outreach and education to the public on personal safety measures to take during periods of extreme heat or cold.	In-Progress High 2024	RCEM	RCEM works to share information received from the Grand Forks, ND National Weather Service (NWS) Forecast Office when periods of extreme heat or cold are forecast and occurring. Public education regarding extreme temperatures safety also occurs during the NWS severe Weather Awareness weeks that occur in April and November each year.	County Funding
9	Extreme Heat/Cold Temps	Mitigation Preparedness & Response Support	WARMING/COOLING CENTERS Work with local communities to develop plans for operating warming centers for those who are vulnerable during extreme cold events.	New High 2025-2030	RCEM	There are designated shelter facilities in the communities of Roseau, Warroad, Greenbush and Badger. These locations can be activated as warming or cooling centers if required due to severe temperatures that pose risk to those who are vulnerable. RCEM is available to assist communities in this planning as needed.	County and Local Gov't Funding
10	Severe Winter Storms	Local Planning & Regulations	SNOW & ICE CONTROL Implement snow removal and ice control to ensure the safety of county roads impacted by winter storms.	Existing High 2025-2030	Roseau County Hwy. Dept.	The Roseau County Highway Department conducts winter road maintenance on county roads in accordance with the Roseau County Snow Removal & Ice Control Policy, effective date: 9/27/2022. Other road jurisdictions conduct winter road maintenance on their respective road systems in accordance with each of their established policy and/or practice.	County Funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
11	Severe Summer Storms	Education & Awareness Programs	SKYWARN TRAINING Work with the National Weather Service (NWS) to provide SkyWarn training and develop a network of trained Storm Spotters throughout the county.	Existing High 2025-2030	RCEM in coord with NWS	RCEM works with the Grand Forks, ND NWS Office to offer this training on an annual basis to local fire and law enforcement departments and local residents that wish to be trained as spotters.	National Weather Service
12	Severe Summer Storms	Mitigation Preparedness & Response Support	OUTDOOR WARNING SIRENS Ensure outdoor warning sirens throughout the county are functional and maintained by the jurisdictions where they are located.	Existing High 2025-2030	RCEM in coord with local jurisdictions	Outdoor warning sirens are located throughout the county and are tested monthly by the Roseau County Sheriff's Office in coordination with local jurisdictions. Warning sirens are owned and maintained by the cities where they are located. RCEM will work with local jurisdictions that are seeking to upgrade their existing warning sirens or to purchase a new one.	County Funding & local jurisdictions

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
13	Severe Summer Storms	Structure & Infrastructure Projects	STORM SHELTERS / TORNADO SAFE ROOMS Address the need for the construction of storm shelters or tornado safe rooms in areas where residents or visitors are vulnerable to high wind events, such as mobile home parks and campgrounds.	Existing High 2025-2030	RCEM in coord with local jurisdictions	RCEM will assist any mobile home park or community in their effort to assess and address the need for construction of a storm shelter or tornado safe room. Grant funding may be available for tornado safe rooms from FEMA Hazard Mitigation grant program funding, based on funding availability and application approval.	County Funding, Local Gov't, Possible FEMA Grant Funding
14	Severe Winter & Summer Storms	Structure & Infrastructure Projects	POWERLINE RETROFITS Encourage municipal and rural electric coops to address burying powerlines or strengthening power poles to avoid power outages from high wind events and storms.	Existing High 2025-2030	RCEM, local jurisdictions in coord with electric utility providers	RCEM works with the local and rural electric cooperatives (City of Roseau, City of Warroad, and Roseau Electric Cooperative) that serve the county and local governments on these efforts as needed. FEMA HMA grant funding may be a source for powerline infrastructure retrofits that eligible rural and municipal electric coops can apply for.	Electric Coop funding, Possible FEMA Grant Funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
15	Severe Winter & Summer Storms	Local Planning & Regulations	BUILDING SAFETY Ensure that new development projects follow state building codes in order to withstand the impacts of severe weather events, including roof collapse from heavy snow or damages from high wind events.	Existing Moderate 2025-2030	Roseau County Environmental Services	Roseau County Planning & Zoning oversees permits for new development. Roseau County recommends new development is built to meet the specifications as provided by the State of Minnesota's Department of Labor and Industry in order to minimize financial burdens and potential safety hazards which can arise from poorly constructed buildings. Local jurisdictions enforce their own building permits respectively.	County Funding
16	Severe Winter & Summer Storms	Natural Systems Protection	VEGETATION MANAGEMENT Manage trees and other vegetation along roads from severe storm events to reduce risk to powerlines and passing motorists.	Existing Moderate 2025-2030	RC Highway Dept., Local Utility Providers	The Roseau County Highway Dept. regularly conducts vegetation management along county roads to reduce the risk of downed trees or branches resulting from severe spring and summer storm events. Local utility providers also work to manage vegetation near power lines to reduce the risk of downed lines and power outages.	County Funding, Utility Coops

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
17	Wildfire	Local Planning & Regulations	COMMUNITY WILDFIRE PROTECTION PLAN Develop a CWPP in coordination with the MN DNR Firewise Program and local jurisdictions.	New High 2025-2030	RCEM in coord with MN DNR Firewise Coordinator	This a priority project area for Roseau County. RCEM will work with the designated MN DNR Firewise Coordinator for NW MN to evaluate and apply for possible grant funding from the federal Community Wildfire Defense Grants to develop a new Roseau County CWPP. When the plan is being updated, RCEM will work with local city and township fire departments and government officials to assess current fire risks and a range of mitigation actions to reduce wildfire risk. CWDG grants cover 90% cost share match with awards up to \$250,000.	Community Wildfire Defense Grant & County/local government cost share
18	Wildfire	Natural Systems Protection	FIREWISE OUTREACH & EDUCATION Promote wildfire safety awareness and encourage homeowners to conduct assessments for defensible space.	Existing High 2025-2030	RCEM in coord with local FDs	Roseau County Emergency Management RCEM will work to include MN DNR Firewise information links on the EM website page. Local fire departments are encouraged to work with homeowners who live in high risk wildfire areas to conduct Level 1 Firewise assessments for defensible space.	County Funding, Local FD's

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
19	Flooding	Local Planning & Regulations	SHORELAND ORDINANCE Implement the county's Shoreland Ordinance to reduce potential impacts of high rain events to adjacent structures.	Existing High 2025- 2030	Roseau County Environmental Services	Roseau County Shore land Management Ordinance, Ordinance #4, July 1993 establishes allowable uses and development standards in shore land areas designated within the county. In addition to establishing setback requirements, the ordinance specifies that local shore land controls must regulate placement of structures in relation to high water elevation for flood protection.	County Funding
20	Flooding	Local Planning & Regulations	FLOODPLAIN ORDINANCE Enforce the county's Floodplain Ordinance to regulate development in mapped flood risk areas.	Existing High 2025- 2030	Roseau County Environmental Services	Roseau County Floodplain Management Ordinance, Ordinance #29, adopted March 28, 2017 establishes the flood plain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts. The Roseau County Environmental Services Office maintains and enforces the floodplain management ordinance for the county. The ordinance is adopted to comply with the rules and regulations of the National Flood Insurance Program codified as 44 Code of Federal Regulations Parts 59 -78, as amended, so as to maintain the community's eligibility in the National Flood Insurance Program.	

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
21	Flooding	Local Planning & Regulations / Structure & Infrastructure Projects	LOCALIZED FLOOD RISK REDUCTION Plan for and implement measures to address localized flood reduction projects for roads, bridges, and culverts throughout the county.	Existing High 2025- 2030	HC Hwy. Dept.	The Roseau County Highway Department maintains update of the county's 5-year Transportation Plan (2004-2025) and schedules projects for implementation. This includes addressing areas where localized impacts may occur from high rain events.	County Funding
22	Flooding	Local Planning & Regulations	PROPERTY BUYOUTS Conduct property buyouts to acquire homes affected by repetitive flooding and physically relocate or remove those homes to eliminate future flood damages.	Existing Low 2025- 2030	RCEM, HC Envr. Services	There are currently no potential property buyout projects identified by Roseau County. The county will continue to evaluate and assist with potential future property acquisition projects and application to FEMA or MN DNR for grant funding to conduct buyouts.	Roseau County, Possible FEMA Grant Funding

23	Flooding	Local Planning & Regulations	<p>WATERSHED PLANNING Work with area watershed organizations to address mitigation plans and projects that address risk reduction for localized flooding and erosion.</p>	Existing Moderate 2025-2030	RC Envr. Services in coord with SWCD and Watershed Districts	<p>Roseau County SWCD and watershed districts have participated in development of the following Comprehensive Watershed Management Plans (CWMPs): Lake of the Woods CWMP, Two Rivers Plus CWMP, Roseau River CWMP, Middle Snake Tamarac Rivers CWMP, and Thief River CWMP. These plans address regional watershed planning for water quality improvement as well as measures for flood mitigation. The watershed districts within Roseau County can provide significant funding and technical assistance to projects.</p> <p>The Two Rivers and Roseau River watershed districts within Roseau County are members of the Red River Watershed Management Board and can plan, develop and construct impactful projects. Collectively, they all are working toward a 'Long Term Flood Solutions' plan with a goal to reduce peak flows on the Red River by 20%. Watershed districts follow MN statute 103D which give them specific powers and duties. They can declare disasters and provide funding for prevention of and recovery from flooding.</p> <p>Roseau County SWCD, RC Environmental Services, Highway</p>	SWCD Cost Share, Roseau County, and Watershed District funding
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#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
						Dept., and Emergency Management continue to partner with the watershed districts involved on implementation of projects where we have a role.	
24	Flooding	Local Planning & Regulations / Education & Awareness Programs	STREAM GAUGE MONITORING Work with partner agencies to monitor for flood flows and flood crest predictions and convey information to the public.	Existing Moderate 2023-2028	USGS, MN DNR, TRWD	The USGS, MN DNR, and Two Rivers Watershed District all have gauging stations to monitor flood flows and help with flood crest predictions. The TRWD also monitors snow depths and snow water equivalents to report to NWS and the public. RCEM helps to convey flood crest information to the public.	USGS, MN DNR, TRWD

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
25	Flooding	Structure & Infrastructure Projects	FLOOD DIVERSION & STORAGE PROJECTS Work with the Two Rivers-Roseau River-Warroad River Watershed Districts, Roseau SWCD, and others on flood diversion and storage projects where identified as needed to reduce the impacts of spring runoff and high rain events on streams, rivers, or drainage systems which may result in localized or downstream flooding.	Existing Moderate 2023-2028	RC Envr. Services Watershed Districts	Roseau County Environmental Services continues to partner with the TRWD, RRWD, WRWD, SWCD, and other involved representatives (County, Watershed District, City, Township), on flood diversion and storage projects. WD's have constructed many projects and are currently advancing several new proposals for impoundments which address large scale overland flood damage These new projects include the Klondike Clean Water Retention Project and Roseau Lake Impoundment	RRWD, TRWD, NRCS, USFWS, USCOE, State Agencies, local landowners, NGO groups
26	Drought	Education & Awareness Programs	DROUGHT OUTREACH & EDUCATION Provide outreach and education to residents to be aware of watering restrictions, water conservation tips, and fire safety during periods of severe drought.	Existing High 2025-2030	RCEM in coord with MN DNR and local gov'ts	RCEM continues to provide public outreach and education during heightened drought periods using the county website and social media platforms. RCEM encourages city and townships to promote drought awareness to residents at the local level.	Roseau County

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
27	Drought	Local Planning & Regulations	WATERING RESTRICTIONS Implement watering restrictions during periods of drought as per MN DNR guidance.	Existing High 2025-2030	RCEM in coord with MN DNR and local gov'ts	Roseau County and local jurisdictions will establish and enforce watering restrictions as per MN DNR guidelines during periods of severe drought.	County Funding, Local Gov'ts

Section 6 – Plan Maintenance

6.1 Monitoring, Evaluation, and Updating the Plan

The Roseau County Hazard Mitigation Plan (HMP) should be considered a living document. The plan should be updated and approved by FEMA at a minimum of every five years. The guidance in this section will function as the primary tool when reviewing progress on the implementation of the Roseau County HMP.

The Roseau County emergency management director (EMD) is the individual responsible for leading all efforts to monitor, evaluate, and update the hazard mitigation plan within the five-year window. Throughout the five-year planning cycle, the Roseau County EMD will work with an emergency managers group to help monitor, review, evaluate, and update the HMP. The group will include township representatives and designated city emergency managers from the cities of Badger, Greenbush, Roosevelt, Roseau, Strathcona, and Warroad, and include other city elected officials or staff as needed. Representatives from agencies or organizations that are involved with related mitigation work in the county as well as those that work with underserved communities or socially vulnerable populations will also be invited to participate in the group. The Roseau County EMD will conduct outreach to and communicate with the group on a quarterly basis on emergency management matters regarding severe weather awareness, local preparedness, mitigation, and response & recovery as needed. Additional stakeholders will be added based on need or in response to severe weather events.

If necessary, the Roseau County EMD will convene the group to meet on a more regular basis to monitor plan implementation progress and reassess needs and opportunities. This could be done in response to funding cycles of programs that provide resources for hazard mitigation activities. If there is a need for a special meeting due to new developments or a declared disaster occurring in the county, the group will meet to update pertinent mitigation strategies. Depending on Roseau County opportunities and fiscal resources, mitigation projects may be implemented independently by individual communities or through local partnerships.

The group will continue to review the HMP goals and objectives to determine their relevance to changing situations in Roseau County. In addition, state and federal policies will be reviewed to ensure they are addressing current and expected conditions. The group will also review the risk assessment portion of the plan to determine if this information should be updated or modified. The parties responsible for the various implementation actions will report on the status of their projects, and will include which implementation processes worked well, any difficulties encountered, how coordination efforts are proceeding, and which strategies should be revised.

Updates or modifications to the HMP during the five-year planning process will require a public notice and a meeting prior to submitting revisions to the individual jurisdictions for approval. The plan will be updated via written changes, submissions as the group deems appropriate and necessary, and as approved by county commissioners.

Throughout the five-year window of the plan, each respective county department and jurisdiction will be required to report on the status of mitigation actions in their charts to the Roseau County EMD so that progress notes may be maintained for the next plan update.

6.2 Implementation

Roseau County and its included municipalities share a common HMP and work together closely to develop, revise, and implement it. This HMP provides a comprehensive chart of mitigation actions for Roseau County and its jurisdictions (see Appendix H and Section 5.3). The cities of Badger, Greenbush, Roosevelt, Roseau, Strathcona, and Warroad participated in the HMP planning process and identified the specific mitigation strategies that they would seek to implement in their communities during the five-year planning cycle. These mitigation actions are provided in Appendix H.

Several implementation tools are available to address hazards. The strategies to use will be part of an ongoing discussion as Roseau County looks for opportunities for plan implementation. The following tools will be considered:

Education: In many cases, education of residents has been identified as one of the most effective mitigation strategies.

Capital Investments: Capital investments such as fire and ambulance equipment, sprinkler systems, and dry hydrants are tools that can limit risks and impacts of natural and manmade hazards.

Data Collection and Needs Assessments: Data collection and needs assessments can aid in gaining a better understanding of threats and allow planning for mitigation strategies accordingly. As resources are limited for this part of the planning process, additional data collection is likely to be an ongoing activity as resources become available.

Coordination: Responsibilities for mitigation strategies run across various county departments, local fire and ambulance departments, city and township governments, and a host of state and federal agencies. Ongoing coordination is an important tool to ensure resources are used efficiently. Coordination can also avoid duplication of efforts or prevent gaps that are created because of unclear roles and responsibilities. The mitigation plan review process can function as a tool to have an ongoing discussion of roles, responsibilities, and opportunities for coordination.

Regional Cooperation: Counties and public safety services providers throughout the region often share similar challenges and concerns. In some cases, a regional approach may be warranted as a mitigation strategy in order to save resources. Mutual aid agreements are a tool already in use for a number of services. Needs assessments for fire and ambulance services and development of assistance for volunteer recruiting, training, and retention could benefit from a regional approach. Cooperation among counties could also help in lobbying for certain funding priorities that address concerns relating to challenges in service delivery in rural areas. Organizations such as FEMA Region 5 and the Minnesota Division of Homeland Security and Emergency Management (HSEM) through the Regional Program Director can offer tools and resources to assist in these cooperative efforts.

Regulation: Regulation is an important mitigation tool for Roseau County. Regulation plays a particularly important role for land use, access to structures, and the protection of water resources and public health.

6.3 Continued Public Involvement

Continued public involvement is critical to the successful implementation of the Hazard Mitigation Plan. The Roseau County Emergency Management Director and the emergency managers group will continue to engage new public stakeholders in planning discussions and project implementation during the five-year cycle of this plan.

The Roseau County HMP website provides opportunities for continued public involvement and feedback

To seek continued public participation after the plan has been approved and during the five-year window of implementation for this plan, Roseau County will take the following measures:

- The Roseau County HMP website link will be posted on the Roseau County Emergency Management website. The website provides a PDF of the plan for download and an interactive experience for the public to understand the planning process, where county-specific vulnerabilities lie, national best practices, as well as a chance to submit feedback. Collected feedback will be reviewed during the five-year plan cycle and will be noted for future update of the plan or addressed as necessary.
- Following any major storms or natural disasters, Roseau County Emergency Management will seek to gather concerns and new ideas for mitigation from local residents to include in the next update of the plan. This may be done through public meetings, outreach via social media, or news releases via local media.
- Each community participating in the plan will be responsible for keeping their local government, schools, and community members updated and engaged in the implementation of their respective mitigation action charts (see Appendix H or the Roseau County HMP website). Each respective jurisdiction will be required to report on the status of mitigation actions in their charts to the Roseau County EMD.
- Roseau County and its jurisdictions will use numerous means of public outreach to engage new public stakeholders in providing input on mitigation concerns, including those from underserved communities or socially vulnerable populations. Outreach methods may include presentations at city council or township board meetings, sharing information at special events, working with local schools and partner organizations, and posting information in areas that are used to communicate with the public (bulletin boards, websites, social media, and local media sources that communities use to inform and engage the public). As mitigation projects are implemented, jurisdictions will work to keep the public updated and engaged in those local efforts.

Appendices

Appendix A – References

Appendix B – Adopting Resolutions

Appendix C – Local Mitigation Survey Report

Appendix E – Past Mitigation Action Review Status Report

Appendix F – Planning Team Meetings

Appendix G – Public Outreach & Engagement Documentation

Appendix H – Mitigation Actions by Jurisdiction

Appendix A – References

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Appendix B – Adopting Resolutions

Appendix C – Local Mitigation Survey Report



Roseau County

Local Mitigation Survey Report

Overview

As part of Roseau County's 2024 Hazard Mitigation Plan update, participating jurisdictions and county personnel were asked to fill out a Local Mitigation Survey (LMS) form. The purpose of the survey was to gather jurisdictionally-specific information needed to support update of the plan and to help inform development of local-level mitigation actions for the next five-year planning cycle.

Following is a list of the jurisdictions that participated in the survey.

LMS Forms

Roseau County	Yes
City of Badger	Yes
City of Greenbush	Yes
City of Roosevelt	Yes
City of Roseau	Yes
City of Strathcona	No
City of Warroad	Yes

The following LMS Survey Report includes a copy of each jurisdiction's completed survey.

Roseau County

LOCAL MITIGATION SURVEY

Please fill out the Point of Contact information and Parts A, B, C, and D of this survey. Please be as specific as in your responses with information as it relates to your jurisdiction. It is strongly recommended to include government officials and staff to help provide detailed feedback.

Name of Jurisdiction: ROSEAU COUNTY

Point of Contact:

Name: Dan Davidson
Job Title: Homeland Security Emergency Management Co-Director
Phone: (218) 469-2155
Email: daniel.davidson@co.roseau.mn.us

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

In the chart below, please identify the natural hazards that pose the greatest risk to your community. Consider past damaging events, likelihood of future events, and impacts to community assets. Rank the prioritization of hazards as high, moderate, or low. Only put an "X" next to those hazards that are of moderate to high priority. These will be addressed with localized mitigation actions.

Natural Hazard	Use an "X" to select the hazards that pose the greatest risk to your jurisdiction.	Please indicate if the hazard is of high, moderate, or low priority.	Do feel that this hazard has increased, decreased, or had no change?
Flooding	X	High	No change
Winter Storms	X	Moderate	Increasing
Tornadoes	X	Moderate	No change
Windstorms	X	Moderate	No change
Lightning		Low	No change
Hail		Moderate	No change
Extreme Cold	X	Moderate	No change
Extreme Heat	X	Moderate	No change
Drought	X	Moderate	Increasing
Wildfire	X	Moderate	Increasing
Landslides		Low	No change
Dam/Levee Failure		Low	No change

2. RECENT HAZARD EVENTS

Please describe any severe weather or disaster events that have occurred over roughly the last 5 years that caused damages in your community or resulted in a disaster declaration.

In the past five years Roseau County has had four flood emergency declaration events. Emergency declarations were declared in: 2019, 2021, 2022 and 2023.

3. LOCAL VULNERABILITIES

Use the chart below to identify what specific community assets are vulnerable to damages or loss from the hazards that pose risk to your community.

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
Flooding	The two most significant impacts of flooding to the residents of Roseau County involve their three largest sources of water, Lake of the Woods, Roseau River, and Two Rivers.
Ice Storms, Blizzards	Much of the county's municipal electrical service consists of overhead power lines and electrical poles. Ice and high winds can make the lines prone to failure. The Roseau County Courthouse and Sheriff's Office has back up power on demand via a large generator.
Windstorms and Tornadoes	The county has multiple mobile home parks that do not have storm shelters and residents are vulnerable to high wind and tornado events. Our municipal and private campgrounds are very active during summer and fall months and campers do not have access to onsite storm shelters. We have experienced power outages from strong wind events that brought down power lines but our local power company is extremely responsive and has restored power very quickly.
Extreme Cold	County residents are susceptible to dangers from extreme cold, especially if the power goes out. Our utility companies are very responsive and there are shelters available in Roseau, Warroad, Greenbush and Badger but the shelters lack backup generator power.
Drought	Roseau County has experienced very dry conditions the past several years as well as Canada directly to the north side of our County. Last summer we saw numerous days with heavy smoke in the air from Canadian wildfires. Wildfires are a constant threat to our large Beltrami Forest as well.

4. REDUCTION IN VULNERABILITY

Please describe any actions your community has taken to reduce vulnerability against future severe weather or disaster events. This can include examples of any work that has been completed or is currently underway.

Flooding has been mitigated in the City of Roseau with the construction of a diversion canal dug around the city which saw frequent flooding from spring ice melt and run off coming from the Roseau River. The diversion was finished in 2017 and has since eliminated any further flooding to the City of Roseau in spite of numerous high water events since its completion. Once water reaches the flood stage in the Roseau River it is diverted to a large trench that was dug around the City of Roseau. Once the water reaches a certain level it overflows into the diversion ditch and bypasses the city.

The city of Warroad purchased a water filled reusable barrier system to place along the shore of Lake of the Woods. This eliminated the use of sand bags and fill during the 2022 high water event and effectively mitigated flood damage to the City of Warroad.

5. INCREASE IN VULNERABILITY

Please describe any current conditions or changes you feel have increased your community's vulnerability to future severe weather or disaster events. Please include any factors such as recent population growth or new development.

The construction of the diversion around the City of Roseau does not mitigate the properties located north of the City where the water flows. We have not experienced an overwhelming amount of water like the 2002 water event that flooded the City of Roseau so we are uncertain to how the downstream area of the diversion project would be affected during another large scale flooding event.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

Please describe what capabilities you have in place to communicate with those in your community to share information about severe weather events and personal preparedness. Please include any considerations for underserved communities or socially vulnerable populations within your jurisdiction.

Roseau County Emergency Management utilizes the Roseau County website, Roseau County Facebook page, and local news media to communicate with residents, visitors, schools, and long-term care facilities on emergency preparedness, severe weather, and other hazard conditions throughout the year. The Roseau County Emergency Management website page provides emergency preparedness information and resource links for the public. The City of Roseau operates an electronic billboard located on Hwy 11 that runs directly through the city on the highly traveled roadway which can be programmed to distribute information as well.

2. EMERGENCY NOTIFICATION SYSTEM

Do you encourage residents in your community to sign up for the county's emergency notification system and/or a local emergency alert system? If yes, how? If not, is this something you would do?

Roseau County maintains the CodeRed Emergency Notification System which allows residents and visitors to sign up ("opt-in") to receive severe weather alerts targeted to their location, along with other local emergency alerts. A link to sign up for the system is located on the Roseau County Emergency Management website page.

Roseau County has multiple outdoor sirens located throughout the county to warn citizens of severe weather conditions.

3. LOCAL PLANS & POLICIES

Please describe any local plans, authorities or policies in place that help to reduce risk from natural hazards in your community. Please make note of enforcement of existing building codes and land use and development ordinances or regulations as they apply to your community. Please also note if your community has any plans or policies in place related to resilience and adaptation for climate change.

All Hazards Emergency Operations Plan: Roseau County Emergency Management maintains an all-hazards Emergency Operations Plan (EOP) which lays out concepts and operating guidelines for all incident management and support functions that may be needed to ensure life safety, incident stabilization, and property preservation during an incident and the transition to recovery.

This plan is maintained and updated through a four year process with HSEM. Roseau County updated their plan in 2024 and met with HSEM staff who signed off on the plan.

Roseau County also maintains a Roseau County Resource Manual which assists in emergency events detailing the names, phone numbers and addresses of all the Emergency Services personnel as well as contractors and citizen groups located throughout the County that can be relied on during a disaster event.

Mass Care Sheltering: In the event of a disaster where temporary sheltering is needed, Roseau County Emergency Management works in coordination with Roseau County Social Services and LifeCare Public Health, the American Red Cross, and local governments/Fire & EMS to provide mass care services as needed. The county EOP includes plans, procedures, and resources available for mass care sheltering.

Snow Removal & Ice Control: The Roseau County Highway Department conducts winter road maintenance on county roads in accordance with the Roseau County Snow Removal & Ice Control Policy, effective date: 9/27/2022.

Shoreland Ordinance: Roseau County Shore land Management Ordinance, Ordinance #4, July 1993 establishes allowable uses and development standards in shore land areas designated within the county. In addition to establishing setback requirements, the ordinance specifies that local shore land controls must regulate placement of structures in relation to high water elevation for flood protection.

Floodplain Ordinance: Roseau County Floodplain Management Ordinance, Ordinance #29, adopted March 28, 2017 establishes the flood plain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts. The Roseau County Environmental Services Office maintains and enforces the floodplain management ordinance for the county. The ordinance is adopted to comply with the rules and regulations of the National Flood Insurance Program codified as 44 Code of Federal Regulations Parts 59 -78, as amended, so as to maintain the community's eligibility in the National Flood Insurance Program.

Transportation Plan: The Roseau County Highway Department maintains update of the county's 5-year Transportation Plan (2004-2025) and schedules projects for implementation.

Minnesota Buffer Law: The Roseau SWCD administers the state Buffer Law and provides technical assistance on buffer compliance by landowners. Buffers benefit bank stabilization and reduced erosion and sedimentation into ditches, streams, rivers, and lakes.

Comprehensive Watershed Management Plans (CWMPs): Roseau County has participated in development of the following CWMPs: Lake of the Woods CWMP, Two Rivers Plus CWMP, Roseau River CWMP, Middle Snake Tamarac Rivers CWMP, and Thief River CWMP. These plans address regional watershed planning for water quality improvement as well as measures for flood mitigation.

4. STAFF & PARTNERSHIPS

Please describe what staff or other partnerships are in place to help accomplish mitigation in your community. This can include specific department staff or outside agencies that have a role with mitigation-related planning or projects.

Roseau County departments work together to accomplish mitigation goals through integrated policies and programs. Key departments include Roseau County Emergency Management, Roseau County Sheriff's Office, Roseau County Highway Department, Roseau County Environmental Services, LifeCare Public Health, Roseau County Administration, City of Warroad Police, City of Roseau Police and Roseau Soil and Water Conservation District. Roseau County also works in partnership with the Roseau River Watershed and the Two Rivers Watershed District on a regular basis.

Roseau County Emergency Management works closely with city emergency managers within the county on emergency preparedness and response capabilities.

Roseau County Emergency Management works closely with the MN HSEM Region 3 regional program coordinator and neighboring county emergency managers on an annual basis for joint planning, training, and exercises.

Roseau County Emergency Management coordinates with local school districts as needed on related emergency planning and preparedness, including support for specific trainings, exercises, equipment, and relay of county-level emergency notifications.

Roseau County has a strong relationship with the Grand Forks, ND National Weather Service (NWS) Forecast Office, having access to all live and on-demand briefings, announcements, and educational opportunities, and contact information for direct collaboration as needed. The county also receives all products/statements issued by the NWS, and in turn shares or incorporates these into its community outreach and public education.

Relationship with LifeCare Medical Center, Altru Clinics, Long-Term Care and Assisted Living: Roseau County Emergency Management has a strong relationship with area health care and senior housing on related emergency planning and preparedness, including support for specific trainings, exercises, equipment, and relay of county-level emergency notifications. Health care and senior care have their own policies, decision-making protocols, and communications plans in place to determine the need to close school and to notify targeted audiences in the event of severe weather, extreme temperatures, or other events that pose risk to patients, residents and staff.

Relationship with LifeCare Public Health: Roseau County contracts with Life Care Medical Center to provide Public Health services for the county. Roseau County HSEM in partnership with LifeCare Public Health share the responsibility for assuring the overall health of the community. In a disaster, serious potential or actual health problems including: disease prevention, injury prevention, food and water safety, surveillance for illness, deaths and injuries, monitoring the immediate and long-term effects of a health related event, hazardous chemical or radiological release and the disposal of human remains will be referred to the local public health authority. Roseau County Emergency Management participates in numerous joint exercises with Life Care Public Health to ensure effective services can be provided during disaster events.

5. PROGRAMS IN PLACE

Describe any programs in place that to help reduce risk from natural hazards in your community.

Severe Weather Statements (Watch, Advisory, Warning, etc.): Roseau County Emergency Management works to relay all severe weather and extreme temperature statements received from the NWS to help alert residents and visitors to hazardous conditions.

NOAA Weather Radios: Roseau County Emergency Management promotes the use of NOAA Weather Radios by residents, businesses, schools, long term care facilities, government buildings, faith communities, and other places of common gathering.

National Weather Service – Severe Weather Awareness Weeks: Roseau County participates in the annual Winter Hazard Awareness Week and Severe Weather Awareness Week campaigns sponsored by MN HSEM and the NWS each November and April. Each week-long effort provides specific information each day covering the topics of severe weather winter weather, outdoor winter safety, indoor winter safety, and winter driving safety. Roseau County Emergency Management promotes and shares information during the week via social media which communities, schools, churches or other civic programs are encouraged to share locally.

Outdoor Warning Siren Testing: Outdoor warning sirens throughout the county are tested monthly by the Roseau County Sheriff's Office in coordination with local jurisdictions.

Skywarn Program: Roseau County Emergency Management works with the National Weather Service to offer Storm Spotter training on an annual basis to local fire and law enforcement departments and area residents that wish to be trained as spotters. SkyWarn Storm Spotters help to keep their local communities safe by providing timely and accurate reports of severe weather to their local NWS office.

Vegetation Management: The Roseau County Highway Department conducts vegetation management along county roads to reduce the risk of downed trees or branches resulting from severe spring and summer storm events. Local utility providers also work to manage vegetation near power lines to reduce the risk of downed lines and power outages.

Precipitation Monitoring: The Roseau SWCD participates in the MNgage Minnesota Volunteer Precipitation Observing Program, which is administered by the DNR Minnesota State Climatology Office. Data collected by volunteers is entered into a database for various studies and weather prediction simulations, including the assessment of drought severity and impacts.

6. FUNDING & OTHER RESOURCES

Please describe what sorts of funding or other resources are available to help accomplish mitigation in your community. Please make note of any work with outside organizations or agencies or municipal/rural electrical coop providers.

The county primarily uses its own budget to address mitigation projects. However, the Corps of Engineers and the city of Roseau began constructing a Roseau River diversion project in 2009 and collectively invested more than \$46 million to reduce the flood risk within the community. The project consists of a 4.5-mile diversion channel that reduced river flows within the city and more than 45 acres of recreation opportunities to include a scenic overlook, two interpretive sites, birding sites, 9 miles of off-road vehicle trails, 7 miles of multi-use trails and more than 4 miles of canoe trails. The project was completed in 2016 and FEMA gave its final approval in 2018 removing the city of Roseau from the 100 year floodplain.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

Please describe what mitigation actions would help to reduce risk to your community from future hazard events. Please consider mitigation activities that address local vulnerabilities; limit risk to existing structures or new development; and also any actions that benefit underserved communities or socially vulnerable populations in your community. Please be as specific as possible in your responses.

- Encourage all county residents to sign-up for the county's emergency notification alert system.
- Provide ongoing education and outreach to residents on personal preparedness for severe weather, extreme temperatures, and extended power outages. Coordinate with local jurisdictions to share information locally.
- Ensure the county's Emergency Operations Plan (EOP) is updated and addresses policies & procedures needed to support EM functions prior to, during, and following a disaster.
- Ensure designated facilities are in place and prepared for providing mass care sheltering and county staff are trained in sheltering operations.
- Work with municipalities / rural electric coops to encourage them to address burying power lines or strengthening power poles to avoid power outages from high wind events and storms.
- Ensure there is a network of trained Storm Spotters throughout the county to support situational awareness of and public notification for dangerous storms such as severe thunderstorms and tornadoes.
- Work with county departments and local jurisdictions to acquire generator backup power to support critical infrastructure and delivery of essential services during an extended power outage due to storms.
- Encourage schools and long-term facilities that house senior citizens or other vulnerable populations to have emergency plans and generators in place to deal with severe weather, extreme temperatures and power outages.
- Work with owners of mobile home parks (MHP's) to ensure they are in compliance with Minnesota Department of Health (MDH) requirements for evacuation plans and storm shelters.
- Work with local governments to ensure the functionality of outdoor warnings sirens to warn residents of dangerous high wind or tornado events.
- Provide assistance to local jurisdictions that require purchase & installation of new outdoor warning sirens and ensure they are connected to the county's remote activation system.
- Work in coordination with local jurisdictions to address the need for the construction of storm shelters or tornado safe rooms in locations where residents and visitors are vulnerable to high wind events, such as mobile home parks, municipal campgrounds, and other public areas.

- Conduct outreach to residents to be aware of water restrictions, water conservation tips, and fire safety during periods of severe drought.
- Continue to participate in the National Flood Insurance Program and enforce policies that address development in high-risk flood areas.
- Continue to enforce ordinances and policies within the county's code of ordinances to support reduction of risk to existing buildings, structures, and infrastructure as well as to limit risk to new development and redevelopment. This includes shore land regulations, setback limits, and floodplain regulations.
- Plan for and implement measures to address localized flood reduction projects for roads, bridges, and culverts throughout the county such as hardening public roads, bridges, and installing high-flow culverts to mitigate recurring flood damages. Additional projects may include paving shoulders of roads, paving or adding rip-rap around culverts, and adding rip-rap to the banks of ditches and streams. These projects may be in coordination between the county, SWCD, and other area watershed districts and in accordance with other existing plans.
- Continue to work in partnership with the Soil & Water Conservation District and other watershed partners to address mitigation plans, policies, and projects that address risk reduction for localized flooding and erosion.
- Continue to address shore land zoning regulations and storm water management to mitigate impacts from high rain events, especially for areas of new development and population growth within the county.
- Conduct soil stabilization and slope management projects in unstable areas for sediment and erosion control resulting from high rain events.
- Conduct floodplain and stream corridor restoration in areas that are impacted by high rain events.
- Construct flood diversion and storage projects were identified as needed to reduce the impacts of high rain events on streams, rivers, or drainage systems which may result in localized or downstream flooding.

2. GAPS OR DEFICIENCIES

Please describe any specific gaps or deficiencies that are a barrier to implementing local mitigation measures.

Not all Roseau County residents are signed up for CodeRED emergency notification system. Citizens should be encouraged to utilize the phone app. Not all citizens have a NOAA weather radio so they can receive notification about severe weather or follow the Roseau County Facebook page to receive important messages. We need ongoing public education to encourage people to utilize those resources.

Not all county and city incident support facilities and shelters have generator backup power. Funding to purchase generators is extremely limited.

Wildland fire is an increasing concern. Roseau County can seek to work in greater coordination with MN DNR Forestry and local jurisdictions' to address wildland fires. It can be difficult to utilize Code Red to communicate with a number of residents located in the Beltrami Island State Forest due to spotty cellular service.

PART D: SURVEY PARTICIPANTS

Please list the names & titles of all persons that contributed information to this survey.

Daniel Davidson, Emergency Manager Roseau County

Jeff Pelowski, Roseau County Coordinator

Ericka Halstensgard, Roseau County Engineer

Brooke Homstad, Public Health Nurse - LifeCare Public Health

Paula Hedlund, Director of Community Health LifeCare Medical Center

Roseau County

LOCAL MITIGATION SURVEY

Please fill out the Point of Contact information and Parts A, B, C, and D of this survey. Please be as specific as in your responses with information as it relates to your jurisdiction. It is strongly recommended to include government officials and staff to help provide detailed feedback.

Name of Jurisdiction: CITY OF BADGER

Point of Contact:

Name: Angie Swenson
Job Title: Clerk/Treasurer
Phone: 218-528-3670
Email: cob@wiktel.com

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

In the chart below, please identify the natural hazards that pose the greatest risk to your community. Consider past damaging events, likelihood of future events, and impacts to community assets. Rank the prioritization of hazards as high, moderate, or low. Only put an "X" next to those hazards that are of moderate to high priority. These will be addressed with localized mitigation actions.

Natural Hazard	Use an "X" to select the hazards that pose the greatest risk to your jurisdiction.	Please indicate if the hazard is of high, moderate, or low priority.	Do feel that this hazard has increased, decreased, or had no change?
Flooding			
Winter Storms	X	Moderate	No change
Tornadoes	X	Moderate	No change
Windstorms			
Lightning			
Hail			
Extreme Cold	X	Low	No change
Extreme Heat			
Drought	X	Low	No change
Wildfire			
Landslides			
Dam/Levee Failure			

2. RECENT HAZARD EVENTS

Please describe any severe weather or disaster events that have occurred over roughly the last 5 years that caused damages in your community or resulted in a disaster declaration.

No major events to report.

3. LOCAL VULNERABILITIES

Use the chart below to identify what specific community assets are vulnerable to damages or loss from the hazards that pose risk to your community.

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
Extreme Cold	More funding for low-income residents for heat assistance.
Tornado	More of an alert system to residents. Not sure everyone has social media.
Drought	Funding for individuals that utilize water/rain for employment purposes.

4. REDUCTION IN VULNERABILITY

Please describe any actions your community has taken to reduce vulnerability against future severe weather or disaster events. This can include examples of any work that has been completed or is currently underway.

The city has replaced all water main pipes and done water tower improvements.

5. INCREASE IN VULNERABILITY

Please describe any current conditions or changes you feel have increased your community's vulnerability to future severe weather or disaster events. Please include any factors such as recent population growth or new development.

N/A

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

Please describe what capabilities you have in place to communicate with those in your community to share information about severe weather events and personal preparedness. Please include any considerations for underserved communities or socially vulnerable populations within your jurisdiction.

Social media / mailed newsletters / newspaper / city meetings / flyers. Fire department also goes into schools for weather awareness.

2. EMERGENCY NOTIFICATION SYSTEM

Do you encourage residents in your community to sign up for the county's emergency notification system and/or a local emergency alert system? If yes, how? If not, is this something you would do?

No – something to consider though.

3. LOCAL PLANS & POLICIES

Please describe any local plans, authorities or policies in place that help to reduce risk from natural hazards in your community. Please make note of enforcement of existing building codes and land use and development ordinances or regulations as they apply to your community. Please also note if your community has any plans or policies in place related to resilience and adaptation for climate change.

Planning Commission looking into upgrades to our City Park – trails – health & wellness.

4. STAFF & PARTNERSHIPS

Please describe what staff or other partnerships are in place to help accomplish mitigation in your community. This can include specific department staff or outside agencies that have a role with mitigation-related planning or projects.

We have a City Engineer, Fire Chief, and a Public Works Director that addresses maintenance.

5. PROGRAMS IN PLACE

Describe any programs in place that to help reduce risk from natural hazards in your community.

Fire department works with the DNR and Roseau County. We have contact with the county Emergency Department.

6. FUNDING & OTHER RESOURCES

Please describe what sorts of funding or other resources are available to help accomplish mitigation in your community. Please make note of any work with outside organizations or agencies or municipal/rural electrical coop providers.

Funding from Rural Water Development DNR grants. Grants from other sources.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

Please describe what mitigation actions would help to reduce risk to your community from future hazard events. Please consider mitigation activities that address local vulnerabilities; limit risk to existing structures or new development; and also any actions that benefit underserved communities or socially vulnerable populations in your community. Please be as specific as possible in your responses.

City communication system – massive call list to all recipients.

2. GAPS OR DEFICIENCIES

Please describe any specific gaps or deficiencies that are a barrier to implementing local mitigation measures.

Website not up to date. Small city with limited financial resources.

PART D: SURVEY PARTICIPANTS

Please list the names & titles of all persons that contributed information to this survey.

Angie Swenson, Clerk/Treasurer

Roseau County

LOCAL MITIGATION SURVEY

Please fill out the Point of Contact information and Parts A, B, C, and D of this survey. Please be as specific as in your responses with information as it relates to your jurisdiction. It is strongly recommended to include government officials and staff to help provide detailed feedback.

Name of Jurisdiction: CITY OF GREENBUSH

Point of Contact:

Name: Lynsi Emery
Job Title: Clerk Treasurer
Phone: 218-782-2570
Email: greenbush@wiktel.com

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

In the chart below, please identify the natural hazards that pose the greatest risk to your community. Consider past damaging events, likelihood of future events, and impacts to community assets. Rank the prioritization of hazards as high, moderate, or low. Only put an "X" next to those hazards that are of moderate to high priority. These will be addressed with localized mitigation actions.

Natural Hazard	Use an "X" to select the hazards that pose the greatest risk to your jurisdiction.	Please indicate if the hazard is of high, moderate, or low priority.	Do feel that this hazard has increased, decreased, or had no change?
Flooding	X	Low	No Change
Winter Storms	X	Moderate	No Change
Tornadoes			
Windstorms			
Lightning			
Hail			
Extreme Cold	X	Moderate	No Change
Extreme Heat			
Drought			
Wildfire			
Landslides			
Dam/Levee Failure			

2. RECENT HAZARD EVENTS

Please describe any severe weather or disaster events that have occurred over roughly the last 5 years that caused damage in your community or resulted in a disaster declaration.

In the past 5 years the City of Greenbush has not experienced any severe or disaster event.

3. LOCAL VULNERABILITIES

Use the chart below to identify what specific community assets are vulnerable to damages or loss from the hazards that pose risk to your community.

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
Flooding	The City's Welcome Park is vulnerable to flooding every spring. The residents that live off the river take their own precautions to the matter. At the park the river is far enough away to avoid any damage, just safety concerns.
Ice Storms, Blizzards	The City of Greenbush uses Ottertail Power Company for electrical services. During the cold temperatures, and blizzard weather conditions we've experienced power outage due to high winds and fallen trees on the power poles.
Extreme Cold	In the past we have experienced frozen pipes/water services. In 2021 and 2022 the city replaced the watermain on Main Street North and South. Residents living on those streets have not had any issues with freezing lines since.

4. REDUCTION IN VULNERABILITY

Please describe any actions your community has taken to reduce vulnerability against future severe weather or disaster events. This can include examples of any work that has been completed or is currently underway.

In 2022, the city switched meter brands, from Sensus to Badger meter. With the new meters we have been able to monitor residents' water temperature from the city office. With the switch, it has helped avoid freezing pipes, and helps monitor those who are running water. The city plans to have the whole city switched over to Badger Meters by 2026.

5. INCREASE IN VULNERABILITY

Please describe any current conditions or changes you feel have increased your community's vulnerability to future severe weather or disaster events. Please include any factors such as recent population growth or new development.

No changes have been made to increase our vulnerability.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

Please describe what capabilities you have in place to communicate with those in your community to share information about severe weather events and personal preparedness. Please include any considerations for underserved communities or socially vulnerable populations within your jurisdiction.

The city will post on Facebook, and the city website as well as display a copy to the local newspaper. Information is also posted outside on the bulletin board at the Community Center/City Office.

2. EMERGENCY NOTIFICATION SYSTEM

Do you encourage residents in your community to sign up for the county's emergency notification system and/or a local emergency alert system? If yes, how? If not, is this something you would do?

No, we currently do not have one, but we are planning to once we get our new website completed.

3. LOCAL PLANS & POLICIES

Please describe any local plans, authorities or policies in place that help to reduce risk from natural hazards in your community. Please make note of enforcement of existing building codes and land use and development ordinances or regulations as they apply to your community. Please also note if your community has any plans or policies in place related to resilience and adaptation for climate change.

We have a 5-year water and paving assessment plan.

4. STAFF & PARTNERSHIPS

Please describe what staff or other partnerships are in place to help accomplish mitigation in your community. This can include specific department staff or outside agencies that have a role with mitigation-related planning or projects.

Randy Jenson, Fire Chief is the city's designated Emergency Manager. We are members of MnWARN.

5. PROGRAMS IN PLACE

Describe any programs in place that to help reduce risk from natural hazards in your community.

We are a part of Life in the Wild Regional Safety Group, that is ran by Minnesota Municipal Utilities Association.

6. FUNDING & OTHER RESOURCES

Please describe what sorts of funding or other resources are available to help accomplish mitigation in your community. Please make note of any work with outside organizations or agencies or municipal/rural electrical coop providers.

The city primarily uses its own budget to address mitigation projects. We have worked with MPFA, and NWCA, for grant funding and loan payments.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

Please describe what mitigation actions would help to reduce risk to your community from future hazard events. Please consider mitigation activities that address local vulnerabilities; limit risk to existing structures or new development; and also any actions that benefit underserved communities or socially vulnerable populations in your community. Please be as specific as possible in your responses.

Flooding- Prompt and enforce the floodplain ordinance as well as the city's sump pump ordinance. They are both ordinances that the city has in place.

Blizzards/Ice Storms- Posting and sharing with residents about the Emergency action Plan. The City's Storm shelter is at the Greenbush-Middle River School.

Extreme Cold- Be more proactive for monitoring freezing pipes/residential services lines, as well as installing more meters throughout the city.

2. GAPS OR DEFICIENCIES

Please describe any specific gaps or deficiencies that are a barrier to implementing local mitigation measures.

Posting the city's Emergency Action Plan on the city website, Facebook, and bulletin board once it's completed.

PART D: SURVEY PARTICIPANTS

Please list the names & titles of all persons that contributed information to this survey.

Lynsi Emery, Clerk- Treasurer

Randy Jenson, Fire Chief

Shaun Jevne, Public Works Supervisor

Roseau County

LOCAL MITIGATION SURVEY

Please fill out the Point of Contact information and Parts A, B, C, and D of this survey. Please be as specific as in your responses with information as it relates to your jurisdiction. It is strongly recommended to include government officials and staff to help provide detailed feedback.

Name of Jurisdiction: CITY OF ROOSEVELT

Point of Contact:

Name: Joyce Claypool

Job Title: City Clerk

Phone:

Email: cityclerk@wikel.com

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

In the chart below, please identify the natural hazards that pose the greatest risk to your community. Consider past damaging events, likelihood of future events, and impacts to community assets. Rank the prioritization of hazards as high, moderate, or low. Only put an "X" next to those hazards that are of moderate to high priority. These will be addressed with localized mitigation actions.

Natural Hazard	Use an "X" to select the hazards that pose the greatest risk to your jurisdiction.	Please indicate if the hazard is of high, moderate, or low priority.	Do feel that this hazard has increased, decreased, or had no change?
Flooding			
Winter Storms	X	Moderate	No change
Tornadoes			
Windstorms	X	High	No change
Lightning			
Hail			
Extreme Cold	X	High	No change
Extreme Heat			
Drought	X	Moderate	Increasing
Wildfire	X	High	Increasing
Landslides			
Dam/Levee Failure			

2. RECENT HAZARD EVENTS

Please describe any severe weather or disaster events that have occurred over roughly the last 5 years that caused damages in your community or resulted in a disaster declaration.

We have not had any major storm events that caused damages. We have had high rain and strong wind events in the last several years. Strong winter storms are common.

3. LOCAL VULNERABILITIES

Use the chart below to identify what specific community assets are vulnerable to damages or loss from the hazards that pose risk to your community.

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
All-Hazards	We have residents in town who may be more vulnerable to severe weather because they are senior citizens or low-income. We do not have any specific city infrastructure at risk to storm events.
Windstorms/Tornadoes	The city does not have an outdoor warning siren to help warn residents of severe windstorms or tornadoes.

4. REDUCTION IN VULNERABILITY

Please describe any actions your community has taken to reduce vulnerability against future severe weather or disaster events. This can include examples of any work that has been completed or is currently underway.

None noted.

5. INCREASE IN VULNERABILITY

Please describe any current conditions or changes you feel have increased your community's vulnerability to future severe weather or disaster events. Please include any factors such as recent population growth or new development.

Roseau County has experienced an increase in drought which also raises the risk of wildfire throughout our area because of dry conditions. We have not had any new development or recent population growth.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

Please describe what capabilities you have in place to communicate with those in your community to share information about severe weather events and personal preparedness. Please include any considerations for underserved communities or socially vulnerable populations within your jurisdiction.

We do not have a city website or Facebook page. We share information with our residents primarily through announcements at city council meetings and posting information at City Hall.

2. EMERGENCY NOTIFICATION SYSTEM

Do you encourage residents in your community to sign up for the county's emergency notification system and/or a local emergency alert system? If yes, how? If not, is this something you would do?

Roseau County Emergency Management does outreach to encourage residents to sign up for the CodeRed system by going to the county website. We have not done anything locally to promote this but we could provide occasional reminders during the year at city council meetings and/or by posting information.

3. LOCAL PLANS & POLICIES

Please describe any local plans, authorities or policies in place that help to reduce risk from natural hazards in your community. Please make note of enforcement of existing building codes and land use and development ordinances or regulations as they apply to your community. Please also note if your community has any plans or policies in place related to resilience and adaptation for climate change.

No specific plans to note. We work with Roseau County to help enforce state building codes if there is any new development.

4. STAFF & PARTNERSHIPS

Please describe what staff or other partnerships are in place to help accomplish mitigation in your community. This can include specific department staff or outside agencies that have a role with mitigation-related planning or projects.

We have a city council and city clerk. We work with Roseau County as needed.

5. PROGRAMS IN PLACE

Describe any programs in place that to help reduce risk from natural hazards in your community.

None to note.

6. FUNDING & OTHER RESOURCES

Please describe what sorts of funding or other resources are available to help accomplish mitigation in your community. Please make note of any work with outside organizations or agencies or municipal/rural electrical coop providers.

We have limited city funding.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

Please describe what mitigation actions would help to reduce risk to your community from future hazard events. Please consider mitigation activities that address local vulnerabilities; limit risk to existing structures or new development; and also any actions that benefit underserved communities or socially vulnerable populations in your community. Please be as specific as possible in your responses.

All Hazards – it would be helpful to have a back up generator for city use as needed if the power goes down during a severe storm.

Severe Winter/Summer Storms – Encourage residents to sign up for the county's emergency notification system and to be aware of and prepared for extreme weather events.

Windstorms/Tornadoes – Work with Roseau County to see if it is possible to get an outdoor warning siren purchased and installed for the city.

2. GAPS OR DEFICIENCIES

Please describe any specific gaps or deficiencies that are a barrier to implementing local mitigation measures.

We are small city with limited financial and staff resources to address local mitigation projects. Many senior citizen residents do not use cell phones to utilize the CodeRed notifications or use weather apps. We mainly depend on local radio and television to keep residents informed of weather events. Significant outside funding would be necessary to complete any big projects like purchase of a warning siren.

PART D: SURVEY PARTICIPANTS

Please list the names & titles of all persons that contributed information to this survey.

Joyce Claypool, City Clerk
Daniel Davidson, Roseau County Deputy EMD

Roseau County

LOCAL MITIGATION SURVEY

Please fill out the Point of Contact information and Parts A, B, C, and D of this survey. Please be as specific as in your responses with information as it relates to your jurisdiction. It is strongly recommended to include government officials and staff to help provide detailed feedback.

Name of Jurisdiction: CITY OF ROSEAU

Point of Contact:

Name: Todd Peterson
Job Title: Community Development Coordinator
Phone: 218-463-5003
Email: todd.peterson@city.roseau.mn.us

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

In the chart below, please identify the natural hazards that pose the greatest risk to your community. Consider past damaging events, likelihood of future events, and impacts to community assets. Rank the prioritization of hazards as high, moderate, or low. Only put an "X" next to those hazards that are of moderate to high priority. These will be addressed with localized mitigation actions.

Natural Hazard	Use an "X" to select the hazards that pose the greatest risk to your jurisdiction.	Please indicate if the hazard is of high, moderate, or low priority.	Do feel that this hazard has increased, decreased, or had no change?
Flooding	X	Moderate	Decreased
Winter Storms	X	Moderate	Decreased
Tornadoes	X	Moderate	No Change
Windstorms	X	Moderate	No Change
Lightning			
Hail			
Extreme Cold			
Extreme Heat			
Drought			
Wildfire			
Landslides			
Dam/Levee Failure			

2. RECENT HAZARD EVENTS

Please describe any severe weather or disaster events that have occurred over roughly the last 5 years that caused damages in your community or resulted in a disaster declaration.

Urban flooding has caused damages to some storm sewers and sanitary sewers (pumps) in the last couple of year from sudden intense rainfall events.

3. LOCAL VULNERABILITIES

Use the chart below to identify what specific community assets are vulnerable to damages or loss from the hazards that pose risk to your community.

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
Flooding	The city has many sanitary lift stations that are prone to flooding when storm sewer capacity is exceeded and urban flooding becomes an issue
Ice Storms & Blizzards	The city still has many existing overhead electric lines in the older sections of Roseau that are vulnerable to ice buildup and falling trees leaving homeowners without power.
Windstorms and Tornadoes	The city has two mobile home parks without storm shelters housing a significant number of people.

4. REDUCTION IN VULNERABILITY

Please describe any actions your community has taken to reduce vulnerability against future severe weather or disaster events. This can include examples of any work that has been completed or is currently underway.

The city has constructed a \$42 million flood diversion around the east side of the community to protect the community from river flooding. The city is also undertaking a \$5 million storm water project to increase capacity to alleviate urban flooding on the west side of the community in 2024-25.

5. INCREASE IN VULNERABILITY

Please describe any current conditions or changes you feel have increased your community's vulnerability to future severe weather or disaster events. Please include any factors such as recent population growth or new development.

New owners of the East and West side trailer courts have made improvements to increase the number of housing units in the parks. This increases the number of persons residing in housing units susceptible to tornadoes and high winds.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

Please describe what capabilities you have in place to communicate with those in your community to share information about severe weather events and personal preparedness. Please include any considerations for underserved communities or socially vulnerable populations within your jurisdiction.

The city has electronic and social media accounts (website, Facebook pages) on which information can be shared. The city also has an electronic messaging sign on TH 11 that displays public information. We also utilize a mailed newsletter 4 times a year for public information.

2. EMERGENCY NOTIFICATION SYSTEM

Do you encourage residents in your community to sign up for the county's emergency notification system and/or a local emergency alert system? If yes, how? If not, is this something you would do?

We maintain information on the city website and in periodic community newsletters on the County's emergency notification system.

3. LOCAL PLANS & POLICIES

Please describe any local plans, authorities or policies in place that help to reduce risk from natural hazards in your community. Please make note of enforcement of existing building codes and land use and development ordinances or regulations as they apply to your community. Please also note if your community has any plans or policies in place related to resilience and adaptation for climate change.

The city of Roseau has local ordinances to enforce public safety for land use and floodplain. The city also maintains a comprehensive plan for growth and development in areas appropriate for land use.

4. STAFF & PARTNERSHIPS

Please describe what staff or other partnerships are in place to help accomplish mitigation in your community. This can include specific department staff or outside agencies that have a role with mitigation-related planning or projects.

The city also maintains an Emergency Operations plan that identifies key personnel and operations staff.

5. PROGRAMS IN PLACE

Describe any programs in place that to help reduce risk from natural hazards in your community.

The city participates with Roseau County in Emergency Planning sessions.

6. FUNDING & OTHER RESOURCES

Please describe what sorts of funding or other resources are available to help accomplish mitigation in your community. Please make note of any work with outside organizations or agencies or municipal/rural electrical coop providers.

The city generally seeks grant opportunities to address large scale project to mitigate hazards, otherwise the city has limited local resources to small improvements.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

Please describe what mitigation actions would help to reduce risk to your community from future hazard events. Please consider mitigation activities that address local vulnerabilities; limit risk to existing structures or new development; and also any actions that benefit underserved communities or socially vulnerable populations in your community. Please be as specific as possible in your responses.

Flooding - The city has received extensive grant funding to address flooding issues. After the completion of the upcoming west side storm water project the most pressing flooding issues should be addressed.

Blizzards, Tornadoes & Windstorms – Work to secure grant funding to assist in the relocation of electric lines underground. Also seek grant funding to create on-site storm shelters in the community's two trailer courts.

2. GAPS OR DEFICIENCIES

Please describe any specific gaps or deficiencies that are a barrier to implementing local mitigation measures.

Limited financial resources and staffing.

PART D: SURVEY PARTICIPANTS

Please list the names & titles of all persons that contributed information to this survey.

Todd Peterson, Community Development Coordinator

Roseau County

LOCAL MITIGATION SURVEY

Please fill out the Point of Contact information and Parts A, B, C, and D of this survey. Please be as specific as in your responses with information as it relates to your jurisdiction. It is strongly recommended to include government officials and staff to help provide detailed feedback.

Name of Jurisdiction: CITY OF WARROAD

Point of Contact:

Name: Kathy Lovelace
Job Title: City Administrator
Phone: 218-386-1454
Email: cityadmin@warroadmn.org

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

In the chart below, please identify the natural hazards that pose the greatest risk to your community. Consider past damaging events, likelihood of future events, and impacts to community assets. Rank the prioritization of hazards as high, moderate, or low. Only put an "X" next to those hazards that are of moderate to high priority. These will be addressed with localized mitigation actions.

Natural Hazard	Use an "X" to select the hazards that pose the greatest risk to your jurisdiction.	Please indicate if the hazard is of high, moderate, or low priority.	Do feel that this hazard has increased, decreased, or had no change?
Flooding	X	Moderate	Increased
Winter Storms			
Tornadoes	X	Moderate	No change
Windstorms	X	Moderate	Decreased
Lightning			
Hail			
Extreme Cold			
Extreme Heat			
Drought			
Wildfire			
Landslides			
Dam/Levee Failure			

2. RECENT HAZARD EVENTS

Please describe any severe weather or disaster events that have occurred over roughly the last 5 years that caused damages in your community or resulted in a disaster declaration.

2022 – Heavy Snow and fast spring thaw in the Lake of the Woods Basin caused flooding from Lake of the Woods.

3. LOCAL VULNERABILITIES

Use the chart below to identify what specific community assets are vulnerable to damages or loss from the hazards that pose risk to your community.

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
Flooding	Storm sewers are vulnerable to flooding when the lake rises too high causing the city to have to “plug” the opening under the Taylor Road Bridge.
Tornadoes	Though not a common occurrence, we did have extensive damage from a tornado in 2006. We do not have a reliable tornado siren that can reach all areas of town. We must rely on CODE RED as a second source of warning.
Wind/Ice Storms	Though we continue to work towards replacing overhead lines with underground, we do still have about 20% of our electric lines overhead. This makes them vulnerable to the wind and ice.

4. REDUCTION IN VULNERABILITY

Please describe any actions your community has taken to reduce vulnerability against future severe weather or disaster events. This can include examples of any work that has been completed or is currently underway.

We continue to work towards replacing overhead power lines with underground lines as the city’s budget can afford.

We have also attempted to seek grant funding to put a flood gate under the Taylor Rd bridge. This would allow us to close or “plug” that in high water years much easier and much less costly. We have not been successful with that.

We have also sought funding for tornado/severe weather sirens with no success.

5. INCREASE IN VULNERABILITY

Please describe any current conditions or changes you feel have increased your community’s vulnerability to future severe weather or disaster events. Please include any factors such as recent population growth or new development.

High water events seem to be happening more frequently increasing the lake level in 2022 to near record highs.

As the city continues to grow, both to the west and to the southeast, both residential neighborhoods are getting further from the cities only tornado siren. Depending on the wind, there are times it can be difficult to hear the siren when deployed.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

Please describe what capabilities you have in place to communicate with those in your community to share information about severe weather events and personal preparedness. Please include any considerations for underserved communities or socially vulnerable populations within your jurisdiction.

We have a utility Facebook page that we post some things on. In severe weather events our police department and fire department will drive through the campground and trailer parks announcing the bad weather warning over the speaker.

2. EMERGENCY NOTIFICATION SYSTEM

Do you encourage residents in your community to sign up for the county's emergency notification system and/or a local emergency alert system? If yes, how? If not, is this something you would do?

We do not currently promote the CODE RED system that I believe the county uses as we have never been asked to or given specific details about the system, when it is used, how it is used or how someone could sign up for it. We would be more than willing to help promote this if asked. That is assuming that the county still uses that system as I am not entirely certain.

3. LOCAL PLANS & POLICIES

Please describe any local plans, authorities or policies in place that help to reduce risk from natural hazards in your community. Please make note of enforcement of existing building codes and land use and development ordinances or regulations as they apply to your community. Please also note if your community has any plans or policies in place related to resilience and adaptation for climate change.

The city's planning and zoning department contracts with a company to provide building permit oversight and enforcement of the MN State Building Code for any remodels or new construction. We have a land use plan for future development as well as a maintenance plan for roadways and infrastructure including preventative maintenance plan for lift stations.

4. STAFF & PARTNERSHIPS

Please describe what staff or other partnerships are in place to help accomplish mitigation in your community. This can include specific department staff or outside agencies that have a role with mitigation-related planning or projects.

Our Police Chief is the city's designated Emergency Manager. We have a Public Safety Commission that reports to the City Council. We have a city engineer and Utility Superintendent that addresses road maintenance issues for flooding. We have our own municipal utility that is responsible for mitigating against power outages. We have attempted to work with the county emergency manager to address the upgrade of our outdoor warning siren, but to no avail.

5. PROGRAMS IN PLACE

Describe any programs in place that to help reduce risk from natural hazards in your community.

Our city works with the county whenever asked, to participate in any severe weather awareness events. Through our quarterly newsletter we do outreach and education on ways they as residents can help

protect themselves as well as help the city by keeping snow away from fire hydrants, and keeping debris from plugging storm drains, etc. Annually, the City Utility Department manages and mitigates vegetation near power lines and other vital infrastructure assets.

6. FUNDING & OTHER RESOURCES

Please describe what sorts of funding or other resources are available to help accomplish mitigation in your community. Please make note of any work with outside organizations or agencies or municipal/rural electrical coop providers.

The city primarily uses its own budget for any mitigation projects as we have been unsuccessful in obtaining any grants or assistance for these types of projects.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

Please describe what mitigation actions would help to reduce risk to your community from future hazard events. Please consider mitigation activities that address local vulnerabilities; limit risk to existing structures or new development; and also any actions that benefit underserved communities or socially vulnerable populations in your community. Please be as specific as possible in your responses.

Flooding/High Water from Lake of the Woods: The installation of a flood gate under the Taylor Road bridge would significantly help in protecting City infrastructure by helping to hold back the high water from Lake of the Woods.

Tornadoes/Severe Weather: Upgrade the city's waring siren and add additional sirens in areas not currently reached by the current siren.

2. GAPS OR DEFICIENCIES

Please describe any specific gaps or deficiencies that are a barrier to implementing local mitigation measures.

If the county still uses CODE RED, then they and the city should promote this and try to get more people signed up for the service. The city is upgrading our website and we could put a link to the county's emergency link if they have one. The city would need significant funding to upgrade and improve the coverage area of the severe weather warning siren. The city would need significant funding to be able to install the flood gate under the Taylor Road Bridge to prevent infrastructure damage. The city should update its Comprehensive Plan to address considerations for future hazard events such as flooding. We are a small city with limited financial and staff resources to address local mitigation projects.

PART D: SURVEY PARTICIPANTS

Please list the names & titles of all persons that contributed information to this survey.

Kathy Lovelace, City Administrator
Dan Trosen, Utility Superintendent
Wade Steinbring, Police Chief/Emergency Manager

Appendix D – Plans & Programs in Place

Roseau County

HMP Plans & Programs in Place Form

EMERGENCY PLANNING CAPABILITIES	Yes/No	Comments
Emergency Mass Notification System	Yes	CodeRED
Outdoor Warning Sirens (#'s and location)		Badger – 1 Greenbush – 1 Roosevelt –0 Roseau –2 Strathcona – 0 Warroad - 1
Emergency Operations Plan (EOP)	Yes	County EOP is typically updated annually
Mass Care Sheltering Plan / List of Shelter Facilities	Yes	Addressed in EOP and in coordination with local jurisdictions
Tornado Safe Rooms / Storm Shelters	No	Addressed in coordination with schools & local jurisdictions with local vulnerabilities
NWS Weather Ready Nation / StormReady Certification	No	
Coordination with Schools	Yes	Tornado Drills, other trainings
Coordination with Neighboring County/Tribal Jurisdictions	Yes	Annual regional planning and training; statewide AMEM conference
Coordination with Local / Regional Agencies involved in mitigation	Yes	SWCD, MN DNR, MnDOT, Rural and Municipal Electric Cooperatives, Watershed Districts
Coordination with organizations or agencies addressing disaster related issues and vulnerable populations, emergency preparedness, access and functional needs populations	Yes	Public Health, American Red Cross, Salvation Army
Hazard data and information	Yes	Damage information is kept on file from past storm events and disaster declarations
Other (please describe)		PH has preparedness plans in place

PLANNING & REGULATORY CAPABILITIES	Yes/No	Comments
Comprehensive/Land Use Plan	No	
Capital Improvements Plan	No	
Economic Development Plan	No	
Climate Adaptation Plan	No	
Continuity of Operations Plan (COOP)	Yes	Roseau County HSEM in coordination with other county depts.
Transportation Plan (Roads, Bridges, Culverts, Ditches)	Yes	Roseau County Highway Department – Five Year Construction Plan
Stormwater Management Plan / Drainage Plan	Yes	Roseau County Highway Dept. and regional watershed authorities are the ditch authority for ditches within their areas of management
Burning Permits/Restrictions (Sheriff's Office or MN DNR)	Yes	MN DNR
Comprehensive Local Water Management Plan	Yes	Roseau County Local Water Management Plan, 2010-2019. This plan is under the SWCD.
Watershed Plan (One Watershed, One Plan)	Yes	Comprehensive Watershed Management Plans: Lake of the Woods CWMP, Two Rivers Plus CWMP, Roseau River CWMP, Middle Snake Tamarac Rivers CWMP, and Thief River CWMP.
Wellhead Protection Plan		Municipal level plans are done in coordination with MDH
Forest Management Plan	No	
Community Wildfire Protection Plan (CWPP)	No	
Participation in MN DNR Firewise Program	No	Local FD's may promote local FW practices
Database of Dry Hydrants/Well Access	No	Local FD's and MN DNR maintain information

		on rural water sources for wildland firefighting
Other (please describe)		

LOCAL POLICY / PROGRAM CAPABILITIES	Yes/No	Comments
Land Use, Planning, & Zoning Ordinance	Yes	Roseau County Ordinances
Subdivision Ordinance	No	
Building Codes	No	Roseau County Environmental Services (Planning & Zoning) does not enforce the MN State 2020 building code for new development.
National Flood Insurance Program (NFIP)	Yes	Roseau County NFIP entry date 01/02/80
Flood insurance rate maps	Yes	Current effective map date 04/19/2017
Floodplain Ordinance	Yes	Roseau County Floodplain Management Ordinance, Ordinance #29, April 2017
Shoreland Ordinance	Yes	Roseau County Shoreland Management Ordinance, Ordinance #4, July 1993
Minnesota Buffer Law / Soil Erosion Ordinance	Yes	Roseau SWCD implements the monitoring plan enforcement of the MN State Buffer law.
Home Buyouts for flood or erosion mitigation	Yes	In 2003 Roseau County conducted 6 home buyouts with FEMA grant funding.
Other natural hazard specific ordinance (i.e., stormwater, steep slope, wildfire)	No	
Maintenance programs to reduce risk	Yes	Highway Dept. ROW maintenance and drainage systems

<i>Other (please describe)</i>	Yes	Roseau County Highway Department – Snow Removal and Ice Control Policy
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ADMINISTRATIVE/TECHNICAL CAPABILITIES	Yes/No	Comments
Emergency Management Director	Yes	Roseau County Homeland Security Emergency Management Department consists of two Co-Directors
Sheriff/Police Department	Yes	Roseau County Sheriff's Office
Floodplain Administrator	Yes	Roseau County Environmental Services (Planning & Zoning) Director
Chief Building Official	Yes	Roseau County Environmental Services (Planning & Zoning) Director
County Engineer	Yes	Roseau County Highway Department – County Engineer
Mapping Specialist (GIS)	Yes	Roseau County Information Technology Department
Public Health Coordinator/Department	Yes	Roseau County is served by Lifecare Public Health
Planning Commission	No	
Soil and Water Conservation District	Yes	Roseau SWCD
Minnesota Department of Natural Resources	Yes	
Mitigation Planning Committee	Yes	2023 HMP Update Planning Team
Mutual Aid Agreements	Yes	Regional
<i>Other (please describe)</i>		

EDUCATION & OUTREACH CAPABILITIES	Yes/No	Comments
SKYWARN Program Training with NWS	Yes	Annual event
Severe Weather Awareness Week (HSEM/NWS)	Yes	Annual event

Winter Weather Awareness Week (HSEM/NWS)	Yes	Annual event
Promotion of NOAA Weather Radios	Yes	During NWS Severe Weather Weeks and Ongoing
<i>Other (please describe)</i>	Yes	Roseau County website offers information in multiple languages for Non-English speaking residents

Appendix E – Past Mitigation Action Review Status Report

Roseau County

Past Mitigation Action Review Status Report

Following is a report on the status of mitigation actions related to natural hazards included in the Roseau County 2015 Hazard Mitigation Plan. This report identifies those actions that have been completed, are being deleted, or are considered as ongoing efforts. Mitigation actions that are noted as “ongoing” will be reviewed and revised as necessary for inclusion in the plan update. This report covers the mitigation actions that were listed for implementation by Roseau County and by city jurisdictions, as applicable.

Hazard	Mitigation Action	Jurisdiction	Status	Comments
All-Hazards	Identify critical infrastructure that needs alternative power methods.	Roseau County and All Cities	Ongoing	Roseau County and cities continue to identify and address where generator backup power is needed for critical infrastructure.
All-Hazards	Identify power lines that have an acute need for mitigation. / Bury lines to reduce power outages.	Roseau County and All Cities	Ongoing	Roseau Electrical Cooperative continues to address mitigation measures for any vulnerable powerlines in the county.
All-Hazards	Continue working with the National Weather Service to increase reliance on storm warning and awareness	Roseau County and All Cities	Ongoing	Roseau County Emergency Management (RCEM) works with the NWS to offer Storm Spotter training on an annual basis.
All-Hazards	Conduct a public education program to encourage individuals and businesses to prepare disaster supplies kits.	Roseau County and All Cities	Ongoing	RCEM participates in the NWS Severe Weather Awareness weeks in April and November, which covers a broad range of topics including personal preparedness for severe weather. Cities are encouraged to share information locally.
All-Hazards	Promote storm preparedness for residents, including identifying a shelter. This is important for smaller city residents, who may have fewer shelter options available.	Roseau County and All Cities	Ongoing	Same as above.
All-Hazards	Promote the weather radio for homes, schools, daycares, and businesses	Roseau County and All Cities	Ongoing	RCEM and cities continue to promote residents, businesses, and other facilities to have NOAA weather radios.

Hazard	Mitigation Action	Jurisdiction	Status	Comments
All-Hazards	Create a unified Shelter Plan for the citizens and tourist between and within the jurisdictions	Roseau County and All Cities	Delete	RCEM and Public Health work to address mass care sheltering and have plans and procedures in place.
All-Hazards	Ensure that nursing homes, hospitals, public events and schools have updated sheltering plans.	Roseau County and All Cities	Ongoing	These facilities are responsible to have emergency plans in place. RCEM and local jurisdictions where they are located provide planning assistance as needed.
All-Hazards	Identify shelters in Roseau County and cities for both tornadoes and winter storms.	Roseau County and All Cities	Ongoing	RCEM and Public Health work with cities to have a list of designated shelter facilities that can be utilized.
All-Hazards	Encourage no/limited travel during severe weather conditions.	Roseau County and All Cities	Ongoing	RCEM and cities help to share travel advisories from the NWS.
All-Hazards	Support collaborative programs focusing on real estate, public and private sector organizations, and individuals to avoid activities that increase risks to hazards.	Roseau County and All Cities	Ongoing	Ongoing as relevant for RCEM sharing public education and outreach measures regarding severe storm awareness.
Windstorms / Tornadoes	Encourage trailer courts to have either an on-site shelter or an evacuation plan to a nearby shelter.	Roseau County and All Cities	Ongoing	RCEM and local jurisdictions work with mobile home park operators to be in compliance with State statutes for shelter plans and evacuation plans
Windstorms / Tornadoes	Have available sheltering opportunities for campgrounds	Roseau County and All Cities	Ongoing	Roseau County and cities with campgrounds will continue to consider opportunities for facility upgrades when improvements are planned.
Windstorms / Tornadoes	Build a Storm shelter at Springsteel	RC and City of Warroad	Delete	Springsteel Resort and Marina are not planning to construct a storm shelter.
Windstorms / Tornadoes	Assess the current siren warning system for the county on a regular basis	Roseau County & All Cities	Ongoing	All warning sirens are tested on an monthly basis to ensure their functionality.
Windstorms / Tornadoes	Purchase/update sirens for areas with deficient coverage	Roseau County & All Cities	Ongoing	RCEM and local jurisdictions will continue to address any warning sirens that need an upgrade or replacement.

Hazard	Mitigation Action	Jurisdiction	Status	Comments
Wildfire	Implement a Community Wildfire Protection Plan (CWPP) for the entire county.	Roseau County in coord with MN DNR and FD's	Ongoing	RCEM would like to continue this effort with the MN DNR Firewise Program Coordinator for our region and local fire departments. Outside grant funding is needed.
Wildfire	Utilize controlled burns if the option is available. An open burning permit is required, as well as NRCS approval.	Roseau County in coord with MN DNR and FD's	Ongoing	Ongoing as deemed necessary by local FD's and MN DNR.
Wildfire	Find cost-efficient methods of removing dry/dead trees that pose a risk for wildfire	Roseau County in coord with MN DNR and FD's	Ongoing	Same as above
Wildfire	Utilize firebreaks around affected CRP. The NRCS would need to be contacted.	Roseau County in coord with MN DNR and FD's	Ongoing	Same as above
Wildfire	Provide information to landowners that may not know about fire prevention methods. DNR Firewise and Fire Prevention program continuation.	Roseau County in coord with MN DNR and FD's	Ongoing	RCEM, local FDs, and MN DNR will continue to work to provide information to property owners about fire risk reduction measure that they can take.
Flooding	Create permanent in-city levees, replacing the older one with a wider version with more clay material.	Roseau	Ongoing	Ongoing as deemed necessary.
Flooding	Install a storm drain on the west side of Roseau	Roseau, Roseau Watershed District	Ongoing	Due for Completion 10-31-2023
Flooding	Install a diversion	Roseau County and Roseau	Completed	June 2018
Flooding	Divert water around the city of Roseau	Roseau County and Roseau	Completed	June 2018
Flooding	Enforce current floodplain ordinances.	Roseau County and All Cities	Ongoing	Floodplain maps were updated for Roseau County on 4/19/17. Floodplain ordinances continue to be enforced.
Flooding	Create Setback and erosion control measures to ensure the stabilizing local eroding riverbanks or ditches.	Roseau County and All Cities	Ongoing	Roseau Hwy. Dept. addresses implementation of ditch buffer program adjacent to ditch systems.

Hazard	Mitigation Action	Jurisdiction	Status	Comments
Flooding	Identify bridges that cause ice/log jams and water backup & mitigate.	Roseau County	Ongoing	Roseau County Highway Dept. monitors and addresses safety of bridges in the county including removal of woody debris.
Flooding	Remove natural flow inhibitors, such as flood debris, beaver dams and sediment that cause flooding	Roseau County and All Cities	Ongoing	Removal of beaver dams and other debris build up that inhibit drainage flow continue to be addressed as needed by Roseau County Highway Dept. and local road authorities.
Flooding	Thoroughly study the network of culverts in Roseau County, replacing/repairing/resizing any that inhibit/prevent flow	Roseau County and All Cities	Ongoing	Roseau County Highway Dept. and local city public works continue to address upgrades to culverts as necessary for storm water management.
Flooding	Maintain efficient city drainage and propose solutions to decrease damage done by fast moving water and overland flooding.	Roseau County and All Cities	Ongoing	The Highway Department is responsible for the inspection and maintenance of about 900 miles of the county ditch system. Local cities also manage drainage flow with sewer and storm water infrastructure maintenance.
Flooding	Coordinate with the watersheds to place gauges on portions of ungauged waterways	Roseau County & Watershed District	Ongoing	Ongoing as deemed necessary.
Flooding	Identify a flood prediction systems to provide advanced flood warning to citizens	Roseau County & Watershed District	Ongoing	Ongoing as deemed necessary.
Flooding	Identify and prioritize property to be bought out if/when funding is available.	Roseau County and All Cities	Ongoing	Roseau County and local cities will continue to evaluate any properties that would be potential acquisition projects.
Flooding	Identify and utilize property that qualifies to use the ring dike program.	Roseau County and All Cities	Ongoing	Ongoing as deemed necessary.
Flooding	Flood proof structures already constructed	Roseau County and All Cities	Ongoing	Ongoing as deemed necessary.
Flooding	Modify, raise or install drainage upon repetitively damaged roads.	Roseau County and All Cities	Ongoing	Roseau Hwy. Dept addresses installation of spillways on recurrently flooded roads.
Flooding	Inventory county roads that suffer continuous damage from flooding events	Roseau County and All Cities	Ongoing	This is annual work by the Roseau County Highway Dept and local road authorities.

Hazard	Mitigation Action	Jurisdiction	Status	Comments
Flooding	Construct impoundments in necessary locations to provide the correct amount of storage	Roseau River Watershed	Ongoing	Ongoing as deemed necessary.
Flooding	Install dike/outlets to the Big Swamp area to ensure no damage is done to Canada or the Two Rivers Watershed	Roseau River Watershed	Ongoing	Ongoing as deemed necessary.
Flooding	Modify Roseau River WMA, adding gated outlets	Roseau River Watershed	Ongoing	Ongoing as deemed necessary.
Flooding	Modify the Roseau River, restoring oxbows and other natural features	Roseau River Watershed	Ongoing	Ongoing as deemed necessary.
Flooding	Utilize wetlands restoration and meandering streams to protect farmland and natural resources (Hay Creek/Norland Project).	Roseau River Watershed	Ongoing	Ongoing as deemed necessary.
Flooding	Improve storage opportunities at Roseau Lake	Roseau River Watershed	Ongoing	Ongoing as deemed necessary.
Flooding	Construct upstream impoundments with gated storage, reducing downstream flood peaks.	Roseau River Watershed	Ongoing	Ongoing as deemed necessary.

Appendix F – Planning Team Meetings

Roseau County HMP Update

Appendix F – Kickoff Meeting Documentation

Overview:

On 4/28/23 U-Spatial@UMD hosted a kickoff meeting online that was attended by the Roseau County Emergency Manager. The webinar included a project overview, U-Spatial@UMD's background, the roles and responsibilities of the Emergency Manager, the contents of the Hazard Mitigation Plan, the planning process, and the projected timeline of the project.

Attached Documentation:

- **Project Handout:** "Minnesota 2023-2024 Multi-Hazard Mitigation Plan Update Project Overview"
- **Webinar Slides:** "Minnesota 2023-2024 Multi-Hazard Mitigation Plan Update Project Kickoff Orientation Webinar"

Minnesota 2023-2024 Hazard Mitigation Plan Update Project Overview

During 2023-2024, U-Spatial at the University of Minnesota Duluth (U-Spatial@UMD) will be working to update Hazard Mitigation Plans (HMPs) for 14 counties. Our team consists of UMD staff who specialize in GIS applications and research and Hundrieser Consulting LLC, who specializes in stakeholder engagement and mitigation strategies.

Participating Jurisdictions

Becker, Chisago, Goodhue, Grant, Houston, Hubbard, Kanabec, Lake, Lyon, Mille Lacs, Olmsted, Pennington, Roseau, and Wabasha counties. Cities within each county are required to participate in the planning process.

Overview of Update Process

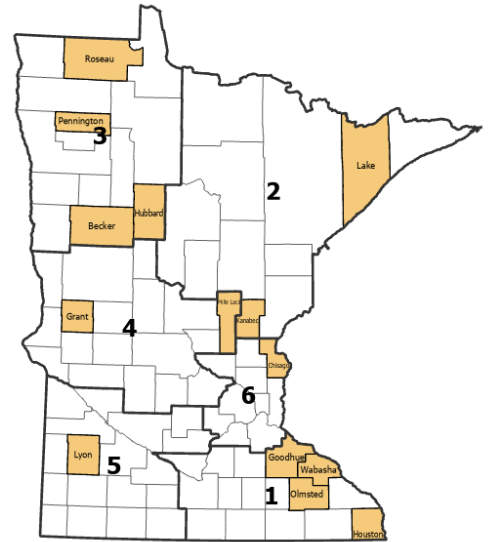
The U-Spatial@UMD team will coordinate with each Emergency Manager throughout the plan update process to engage participating jurisdictions and other stakeholders in the planning process. Following is an overview of key tasks that the U-Spatial@UMD team will facilitate to meet FEMA requirements in the update of each plan:

- Conduct 2 planning team meetings
- Conduct public outreach & engagement
- Assess Plans & Programs in Place to address natural hazards
- Conduct a Past Mitigation Action Review from past plan
- Update prioritization of natural hazards that pose risk
- Complete jurisdictional Local Mitigation Surveys (hazards, vulnerabilities & capabilities)
- Conduct hazard risk assessment for 1% annual chance floods using the Hazus GIS tool
- Inventory critical infrastructure
- Develop hazard profiles for each natural hazard (description, incident history, geographic variability, future probability, relationship to changing climate trends and local vulnerabilities) and present data in an interactive website.
- Prepare a PDF document and interactive website that meets FEMA HMP plan requirements.
- Develop 5-year jurisdictional Mitigation Action Charts

The planning process generally occurs over the course of 14-18 months from start to finish.

Contact

Stacey Stark, U-Spatial Associate Director (MHMP Project Manager)
Phone: (218) 726-7438 / Email: slstark@d.umn.edu



Overview of the HMP Update Process

The U-Spatial@UMD team will coordinate with each Emergency Manager (EM), participating jurisdictions, and other stakeholders throughout the planning process. The plan update generally occurs over the course of 14-18 months from start to finish. Following is an overview of key tasks that will occur and the approximate timeline for completion. This list is not a complete list of what the plan update entails.

Stage 1 Tasks (4-5 months)

- HMP kickoff meeting/webinar with EM and U-Spatial@UMD
- Develop jurisdictional contact list for MHMP planning team
- Disseminate & document News Release #1 (plan update announcement)
- Complete Plans & Programs in Place Checklist
- Conduct a Past Mitigation Action Review from prior plan
- Complete Capabilities Assessment to address natural hazards
- Hold & document Planning Team Meeting #1
- Complete Local Mitigation Surveys (hazards, vulnerabilities & capabilities)
- Revisit prioritization of natural hazards that pose risk
- Assist U-Spatial@UMD with provision of key data
- Complete inventory of Critical Infrastructure

Stage 2 Tasks (5-7 months)

- Develop 5-year Jurisdictional Mitigation Action Charts
- Conduct hazard risk assessment for 1% annual chance floods using the Hazus GIS tool
- Develop hazard profiles for each natural hazard (description, incident history, geographic variability, future probability)
- Complete hazard profiles for each natural hazard
- Complete Plan Maintenance section of draft plan

Stage 3 Tasks (2-3 months)

- EM review of Draft Plan
- Hold & document Planning Team Meeting #2
- Finalize Mitigation Action Charts
- Disseminate & document News Release #2 (Public Review & Comment Period)
- EM coordination of plan review by local government(s) & other stakeholders

Stage 4 Tasks (2-3 months)

- Post-public review revisions made to plan (as necessary)
- Draft Plan sent to HSEM for review & approval
- Draft Plan sent to FEMA for review & approval
- Post FEMA review revisions made to plan (as necessary)
- FEMA to send letter stating "Approval Pending Adoption" to EM
- EM to facilitate MHMP jurisdictional adoptions (County/Tribe and cities)

Ongoing - Quarterly 25% Local Match Tracking Quarterly to HSEM

As part of the MHMP plan update, Emergency Managers are required to submit quarterly reports to HSEM on their local 25% match accrued through HMP activities during that quarter.

Minnesota 2023-2024 Multi-Hazard Mitigation Plan Update Project Kick-off Orientation Webinar

U-SPATIAL
UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover

Webinar Purpose & Goals

The purpose of this webinar is to provide an orientation for Emergency Managers participating in 2023-2024 Multi-Hazard Mitigation Plan Updates.

- Introduce the U-Spatial@UMD Team and county contacts.
- Provide an overview of the project.
- Clarify roles and responsibilities.
- Outline the planning process, discuss key tasks and timelines.
- Discuss next steps and answer your questions.

Stacey Stark

Introductions

U-Spatial@UMD Project Team



Stacey Stark
Project Manager
U-Spatial@UMD



Bonnie Hundrieser
Emergency Management Planning Consultant
Hundrieser Consulting LLC



Zach Vavra
GIS Specialist and Researcher
U-Spatial@UMD



Steve Graham
Research Associate, Flood Modeling Specialist
U-Spatial@UMD



Jane Lindelf
Project Coordinator, Communications Specialist
U-Spatial@UMD

Emergency Managers:

- Name, Title, and Jurisdiction
- Past Experience with MHMP?

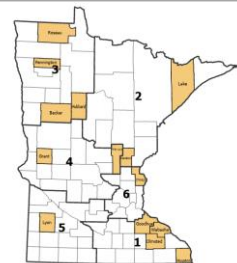
Minnesota HSEM:

Jennifer Davis, MN HSEM
State Hazard Mitigation Officer

Project Overview

14 Counties:

Becker
Chisago
Goodhue
Grant
Houston
Hubbard
Kanabec
Lake
Lyon
Mille Lacs
Olmsted
Pennington
Roseau
Wabasha



Why U-Spatial@UMD?

➤ Proven experience

Our updates of 40+ MHMPs, as well as the State MHMP, have been quickly approved by FEMA and adopted by counties.

➤ Advanced Capabilities

Expertise in the application of GIS, HAZUS, and research supports plan development and meeting all FEMA requirements.

➤ Ability to Expedite

A consistent and proven approach for multiple counties supports State & FEMA review of draft plans.

➤ Planning Team

Our project team includes advanced GIS students and Hundrieser Consulting.

Purpose

The Federal Disaster Mitigation Act of 2000 (DMA 2000) established programs and funding:

"to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters"

A local government plan is required in order to maintain eligibility for FEMA hazard mitigation grant programs.

MHMP's must be updated every 5 years.

Flooding	Hail	Drought
Dam/Levee Failure	Lightning	Extreme Heat
Wildfire	Winter Storms	Extreme Cold
Windstorms	Landslides	Earthquakes
Tornadoes	Sinkholes & Karst	Coastal Erosion

Natural hazard categories for Minnesota MHMPs. Hazards may be omitted if low risk is demonstrated.

Overview of MHMP Update Process

Bonnie Hundrieser

U-Spatial@UMD Team Roles & Responsibilities

- Keep you informed about the progress of your plan.
- Facilitate & document jurisdictional engagement.
- Facilitate & document public outreach.
- Work with EM and planning team to complete key tasks.
- Keep up-to-date on FEMA requirements and Minnesota guidance.
- Produce a quality plan that FEMA will approve.
- Answer questions in a timely fashion.
- Support EM's in tracking your required local 25% match.
- Provide quarterly reports to HSEM on your plan progress.

EM Roles & Responsibilities

- Act as main Point of Contact. (EM / Deputy EM)
- Report to HSEM quarterly on required local 25% match.
- Coordinate engagement of MHMP Planning Team.
- Conduct & document public outreach.
- Participate in completion of key assignments for plan update.
- Coordinate with county staff & other key stakeholders to obtain information.
- Assist in timely review of draft document.
- Facilitate completion of local adoptions.

Local 25% Match

EM's will be responsible to track and submit local match documentation to HSEM on a quarterly basis.

Notes:

- EM's are provided with a "Master Match Tracking" Excel Workbook to document match MHMP activities, participants, and amount accrued.
- Bonnie will assist with local match tracking on several task items.
- Regular reminders & guidance will be provided on tracking match.

MHMP Planning Team

In addition to jurisdictional participation, the plan must provide documentation of an **opportunity for stakeholders to be involved** in the current planning process. The MHMP Planning Team should include:

1. Local & Regional Agencies involved in hazard mitigation
2. Agencies that have the authority to regulate development
3. Neighboring communities (counties, tribes)
4. Representatives of businesses, academia, and other private organizations
5. Representatives of nonprofit organizations, including community-based organizations that work with/provide support to underserved communities and socially vulnerable populations

Key Tasks

- Develop Jurisdictional Contact List.
- Hold & document Planning Team Meeting #1 & Meeting #2.

Public Outreach

The plan update must document how the public was given the opportunity to be involved in the planning process and how their feedback was incorporated into the plan.

- Collect feedback on local-level concerns & mitigation actions.
- Use of local/social media, websites & community bulletin boards.
- Other outreach (i.e., attendance at City Council mtgs)
- Must include underserved communities and vulnerable populations within the planning area.

Key Tasks

- Distribute & document News Release #1 (start of plan)
- Distribute & document News Release #2. (public review of plan)
- Conduct additional public outreach (i.e., County Fair, other events).

Hazard Risk Assessment and Vulnerability Analysis

The U-Spatial@UMD Team will work closely with each EM and key departments to provide information as needed.

Key Tasks

- Review and contribute to critical infrastructure inventory.
- Identify specific, local-level impacts and vulnerabilities.
- Identify if and how risk priorities have changed since the last plan.
- Identify any factors (i.e., new development) that may increase the community's vulnerability to natural hazard events.
- Review social vulnerability factors.

Key Task Assignments

Bonnie Hundrieser will coordinate with each EM and participating cities on key task assignments that will provide information required for the plan update.

Key Tasks

- Complete Plans in Place Checklist.
- Complete Capabilities Assessment for Mitigation.
- Conduct Past Mitigation Action Review.
- Coordinate Local Mitigation Survey (LMS) Forms.
- NFIP Status Information and documentation program compliance

Mitigation Action Charts

Bonnie Hundrieser will also coordinate development of draft 5-year jurisdictional Mitigation Action Charts (MACs) for the county and each participating city jurisdiction.

Key Tasks

- Conduct local-level development of MACs.
- Facilitate & document jurisdictional MAC review.
- Hold Planning Team Mtg. #2 for any additional feedback.
- Complete final MAC revisions.

Draft Plan Review

The U-Spatial@UMD Team will work with each EM to conduct a review of the draft MHMP and provide an opportunity for public review & comment on the plan.

Key Tasks

- EM review of initial draft plan > Revisions made as needed.
- Distribute News Release #2 - public review & comment period.
- EM coordination of review by county & key stakeholders.
- Posting of draft plan online with comment form.
- Documentation and incorporation of public feedback.

Plan Submission

The draft MHMP will be submitted to HSEM and FEMA for review & approval. Timing for review & approval is generally within 1-2 months.

Key Steps

- U-Spatial@UMD will submit the draft plan & Plan Review Tool (PRT) to HSEM.
- HSEM will submit the draft plan & PRT to FEMA reviewer.
- FEMA may respond with requests for revisions > U-Spatial@UMD to address revisions and resubmit plan.
- FEMA will send a letter of Approval Pending Adoption (APA status)

Plan Adoption

After FEMA has provided APA status, the county and all participating cities must formally adopt the plan.

Notes

- Good jurisdictional participation will facilitate local adoptions.
- Adoption of the plan is required for HMA grant program eligibility.
- Example adoption resolutions are provided for county and city adoption. Townships may elect to adopt (not required).
- Resolutions are incorporated into the final MHMP (PDF) by the Emergency Manager or included as hard copies.

Plan format and delivery

“Next Gen” – MN Hazard Mitigation Plans

PDF document

- Contains almost all required elements
- No mapping
- Community outreach/input remains the same
- Includes appendices with jurisdictional outreach

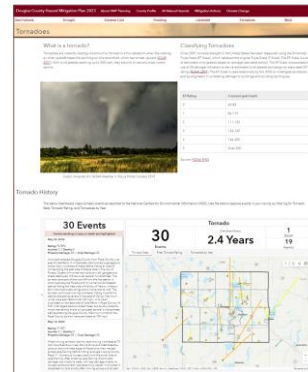
ArcGIS Hub (website) companion

- Interactive maps and content
- Simple, concise explanations and highlights
- Multiple ways to navigate the content
- Links to PDF components and document
- Public input form on site

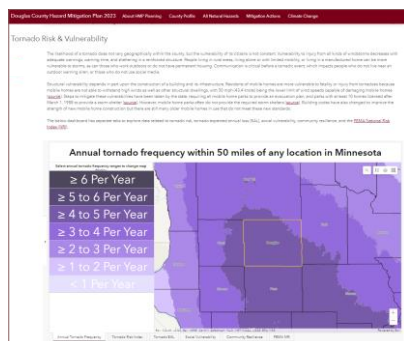
Stacey Stark



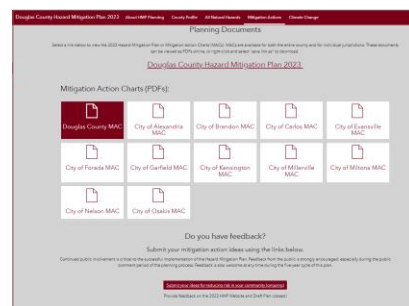
Example Web Site



Example Web Site



Example Web Site



Example Web Site

Timeline Overview

- 18-Month total timeline (April 2023 – October 2024)
- Most plans take 14-18 months.
- Staggering of plans will be required to complete update of risk assessments, research of hazard histories, etc. for each jurisdiction.
- Many tasks occur concurrently, others must be done in succession.
- Work is expedited at the pace by which Emergency Managers complete tasks with Bonnie Hundrieser.

Possible timeline for your plan		Red includes county action items
Stage 1 Tasks (4-5 months)	May – October 2023	HMP kickoff meeting/webinar with U-Spatial@UMD Develop jurisdictional contact list for MHMP planning team Disseminate & document News Release #1 Hold & document Planning Team Meeting #1 Complete Plans & Programs in Place Checklist Complete Capabilities Assessment to address natural hazards Conduct a Past Mitigation Action Review from prior plan Complete Local Mitigation Surveys Revisit prioritization of natural hazards that pose risk Assist U-Spatial@UMD with provision of key data Complete inventory of Critical Infrastructure
Stage 2 Tasks (4-6 months)	November 2023 – May 2024	Develop 5-year Jurisdictional Mitigation Action Charts Hazus hazard risk assessment for flooding Develop hazard profiles for each natural hazard Complete county profile sections and maps Complete Draft Plan
Stage 3 Tasks (2-3 months)	June – August 2024	EM review of Draft Plan Hold & document Planning Team Meeting #2 Finalize Mitigation Action Charts Disseminate & document News Release #2 EM coordination of plan review by stakeholders
Stage 4 Tasks (2-3 months)	September - November 2024	Post-public review revisions made to plan (as necessary) Draft Plan sent to HSEM for review & approval Draft Plan sent to FEMA for review & approval

Next Steps

U-Spatial@UMD Team members will coordinate each EM to commence work on several tasks that will take place over the next several months.

Notes:

- We are sensitive to the workloads of EM's.
- All information requests or assignments are in prepared form.
- Please communicate your availability to complete/not complete work.
- Plans most expired are priority; however, EM's with completed tasks move up in the que for plan development.

Questions?

What questions do you have for U-Spatial@UMD or HSEM about the MHMP update process?

Contact Information

Stacey Stark, MS, GISP
U-Spatial@UMD
slstark@d.umn.edu
218-726-7438

Example Plans:
<https://z.umn.edu/hazardmitigation>

Roseau County HMP Update

JURISDICTIONAL CONTACT LIST

COUNTY CONTACTS

Name	Title	Phone	Email
Sue Grafstrom	Homeland Security Emergency Management Director	(218) 463-3375	sue.grafstrom@co.roseau.mn.us
Dan Davidson	Homeland Security Emergency Management Co-Director	(218) 368-9398	daniel.davidson@co.roseau.mn.us
Steve Gust	County Sheriff	218-463-1421	steve.gust@co.roseau.mn.us
Jeff Pelowski	County Coordinator / Environmental Services Director	218-463-4248	Jeff.pelowski@co.roseau.mn.us
Liz Lund	County Assessor	218-463-1861	Liz.lund@co.roseau.mn.us
Martha (Martie) Monsrud	County Auditor	218-463-1282	martie@co.roseau.mn.us
Ericka Halstensgard	County Engineer	(218) 463-2063	Ericka.halstensgard@co.roseau.mn.us
Chris Stauffer	IT Administrator	218-463-4247	Chris.stauffer@co.roseau.mn.us
Karla Langaas	Social Services Director	218-463-2411	Karla.langaas@co.roseau.mn.us
Paula Hedlund	Director of Roseau County Public Health	218-463-4301	phedlund@lifecaremc.com
Brooke Homstad	PHEP Coordinator at LifeCare Public Health	218-463-4301	bhomstad@lifecaremc.com
Glenda Phillipe	District 1 Commissioner	202-997-9085	Glenda.phillipe@co.roseau.mn.us
Jack Swanson	District 2 Commissioner	218-242-0617	Jack.swanson@co.roseau.mn.us
Levi Novacek	District 3 Commissioner	701-367-1803	Levi.novacek@co.roseau.mn.us
(Vacant)	District 4 Commissioner		
Daryl Wicklund	District 5 Commissioner	218-689-2989	Daryl.wicklund@co.roseau.mn.us

CITY CONTACTS

CITY OF BADGER (431)

Name	Title	Phone	Email
Angie Gregerson	City Clerk	218-528-3670	cob@wiktel.com
Daniel Carpenter	Mayor	218-528-3670	
Jeremy Swenson	Fire Chief	218-689-1620	jeremy@wiktel.com

CITY OF GREENBUSH (681)

Name	Title	Phone	Email
Lynsi Hansen	City Clerk-Treasurer	218-782-2570	greenbush@wiktel.com
Eric Etherington	Mayor	218-782-2570	
Randy Jenson	Fire Chief	218-689-1002	Rcca.randy@wiktel.com

CITY OF ROOSEVELT (153)

Name	Title	Phone	Email
Gerald Landby	Mayor	218-442-5015	
Joyce Claypool	City Clerk		cityclerk@wiktel.com

CITY OF ROSEAU (2,681)

Name	Title	Phone	Email
Elizabeth Carlson	City Clerk-Treasurer	218-463-1542	beth.carlson@city.roseau.mn.us
Todd Peterson	Community Development Coordinator	218-463-1542	Todd.peterson@city.roseau.mn.us
Dan Fabian	Mayor	218-463-1542	
Leon Huot	Fire Chief	309-713-6008	Leon.huot@polaris.com

CITY OF STRATHCONA (25)

Name	Title	Phone	Email
Shirley Ryden	City Clerk	218-781-2242	cityofstrathcona@outlook.com
Mike Wojciechowski	Mayor		

CITY OF WARROAD (1,820)

Name	Title	Phone	Email
Kathy Lovelace	City Administrator	218-386-1454	cityadmin@warroadmn.org
Bob Marvin	Mayor		
Damian McMillin	Fire Chief		damianmcmillin@gmail.com

TOWNSHIP CONTACTS

Name of Township	Name & Title	Phone	Email
Barnett Township	Joyce Shimpa, Clerk	218-469-2270	Joy.shimpa@borderstatebank.com
Barto Township	Tammy Novacek, Clerk	218-686-1663	enovacek@wiktel.com
Beaver Township	Jill Geroy, Clerk	218-425-7274	jillgeroy@hotmail.com
Cedarbend Township	Cynthia Poole, Clerk	218-386-2192	Bill_cyndee@hotmail.com
Deer Township	Allen Anderson, Clerk	218-782-2647	Adander101@gmail.com
Dewey Township	Kurt Stenberg, Clerk	218-782-4801	Kurt_stenberg@polaris.com
Dieter Township	Rosalie Isham	218-463-1998	Rosalie_isham@hotmail.com
Enstrom Township	Sara Eidsmoe	218-242-9546	Sara_toenies24@gmail.com
Falun Township	Sara Buley, Clerk	218-242-0008	falunclerk@live.com
Golden Valley Township	Steve Johnson, Clerk	218-425-7330	dynastydj@hotmail.com
Grimstad Township	Michael Steinhauer, Clerk	218-425-7539	mosjitsu@gmail.com
Hereim Township	Bruce Anderson, Clerk	218-782-3147	abcfarms@wiktel.com
Huss Township	Debra Wiskow, Clerk	218-688-1768	DebWiskow73@gmail.com
Jadis Township	Beth Johnson, Clerk	218-242-3513	Bellabjorn1@gmail.com
Lake Township	Bobbi Aker, Clerk	218-242-1609	Lake053@centurytel.net ; bobbiaaker53@gmail.com
Laona Township	Thomas Lund, Clerk	218-386-1193	toml@marvin.com
Lind Township	Brandon Langaas, Clerk	218-469-0755	Brandon.langaas@gmail.com

Malung Township	Janet Foster	218-469-9694	Clerk.malungtownship@wiktel.com
Mickinock Township	Ronald Huston	218-425-7431	rhuston@wiktel.com
Moose Township	Kathy Jenson	218-463-4284	Kathy.jenson@co.roseau.mn.us
Moranville Township	Tim O'Donnell	218-386-2459	moranvilletwnshp@gmail.com
Nereson Township	Michelle Didrikson	218-452-3268	Reed0506@gmail.com
Palmville Township	Ronald Palm	218-280-5749	Ronmachinewell10@icloud.com
Pohlitz Township	Wayne Trangsrud	218-528-3789	
Polonia Township	Virgil Gryskiewicz	218-689-0195	virgilg@wiktel.com
Poplar Grove Township	William Schafer	218-528-3592	bandps@wiktel.com
Reine Township	Paul Norberg	218-242-0908	Paulenor63@gmail.com
Ross Township	Jandi VonEnde	218-242-7769	Vonende3787@wiktel.com
Skagen Township	Evie Lorensen	218-469-3300	nippynorwegian@gmail.com
Soler Township	Brede Christianson	218-689-7435	bchristianson@wiktel.com
Spruce Township	Teall Novacek	218-242-0139	Teallblue21@gmail.com
Stafford Township	Sheila Holter	218-469-3138	Ksholter45@gmail.com
Stokes Township	Noreen Penas	218-469-9331	dannyorilove@gmail.com

OTHER STAKEHOLDER CONTACTS

LOCAL & REGIONAL AGENCIES INVOLVED IN HAZARD MITIGATION

Name of Agency / Organization	Name & Title	Phone	Email
MN Homeland Security & Emergency Management	Jennifer Olson, HSEM Region 3 Regional Program Coordinator	651-396-0480 cell	Jennifer.Olson@state.mn.us
Roseau Soil & Water Conservation District (SWCD)	Scott Johnson, District Manager	218-463-1903	scott.johnson@roseau.mnswcd.org
Natural Resources Conservation Service (NRCS)	Bonnie Hasbrouck, District Conservationist	(218) 463-1862 Ext. 114	bonnie.hasbrouck@usda.gov
USDA Rural Development Community Programs	Angie Bokovoy, Area Specialist	218-751-1942 x116	angela.bokovoy@usda.gov
MnDOT District 2	J.T. Anderson, Transportation District Engineer	218-755-6549	j.t.anderson@state.mn.us
MN DNR Firewise Program	Allissa Reynolds, Wildfire Prevention Supervisor	651-259-5288	allissa.reynolds@state.mn.us
MN DNR Ecological and Water Resources Division	Stephanie Klamm, Region 1 Northwest Area Hydrologist	(651) 587-5448	Stephanie.Klamm@state.mn.us
Roseau River Watershed District	Tracy Halstensgard, Administrator	218-242-1737	rrwd@mncable.net
Two Rivers Watershed	Dan Money, Director Tyler Coffield, District Technician	218-843-3333	dan.money@tworiverswd.com Tyler.coffield@tworiverswd.com
DNR-Warroad	Adam Fisher, Acting Warroad Area Supervisor	218-386-1304 ext. 308	Adam.fisher@state.mn.us

REPRESENTATIVES OF BUSINESSES, ACADEMIA, AND OTHER PRIVATE ORGANIZATIONS

Name of Agency / Organization	Name & Title	Phone	Email
Roseau Public School District ISD 683	Tom Jerome, Superintendent	(218) 463-1471	tom_jerome@roseauschool.org
Warroad Public School	Shawn Yates, Superintendent	218-386-6066	shawn_yates@warroad.k12.mn.us
Greenbush-Middle River School	Larry Guggisberg, Superintendent	218-782-2232 ext. 205	lguggisberg@greenbush.k12.mn.us
Badger Public School	Dan Carpenter, Superintendent	(218)-528-3201 ext. 102	dcarpenter@badger.k12.mn.us
Roseau Electric Cooperative	Tracey Stoll, General Manager	218-463-1543	tstoll@roseauelectric.com

REPRESENTATIVES OF NONPROFIT ORGS, INCLUDING COMMUNITY-BASED ORGS THAT WORK WITH OR PROVIDE SUPPORT TO UNDERSERVED COMMUNITIES AND SOCIALLY VULNERABLE POPULATIONS

Name of Agency / Organization	Name & Title	Phone	Email
Salvation Army Northern Division (MN/ND)	Major Michele Heaver	651-238-7783	Michele.heaver@usc.salvationarmy.org
American Red Cross -NW MN /Eastern ND Chapter	Marian Jordan, Disaster Program Manager	701-205-7794	Marian.jordan@redcross.org
Northwest Regional Development Commission	Darla Waldner, Executive Director	(218) 745-9109	darla@nwrdc.org
Northwest Minnesota Foundation	Dawn Ganje, Director for Community Philanthropy	218-759-2057	dawng@nwmf.org

NEIGHBORING JURISDICTIONS

Name of Jurisdiction	Name & Title	Phone	Email
Kittson County	Scot Elling Olson, EMD	(218) 843-2113	solson@co.kittson.mn.us
Lake of the Woods County	Jill Hasbargen Olson, EMD	(218) 634-4547	jill_o@co.lotw.mn.us
Beltrami County	Chris Muller, EMD	(218) 333-8386	Chris.muller@co.beltrami.mn.us
Marshall County	Josh Johnston, EMD	(218) 745-5841	josh.johnston@co.marshall.mn.us
Red Lake Reservation	Robert Neadeau Jr., EMD	218-679-3341	rneadeau@redlakenation.org

LOCAL MEDIA CONTACTS

Name of Local Media	Media Contact	Phone	Email
KKWQ	Jon Michaels	218-386-3024	Kq92@mncable.net
Wild 102 FM	Craig Olson	218-463-0161	info@wild102fm.com
Roseau Times Region	Jody Wojchieowski	218-463-1521	rtr@mncable.net
Thief River Falls Times	Dan Hill	218-681-2955	dhill@trftimes.com

Roseau County HMP Planning Team

Meeting #1 Presentation and Discussion

12/11/23 Meeting Summary & Documentation

Summary: On Monday, December 11, 2023 Roseau County Emergency Management convened key county, city, and township representatives, as well as neighboring jurisdictions and other stakeholders to participate in the 1st Planning Team Meeting for the update of the Roseau County Hazard Mitigation Plan (HMP). The purpose of the meeting was to formally present information about the Roseau County HMP update and to discuss key items that would inform plan development. The meeting was held via Zoom webinar video conference and was facilitated by Stacey Stark and Bonnie Hundrieser of the U-Spatial@UMD project team.

Stakeholder Invitations: Roseau County Emergency Management invited all stakeholders included on the county's HMP Update Jurisdictional Contact List (JCL), which includes the key County Contacts, City Contacts, Township Contacts, Other Stakeholder Contacts, and Neighboring Jurisdiction Contacts identified to be invited to participate in the plan update process. Contacts were encouraged to engage additional staff or to send someone in their stead if they could not attend. A copy of the county's Jurisdictional Contact List is provided in *Appendix F Planning Team Meetings*.

Pre-Meeting Materials: Several days in advance of the meeting an email was sent out to the HMP stakeholder list with materials to review prior to the meeting. Materials included an HMP overview handout, a list of discussion questions that would be covered during the meeting, and a handout on the FEMA Hazard Mitigation Assistance Grant Program. Participants who were registered for the meeting were encouraged to review the questions and be ready to discuss them during the meeting. Stakeholders who were not attending the meeting were also encouraged to fill out and return the discussion question form.

Meeting Participants: A total of 17 people attended the meeting. Representation included elected officials and departmental staff from Roseau County and the cities of Roseau and Warroad. Representatives from the cities of Badger, Greenbush, Roosevelt, and Strathcona were not available to attend. Other stakeholders, including neighboring jurisdictions, participated in the meeting. A participant list is provided below:

	Name	Agency/Organization	Participant Title
1	Sue Grafstrom	Roseau County Homeland Security Emergency Management	Co-Director
2	Dan Davidson	Roseau County Homeland Security Emergency Management	Co-Director
3	Jack Swanson	Roseau County	Commissioner
4	Glenda Phillipe	Roseau County	Commissioner
5	Chris Stauffer	Roseau County	Technology Administrator
6	Martie Monsrud	Roseau County	Auditor
7	Karla Langaas	Roseau County	Social Services Director
8	Todd Peterson	City of Roseau	Community Development Coordinator
9	Kathy Lovelace	City of Warroad	City Administrator
10	Leon Huot	City of Roseau Fire Dept.	Chief

11	Thomas Lund	Laona Township	Clerk
12	Adam Tesarek	Mickinock Township	Supervisor
13	Julie Pahlen	LifeCare Medical Center	Emergency Preparedness
14	Kevin Ricke	Badger Public Schools	Superintendent + Principal K-12
15	Dan Money	Two Rivers Watershed District	Administrator
16	Michele Heaver	The Salvation Army	Divisional Emergency Disaster Services Director
17	Scot Olson	Kittson County Emergency Management	Emergency Management Director

Presentation Overview: The Power Point presentation covered the following items. A PDF of the presentation slides is included with this meeting summary.

- Welcome & Introductions
- Review of HMP Overview (*handout)
- Review of Past Hazard Risk Prioritization, Hazard Profiles, and New Priorities
- Overview of Mitigation Strategies, Actions
- Overview of FEMA HMA grant program
- Discuss local mitigation ideas
- Overview of Next Steps

ROSEAU COUNTY HMP PLANNING TEAM MEETING #1 DISCUSSION NOTES

PARTICIPANT POLLS

During the presentation, participants were presented with two poll questions to respond to. Following are the poll questions and responses:

POLL #1: TOP HAZARDS

What are the top three hazards of most concern to you in this county? (Multiple Choice)

The top 3 hazards noted were Flooding, Winter Storms, and Tornadoes.

POLL #2: CHANGE IN PERCEIVED RISK

Has the risk of any natural hazards changed in your jurisdiction in the last 5 years? (increased severity, decreased risk, increased extent, etc) (Single Choice)

- No (3/11) 27%
- Yes (4/11) 36%
- Not Sure (4/11) 36%

What hazard risk has changed, and in what jurisdiction?

- Dan Money, Two Rivers Watershed District Administrator: There have been 2 federal disasters in the past 3 years. Rainfall and runoff are increasing.
- Julie Pahlen, LifeCare Medical Center, Emergency Preparedness: Change in the population- in flux of non English speaking; influx of populations in general who aren't aware of local plans, policies, processes. Flooding in the rural areas. Lake of the Woods.

- Scot Olson, Kittson County Emergency Management Director: Flooding issues are increasing in Kittson.
- Jack Swanson, Roseau County Commissioner: Flood risk in the City of Roseau has decreased since completion of the East Diversion project.

FOCUSED DISCUSSION QUESTIONS

During the presentation there were 3 key discussion questions (DQ's) that were presented to the planning team for feedback. Following are the questions and responses:

DQ #1: *Are there any vulnerable populations or underserved communities you would identify for Roseau County or within your own local jurisdiction? If so, are there any best outreach methods to provide an opportunity to participate?*

- Julie Pahlen, LifeCare Medical Center, Emergency Preparedness: Elderly homebound; Laotian population-temple; elderly all over the county
- Jackson Swanson, Roseau County Commissioner: The homeless population would be a vulnerable group
- Scot Olson, Kittson County Emergency Management Director: To a certain extent, I think tourists/visitors could be considered vulnerable in the event of a disaster or incident as they would not be familiar with local resources and where to go, etc.
- Sue Grafstrom, Roseau County EM Co-Director: We have Laotian, Puerto Rican, and some Ukrainian families the area. (Outreach) We do have one county newspaper, but it's typically a city of Roseau newspaper. We have two locally owned radio stations that could be helpful in providing outreach.
- Glenda Phillipe, Roseau County Commissioner: There are vulnerable populations that will probably not have access to social media. Perhaps they can be reached through a mailer. We have Puerto Rican families, who, for the most part work at Marvin's plant. They can be reached by contacting Marvin. We have several HUD housing units; it will be easy to contact the residents.

DQ#2: *What do you feel should be recorded as the updated Hazard Prioritizations for the Roseau County 2023 HMP? Why?* Following are the updated hazard priorities noted by planning team members during the meeting:

Hazards	Risk Priority	Comments
Flooding	High	Sue Grafstrom - We have reduced our flooding risk – but flooding is still an ongoing concern. Our main concern with flooding is overland flooding where high rain events result in washed out roads, washout of culverts and maybe affect the safety of a bridge.
Windstorms	Moderate	Sue Grafstrom - They occur frequently but don't always cause damage. Not as much as a life safety issue.
Tornadoes	Moderate	Sue Grafstrom - We really have not noticed them with property damage. But tornadoes are still a concern.

Hail	Moderate	Sue Grafstrom - Hailstorms are a moderate concern for damages that can occur.
Winter Storms	Moderate	Jack Swanson - Seems to me winter storms and extreme cold are fairly likely
Extreme Heat	Moderate	Sue Grafstrom - Extreme heat not as common but may increase in the future. Keep as moderate.
Extreme Cold	Moderate	Sue Grafstrom – Our concern with extreme cold has more to do with power outages during a period of extreme cold. Would we have the opportunity to harden up power?
Drought	Low	Sue Grafstrom – Drought is not a moderate or high priority at this time.
Wildfire	Moderate	Sue Grafstrom – more common in the last few years. Its's more prevalent. Mostly non-natural i.e. ditch burning.
Lightning	Low	Sue Grafstrom – Lightning occurs but damaging impacts are not common.
Landslides	Low	<p>Sue Grafstrom – To clarify why erosion was ranked higher in our last plan - the five declarations we have had were all because of erosion of the ditches eroding. This is really related to overland flooding from high rain events. Every year we have our list of not passable roads because of washouts (state ditches). So this concern is more related under the hazard of flooding more than landslides.</p> <p>Dan Money - Consider slope failures on ditches and on road slopes. These have been common and are eligible for FEMA disaster funding</p>
Dam/Levee Failure	Low	<p>Stacey Stark – there are no High Hazard Potential Dams in Roseau County. There are two classified as Significant hazard dams by the NID. Unless you have any mitigation actions for those you don't necessarily need to profile it.</p> <p>Sue Grafstrom – Dam failure is a low priority concern.</p>

DQ#3: Do you have any ideas for specific mitigation activities for implementation at the county or local level?

- Dan Money, Two Rivers Watershed District Administrator: Several watershed district projects (Roseau River, Two Rivers, and Warroad River) are in the works with regard to flood risk reduction. These typically include impoundments, diversions, ditching and diking. There is a planning group made up of Roseau County, Kittson County, Roseau River WD and Two Rivers WD actively meeting to discuss SD 69, SD 62 and overflow flooding in Juneberry Township.
- Jack Swanson, Roseau County Commissioner: I think additional tornado safe rooms would be good.
- Leon Huot, City of Roseau Fire Chief: The quantity and location of tornado safe rooms within city of Roseau can be improved upon. The Roseau Fire Dept also does not currently have backup power.

- Kevin Ricke, Badger Public Schools, Superintendent + Principal K-12: Badger School needs back up power.
- Glenda Phillipe, Roseau County Commissioner: Tornado sirens in Warroad aren't working properly. Grants available? / Scot Olson, Kittson County EM: Kittson County and some of our cities are considering using some of our 2023 State Public Safety Aid for Sirens
- Glenda Phillipe, Roseau County Commissioner:
 - Train derailment in City of Warroad. *(It was noted that the HMP does not cover non-natural hazards such train derailments. This is covered under other planning and exercises by Roseau County Homeland Security Emergency Management and local fire departments).*
 - Tornado/fire sirens that work in City of Warroad.
 - Shelter for trailer park residents.
 - Shelter for occupants in county parks.
 - Shelter for Springsteel Island residents.

The meeting concluded with an overview of next steps and estimated timeline for completion.

MEETING DOCUMENTATION

Attached are additional documentation items for the Roseau County HMP Mtg #1:

- Mtg #1 Email Invitation to RSVP
- Mtg #1 Pre-meeting Materials: Email, HMP Overview Handout, Discussion Questions Response Form, and HMA Grants Program Overview
- Mtg #1 Power Point Presentation Slides

Meeting Summary Prepared By: Bonnie Hundrieser, U-Spatial@UMD Project Team

From: [Susan L. Grafstrom](#)
To: [Susan L. Grafstrom](#); [Daniel J. Davidson](#); [Steven J. Gust](#); [Jeffrey D. Pelowski](#); [Liz R. Lund](#); [Ericka L. Halstensgard](#); [Chris D. Stauffer](#); [Karla M. Langaas](#); [jpahlen@lifecaremc.com](#); [Glenda A. Phillippe](#); [Jack J. Swanson](#); [Levi M. Novacek](#); [Daryl E. Wicklund](#); [cob@wiktel.com](#); [jeremy@wiktel.com](#); [greenbush@wiktel.com](#); [Rcca.randy@wiktel.com](#); [cityclerk@wiktel.com](#); [Martha A. Monsrud](#); [beth.carlson@city.roseau.mn.us](#); [Todd.peterson@city.roseau.mn.us](#); [Leon.huot@polaris.com](#); [cityofstrathcona@outlook.com](#); [cityadmin@warroadmn.org](#); [damianmcmillin@gmail.com](#); [Joy.shimpa@borderstatebank.com](#); [enovacek@wiktel.com](#); [jillgeroy@hotmail.com](#); [Bill_cyndee@hotmail.com](#); [Adander101@gmail.com](#); [Kurt_stenberg@polaris.com](#); [Rosalie_isham@hotmail.com](#); [Sara_toenies24@gmail.com](#); [falunclerk@live.com](#); [dynastydj@hotmail.com](#); [mosjitsu@gmail.com](#); [abcfarms@wiktel.com](#); [Debwiskow73@gmail.com](#); [Bellabjorn1@gmail.com](#); [Lake053@centurytel.net](#); [bobbaker53@gmail.com](#); [toml@marvin.com](#); [Brandon.langaas@gmail.com](#); [Clerk.malungtownship@wiktel.com](#); [rhuston@wiktel.com](#); [Kathy R. Jenson](#); [moranvilletwnshp@gmail.com](#); [Reed0506@gmail.com](#); [Ronmachinewell10@icloud.com](#); [virgilg@wiktel.com](#); [bandps@wiktel.com](#); [Paulenor63@gmail.com](#); [Vonende3787@wiktel.com](#); [nippynorwegian@gmail.com](#); [bchristianson@wiktel.com](#); [Teallblue21@gmail.com](#); [Ksholter45@gmail.com](#); [dannyorlove@gmail.com](#); [andrew.tepfer@state.mn.us](#); [scott.johnson@roseau.mnswcd.org](#); [kathy.fillmore@usda.gov](#); [angela.bokovoy@usda.gov](#); [j.t.anderson@state.mn.us](#); [allissa.reynolds@state.mn.us](#); [Stephanie.Klamm@state.mn.us](#); [jolson@nwrdc.org](#); [rrwd@mncable.net](#); [dan.money@tworiverswd.com](#); [Tyler.coffield@tworiverswd.com](#); [Adam.fisher@state.mn.us](#); [Michele.heaver@usc.salvationarmy.org](#); [Marian.jordan@redcross.org](#); [tom_jerome@roseauschool.org](#); [shawn_yates@warroad.k12.mn.us](#); [lguggisberg@greenbush.k12.mn.us](#); [kricke@badger.k12.mn.us](#); [tstoll@roseauelectric.com](#); [darla@nwrdc.org](#); [nated@nwmf.org](#); [dawng@nwmf.org](#); [solson@co.kittson.mn.us](#); [jill_o@co.lotw.mn.us](#); [Chris.muller@co.beltrami.mn.us](#); [josh.johnston@co.marshall.mn.us](#); [rneadeau@redlakenation.org](#); [Susan L. Grafstrom](#); [Daniel J. Davidson](#); [Steven J. Gust](#); [Jeffrey D. Pelowski](#); [Liz R. Lund](#); [Ericka L. Halstensgard](#); [Chris D. Stauffer](#); [Karla M. Langaas](#); [jpahlen@lifecaremc.com](#); [Glenda A. Phillippe](#); [Jack J. Swanson](#); [Levi M. Novacek](#); [Daryl E. Wicklund](#); [cob@wiktel.com](#); [jeremy@wiktel.com](#); [greenbush@wiktel.com](#); [Rcca.randy@wiktel.com](#); [cityclerk@wiktel.com](#); [beth.carlson@city.roseau.mn.us](#); [Todd.peterson@city.roseau.mn.us](#); [Leon.huot@polaris.com](#); [cityofstrathcona@outlook.com](#); [cityadmin@warroadmn.org](#); [damianmcmillin@gmail.com](#); [Joy.shimpa@borderstatebank.com](#); [enovacek@wiktel.com](#); [jillgeroy@hotmail.com](#); [Bill_cyndee@hotmail.com](#); [Adander101@gmail.com](#); [Kurt_stenberg@polaris.com](#); [Rosalie_isham@hotmail.com](#); [Sara_toenies24@gmail.com](#); [falunclerk@live.com](#); [dynastydj@hotmail.com](#); [mosjitsu@gmail.com](#); [abcfarms@wiktel.com](#); [Debwiskow73@gmail.com](#); [Bellabjorn1@gmail.com](#); [Lake053@centurytel.net](#); [bobbaker53@gmail.com](#); [toml@marvin.com](#); [Brandon.langaas@gmail.com](#); [Clerk.malungtownship@wiktel.com](#); [rhuston@wiktel.com](#); [Kathy R. Jenson](#); [moranvilletwnshp@gmail.com](#); [Reed0506@gmail.com](#); [Ronmachinewell10@icloud.com](#); [virgilg@wiktel.com](#); [bandps@wiktel.com](#); [Paulenor63@gmail.com](#); [Vonende3787@wiktel.com](#); [nippynorwegian@gmail.com](#); [bchristianson@wiktel.com](#); [Teallblue21@gmail.com](#); [Ksholter45@gmail.com](#); [dannyorlove@gmail.com](#); [andrew.tepfer@state.mn.us](#); [scott.johnson@roseau.mnswcd.org](#); [kathy.fillmore@usda.gov](#); [angela.bokovoy@usda.gov](#); [j.t.anderson@state.mn.us](#); [allissa.reynolds@state.mn.us](#); [Stephanie.Klamm@state.mn.us](#); [jolson@nwrdc.org](#); [rrwd@mncable.net](#); [dan.money@tworiverswd.com](#); [Tyler.coffield@tworiverswd.com](#); [Adam.fisher@state.mn.us](#); [Michele.heaver@usc.salvationarmy.org](#); [Marian.jordan@redcross.org](#); [tom_jerome@roseauschool.org](#); [shawn_yates@warroad.k12.mn.us](#); [lguggisberg@greenbush.k12.mn.us](#); [kricke@badger.k12.mn.us](#); [tstoll@roseauelectric.com](#); [darla@nwrdc.org](#); [nated@nwmf.org](#); [dawng@nwmf.org](#); [solson@co.kittson.mn.us](#); [jill_o@co.lotw.mn.us](#); [Chris.muller@co.beltrami.mn.us](#); [josh.johnston@co.marshall.mn.us](#); [rneadeau@redlakenation.org](#)
Cc: [Bonnie Hundrieser \(hundrieserconsulting@outlook.com\)](#); [Susan L. Grafstrom](#)
Subject: HAZARD MITIGATION PLAN UPDATE – MEETING INVITATION
Date: Wednesday, October 11, 2023 2:19:51 PM

ROSEAU COUNTY

HAZARD MITIGATION PLAN UPDATE – MEETING INVITATION

Greetings,

Your presence is requested at a Planning Team Meeting for the update of the **Roseau County Hazard Mitigation Plan**. You are requested to participate in this vital meeting because you have a position of administrative or departmental responsibility within either the county, a municipal government, or are a key stakeholder related to the planning process. Emergency Managers from neighboring jurisdictions are also encouraged to attend so we may strengthen our shared mitigation efforts.

We will be holding the meeting virtually using Zoom video/phone conferencing:

Date: Monday, December 11, 2023

Time: 1:00 p.m. – 2:30 p.m.

Zoom Link: https://umn-private.zoom.us/webinar/register/WN_ryQ8vTt8STSZtNBg53aSsA

You must click on the link above to register. (Ctrl+Click to follow link) When you register, you will automatically be placed on an RSVP list and will be sent an email confirmation.

About the Plan

The update of the Roseau County Hazard Mitigation Plan (HMP) is a requirement by the State of Minnesota Department of Homeland Security & Emergency Management (HSEM) as well as the Federal Emergency Management Agency (FEMA) every 5 years. Our last plan is due for an update and our planning is currently underway. The plan addresses the natural hazards that face Roseau County and will result in the identification of mitigation actions and projects that will help to reduce or eliminate the impact of future hazard events, such as flooding and severe winter or summer storms.

Your participation in this plan update is important for several reasons:

1. You will help to identify critical mitigation actions to implement at the county / municipal level, and how they can be integrated with existing plans, policies, or project efforts.
2. Participating jurisdictions will be eligible to apply for FEMA hazard mitigation grant funding.
3. Mitigation planning is necessary to keep our communities resilient against future disasters and reduce the costs of recovery.
4. FEMA requires documentation of how local government and key stakeholders participated in the planning process.

During this meeting we will review and prioritize the natural hazards that pose risk to Roseau County and individual communities and discuss a range of mitigation measures for local implementation. The meeting will be facilitated by personnel from U-Spatial at the University of MN Duluth who are working closely with us on this project.

We look forward to you joining us for this important meeting.

Thank you,

Sue Grafstrom
Homeland Security and Emergency Management Co-Director
Roseau County
606 5th Ave SW

Roseau, MN 56751

(218) 463-3375(office)

(218) 242-3134(cell)

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Cc: ["Stacey Stark"](#)
Subject: Roseau County HMP Planning Team Meeting Materials – Please Review
Date: Monday, December 4, 2023 11:52:00 AM
Attachments: [Roseau County 2023 HMP Overview handout.pdf](#)
[Roseau County HMP Mtg. #1 Discussion Questions.docx](#)
[HSEM HMA Grants Program Overview.pdf](#)
Importance: High

Greetings,

The Roseau County Hazard Mitigation Plan (HMP) Update – Planning Team Meeting #1 will be held via Zoom on **Monday, December 11, 2023 from 1:00 – 2:30 p.m.** This meeting is a critical step in the plan update process where we meet with county and local government officials, departmental staff, and other agency stakeholders to provide an overview of the plan update and gather important feedback.

Attached are several items that we will reference during the meeting.

1. **Roseau County 2023-2024 Hazard Mitigation Plan Update Overview**
2. **Roseau County HMP Planning Team Meeting #1 - Discussion Questions.** If you are registered for the meeting, you are encouraged to review and fill out the form in advance. If you are not able to join us, we welcome your feedback by returning the Discussion Questions form via email.
3. **HSEM Hazard Mitigation Assistance (HMA) Grants Program Overview**

If you have not registered yet, please click on the following registration link: https://umn-private.zoom.us/webinar/register/WN_ryQ8vTt8STSztNBg53aSaA (control+click)

If you are not able to personally attend, we encourage you to send another representative in your stead.

We look forward to meeting with you! If you have any questions, please let me know.

Thank you,
Bonnie Hundrieser

Bonnie K. Hundrieser, CEM

Hazard Mitigation Planning Specialist

Part of the **U-Spatial@UMD** HMP Planning Team

Hundrieser Consulting LLC

Phone: 218-343-3468



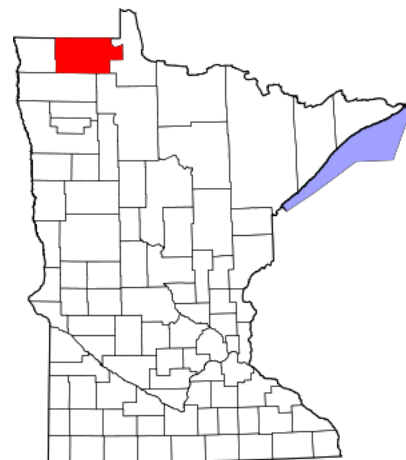
Roseau County 2023-2024 Hazard Mitigation Plan Update Overview

During 2023-2024, U-Spatial at the University of Minnesota Duluth (U-Spatial@UMD) will be working to update the **Roseau County Hazard Mitigation Plan (HMP)**. Our team consists of UMD staff who specialize in GIS applications and research and Hundrieser Consulting LLC, who specializes in stakeholder engagement and mitigation strategies.

Overview

Following are key points regarding the Roseau County HMP Update:

Plan Requirement: It is a state and federal requirement that local governments develop and adopt an updated HMP every 5 years to be eligible for FEMA hazard mitigation assistance grant program funding. Plans must include a comprehensive risk assessment, engage a range of stakeholders and the public, and result in a plan of action to reduce risk from future natural hazard events.



Who the Plan Covers: The HMP is a multi-jurisdictional plan, covering all of Roseau County, including all cities and townships within the county. The plan also takes into consideration the needs and concerns of other stakeholders such as schools, watershed districts, and agencies or organizations involved in mitigation or services to vulnerable populations within the county.

Who Participates: The HMP is developed in coordination with a local “planning team,” which includes county, city, and township government officials and departmental staff and other related key stakeholders. The team participates in two meetings, assists with public outreach, and provides information to help inform the plan update. Input is also sought from the larger public via news releases, social media, and public events. Planning team members and the public help to review and comment on the draft plan.

Plan Content: The HMP addresses the natural hazards that pose risk to Roseau County, such as flooding, severe winter storms, windstorms, tornadoes, extreme temperatures, and drought. A hazard profile is developed for each hazard prioritized as moderate to high. Each profile includes a description, incident history, geographic variability, future probability, relationship to changing climate trends and local vulnerabilities, as well as a review of planning and program capabilities. The HMP results in a plan of action for implementation.

Timeframe: The planning process generally occurs over the course of 14-18 months from start to finish.

Final Product: The Roseau County HMP will include a PDF plan and an accompanying interactive website.

Contact:

Stacey Stark, U-Spatial Associate Director (HMP Project Manager)
Phone: (218) 726-7438 / Email: slstark@d.umn.edu

U-SPATIAL

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Roseau County Hazard Mitigation Plan Update

Planning Team Meeting #1 Discussion Questions

As part of the Roseau County 1st HMP Planning Team meeting, we will be covering several key discussion items. Your input is important to ensure the plan update reflects current concerns, priorities, and ideas for mitigation activities to reduce risk. Following are **3 discussion questions** where we will be seeking your feedback.

Meeting participants are encouraged to take down notes prior to the meeting using this form. You may also submit your form electronically if you wish to provide your written notes. Forms should be returned to: hundrieserconsulting@outlook.com

Please provide your contact information:

Name:

Jurisdiction/Agency:

Job Title:

Phone:

Email:

1. Outreach to Vulnerable Populations / Underserved Communities

As part of the planning process, FEMA specifically seeks to ensure that communities have addressed how vulnerable populations and underserved communities within the planning area were provided an opportunity to be involved. We are interested in what this means for your county and local community.

DISCUSSION QUESTION: Are there any vulnerable populations or underserved communities you would identify for Roseau County or within your own local jurisdiction? If so, are there any best outreach methods to use to provide an opportunity to participate?

Type any comments

2. Review of Hazard Risk Prioritization

As part of the planning process, FEMA specifically seeks to ensure that participants have reviewed the natural hazards that pose risk to the county and its jurisdictions and consider how the priority of those hazards may have changed. Below are the natural hazards were addressed in the county's past hazard mitigation plan and the risk priorities that were noted for each.

ROSEAU COUNTY 2015 HAZARD MITIGATION PLAN

Hazards	Risk Priority
Flood	High
Tornado	Moderate
Winter Storms	Moderate
Dam/Levee Failure	Moderate
Hail	Moderate
Erosion	Moderate

Wildfire	Moderate
Drought	Low
Subsidence	Low
Windstorms	Low
Extreme Heat	Low
Lightning	Low
Landslides	Not Addressed

DISCUSSION QUESTION: What do you feel should be recorded as the updated hazard prioritizations for the Roseau County 2023 HMP? Consider the probability of future events occurring (likelihood) and damaging impacts to local vulnerabilities (people, systems, and critical infrastructure). Please use the chart below to note your answers.

ROSEAU COUNTY 2023 HMP UPDATE - HAZARD RISK PRIORITIZATIONS

Hazards	Risk Priority (Low, Moderate, or High)	Comments
Flooding		
Windstorms		
Tornadoes		
Hail		
Lightning		
Winter Storms (heavy snow, blizzards, ice storms)		
Extreme Heat		
Extreme Cold		
Drought		
Wildfire		
Landslides		
Dam/Levee Failure		

Type any additional comments

3. Identification of Mitigation Actions

The end-result of the Roseau County HMP will be a set of jurisdictional mitigation action charts which will provide a course of action for the county and each city jurisdiction to reduce risk against future hazard events. The development of mitigation actions will be drawn from local-level hazard priorities, known vulnerabilities, and local capabilities to implement actions. The development of mitigation actions is guided by different types of strategies, including: Local Planning & Regulations, Structure & Infrastructure Projects, Natural Systems Protection, Education & Awareness Programs, and Mitigation Preparedness & Response Support. We are interested to know what ideas you may have for mitigation activities that can be incorporated into our planning as we move forward. Please be as specific as possible. For example, "Construct a tornado safe room for the City of X mobile home park." "Increase the size of culverts on township roads to reduce over the road flooding and erosion from high rain events."

DISCUSSION QUESTION: Do you have any ideas for specific mitigation activities for implementation at the county or local level?

Type any comments



State of Minnesota
Department of Public Safety
Division of Homeland Security and Emergency Management
445 Minnesota Street, Suite 223
St. Paul, MN 55101-6223

HAZARD MITIGATION ASSISTANCE

Hazard Mitigation Assistance (HMA) grant programs provide funding with the aim to reduce or eliminate risk to property and loss of life from future natural disasters. HMA programs are typically a 75%/25% cost share program. The federal share is 75% of total eligible project reimbursement costs. The local applicant is responsible for 25% of the project costs. The amount of HMGP funds availability is based on a percent of Public Assistance provided by Federal Emergency Management Agency (FEMA).

- Hazard Mitigation Grant Program (HMGP) funds assists in implementing long-term hazard mitigation measures following a Presidential major disaster declaration.
- Pre-Disaster Mitigation (PDM) provides funds for hazard mitigation planning and projects on an annual basis.
- Flood Mitigation Assistance (FMA) provides funds on an annual basis to reduce or eliminate risk of flood damage to buildings that are insured under the National Flood Insurance Program (NFIP).

Who is eligible for grant funding?

All applicants must have or be covered under an approved Hazard Mitigation Plan. Eligible applicants include: State and local governments; certain private non-profit organizations or institutions; and Tribal Communities

What types of projects can be funded?

All projects must be eligible, technically feasible, and cost-effective. All projects are subject to environmental and cultural resource review. Examples of projects include:

- **Advance Assistance** may be used to develop mitigation strategies and obtain data, including for environmental and historic preservation compliance considerations, and develop complete project applications in a timely manner.
- **Aquifer Storage and Recovery** (ASR) projects serve primarily as a drought management tool, but can also be used to reduce flood risk and restore aquifers that have been subject to overdraft. The concept is to capture water when there is an abundant supply, store the water in subsurface aquifers, and recover water from the storage aquifer when needed. Storing water underground can help protect it from pollutants, evaporation, and weather events.
- **Floodplain and stream restoration** (FSR) projects are used primarily to reduce flood risk and erosion by providing stable reaches, and may also mitigate drought impacts. FSR projects restore and enhance the floodplain, stream channel and riparian ecosystem's natural function. They provide base flow recharge, water supply augmentation, floodwater storage, terrestrial and aquatic wildlife habitat, and recreation opportunities by restoring the site's soil, hydrology and vegetation conditions that mimic pre-development channel flow and floodplain connectivity.
- **Flood Diversion and Storage** (FDS) projects often are used to reduce flood risk, but also can be used to mitigate drought and improve ecosystem services. These projects involve diverting floodwaters from a stream, river, or other body of water into a conduit such as a canal, pipe, or wetland and storing them in an above-ground storage facility. Water is then slowly released, reducing flood risk.

- **Green Infrastructure Methods** are a sustainable approach to natural landscape preservation and storm water management. Include in *eligible hazard mitigation activities* as well as provide additional ecosystem benefits. Ecosystem-based approach to replicate a site's pre-development, natural hydrologic function. Benefits include: Increase water supply, improved water quality, can be scaled to size and designed to fit site conditions.
- **Property Acquisition and Structure Demolition or Relocation** – The voluntary acquisition of an existing at-risk structure and the underlying land, and conversion of the land to open space through the demolition or relocation of the structure. The property must be deed-restricted in perpetuity to open space uses to restore and/or conserve the natural floodplain functions.
- **Retrofit Flood-Prone Residential Structures** are changes made to an existing structure to reduce or eliminate the possibility of damage to that structure from flooding, erosion, or other hazards. Examples of this mitigation are primarily elevation of structures above flood levels and floodwalls.
- **Safe Room Construction** - Safe room construction projects are designed to provide immediate life-safety protection for people in public and private structures from tornado and severe wind events. Includes retrofits of existing facilities or new safe room construction projects, and applies to both single and dual-use facilities
- **Minor Localized Flood Reduction Projects** - Projects to lessen the frequency or severity of flooding and decrease predicted flood damages, such as the installation or up-sizing of culverts, and stormwater management activities, such as creating retention and detention basins. These projects must not duplicate the flood prevention activities of other Federal agencies and may not constitute a section of a larger flood control system.
- **Infrastructure Retrofit** - Measures to reduce risk to existing utility systems, roads, and bridges.
- **Soil Stabilization** - Projects to reduce risk to structures or infrastructure from erosion and landslides, including installing geotextiles, stabilizing sod, installing vegetative buffer strips, preserving mature vegetation, decreasing slope angles, and stabilizing with rip rap and other means of slope anchoring. These projects must not duplicate the activities of other Federal agencies. *New tools for Bioengineered Shoreline Stabilization, Bioengineered Streambank Stabilization.*
- **Wildfire Mitigation** - Projects to mitigate at-risk structures and associated loss of life from the threat of future wildfire through: Defensible Space for Wildfire, Application of Ignition-resistant Construction and Hazardous Fuels Reduction. *New tool for Bioengineered Wildfire Mitigation.*
- **HMGP only - 5 Percent Initiative Projects** – These projects, which are only available pursuant to an HMGP disaster, provide an opportunity to fund mitigation actions that are consistent with the goals and objectives of approved mitigation plans and meet all HMGP program requirements, but for which it may be difficult to conduct a standard Benefit-Cost Analysis (BCA) to prove cost-effectiveness.

How do I apply?

Start by submitting a Notice of Interest, available on HSEMs website at:

<https://dps.mn.gov/divisions/hsem>

Where can I obtain further information?

For additional information about the HMA grant program, you can refer to the FEMA website:

<http://www.fema.gov/hazard-mitigation-assistance>

ROSEAU COUNTY Hazard Mitigation Plan Update 2023

Planning Team Meeting #1
Presentation & Discussion, 12/11/23



Welcome & Introductions

U-Spatial@UMD Project Leads



Stacey Stark
Project Manager
U-Spatial@UMD



Bonnie Hurdieser
HMP Planning Specialist
Hurdieser Consulting LLC

Roseau County Project Lead

- Sue Grafstrom, Roseau County Homeland Security Emergency Management Co-Director



Please type your name and jurisdiction in CHAT – so others know who is here

PRESENTER: STACEY STARK

Zoom Logistics

If you haven't yet, please type your Roseau and jurisdiction or department in the Chat window

PLEASE REMAIN MUTED AND VIDEO OFF SO EVERYONE CAN HAVE THE BEST EXPERIENCE.

USE CHAT:

- Send a message to everyone
- Send a message to individuals or the presenters
- Send a message to host to ask for help or ask a question that isn't for the whole group. The host is Stacey Stark



ASK TO SPEAK:



PRESENTER: STACEY STARK

Meeting Purpose & Agenda

The purpose of this meeting is to formally convene the **Roseau County HMP Planning Team** for a presentation on the plan update and to discuss key items required for the plan update.

AGENDA

- Review of HMP Overview (*handout)
- Plan Content and Format
- Review of Past Hazard Risk Prioritization, Hazard Profiles, and New Priorities
- Overview of Mitigation Strategies, Actions
- Overview of FEMA HMA grant program
- Discuss local mitigation ideas
- Overview of Next Steps

Throughout the presentation we will cover key discussion questions to gather your input!

PRESENTER: STACEY STARK

HMP OVERVIEW – KEY POINTS

ROSEAU COUNTY 2023 HMP UPDATE

Plan Requirement

The Hazard Mitigation Plan (HMP) is a requirement of the Federal Disaster Mitigation Act of 2000 (DMA 2000).

- The development of a local government plan is required to maintain eligibility for FEMA HMA grant programs.
- Plans must be updated every 5 years.
- Must address all jurisdictions and engage key stakeholders + the public
- Must be approved by FEMA for meeting all federal requirements.

Roseau County HMP Update 2023

- Last plan was adopted in 2015.
- The updated plan will cover a 5-year window for implementation and grant program eligibility
- Participating jurisdictions must have documented engagement in the planning process and adopt the final plan.

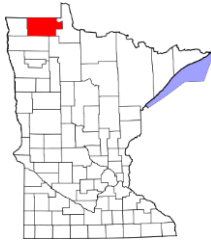


PRESENTER: BONNIE HURDIESER

Who the Plan Covers

This is a **multi-jurisdictional plan** that covers Roseau County, including all cities and townships within the county.

The plan also takes into consideration the needs and concerns of other stakeholders such as schools, watershed districts, and agencies or organizations involved in mitigation or services to vulnerable populations within the county.



PRESENTER: BONNIE HUNDRIESER

Who Participates



Planning Team

The HMP is developed in coordination with county, city, and township government officials and departmental staff and other related key stakeholders.

- Two planning team meetings
- Assistance with public outreach
- Participation in Local Mitigation Survey, Mitigation Action Chart development, and final plan review

The Public

It is required to provide an opportunity to the public to be aware of and provide input to the HMP plan update process.

- Information is shared via news releases, social media, local bulletin boards, and public events.
- Public outreach must include vulnerable populations or underserved communities within the planning area.

PRESENTER: BONNIE HUNDRIESER

Discussion Question #1:

Who are the vulnerable populations or underserved communities in Roseau County or within your own local jurisdiction?

What are outreach methods to provide these groups an opportunity to participate?

Plan Content

What Hazards are Addressed

- The HMP addresses the **natural hazards** that pose risk to the county and its jurisdictions.
- Manmade hazards are not required to be addressed (per the DMA 2000).
- Hazards that are deemed to be of low risk may be omitted from the plan.
- Hazard risk may differ in cities and the county overall.

Flooding	Hail	Drought
Dam/Levee Failure	Lightning	Extreme Heat
Wildfire	Winter Storms	Extreme Cold
Windstorms	Landslides	Earthquakes
Tornadoes	Sinkholes & Karst	Coastal Erosion

Natural hazard categories as per the State Hazard Mitigation Plan

Poll #1

PRESENTER: BONNIE HUNDRIESER

Plan Content

Risk Assessment & Vulnerability Analysis

The U-Spatial@UMD Team will work closely with the county and each city to provide information as needed.

- Inventory of critical infrastructure.
- Identify specific, local-level impacts and vulnerabilities.
- Identify any factors (i.e., new development) that may increase the community's vulnerability.
- Review social vulnerability factors.
- Identify if and how risk priorities have changed since the last plan. (Increased / Decreased)



PRESENTER: STACEY STARK

Timeframe for development & Plan Format

Timeframe:

The planning process generally occurs over the course of 14-18 months from start to finish.

- The Roseau County Plan will be completed in 2024.

Format:

- PDF document (paper version)
- Interactive website companion
- Developed and hosted by U-Spatial at UMD



Comments and Questions?

Hazard Prioritization

REVIEW OF THE HAZARD RISK PRIORITIES FOR
ROSEAU COUNTY

Roseau County 2015 HMP Risk Rankings

Flood	High
Tornado	Moderate
Winter Storms	Moderate
Dam/Levee Failure	Moderate
Hail	Moderate
Erosion	Moderate
Wildfire	Moderate
Drought	Low
Subsidence	Low
Windstorms	Low
Extreme Heat	Low
Lightning	Low
Landslides	Not Addressed

Has the level of priority for the following natural hazards changed for Roseau County?

Please consider:

- Increase or decrease of events (probability)
- Local vulnerabilities (impacts to people, systems, and infrastructure)
- New development and population growth

Poll #2

PRESENTER: STACEY STARK

Discussion Question #2

What should be recorded as the updated Hazard Prioritizations for the Roseau County 2023 HMP?

<https://z.umn.edu/RoseauHMP>

PRESENTER: STACEY STARK

Natural Hazards
Assessment on Website-
Demo

ROSEAU COUNTY HMP UPDATE Review of hazard prioritizations

Hazards	2023 Risk Priority (Low, Moderate, or High)
Flooding	
Windstorms	
Tornadoes	
Hail	
Lightning	
Winter Storms (heavy snow, blizzards, ice storms)	
Extreme Heat	
Extreme Cold	
Drought	
Wildfire	
Landslides	
Dam/Levee Failure	

Comments and Questions?

Mitigation Strategies, Actions & FEMA HMA grants

DEVELOPMENT OF MITIGATION ACTIONS AND
ELIGIBLE ACTIVITIES FOR FEMA HAZARD
MITIGATION ASSISTANCE GRANT FUNDING

PRESENTER: BONNIE HUNDRIESER

Overview of Mitigation Actions



Mitigation Action Charts are the end product of the HMP.

- Mitigation actions address hazards of moderate to high priority.
- Mitigation actions are specific.
- Mitigation actions address known vulnerabilities.
- Mitigation actions utilize capabilities to reduce risk.
- Jurisdictional mitigation action charts will be developed for the county and each city. Townships and other related agency mitigation efforts will be integrated where appropriate.

PRESENTER: BONNIE HUNDRIESER

FEMA HMA Grant Funding



Eligible Activities:

- All applicants must be covered by an approved HMP
 - Cost share: Federal 75%, Applicant 25%
 - Projects must address risk reduction.
 - Eligible projects must be identified in the plan of action.
- Property Acquisition (flooding/erosion)
Tornado Safe Rooms (new/retrofit)
Infrastructure Retrofits (utility systems, roads & bridges)
Wildfire Mitigation
Soil Stabilization
Flood Risk Reduction
Green Infrastructure
Other projects difficult to conduct a standard BCA

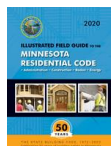
PRESENTER: BONNIE HUNDRIESER

Local Planning & Regulations



Examples:

- Enrollment in the NFIP and enforcement of county and local floodplain ordinances.
- Participation in regional One Watershed, One Plan (1W1P) and partnership projects
- Working with mobile home parks to be in compliance with Minnesota State statutes for storm shelters & evacuation plans.
- Permitting for new development and adhering to MN state building codes to reduce impacts of severe weather to structures.



PRESENTER: BONNIE HUNDRIESER

Structure & Infrastructure Projects

Examples:

- Installation of new outdoor warning sirens
- Construction of safe rooms / storm shelters
- Burying powerlines to reduce power failure
- Conducting property buyouts for flooding
- Addressing road, bridge, culvert, and drainage ditch improvements to reduce localized flood risks
- Protection of vulnerable critical infrastructure such as lift stations and Fire Halls



PRESENTER: BONNIE HUNDRIESER

Natural Systems Protection

Examples:

- Conduct vegetation management along roads to reduce the risk of downed trees and branches resulting from severe storms. (County, Local, Electric Coop)
- Planting Living Snow Fences to reduce snow drifting
- Installing Rain Gardens to reduce impacts of high rain events



PRESENTER: BONNIE HUNDRIESER

Education & Awareness Programs

Examples:

- Promoting sign-up for the county's emergency notification system and EM Facebook page.
- Providing presentations and information on preparedness at schools, special facilities, and public events.
- Participation in the NWS Severe Weather Awareness Weeks and SKYWARN Storm Spotter Training
- Outreach to vulnerable populations



PRESENTER: BONNIE HUNDRIESER

Mitigation Preparedness & Response Support

Examples:

- Acquire generators for backup power of critical infrastructure and key facilities
- Update of county EOP
- Conduct local and regional shelter planning
- Preparation for extended power outages and evacuation of vulnerable populations.
- Testing of outdoor warning sirens.
- Participate in regional EM planning, training, and exercising



PRESENTER: BONNIE HUNDRIESER

Discussion Question #3

Do you have any ideas for specific mitigation activities for implementation at the county or local level?

PRESENTER: STACEY STARK



Following Planning Team Meeting #1

Development of Local Mitigation Surveys

Representatives from Roseau County and each city jurisdiction will participate in filling out Local Mitigation Survey forms. These forms include:

- Local hazard identification & risk prioritization.
- Local vulnerabilities (critical infrastructure, populations or assets)
- Local-level capabilities (programs, policies, staff, funding)
- Identify local mitigation projects.

PRESENTER: BONNIE HUNDRIESER

Questions?

What questions do you have for U-Spatial@UMD about development of the HMP or next steps?

PRESENTER: STACEY STARK

Contact Information

Stacey Stark, MS, GISP

U-Spatial@UMD

slstark@d.umn.edu

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U-SPATIAL

UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover

Bonnie Hundrieser, HM Planner

Hundrieser Consulting LLC

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**HUNDRIESER
CONSULTING LLC**

PRESENTER: STACEY STARK

Roseau County HMP Planning Team Meeting #2

10/9/24 Meeting Summary & Documentation

Summary: On Wednesday, October 9, 2024, Roseau County Emergency Management convened key county, city, and township representatives, as well as neighboring jurisdictions and other stakeholders to participate in the 2nd and final Planning Team Meeting for the update of the Roseau County Hazard Mitigation Plan (HMP). The purpose of the meeting was to formally convene the Roseau County HMP Planning Team for a presentation on the draft plan and discussion of key items prior to public review and submission of the plan to HSEM and FEMA. The meeting was held via Zoom webinar video conference and was facilitated by Stacey Stark and Bonnie Hundrieser of the U-Spatial@UMD project team.

Stakeholder Invitations: Roseau County Emergency Management invited all stakeholders included on the county's HMP Update Jurisdictional Contact List (JCL), which includes the key County Contacts, City Contacts, Township Contacts, Other Stakeholder Contacts, and Neighboring Jurisdiction Contacts identified to be invited to participate in the plan update process. Contacts were encouraged to engage additional staff or to send someone in their stead if they could not attend. A copy of the county's Jurisdictional Contact List is provided in *Appendix F Steering Committee Meetings*.

Meeting Participants: A total of **17** people attended the meeting. Representation included elected officials and departmental staff from Roseau County and the cities of Badger, Roseau, and Warroad. The cities of Greenbush, Roosevelt, and Strathcona were not available to participate and were not in attendance. Other stakeholders, including neighboring jurisdictions, participated in the meeting. A participant list is provided below:

	Name	Organization	Job Title
1	Sue Grafstrom	Roseau County Homeland Security Emergency Management	Emergency Management Director
2	Steve Gust	Roseau County Sheriff	Sheriff
3	Glenda Phillipe	Roseau County	Commissioner
4	Angie Swenson	City of Badger	Clerk/Treasurer
5	Todd Peterson	City of Roseau	Community Development Coordinator
6	Wade Steinbring	City of Warroad Police Department	Police Chief
7	Tom Lund	Laona Township	Clerk
8	Jason Schneider	Mickinock Township	Supervisor
9	Adam Tesarek	Mickinock Township	Supervisor
10	Daniel Carpenter	Badger ISD #676	Superintendent
11	James Dinsch	LifeCare Medical Center	Director of EMS
12	Paula Hedlund	LifeCare Medical Center	Director of Community Health
13	Dan Money	Two Rivers Watershed District	Administrator
14	Adam Fisher	MN DNR Forestry	Warroad Area Forestry Supervisor
15	Jennifer Olson	MN HSEM	Regional Program Coordinator
16	Christopher Muller	Beltrami County	Emergency Management Director
17	Scot Olson	Kittson County	Emergency Management Director

Presentation Overview: The PowerPoint presentation covered the following items about the process and content of the plan update. A PDF of the presentation slides is included with this meeting summary.

- Meeting Purpose and Agenda
- About the Project Team
- Overview of Plan Update
- Who the Plan Covers
- Who Needs to Participate
- Overview of the Structure of the HMP (Website and PDF)
- Prioritization of Natural Hazards
- Review of Risk Assessment Factors and Hazard Profiles
- Overview of Mitigation Action Charts and FEMA HMA Grant Funding
- Review of Mitigation Strategies and Actions
- Open Discussion (Comments and Questions)
- Discussion of Next Steps & answer your questions

The opening PowerPoint presentation covered a re-cap of key points about the plan update, a review of the Risk Assessment & Vulnerability Analysis, an overview of FEMA Hazard Mitigation Assistance (HMA) grant funding; an overview of how mitigation actions are developed and an overview of the jurisdictional Mitigation Action Charts (MACs). Following the presentation, participants were provided with an opportunity to review and discuss the county and local mitigation action charts. This discussion period offered a facilitated opportunity for participants to consider any changes or new additions to the MACs prior to completion of the draft plan for public review.

ROSEAU COUNTY HMP PLANNING TEAM MEETING #2 DISCUSSION NOTES

- *Regarding Wildfire:* Adam Fisher, MN DNR Forestry - Agreed with the prioritization of wildfire as moderate. Noted that due to climate change our seasons are longer and our wildfires are more volatile.
- *Regarding Flooding:* Dan Money, Two Rivers Watershed District - Noted that some additional mitigation actions could be added that incorporate projects by area watershed districts. He would follow up with Bonnie separately to get them included into the Roseau County mitigation action chart.

Meeting Conclusion: The meeting concluded with an overview and timeline of the upcoming next steps for public review and submission of the draft plan to HSEM and FEMA for final review and approval.

Attached are the following documentation items for the Roseau County HMP Meeting #2:

- Meeting Invitation to Stakeholders
- PowerPoint Presentation Slides
- Information Handouts

Meeting Summary Prepared By: Bonnie Hundrieser, U-Spatial@UMD Project Team

From: Susan L. Grafstrom
To: Daniel J. Davidson; Steven J. Gust; Jeffrey D. Pelowski; Liz R. Lund; Martha A. Monsrud; Ericka L. Halstensgard; Chris D. Stauffer; Karla M. Langaas; phedlund@lifecaremc.com; bhomstad@lifecaremc.com; Glenda A. Phillippe; Jack J. Swanson; Levi M. Novacek; Daryl E. Wicklund; cob@wiktel.com; jeremy@wiktel.com; greenbush@wiktel.com; Rcca.randy@wiktel.com; cityclerk@wiktel.com; beth.carlson@city.roseau.mn.us; Todd.peterson@city.roseau.mn.us; Leon.huot@polaris.com; cityofstrathcona@outlook.com; cityadmin@warroadmn.org; damianmcmillin@gmail.com; enovacek@wiktel.com; jillgeroy@hotmail.com; Adander101@gmail.com; Rosalie.isham@hotmail.com; faluncle@live.com; dynastydj@hotmail.com; mosjitsu@gmail.com; abcfarms@wiktel.com; Debwiskow73@gmail.com; Bellabjorn1@gmail.com; Lake053@centurytel.net; bobbiaker53@gmail.com; toml@marvin.com; Brandon.langaas@gmail.com; rhuston@wiktel.com; Kathy R. Jenson; moranvilletwnshp@gmail.com; Reed0506@gmail.com; Ronmachinewell10@icloud.com; bandps@wiktel.com; Paulenorb63@gmail.com; Vonende3787@wiktel.com; nippynorwegian@gmail.com; bchristianson@wiktel.com; Teallblue21@gmail.com; Ksholter45@gmail.com; dannyorilove@gmail.com; scott.johnson@roseau.mnswcd.org; kathy.fillmore@usda.gov; angela.bokovoy@usda.gov; j.t.anderson@state.mn.us; allissa.reynolds@state.mn.us; Stephanie.Klamm@state.mn.us; jolson@nwrdr.org; rrwd@mncable.net; dan.money@tworiverswd.com; Tyler.coffield@tworiverswd.com; Adam.fisher@state.mn.us; Michele.heaver@usc.salvationarmy.org; tom.jerome@roseauschool.org; shawn.yates@warroad.k12.mn.us; tstoll@roseauelectric.com; darla@nwrdr.org; nated@nwmf.org; dawng@nwmf.org; solson@co.kittson.mn.us; jill_o@co.lotw.mn.us; Chris.muller@co.beltrami.mn.us; josh.johnston@co.marshall.mn.us; Jennifer.Olson (jennifer.olson@state.mn.us)
Cc: Bonnie Hundrieser (hundrieserconsulting@outlook.com); Stacey Stark
Subject: Roseau County Hazard Mitigation Plan Update - Meeting Invitation
Date: Monday, September 30, 2024 3:40:03 PM

ROSEAU COUNTY HAZARD MITIGATION PLAN UPDATE – MEETING INVITATION

Greetings,

Your presence is requested at the **2nd Planning Team Meeting** for the update of the **Roseau County Hazard Mitigation Plan (HMP)**. You are requested to participate in this vital meeting because you have a position of administrative or departmental responsibility within either the county, a municipal government, or are a key stakeholder related to the planning process. Emergency Managers from neighboring jurisdictions are also encouraged to attend so we may strengthen our shared mitigation efforts. This meeting will be the final planning meeting for the HMP update process.

We will be holding the meeting virtually using Zoom webinar:

Date: Wednesday, October 9, 2024

Time: 2:00 p.m. – 3:00 p.m.

Register: [Control+Click here to follow to link to register for the meeting](#)

The purpose of this meeting is to provide an overview of the plan and interactive website, including a review of the updated risk assessment for natural hazards that affect the county. We will also discuss the Mitigation Action Charts that will be specific to Roseau County and each city, as well as funding opportunities available under the FEMA Hazard Mitigation Assistance grant programs.

Your participation in this meeting and feedback on the draft plan is important to us. The draft Roseau County HMP is nearing completion and will be ready for review by planning team members and the public in the coming weeks.

When you register, you will automatically be placed on an RSVP list. If you are not able to attend,

please consider sending another representative in your stead.

Thank you,

Sue Grafstrom
Homeland Security and Emergency Management Co-Director
Roseau County
606 5th Ave SW
Roseau, MN 56751
(218) 463-3375(office)
(218) 242-3134(cell)

Roseau County Hazard Mitigation Plan Update 2024 Planning Team Meeting #2

October 9, 2024



Welcome & Introductions

U-Spatial@UMD Project Leads



Stacey Stark
Project Manager
U-Spatial@UMD



Bonnie Hundrieser
HMP Planning Specialist
Hundrieser Consulting LLC

Roseau County Project Lead:

- Sue Grafstrom, Roseau County Homeland Security Emergency Management Director



Please type your name and jurisdiction in the CHAT – so others know who is here

PRESENTER: STACEY STARK

Zoom Logistics

If you haven't yet, please type your Roseau and jurisdiction or department in the Chat window

PLEASE REMAIN MUTED AND VIDEO OFF SO EVERYONE CAN HAVE THE BEST EXPERIENCE.

USE CHAT:

- Send a message to everyone
- Send a message to individuals or the presenters
- Send a message to host to ask for help or ask a question that isn't for the whole group. The host is Stacey Stark



ASK TO SPEAK:



PRESENTER: STACEY STARK

Meeting Purpose & Agenda



This meeting formally convenes the **Roseau County HMP Planning Team** for a presentation on the draft plan and discussion of key items prior to public review and submission of the plan to HSEM and FEMA.

Agenda

- Welcome & Introductions
- Recap of Key HMP Points
- Preview of Deliverables
- Review of Risk Assessment & Vulnerability Analysis in Website
- Overview of FEMA HMA Funding and Mitigation Action Charts
- Review & Feedback
- Next Steps

PRESENTER: STACEY STARK

Overview of Plan Update

Roseau County is updating its **Hazard Mitigation Plan (HMP)** to fulfill a state & federal requirement. The plan must be updated every 5 years. The last plan was adopted in 2016.

The purpose of the plan is to identify & assess natural hazards that pose risk to the county and its jurisdictions and **develop long-term strategies and mitigation actions** that will help to reduce or eliminate the impact of future hazard or disaster events.



Hazard Mitigation is any action taken to reduce or eliminate long term risk to people and property from natural disasters.

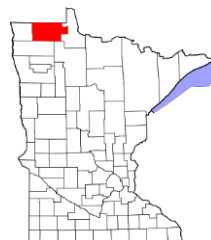
PRESENTER: BONNIE HUNDRIESER

Who the Plan Covers



This is a **multi-jurisdictional plan** that covers Roseau County, including all cities and townships within the county.

The plan also takes into consideration the needs and concerns of other stakeholders such as schools, watershed districts, and agencies or organizations involved in mitigation or services to vulnerable populations within the county.



PRESENTER: BONNIE HUNDRIESER

Stakeholder Involvement



Planning Team

- County and local government, other agencies & organizations.
- Participation in planning team meetings, public outreach, local mitigation survey, provision of spatial or other data, and review of draft plan.

The Public

- Opportunity to learn about the plan and provide feedback on local-level concerns, mitigation ideas, and review of draft plan.

PRESENTER: BONNIE HUNDRIESER

HMP Deliverables

PDF document:

- Contains FEMA required elements
- Limited figures & Images
- Links to Website integrated
- Summary of Hazard Identification
- Local Mitigation Summary Report
- Plans & Programs in Place
- Past Mitigation Action Review
- Planning Team Meetings
- Public Outreach & Engagement Documentation
- Mitigation Actions by Jurisdiction



Website companion:

- Links to PDF components and document
- Interactive maps and context
- Simple, concise explanations
- Multiple ways to navigate the content
- Public input form on site

PRESENTER: STACEY STARK

Prioritization of Hazards for Roseau County



Prioritization of hazards by the Roseau County planning team included consideration of:

➤ Probability and Severity of natural hazard events (risk)

➤ Observed increase or decrease in risk since last plan

➤ Jurisdictional variations in risk (i.e., local vulnerabilities, changes in development)

Natural Hazards	Current Priority
Flooding	High
Winter Storms	Moderate
Windstorms	Moderate
Hailstorms	Moderate
Tornadoes	Moderate
Extreme Cold	Moderate
Extreme Heat	Moderate
Wildfire	Moderate
Landslides	Low
Lightning	Low
Drought	Low
Dam Failure	Low

PRESENTER: STACEY STARK

Hazards Risk Assessment

- Validates the prioritization of hazards
- Provides probability and severity of future events as possible
- Identifies vulnerable populations and structures at risk as possible
- Considers variable jurisdictional vulnerability
- Informs Mitigation Actions in the HMP



PRESENTER: STACEY STARK

Website Demo

z.umn.edu/RoseauHMP

Comments and Questions?

Overview of Mitigation Action Charts



Mitigation Action Charts are the end product of the HMP.

They demonstrate a community's 5-year plan to:

- Reduce future risk to natural hazard events.
- Address local vulnerabilities through targeted activities.
- Utilize local capabilities to implement actions.



Eligible FEMA HMA grant activities **must** be identified in the plan of action.

PRESENTER: BONNIE HUNDRIESER

FEMA Mitigation Grant Funding



FEMA

Section 406

Available after a disaster occurs.

Focuses on mitigation measures for facilities that have actually been damaged in a particular disaster.

Section 404

Requires an approved & adopted HMP. Funds mitigation projects for both damaged and non-damaged facilities. Several different grant programs.

Example Section 404 activities:

- Property Acquisition
- Tornado Safe Rooms
- Infrastructure Retrofits
- Wildfire Mitigation
- Soil Stabilization
- Flood Risk Reduction
- Green Infrastructure
- Other projects difficult to conduct a standard BCA

PRESENTER: BONNIE HUNDRIESER

Local Planning & Regulations



Roseau County Examples:

- Enforcement of ordinances that reduce impacts of high rain events.
- Participation in several regional watershed plans with SWCD and area watershed districts (1W1P).
- Development of a Roseau County - Community Wildfire Protection Plan (CWPP)
- Help direct low-income residents to area resources that provide financial heating assistance.



PRESENTER: BONNIE HUNDRIESER

Structure & Infrastructure Projects

Roseau County Examples:

- Installation of new outdoor warning sirens (Roosevelt, Warroad)
- Construction of tornado safe rooms or storm shelters at trailer courts (City of Roseau)
- Powerline Retrofits (City of Roseau, City of Warroad, and Roseau Electric Cooperative)
- Conducting property buyouts for flooding
- Stormwater management improvements to alleviate localized flooding issues
- Road and bridge improvements



PRESENTER: BONNIE HUNDRIESER

Natural Systems Protection



Roseau County Examples:

- Conduct vegetation management along roads to reduce the risk of downed trees and branches resulting from heavy snow, ice, or high winds.
- Other examples:
 - Planting Living Snow Fences to reduce snow drifting
 - Installing Rain Gardens to reduce impacts of high rain events



PRESENTER: BONNIE HUNDRIESER

Education & Awareness Programs

Roseau County Examples:

- Promoting sign-up for the county's emergency notification system.
- Wildfire Outreach and Education (Firewise Program)
- Encouraging residents to be aware of and prepared for severe weather events, extreme temperatures, and extended power outages.
 - Outreach methods vary by community
 - Should consider vulnerable populations
 - NWS Severe Weather Awareness Weeks
 - SKYWARN Storm Spotter Training

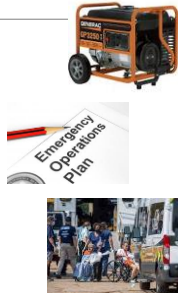


PRESENTER: BONNIE HUNDRIESER

Mitigation Preparedness & Response Support

Roseau County Examples:

- Obtain generators for backup power of critical infrastructure and key facilities
- Update of county EOP
- Conduct local and regional shelter planning
- Preparation for extended power outages and evacuation of vulnerable populations.
- Testing of outdoor warning sirens.
- Participate in regional EM planning, training, and exercising



PRESENTER: BONNIE HUNDRIESER

Comments and Questions?



Oct-Nov, 2024

EM + Local Gov't Review of Draft Plan and Public Review & Comment Period



Following Planning Team Mtg. #2

- EM + Local government review of draft plan
- Public review & comment period (News Release #2)
- Document local postings
- Document public feedback & incorporate as appropriate

PRESENTER: BONNIE HUNDRIESER



Nov-Dec, 2024

Draft Plan Submission to HSEM & FEMA, Plan Approval, and Collection of Adopting Resolutions

- Draft plan will be submitted first to HSEM and then to FEMA for approval for meeting all Federal requirements.
- Typically requires 1-2 months.
- APA letter
- EM coordination of adopting resolutions from each city.
- Final approval letter

PRESENTER: BONNIE HUNDRIESER

Questions?

What questions do you have for
U-Spatial@UMD about the draft MHMP or
next steps ?

PRESENTER: STACEY STARK

Contact Information

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Bonnie Hundrieser, HM Planner

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Driven to Discover


**HUNDRIESER
CONSULTING LLC**

PRESENTER: STACEY STARK



State of Minnesota
Department of Public Safety
Division of Homeland Security and Emergency Management
445 Minnesota Street, Suite 223
St. Paul, MN 55101-6223

HAZARD MITIGATION ASSISTANCE

Hazard Mitigation Assistance (HMA) grant programs provide funding with the aim to reduce or eliminate risk to property and loss of life from future natural disasters. HMA programs are typically a 75%/25% cost share program. The federal share is 75% of total eligible project reimbursement costs. The local applicant is responsible for 25% of the project costs. The amount of HMGP funds availability is based on a percent of Public Assistance provided by Federal Emergency Management Agency (FEMA).

- Hazard Mitigation Grant Program (HMGP) funds assists in implementing long-term hazard mitigation measures following a Presidential major disaster declaration.
- Pre-Disaster Mitigation (PDM) provides funds for hazard mitigation planning and projects on an annual basis.
- Flood Mitigation Assistance (FMA) provides funds on an annual basis to reduce or eliminate risk of flood damage to buildings that are insured under the National Flood Insurance Program (NFIP).

Who is eligible for grant funding?

All applicants must have or be covered under an approved Hazard Mitigation Plan. Eligible applicants include: State and local governments; certain private non-profit organizations or institutions; and Tribal Communities

What types of projects can be funded?

All projects must be eligible, technically feasible, and cost-effective. All projects are subject to environmental and cultural resource review. Examples of projects include:

- **Advance Assistance** may be used to develop mitigation strategies and obtain data, including for environmental and historic preservation compliance considerations, and develop complete project applications in a timely manner.
- **Aquifer Storage and Recovery** (ASR) projects serve primarily as a drought management tool, but can also be used to reduce flood risk and restore aquifers that have been subject to overdraft. The concept is to capture water when there is an abundant supply, store the water in subsurface aquifers, and recover water from the storage aquifer when needed. Storing water underground can help protect it from pollutants, evaporation, and weather events.
- **Floodplain and stream restoration** (FSR) projects are used primarily to reduce flood risk and erosion by providing stable reaches, and may also mitigate drought impacts. FSR projects restore and enhance the floodplain, stream channel and riparian ecosystem's natural function. They provide base flow recharge, water supply augmentation, floodwater storage, terrestrial and aquatic wildlife habitat, and recreation opportunities by restoring the site's soil, hydrology and vegetation conditions that mimic pre-development channel flow and floodplain connectivity.
- **Flood Diversion and Storage** (FDS) projects often are used to reduce flood risk, but also can be used to mitigate drought and improve ecosystem services. These projects involve diverting floodwaters from a stream, river, or other body of water into a conduit such as a canal, pipe, or wetland and storing them in an above-ground storage facility. Water is then slowly released, reducing flood risk.

- **Green Infrastructure Methods** are a sustainable approach to natural landscape preservation and storm water management. Include in *eligible hazard mitigation activities* as well as provide additional ecosystem benefits. Ecosystem-based approach to replicate a site's pre-development, natural hydrologic function. Benefits include: Increase water supply, improved water quality, can be scaled to size and designed to fit site conditions.
- **Property Acquisition and Structure Demolition or Relocation** – The voluntary acquisition of an existing at-risk structure and the underlying land, and conversion of the land to open space through the demolition or relocation of the structure. The property must be deed-restricted in perpetuity to open space uses to restore and/or conserve the natural floodplain functions.
- **Retrofit Flood-Prone Residential Structures** are changes made to an existing structure to reduce or eliminate the possibility of damage to that structure from flooding, erosion, or other hazards. Examples of this mitigation are primarily elevation of structures above flood levels and floodwalls.
- **Safe Room Construction** - Safe room construction projects are designed to provide immediate life-safety protection for people in public and private structures from tornado and severe wind events. Includes retrofits of existing facilities or new safe room construction projects, and applies to both single and dual-use facilities
- **Minor Localized Flood Reduction Projects** - Projects to lessen the frequency or severity of flooding and decrease predicted flood damages, such as the installation or up-sizing of culverts, and stormwater management activities, such as creating retention and detention basins. These projects must not duplicate the flood prevention activities of other Federal agencies and may not constitute a section of a larger flood control system.
- **Infrastructure Retrofit** - Measures to reduce risk to existing utility systems, roads, and bridges.
- **Soil Stabilization** - Projects to reduce risk to structures or infrastructure from erosion and landslides, including installing geotextiles, stabilizing sod, installing vegetative buffer strips, preserving mature vegetation, decreasing slope angles, and stabilizing with rip rap and other means of slope anchoring. These projects must not duplicate the activities of other Federal agencies. *New tools for Bioengineered Shoreline Stabilization, Bioengineered Streambank Stabilization.*
- **Wildfire Mitigation** - Projects to mitigate at-risk structures and associated loss of life from the threat of future wildfire through: Defensible Space for Wildfire, Application of Ignition-resistant Construction and Hazardous Fuels Reduction. *New tool for Bioengineered Wildfire Mitigation.*
- **HMGP only - 5 Percent Initiative Projects** – These projects, which are only available pursuant to an HMGP disaster, provide an opportunity to fund mitigation actions that are consistent with the goals and objectives of approved mitigation plans and meet all HMGP program requirements, but for which it may be difficult to conduct a standard Benefit-Cost Analysis (BCA) to prove cost-effectiveness.

How do I apply?

Start by submitting a Notice of Interest, available on HSEMs website at:

<https://dps.mn.gov/divisions/hsem>

Where can I obtain further information?

For additional information about the HMA grant program, you can refer to the FEMA website:

<http://www.fema.gov/hazard-mitigation-assistance>

Mitigation Strategies & Action Types

Following are the five types of mitigation strategies that will be used in the update of the Multi-Hazard Mitigation Plan with examples of related mitigation actions. Minnesota HSEM recommends the use of these mitigation strategies to be in alignment with the State plan and those recommended by FEMA. The first four strategies listed are taken from the FEMA publications *Local Mitigation Planning Handbook* (2013) and *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards* (2013). The fifth strategy type was determined by Minnesota HSEM for use within the state.

These strategies will provide the framework for identification of new jurisdictional-level mitigation actions for implementation over the next 5-year planning cycle.

Mitigation Strategy	Description	Example Mitigation Actions
Local Planning and Regulations	These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.	<ul style="list-style-type: none"> • Comprehensive plans • Land use ordinances • Planning and zoning • Building codes and enforcement • Floodplain ordinances • NFIP Community Rating System • Capital improvement programs • Open space preservation • Shoreline codes • Stormwater management regulations and master plans • Mobile home park compliance for storm shelters
Structure and Infrastructure Projects	<p>These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure.</p> <p>This type of action also involves projects to construct manmade structures to reduce the impact of hazards.</p>	<ul style="list-style-type: none"> • Property Acquisitions and elevations of structures in flood prone areas • Utility undergrounding • Structural retrofits (i.e., metal roofs) • Floodwalls and retaining walls • Detention and retention structures • Culvert Installation/Modification • Roads & Bridge risk reduction • Safe Room (New construction or facility retrofit) • Green Infrastructure Methods <p><i>Many of these types of actions are projects eligible for funding through FEMA HMA grant programs.</i></p>

Mitigation Strategy	Description	Example Mitigation Actions
Natural Systems Protection	<p>These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.</p>	<ul style="list-style-type: none"> • Soil stabilization for sediment and erosion control • Floodplain and Stream corridor restoration • Slope management • Forest management (defensible space, fuels reduction, sprinkler systems) • Conservation easements • Wetland restoration and preservation • Aquifer Storage & Recovery • Flood Diversion and Storage <p><i>Many of these types of actions are projects eligible for funding through FEMA HMA grant programs.</i></p>
Education and Awareness Programs	<p>These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady or Firewise Communities. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions that support life safety and lessen property damage.</p>	<ul style="list-style-type: none"> • Radio or television spots • Websites with maps and information • Social media outreach • Promotion of sign-up for emergency warnings • Real estate disclosure • Promotion of NFIP insurance to property owners • Presentations to school groups or neighborhood organizations • Mailings to residents in hazard-prone areas. • NWS StormReady Program • Firewise Communities <p><i>Some of these types of actions may be projects eligible for funding through the FEMA HMA "5 Percent Initiative Program".</i></p>
Mitigation Preparedness and Response Support	<p>This is a State of Minnesota mitigation strategy with the intent of covering emergency preparedness actions that protect life and property prior to, during, and immediately after a disaster or hazard event. These activities are typically not considered mitigation, but support reduction of the effects of damaging events.</p>	<ul style="list-style-type: none"> • Emergency Operations Plan • Flood fight plans and preparedness measures • Dam emergency action plans • Emergency Warning Systems (i.e., CodeRed, warning sirens) • Generator backup power • NWS Storm Spotter Training • Training and education for local elected officials and key partners.

Appendix G – Public Outreach & Engagement Documentation

Roseau County MHMP News Release #1

Record of Public Input & Incorporation

Overview: On **June 7, 2023**, Roseau County Emergency Management put out a news release titled **“Public Input Wanted as County Updates Multi-Hazard Mitigation Plan”** to announce the start of the county’s Hazard Mitigation Plan. The news release provided information on the purpose and content of the plan, who the plan covers, stakeholders involved in the plan update and examples of hazard mitigation activities. Roseau County used the news release to gather feedback from residents and businesses from across the county to incorporate into the plan, inviting feedback to the following:

- What are the natural hazards you feel pose the greatest risk to your community?
- What concerns do you have, and what sorts of mitigation actions or projects do you feel would help to reduce the damages of potential future events for your personal property, your community, or the County as a whole?

The public was strongly encouraged contact Roseau County Emergency Management to submit comments, concerns, or questions regarding natural disasters and potential mitigation actions to be included into the plan update process. The public was also able to post comments electronically on county or city Facebook sites where the news release was posted.

Distribution: The news release was sent via email to the county’s HMP Jurisdictional Contact List, which includes the names, titles, phone numbers, and email addresses of key stakeholders to be engaged in the HMP update, including county, city, and township contacts; other related agency and organizational stakeholder contacts, and neighboring jurisdiction contacts. (A copy of the Jurisdictional Contact List can be found in Appendix F). The news release was additionally sent to local media contacts with a request to carry the news release.

Postings: Attached is documentation of the news release postings by Roseau County, participating jurisdictions, local media, and other stakeholders. Cities and townships were encouraged to help share the news release locally by posting it on their websites, social media, or community bulletin boards.

Public Input & Incorporation:

Following is a record of public responses to the news release and how their input will be incorporated into the plan update, and if not relevant to be addressed, why.

No Public Input: Roseau County Emergency Management and local jurisdictions did not receive any public input following News Release #1.

From: [Susan L. Grafstrom](#)
To: [Susan L. Grafstrom](#); [Daniel J. Davidson](#); [Steven J. Gust](#); [Jeffrey D. Pelowski](#); [Liz R. Lund](#); [Ericka L. Halstensgard](#); [Chris D. Stauffer](#); [Karla M. Langaas](#); [jpahlen@lifecaremc.com](#); [Glenda A. Phillipe](#); [Jack J. Swanson](#); [Levi M. Novacek](#); [Daryl E. Wicklund](#); [cob@wiktel.com](#); [jeremy@wiktel.com](#); [greenbush@wiktel.com](#); [Rcca.randy@wiktel.com](#); [cityclerk@wiktel.com](#); [beth.carlson@city.roseau.mn.us](#); [Todd.peterson@city.roseau.mn.us](#); [Leon.huot@polaris.com](#); [cityofstrathcona@outlook.com](#); [cityadmin@warroadmn.org](#); [damianmcmillin@gmail.com](#); [Joy.shimpa@borderstatebank.com](#); [enovacek@wiktel.com](#); [jillgeroy@hotmail.com](#); [Bill_cyndee@hotmail.com](#); [Adander101@gmail.com](#); [Kurt_stenberg@polaris.com](#); [Rosalie_isham@hotmail.com](#); [Sara_toenies24@gmail.com](#); [falunclerk@live.com](#); [dynastydj@hotmail.com](#); [mosjitsu@gmail.com](#); [abcfarms@wiktel.com](#); [Debwiskow73@gmail.com](#); [Bellabjorn1@gmail.com](#); [Lake053@centurytel.net](#); [bobbaker53@gmail.com](#); [toml@marvin.com](#); [Brandon.langaas@gmail.com](#); [Clerk.malungtownship@wiktel.com](#); [rhuston@wiktel.com](#); [Kathy R. Jenson](#); [moranvilletwnshp@gmail.com](#); [Reed0506@gmail.com](#); [Ronmachinewell10@icloud.com](#); [virgilg@wiktel.com](#); [bandps@wiktel.com](#); [Paulenor63@gmail.com](#); [Vonende3787@wiktel.com](#); [nippynorwegian@gmail.com](#); [bchristianson@wiktel.com](#); [Teallblue21@gmail.com](#); [Ksholter45@gmail.com](#); [dannyorilove@gmail.com](#); [Heather.Winkleblack@state.mn.us](#); [scott.johnson@roseau.mnswcd.org](#); [kathy.fillmore@usda.gov](#); [angela.bokovoy@usda.gov](#); [j.t.anderson@state.mn.us](#); [allissa.reynolds@state.mn.us](#); [Stephanie.Klamm@state.mn.us](#); [jolson@nwrdc.org](#); [rrwd@mncable.net](#); [dan.money@tworiverswd.com](#); [Tyler.coffield@tworiverswd.com](#); [Adam.fisher@state.mn.us](#); [Michele.heaver@usc.salvationarmy.org](#); [Marian.jordan@redcross.org](#); [tom_jerome@roseauschool.org](#); [shawn_yates@warroad.k12.mn.us](#); [lguggisberg@greenbush.k12.mn.us](#); [kricke@badger.k12.mn.us](#); [tstoll@roseauelectric.com](#); [darla@nwrdc.org](#); [nated@nwmf.org](#); [dawng@nwmf.org](#); [solson@co.kittson.mn.us](#); [jill_o@co.lotw.mn.us](#); [Chris.muller@co.beltrami.mn.us](#); [josh.johnston@co.marshall.mn.us](#); [rneadeau@redlakenation.org](#); [Cc: Bonnie Hundrieser \(hundrieserconsulting@outlook.com\)](#); [Martha A. Monsrud](#)
Subject: Roseau County Hazard Mitigation News Release
Date: Wednesday, June 7, 2023 2:06:25 PM
Attachments: [Roseau County HMP Press Release 6-2023.pdf](#)

Greetings,

Roseau County Emergency Management is commencing work on the update of the Roseau County Hazard Mitigation Plan (HMP). Attached is a news release for your information.

Your assistance is requested to post this news release to help notify the public about the plan update and to have an opportunity to provide feedback. If you have a website and/or Facebook page we encourage you to post the news release electronically to those places. You may also post a hardcopy of the news release in locations such as City Hall, the Post Office, or other common area. We welcome as many of ways of posting that you can cover. As part of the plan update we must document the public outreach that was conducted. Please send me an email with information on your posting as follows:

- **Websites/Facebook Postings:** Please send me an email detailing the date, location, and link of the posting. We will need to get a screenshot of the posting online.
- **Hardcopy Postings:** Please send me an email detailing the date and location of where the news release was posted (i.e., City Hall bulletin board).

-
All city governments within the county are requested to participate in order to meet FEMA requirements. Townships, businesses, and other agencies or organizations are also strongly encouraged to participate.

If you receive any return public feedback, please notify me so we may document this and incorporate this feedback into the plan update.

The timely return of your posting documentation is appreciated. We will be working to wrap this up before the end of June.

I look forward to your participation in the Roseau County HMP update.

If you have any questions, please let me know.

Thank you,

Sue Grafstrom
Homeland Security and Emergency Management Co-Director
Roseau County
606 5th Ave SW
Roseau, MN 56751
(218) 463-3375(office)
(218) 242-3134(cell)

From: [Susan L. Grafstrom](#)
To: rtr@mncable.net; ntp@wiktel.com; dhill@trftimes.com; info@wild102fm.com; mp_pederson@hotmail.com
Cc: [Bonnie Hundrieser \(hundrieserconsulting@outlook.com\)](mailto:Bonnie.Hundrieser(hundrieserconsulting@outlook.com))
Subject: Press Release - Roseau County Seeks Public Input on Hazard Mitigation Plan
Date: Wednesday, June 7, 2023 11:28:32 AM
Attachments: [Roseau County HMP Press Release 6-2023.pdf](#)

For Immediate Release, if you have questions let me know.

Sue Grafstrom
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Roseau County
606 5th Ave SW
Roseau, MN 56751
(218) 463-3375 (office)
(218) 242-3134 (cell)

ROSEAU COUNTY NEWS RELEASE

June 7, 2023

Public Input Wanted as County Updates Hazard Mitigation Plan

Roseau County residents, community leaders, business owners, area agencies and organizations now have an opportunity to share how severe weather events impact their property and lives. There is also an opportunity to share their ideas on how to reduce local impacts in the future.

The Roseau County Office of Emergency Management is working with U-Spatial at the University of Minnesota Duluth to update the county's Hazard Mitigation Plan (HMP). The plan assesses the natural hazards that pose risk to the county, such as tornadoes, straight line winds, ice storms, blizzards, wildfire, flooding, and extreme temperatures and identifies ways to minimize the damage of future events. As the county works to update the plan, it wants to hear from the public.

The Roseau County HMP is a multi-jurisdictional plan that covers Roseau County, including the cities of Badger, Greenbush, Roosevelt, Roseau, Strathcona, and Warroad. The Roseau County HMP also incorporates the concerns and needs of townships, school districts, and area agencies or organizations participating in the plan. The plan will be updated by a planning team made up of representatives from county departments, local municipalities, school districts and other key stakeholders. When completed, the plan will be submitted to the Minnesota Department of Homeland Security and Emergency Management and the Federal Emergency Management Agency (FEMA) for approval.

"Hazard mitigation planning is a central part of our emergency management program," said Sue Grafstrom, Roseau County Homeland Security Emergency Management Co-Director.

"Understanding the natural hazards that can cause serious impact to our communities and taking action to reduce or eliminate the impact of future disasters makes us more resilient. Hazard mitigation helps us to break the cycle of damage and repair caused by things like flooding, ice storms, and severe wind events that can damage property, stress economies, and threaten life safety in our county."

Examples of hazard mitigation include:

- Conducting public outreach on severe weather awareness and preparedness
- Limiting or restricting development in floodplain areas
- Removing existing buildings from flood or erosion prone hazard areas
- Using snow fences to limit blowing and drifting of snow over road corridors
- Constructing tornado safe rooms in vulnerable areas such as mobile home parks

- Burying overhead powerlines that may fail due to heavy snow, ice, or windstorms

Some mitigation activities may be eligible for future FEMA Hazard Mitigation Assistance grant funding.

Public input is an essential part of the plan update. As part of the planning process, Roseau County is seeking feedback from residents and businesses from across the county to incorporate into the plan:

- What are the natural hazards you feel pose the greatest risk to your community?
- What concerns do you have, and what sorts of actions do you feel would help to reduce damages of future hazard events in your community or the county as a whole?

Comments, concerns, or questions regarding natural disasters and potential mitigation actions to be included into the plan update should be submitted to Roseau County Emergency Management by phone, email, or by posting a comment via a social media posting of this article.

There will be additional opportunities for public feedback throughout the planning process. A draft of the plan will be made available for public review prior to submission of the plan to the State of Minnesota. Future news releases will be shared with the media to notify the public of these opportunities.

The Federal Disaster Mitigation Act of 2000 (DMA 2000) requires counties to update their plan every 5 years to maintain eligibility for FEMA's Hazard Mitigation Assistance (HMA) grant programs.

Contact

Sue Grafstrom

Roseau County Homeland Security Emergency Management Co-Director

Phone: (218) 463-3375

Email: sue.grafstrom@co.roseau.mn.us

Roseau County HMP News Release #1 – June 7, 2023
Chart Documentation of News Release Postings

Jurisdiction or Agency	Posting Representative	Date & Location of News Release Posting
Roseau County	Sue Grafstrom, Roseau County EMD	6/7/23, Roseau County website and Facebook page
City of Badger	Angie Gregerson, City Clerk	6/22/23, City Hall front door
City of Greenbush	Lynsi Hansen, City Clerk,	6/22/23, City Hall notice board and Community Center notice board
City of Roosevelt	Joyce Claypool, City Clerk	6/20/23, news release shared with the Roosevelt City Council in lieu of a physical posting location (none available).
City of Roseau	Elizabeth Carlson, City Clerk	6/9/23, City Hall notice board
City of Strathcona	Shirley Ryden, City Clerk	6/20/23, news release shared with the Strathcona City Council in lieu of a physical posting location (none available).
City of Warroad	Kathy Lovelace, City Administrator	6/9/23, City Hall bulletin board
Moose Township	Kathy Jenson, Township Clerk	6/9/23, Town Hall bulletin board
Moranville Township	Tim O'Donnell, Township Clerk	6/21/23, Town Hall bulletin board
Thief River Falls Times	Dan Hill, News Editor	6/10/23, Thief River Falls – Northern Watch Newspaper printed news article / online PDF

Roseau County HMP News Release #2

Record of Public Input & Incorporation

Overview: On October 28, 2024 Roseau County Emergency Management put out a news release titled **“Public Comment Sought for County’s Hazard Mitigation Plan”** to announce the completion of the draft Roseau County Hazard Mitigation Plan and invitation for public review and comment. The news release informed jurisdictional stakeholders and the public that a copy of the draft plan, interactive website, and comment form for public feedback was available online with a website link. The public review period for the draft plan was open from 10/28/24 – 11/11/24 for a total of 15 days.

Distribution: The news release was sent via email to the county’s HMP Jurisdictional Contact List, which includes the names, titles, phone numbers, and email addresses of key stakeholders to be engaged in the HMP update, including County Contacts, City Contacts, Township Contacts, Other Stakeholder Contacts, and Neighboring Jurisdiction Contacts. (A copy of the Jurisdictional Contact List can be found in Appendix F). The news release was additionally sent to local media contacts such as area newspapers, radio and television channels with a request to carry the news release.

Postings: Attached is documentation of the news release postings by Roseau County, participating jurisdictions, and local media. Cities and townships were encouraged to help share the news release locally by posting it on their websites, social media, or community bulletin boards.

Public Input & Incorporation:

Following is a record of public responses to the Roseau County news release and how the input will be incorporated into the plan update, and if not relevant to be addressed, why.

- **No public input was received via the online feedback form, directly by Roseau County or local jurisdictions.**

From: [Susan L. Grafstrom](#)
To: rtr@mncable.net; ntp@wiktel.com; trftimes@trftimes.com
Cc: [Bonnie Hundrieser \(hundrieserconsulting@outlook.com\)](mailto:Bonnie.Hundrieser(hundrieserconsulting@outlook.com))
Subject: Roseau County Hazard Mitigation Plan Public Comment Period Now Open
Date: Tuesday, October 29, 2024 2:06:54 PM
Attachments: [Roseau County News Release HMP Public Review \(10-28-24\).pdf](#)

-
Good Afternoon,

Attached is a public service announcement for the residents of Roseau County so if you could include in the next edition it will help Roseau County to maintain the integrity of their process for fair and open communication and is a requirement of FEMA.

The public review and comment period is now open for the Roseau County Hazard Mitigation Plan. Please see the attached news release.

The public review period will run from **October 28th to November 11th**, prior to submission of the plan to FEMA.

Thank you,

Sue Grafstrom
Homeland Security and Emergency Management Co-Director
Roseau County
606 5th Ave SW
Roseau, MN 56751
(218) 463-3375(office)
(218) 242-3134(cell)

From: [Susan L. Grafstrom](#)
To: [Susan L. Grafstrom](#); [Daniel J. Davidson](#); [Steven J. Gust](#); [Jeffrey D. Pelowski](#); [Liz R. Lund](#); [Martha A. Monsrud](#); [Ericka L. Halstensgard](#); [Chris D. Stauffer](#); [Karla M. Langaas](#); [phedlund@lifecaremc.com](#); [bhomstad@lifecaremc.com](#); [Glenda A. Phillipe](#); [Jack J. Swanson](#); [Levi M. Novacek](#); [Daryl E. Wicklund](#); [cob@wiktel.com](#); [jeremy@wiktel.com](#); [greenbush@wiktel.com](#); [Rcca.randy@wiktel.com](#); [cityclerk@wiktel.com](#); [beth.carlson@city.roseau.mn.us](#); [Todd.peterson@city.roseau.mn.us](#); [Leon.huot@polaris.com](#); [cityofstrathcona@outlook.com](#); [cityadmin@warroadmn.org](#); [damianmcmillin@gmail.com](#); [enovacek@wiktel.com](#); [jillgeroy@hotmail.com](#); [Adander101@gmail.com](#); [Rosalie_isham@hotmail.com](#); [falunclerk@live.com](#); [dynastydj@hotmail.com](#); [mosjitsu@gmail.com](#); [abcfarms@wiktel.com](#); [Debwiskow73@gmail.com](#); [Bellabjorn1@gmail.com](#); [Lake053@centurytel.net](#); [bobbaker53@gmail.com](#); [toml@marvin.com](#); [Brandon.langaas@gmail.com](#); [rhuston@wiktel.com](#); [Kathy R. Jenson](#); [moranvilletwnshp@gmail.com](#); [Reed0506@gmail.com](#); [Ronmachinewell10@icloud.com](#); [virgilg@wiktel.com](#); [bandps@wiktel.com](#); [Paulenorb63@gmail.com](#); [Vonende3787@wiktel.com](#); [nippynorwegian@gmail.com](#); [bchristianson@wiktel.com](#); [Teallblue21@gmail.com](#); [Ksholter45@gmail.com](#); [dannyorilove@gmail.com](#); [andrew.tepfer@state.mn.us](#); [scott.johnson@roseau.mnswcd.org](#); [bonnie.hasbrouck@usda.gov](#); [angela.bokovoy@usda.gov](#); [j.t.anderson@state.mn.us](#); [allissa.reynolds@state.mn.us](#); [Stephanie.Klamm@state.mn.us](#); [rrwd@mncable.net](#); [dan.money@tworiverswd.com](#); [Tyler.coffield@tworiverswd.com](#); [Adam.fisher@state.mn.us](#); [Michele.heaver@usc.salvationarmy.org](#); [tom_jerome@roseauschool.org](#); [shawn_yates@warroad.k12.mn.us](#); [lguggisberg@greenbush.k12.mn.us](#); [dcarpenter@badger.k12.mn.us](#); [tstoll@roseauelectric.com](#); [daria@nwrdc.org](#); [dawnng@nwmf.org](#); [solson@co.kittson.mn.us](#); [jill_o@co.lotw.mn.us](#); [Chris.muller@co.beltrami.mn.us](#); [josh.johnston@co.marshall.mn.us](#); [rneadeau@redlakenation.org](#); [Jennifer.Olson@state.mn.us](#)
Cc: [Bonnie Hundrieser \(hundrieserconsulting@outlook.com\)](#)
Subject: Announcement - Roseau County Hazard Mitigation Plan Public Comment Period Now Open
Date: Tuesday, October 29, 2024 1:57:24 PM
Attachments: [Roseau County News Release HMP Public Review \(10-28-24\).pdf](#)
[Roseau County News Release HMP Public Review \(10-28-24\).docx](#)

Good Afternoon,

The public review and comment period is now open for the Roseau County Hazard Mitigation Plan. Please see the attached news release.

The public review period will run from **October 28th to November 11th**, prior to submission of the plan to FEMA.

PLEASE POST THIS LOCALLY. As a jurisdiction or related stakeholder involved in the Roseau County plan update, your assistance is requested to help post the news release and also to review the draft plan. **Please post the news release promptly to the areas where you share information with the public, such as your website, Facebook page, bulletin boards, or other locations. Please email me to let me know the date and location(s) of where the news release was posted.**

In addition, if you have not already reviewed the plan during the government review period, you are strongly encouraged to do so. There are website links as well as a QR code in the news release that will take you to PDF of the plan, interactive website, mitigation action charts. There is also an online feedback form where you are encouraged to provide any comments, questions, or other feedback. If you review the plan, please let me know.

Please respond no later than November 11th.

Thank you for your assistance on conducting this public outreach.

Sue Grafstrom
Homeland Security and Emergency Management Co-Director
Roseau County

606 5th Ave SW

Roseau, MN 56751

(218) 463-3375(office)

(218) 242-3134(cell)



**Homeland Security
Emergency Management**
606 5th Ave. SW, Room #132
Roseau, MN 56751
Phone: 218-463-3375
Fax: 218-463-3252

ROSEAU COUNTY NEWS RELEASE

October 28, 2024

Public Comment Sought for Roseau County's Hazard Mitigation Plan

Roseau County has completed an updated draft of its Hazard Mitigation Plan (HMP) and is now seeking public feedback. Like all Minnesota counties, Roseau County is vulnerable to a variety of natural hazards such as tornadoes, windstorms, severe winter storms, flooding, drought, and extreme temperatures, which can threaten the loss of life and property in the county. Planning for natural disasters minimizes the impact of events that can cause vast economic loss and personal hardship.

All county residents, as well as other interested agency or organizational stakeholders are strongly encouraged to review and offer feedback on the interactive website, PDF of the draft plan, and proposed local mitigation actions. The review and comment period is open for a period of 15 days through November 11, 2024. The public can access the plan using the following hyperlinks:

[Roseau County HMP Website Homepage](#) (feedback form at the bottom of page)

[Roseau County Mitigation Action Charts](#) (feedback form at the bottom of page)

The Roseau County HMP is a multi-jurisdictional plan that covers Roseau County, including all cities and townships within the county. The Roseau County HMP also incorporates the concerns and needs of other key stakeholders such as school districts and related agencies, organizations, or businesses participating in the planning process.

Update of the plan has been under direction of Roseau County Emergency Management in cooperation with U-Spatial at the University of Minnesota Duluth and representatives from county departments, city and township governments and other participating stakeholders. Together, the planning team worked to identify cost-effective and sustainable actions to reduce or eliminate the long-term risk to human life or property from natural hazards. Examples include infrastructure projects for areas that experience repetitive flooding; construction of safe rooms in areas where residents and visitors are vulnerable to tornadoes and severe storm events; burying powerlines that may fail due to heavy snow, ice, or wind storms; ensuring timely emergency communication to the public through warning sirens and mass notification systems; and conducting outreach to increase public awareness of severe weather and personal preparedness.

Hazard mitigation planning helps Roseau County and other jurisdictions protect their residents. Working with local communities through the process helps identify vulnerabilities and develop strategies to reduce or eliminate the effects of a potential hazard.

In addition, increasing public awareness of natural disasters and encouraging personal preparedness helps to create a community that is resilient to disaster, and breaks the cycle of response and recovery. Updating the plan further allows Roseau County and its jurisdictions to be eligible to apply for future FEMA Hazard Mitigation Assistance grant program funding for projects that help to reduce or eliminate the impacts of future natural hazard events.

Community feedback is vital to the success of the plan. Roseau County invites public review and feedback of the draft plan prior to submitting it to the State of Minnesota and the Federal Emergency Management Agency (FEMA) for review. Feedback may be provided via the online comment forms or directly to Roseau County Emergency Management.

Contact

Sue Grafstrom

Roseau County Homeland Security Emergency Management Co-Director

Phone: (218) 463-3375

Email: sue.grafstrom@co.roseau.mn.us

Please scan the following QR code to go directly to the Roseau County Hazard Mitigation Plan interactive website:



Roseau County HMP News Release #2 (10/28/24)
Chart Documentation of News Release Postings

Jurisdiction or Agency	Posting Representative	Date & Location of News Release Posting
Roseau County	Sue Grafstrom, Roseau County EMD	October 28, 2024 included both website and facebook announcements regarding the public comment period.
City of Badger	Angie Gregerson, City Clerk	10/28/24, City Hall as before. Front Door
City of Greenbush	Lynsi Hansen, City Clerk	10/28/24, Notice Board at City Hall
City of Roosevelt	Joyce Claypool, City Clerk	11/4/24No Physical Location for Information, emailed to council.
City of Roseau	Beth Carlson, City Clerk	11/4/24 Bulletin Board in City Center Main Entrance
City of Strathcona	Shirley Ryden, City Clerk	Emailed on 11/5/24 to city council. There is not a physical city office.
City of Warroad	Kathy Lovelace, City Administrator	11/4/24, Bulletin Board at Depot/City Hall.
Roseau Times Region	Jody Wiskow, Editor	Roseau County Newspaper, notice was in 10/31/24 edition
Thief River Falls Times	Dan Hill, Editor	Notice was in 11/9/24 edition of the Thief River Times which is a regionally distributed paper to every resident.

Appendix H – Mitigation Actions by Jurisdiction

CITY OF BADGER

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	To share information with our residents we use social media, mailed newsletters, local newspaper, city meetings, and posted flyers. Our Fire department also goes into schools for weather awareness. When we update our city website, we can also post information here.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	We direct residents to go to the county website to sign up for CodeRED. When we update our city website, we will work with Roseau County Emergency Management to help us put a link up. We can also put up flyers in public areas as reminders to the community.	City Funding
3	Flooding	Structure & Infrastructure Projects	Continue to address stormwater management planning to handle future high-rain events that impact the city.	Existing Moderate 2025-2030	City Engineer / Public Works Director	We have a City Engineer and a Public Works Director that addresses maintenance as needed to city infrastructure such as roads and culverts.	City Funding
4	Extreme Cold	Local Planning & Regulations	Help direct low-income residents to area resources that provide financial heating assistance.	Existing Moderate 2025-20230	City Admin	The city will help to direct residents who need financial heating assistance to local resources such as the Roseau Electric Cooperative's Energy Assistance Program and the Northwest Community Action Energy Assistance Program.	Roseau Electric Coop and Northwest Community Action Inc.
5	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will establish watering restrictions as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage.	City

CITY OF BADGER**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Wildfire	Education & Awareness Programs	Promote public awareness of the risk of wildfire, especially during periods of drought.	Existing Moderate 2025-2030	City EM	The city continues to work with the MN DNR and Roseau County Emergency Management to stay aware of wildfire conditions in our area and to share information with the public if the risk of wildfire is high. If there is a burn ban in place we will actively let residents know.	City Funding

CITY OF GREENBUSH

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	The city shares information with residents using our city website, Facebook page, and the local newspaper. Information is also posted outside on the bulletin board at the Community Center/City Office. We work to share information that we receive about severe weather from Roseau County Emergency Management.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	We will work with Roseau County Emergency Management to help us get a link to sign up for CodeRED on our city website. We can also post flyers in public areas to help remind residents to sign up.	City Funding
3	Flooding	Local Planning & Regulations	Enforce city ordinances that reduce the impacts of high rain events and risk of flooding to areas of new development.	Existing High 2025-2030	City Admin	The city continues to enforce our floodplain ordinance as well as the city's sump pump ordinance.	City Funding
4	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city is prepared to provide emergency sheltering to residents who are displaced due to extreme weather or temperature events.	Existing High 2025-2030	City Admin / City EM	The city has an Emergency Action Plan. The City's Storm shelter is at the Greenbush-Middle River School. If there is a severe storm event or a period of extreme temperatures that require activating the shelter, we will work with Roseau County Emergency Management to help get the word out to our residents.	City Funding
5	Severe Winter & Summer Storms	Structure & Infrastructure Projects	Reduce the risk of downed power lines and extended power outages from the impacts of heavy snow, ice, or high wind events.	Existing High 2025-2030	Ottertail Power Company, City Public Works	The City of Greenbush works with Ottertail Power Company for electrical services. Ottertail Power continues to work to address where potential power failures can be mitigated through best approaches. Ottertail Power also works to help trim dead or dying limbs away from overhead power lines that they service.	Ottertail Power Company

CITY OF GREENBUSH

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Extreme Cold	Local Planning & Regulations	Help direct low-income residents to area resources that provide financial heating assistance.	Existing Moderate 2025-20230	City Admin	The city will work help to direct residents who need financial heating assistance to local resources such as the Roseau Electric Cooperative's Energy Assistance Program and the Northwest Community Action Energy Assistance Program.	Roseau Electric Coop and Northwest Community Action Inc.
7	Extreme Cold	Mitigation Preparedness & Response Support	Work to reduce the risk of freezing water lines for city and residential services during periods of extreme cold.	Existing High 2025-2030	City Public Works	Our city public works staff is working to be more proactive for monitoring freezing pipes/residential services lines, as well as installing more meters throughout the city.	City Funding
8	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will establish watering restrictions as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage.	City
9	Wildfire	Education & Awareness Programs	Promote public awareness of the risk of wildfire, especially during periods of drought.	Existing Moderate 2025-2030	City EM	The city continues to work with the MN DNR and Roseau County Emergency Management to stay aware of wildfire conditions in our area and to share information with the public if the risk of wildfire is high. If there is a burn ban in place we will actively let residents know.	City Funding

CITY OF ROOSEVELT

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	We do not have a city website or Facebook page. We share information with our residents primarily through announcements at city council meetings and posting information at City Hall. We will continue to work to share information from Roseau County Emergency Management to help make our residents more aware of and prepared for severe weather. Residents are encouraged to follow local news and weather apps to help stay informed.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	We will provide occasional reminders during the year at city council meetings and/or by posting information. We primarily look to Roseau County Emergency Management to do public outreach to direct residents how to sign up for CodeRED.	City Funding
3	Extreme Cold	Local Planning & Regulations	Help direct low-income residents to area resources that provide financial heating assistance.	Existing Moderate 2025-20230	City Admin	The city will help to direct residents who need financial heating assistance to local resources such as the Roseau Electric Cooperative's Energy Assistance Program and the Northwest Community Action Energy Assistance Program.	Roseau Electric Coop and Northwest Community Action Inc.
4	Severe Winter & Summer Storms	Local Planning & Regulations	Ensure new development is built to guidelines to reduce risk of damage or failure from extreme storm events.	Existing Moderate 2025-20230	City Admin	We work with Roseau County to help enforce state building codes if there is any new development.	City Funding
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Obtain a backup generator for city use during power outages from severe storms.	New High 2025-2030	City Admin / Public Works	The city will work to purchase a portable generator as funding is available.	City Funding

CITY OF ROOSEVELT

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Severe Summer Storms	Structure & Infrastructure Projects	Work to obtain funding to purchase and install and outdoor warning siren to warn residents of severe windstorms or tornadoes.	New High 2025-2030	City Admin / City EM	The city will work with Roseau County to see if it is possible to get an outdoor warning siren purchased and installed for the city. Significant outside funding would be necessary to complete any big projects like purchase of a warning siren	City Funding, County Funding
7	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will establish watering restrictions as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage.	City
8	Wildfire	Education & Awareness Programs	Promote public awareness of the risk of wildfire, especially during periods of drought.	Existing Moderate 2025-2030	City EM	The city continues to work with the MN DNR and Roseau County Emergency Management to stay aware of wildfire conditions in our area and to share information with the public if the risk of wildfire is high. If there is a burn ban in place we will actively let residents know.	City Funding

CITY OF ROSEAU

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	The city has electronic and social media accounts (website, Facebook pages) on which information can be shared. The city also has an electronic messaging sign on TH 11 that displays public information. We also utilize a mailed newsletter 4 times a year for public information. We work to share information we receive from Roseau County Emergency Management about severe weather conditions and preparedness for residents.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	We maintain information on the city website and in periodic community newsletters on how to sign up for the county's CodeRED emergency notification system.	City Funding
3	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and development.	Existing High 2025-2030	City Admin	The city of Roseau has local ordinances to enforce public safety for land use and floodplain. The city also maintains a comprehensive plan for growth and development in areas appropriate for land use. The city also maintains an Emergency Operations plan that identifies key personnel and operations staff.	City Funding
4	Extreme Cold	Local Planning & Regulations	Help direct low-income residents to area resources that provide financial heating assistance.	Existing Moderate 2025-20230	City Admin	The city will help to direct residents who need financial heating assistance to local resources such as the Roseau Electric Cooperative's Energy Assistance Program and the Northwest Community Action Energy Assistance Program.	Roseau Electric Coop and Northwest Community Action Inc.

CITY OF ROSEAU

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	Severe Winter & Summer Storms	Local Planning & Regulations	Work to secure grant funding to assist in the relocation of electric lines underground.	New High 2025-2030	Roseau Public Works & Utilities	The city has it's one municipal utility, Roseau Public Works & Utilities. The city will seek to convert overhead powerlines to underground where possible. The city may seek to apply for FEMA grant funding to help with these retrofit projects as we move forward. We will work with Roseau County Emergency Management to stay informed of possible FEMA grant opportunities.	City Funding, FEMA grant funding
6	Flooding	Structure & Infrastructure Projects	Continue to implement the city's west side storm water project to alleviate urban flooding.	In-Progress High 2024-2025	Roseau Public Works & Utilities	The city has constructed a \$42 million flood diversion around the east side of the community to protect the community from river flooding. The city is also undertaking a \$5 million storm water project to increase capacity to alleviate urban flooding on the west side of the community in 2024-25. The city also has many sanitary lift stations that are prone to flooding when storm sewer capacity is exceeded and urban flooding becomes an issue. Public Works continues to address stormwater management planning and projects for these areas.	
7	Severe Winter & Summer Storms	Structure & Infrastructure Projects	Reduce the risk of downed power lines and extended power outages from the impacts of heavy snow, ice, or high wind events.	Existing High 2024-2025	Roseau Public Works & Utilities	Roseau Public Works & Utilities work to trim or remove trees that may post risk to overhead powerlines. Older overhead electric lines will be converted to underground as feasible and as funding allows. In the future the city may seek to apply for FEMA grant funding to retrofit existing vulnerable overhead powerlines to underground.	City Funding, FEMA grant funding

CITY OF ROSEAU

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
8	Severe Summer Storms	Local Planning & Regulations / Structure & Infrastructure Projects	Seek grant funding to create on-site storm shelters in the community's two trailer courts.	New High 2025-2030	City Admin / City EM	The city will work with Roseau County Emergency Management to see if we can apply for FEMA grant funding to construct 2 tornado safe rooms.	City Funding, Possible FEMA grant funding
9	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will establish watering restrictions as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage.	City Funding
10	Wildfire	Education & Awareness Programs	Promote public awareness of the risk of wildfire, especially during periods of drought.	Existing Moderate 2025-2030	City EM	The city continues to work with the MN DNR and Roseau County Emergency Management to stay aware of wildfire conditions in our area and to share information with the public if the risk of wildfire is high. If there is a burn ban in place we will actively let residents know.	City Funding

CITY OF STRATHCONA

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	The city has no website or Facebook page. We share information verbally with our residents at City Council meetings. We encourage residents to follow local TV and radio news to stay informed of severe weather and to be prepared.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	Residents are directed to go to the Roseau County website to sign up for CodeRED.	City Funding
3	Extreme Cold	Local Planning & Regulations	Help direct low-income residents to area resources that provide financial heating assistance.	Existing Moderate 2025-20230	City Admin	The city will help to direct residents who need financial heating assistance to local resources such as the Roseau Electric Cooperative's Energy Assistance Program and the Northwest Community Action Energy Assistance Program.	Roseau Electric Coop and Northwest Community Action Inc.
4	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will establish watering restrictions as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage.	City
5	Wildfire	Education & Awareness Programs	Promote public awareness of the risk of wildfire, especially during periods of drought.	Existing Moderate 2025-2030	City EM	The city continues to work with the MN DNR and Roseau County Emergency Management to stay aware of wildfire conditions in our area and to share information with the public if the risk of wildfire is high. If there is a burn ban in place we will actively let residents know.	City Funding

CITY OF WARROAD

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	Our city works with the county whenever asked to participate in any severe weather awareness events. We have a utility Facebook page that we post some things on. Through our quarterly newsletter we do outreach and education on ways that residents can help protect themselves as well as help the city by keeping snow away from fire hydrants, and keeping debris from plugging storm drains, etc. During severe spring/summer weather events our police and fire department personnel will drive through the campground and trailer parks announcing the bad weather warning over the speaker.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	The city is upgrading our website. We will request that Roseau County Emergency Management provide us with a link for residents to sign up for the CodeRED emergency notification system.	City Funding
3	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and development.	Existing High 2025-2030	City Admin	The city's planning and zoning department contracts with a company to provide building permit oversight and enforcement of the MN State Building Code for any remodels or new construction. We have a land use plan for future development as well as a maintenance plan for roadways and infrastructure including preventative maintenance plan for lift stations. When we update our Comprehensive Plan, we will seek to address considerations for future hazard events such as flooding.	City Funding

CITY OF WARROAD

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
4	Severe Winter & Summer Storms	Structure & Infrastructure Projects	Reduce the risk of downed power lines and extended power outages from the impacts of heavy snow, ice, or high wind events.	Existing High 2025-2030	Public Works – Utilities Dept.	The city's Utility Department annually manages and mitigates vegetation near power lines and other vital infrastructure assets. We have our own municipal utility that is responsible for mitigating against power outages. We continue to work towards replacing overhead power lines with underground lines as the city's budget can afford. This may be something that the city would seek to apply for FEMA grant funding for in the future.	City Funding, Possible FEMA BRIC grant funding
5	Severe Summer Storms	Structure & Infrastructure Projects	Upgrade the city's waring siren and add additional sirens in areas not currently reached by the current siren.	New High 2025-2030	City Admin / City EM	We have also sought funding for tornado/severe weather sirens in the past with no success. The city would need significant funding to upgrade and improve the coverage area of the severe weather warning siren. We will look to Roseau County Emergency Management for assistance in trying to find outside grant funding.	City Funding, Other grants (TBD)
6	Flooding	Structure & Infrastructure Projects	Work to install a flood gate under the Taylor Road bridge to help hold back high water from Lake of the Woods and protect city infrastructure.	New High 2025-2030	Public Works – Utilities Dept.	The city would need significant funding to be able to install the flood gate under the Taylor Road Bridge to prevent infrastructure damage. This would allow us to close or "plug" that in high water years much easier and much less costly. We have sought grant funding but not been successful with that. This may be something that the city would seek to apply for FEMA grant funding for in the future.	City Funding, Possible FEMA BRIC grant funding

CITY OF WARROAD

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
7	Extreme Cold	Local Planning & Regulations	Help direct low-income residents to area resources that provide financial heating assistance.	Existing Moderate 2025-20230	City Admin	The city will help to direct residents who need financial heating assistance to local resources such as the Roseau Electric Cooperative's Energy Assistance Program and the Northwest Community Action Energy Assistance Program.	Roseau Electric Coop and Northwest Community Action Inc.
8	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will establish watering restrictions as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage.	City
9	Wildfire	Education & Awareness Programs	Promote public awareness of the risk of wildfire, especially during periods of drought.	Existing Moderate 2025-2030	City EM	The city continues to work with the MN DNR and Roseau County Emergency Management to stay aware of wildfire conditions in our area and to share information with the public if the risk of wildfire is high. If there is a burn ban in place we will actively let residents know.	City Funding