

Mille Lacs County 2024 Hazard Mitigation Plan



Mille Lacs County Minnesota

2024 Hazard Mitigation Plan

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Contents

Section 1 – Introduction.....	1
1.1 Hazard Mitigation Planning in Minnesota.....	1
1.1.1 Scope.....	2
1.1.2 Hazard Mitigation Definition.....	2
1.2 State Administration of Mitigation Grants.....	3
Section 2 – Public Planning Process.....	4
2.1 Planning Team Information.....	4
2.2 Review of Existing Plans, Capabilities & Vulnerabilities.....	5
2.3 Planning Process Timeline and Steps.....	6
2.3.1 Mille Lacs County Stakeholder Coordination	6
2.3.2 Overview of Jurisdictional Participation.....	7
Section 3 – Risk Assessment and Vulnerability Analysis.....	9
3.1 Natural Hazard Identification.....	9
3.1.1 Hazard Prioritization	9
3.1.2 FEMA- and Minnesota-Declared Disasters and Assistance	10
3.2 Community Vulnerability	11
3.3 Climate Change	11
3.3.1 Climate Change Impacts and Resilience Planning.....	13
3.3.2 Health Impacts of Climate Change in Minnesota	14
3.3.3 Climate Change Adaptation.....	18
3.3.4 Climate Change Data and Tools in Minnesota.....	18
3.4 Jurisdictional Change in Risk or Vulnerability Assessment.....	18
3.4.1 Jurisdictional Responses.....	18
3.4.2 Future Development.....	22
Section 4 – Hazards.....	25
4.1 Flooding.....	25
4.1.1 Probability of Occurrence	25
4.1.2 Vulnerability.....	25
4.1.3 Flooding and Climate Change	27
4.1.4 Program Gaps and Deficiencies.....	28
4.2 Wildfire	29
4.2.1 Probability of Occurrence	29
4.2.2 Vulnerability.....	30
4.2.3 Wildfire and Climate Change.....	30
4.2.4 Program Gaps and Deficiencies.....	31
4.3 Windstorms.....	32
4.3.1 Probability of Occurrence	32

4.3.2	Vulnerability.....	33
4.3.3	Windstorms and Climate Change	33
4.3.4	Program Gaps and Deficiencies.....	33
4.4	Tornadoes	34
4.4.1	Probability of Occurrence	34
4.4.2	Vulnerability.....	35
4.4.3	Tornadoes and Climate Change.....	35
4.4.4	Program Gaps and Deficiencies.....	36
4.5	Winter Storms	37
4.5.1	Probability of Occurrence	38
4.5.2	Vulnerability.....	38
4.5.3	Winter Storms and Climate Change	38
4.5.4	Program Gaps and Deficiencies.....	38
4.6	Extreme Cold.....	39
4.6.1	Probability of Occurrence	39
4.6.2	Vulnerability.....	39
4.6.3	Extreme Cold and Climate Change	40
4.6.4	Program Gaps and Deficiencies.....	40
4.7	Extreme Heat.....	41
4.7.1	Probability of Occurrence	42
4.7.2	Vulnerability.....	42
4.7.3	Extreme Heat and Climate Change.....	43
4.7.4	Program Gaps and Deficiencies.....	43
4.8	Drought.....	43
4.8.1	Probability of Occurrence	44
4.8.2	Vulnerability.....	44
4.8.3	Drought and Climate Change	45
4.8.4	Program Gaps and Deficiencies.....	45
4.9	Landslides.....	46
4.9.1	Probability of Occurrence	47
4.9.2	Vulnerability.....	47
4.9.3	Landslides and Climate Change	48
4.9.4	Program Gaps and Deficiencies.....	48
4.10	Dam Failure.....	48
4.10.1	Probability of Occurrence	49
4.10.2	Vulnerability.....	49
4.10.3	Dam Failure and Climate Change.....	49
4.10.4	Program Gaps and Deficiencies.....	50
Section 5 – Mitigation Strategy.....		51

5.1	Community Capability Assessments	51
5.1.1	National Flood Insurance Program (NFIP).....	51
5.1.2	Plans and Ordinances.....	57
5.1.3	Plans and Programs in Place to Address Natural Hazards	58
5.2	Mitigation Goals.....	63
5.3	Mitigation Action and Project Strategies.....	64
5.3.1	Mille Lacs County Mitigation Action Chart.....	68
Section 6 – Plan Maintenance.....		76
6.1	Monitoring, Evaluation, and Updating the Plan	76
6.2	Implementation.....	77
6.3	Continued Public Involvement	78
Appendices.....		79
Appendix A – References		
Appendix B – Adopting Resolutions		
Appendix C – Local Mitigation Survey Report		
Appendix D – Plans & Programs in Place		
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		

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).

Mille Lacs 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

[*Mille Lacs 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 Mille Lacs County Emergency Management to facilitate an update to the 2017 Mille Lacs 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 Mille Lacs 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 Mille Lacs County, including the cities of Bock, Isle, Milaca, Onamia, Pease, Princeton, and Wahkon. The city of Foreston (population 556) was included in the planning process, but ultimately did not contribute as a plan participant and is not seeking to adopt the plan. The Mille Lacs County mitigation activities identified in this plan also incorporate the concerns and needs of townships, school districts, and other participating entities.

The Mille Lacs Band of Ojibwe Reservation has tribal lands that are partially located within Mille Lacs County. The Mille Lacs Band develops its own tribal hazard mitigation plan and is not included as a participating jurisdiction in the county plan.

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 Mille Lacs County after final approval by FEMA (see Appendix B).

Mille Lacs County has specified the following goals for this plan update:

- Include more recent data documenting the critical infrastructure and hazards Mille Lacs County faces.
- 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 Mille Lacs 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 Mille Lacs County HMP planning team is headed by the Mille Lacs 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 Mille Lacs County HMP website](#)

Table 1. Hazard Mitigation Planning (HMP) Team

Name	Agency/Organization	Participant Title
Andy Beckstrom	Mille Lacs County Sheriff's Office	Emergency Management Director
John Henderson	Mille Lacs County Sheriff's Office	Deputy Emergency Manager
Beth Crook	Mille Lacs County Community and Veterans Services	Director
Brenda Eklund	Mille Lacs County	Auditor-Treasurer
Kristine Klopp	Mille Lacs County	Community Health Services Administrator
Heidi Culbertson	Mille Lacs County Public Health	PHEP/CRI Coordinator
Dillon Hayes	Mille Lacs County	County Administrator
Dan Whitcomb	Mille Lacs County	County Commissioner
Noelan Lange	Mille Lacs County	Facility & Fleet Operations Manager
Gina Becker	Mille Lacs Health System	Ambulance Manager & Disaster Chair
Doug Hansen	Mille Lacs County Land Services Dept.	Land Services Director
Lainy Hoskins	Mille Lacs County	Community & Organizational Development Manager
Susan Shaw	Mille Lacs Soil & Water Conservation District	District Administrator
Jamie Hubbell	City of Isle	Clerk/Treasurer
Tammy Pfaff	City of Milaca	City Manager
Michelle Peterson	City of Onamia	City Clerk/Treasurer
Michele McPherson	City of Princeton	City Administrator
Ron Lawrence	City of Princeton	Emergency Manager
Karrie Roeschlein	City of Wahkon	City Clerk/Treasurer
Ronda Bjornson	City of Wahkon	Mayor
Ben Barton	Princeton Schools	Superintendent
David Wedin	Milaca Public Schools	Superintendent
Dean Kapsner	Isle School District	Superintendent
Chris Carlson	Borgholm Township	Supervisor
Jesse Daniel Hadrava	Borgholm Township	Supervisor
Al Anderson	Bogus Brook Township	Supervisor

Name	Agency/Organization	Participant Title
Kurt Beckstrom	Borgholm Township	Board Chair
Richard Bronson	Greenbush Township	Town Board
Ben Mueller	Milo Township	Supervisor
Fred Miller	Fairview Health Services	Manager, Security and Emergency Management
Gina Becker	Mille Lacs Health System Ambulance	Ambulance Manager
Michele Heaver	The Salvation Army	Emergency Disaster Services Director
Jason Kern	MN DNR Forestry	Resource Protection Program Forester
Kayla Hagfors	East Central Energy	Finance & Assets Manager
Chad Meyer	Isanti County Sheriff's Office	Captain/Emergency Manager
Victoria MacKissock	Morrison County	Emergency Management Director

2.2 Review of Existing Plans, Capabilities & Vulnerabilities

Mille Lacs 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 Mille Lacs 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 Mille Lacs 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 Mille Lacs 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 Mille Lacs County to support mitigation.

Local Mitigation Surveys: As part of Mille Lacs 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 Mille Lacs County LMS report, see Appendix C).

2.3 Planning Process Timeline and Steps

In order to update the 2017 Mille Lacs County HMP, U-Spatial consultants worked in coordination with Mille Lacs County Emergency Management and members of the planning team. The updated plan includes new data documenting the types of hazards faced by Mille Lacs County residents and emergency planning officials as well as new thinking on how to address these hazards.

2.3.1 Mille Lacs County Stakeholder Coordination

Two planning team meetings took place via Zoom video conference hosted by U-Spatial. Meeting participants included representatives from Mille Lacs 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, Mille Lacs 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 12/2/24/24 to 12/16/24, for a period of 15 days. Appendix G provides documentation of the public outreach for feedback on the draft plan by Mille Lacs County and jurisdictions.

Table 2. Mille Lacs County hazard mitigation update meetings and public outreach

Event	Date	Appendix
Kickoff Webinar	4/28/23	Appendix F, Planning Team Meetings
News Release #1	6/8/23	Appendix G, Public Outreach & Engagement Documentation
Planning Team Meeting #1	11/20/23	Appendix F, Planning Team Meetings
Planning Team Meeting #2	11/7/24	Appendix F, Planning Team Meetings
News Release #2	12/2/24	Appendix G, Public Outreach & Engagement Documentation

At the close of the public outreach period, the U-Spatial consultants worked with the Mille Lacs County Emergency Manager and planning team to incorporate public feedback 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, Mille Lacs 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 Mille Lacs 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 Mille Lacs 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 Mille Lacs 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 Mille Lacs 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. Mille Lacs 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 Mille Lacs County HMP update planning process and a reference to supporting documentation.

Table 3. Jurisdictional participation in 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
Mille Lacs County (26,482)	X	X	X	X	X	X
City of Bock (77)	X		X	X		X
City of Foreston (556)*	X			X		X
City of Isle (809)	X	X	X	X	X	X
City of Milaca (2,805)	X		X	X	X	X
City of Onamia (777)	X	X	X	X	X	X
City of Pease (187)	X		X	X		X
City of Princeton (4,719)	X		X	X	X	X
City of Wahkon (256)	X	X	X	X	X	X
Neighboring Jurisdictions:						
Crow Wing County						
Aitkin County						
Kanabec County						
Isanti County		X			X	
Sherburne County					X	
Benton County						
Morrison County		X				
Mille Lacs Reservation						

*The City of Foreston is not included in this plan as a participating jurisdiction.

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 as well as consultation with hazard mitigation planning expertise at FEMA and HSEM as well as 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 the 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 Mille Lacs County, updated the existing mitigation actions published in the 2017 HMP, and proposed new mitigation actions.

The team examined the hazards identified in the 2017 HMP and adjusted them to reflect the definitions of natural hazards used in the 2024 Minnesota State Hazard Mitigation Plan.

While this HMP focuses on natural hazards, planning took place with the understanding that many non-natural hazards could occur due to 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 Mille Lacs County HMP Update (Table 4) was based upon 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 Mille Lacs County HMP Update

Natural Hazards	Current Priority
Winter Storms	High
Windstorms	High
Wildfire	High
Tornadoes	Moderate
Flooding	Moderate
Landslides	Moderate
Extreme Cold	Moderate
Extreme Heat	Moderate
Drought	Moderate
Dam Failure	Low
Lightning	Low
Hailstorms	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, seven federal disasters and three federal emergencies were declared in Mille Lacs County; see details on the [Mille Lacs 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). Mille Lacs County has been included in two State Disaster Declarations.

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 Mille Lacs County

Project Identifier	Sub-Grantee	Project Type	Project Total	Federal Share
DR-1419-0011-P	East Central Regional Development Commission	91.1: Local Multihazard Mitigation Plan	\$91,225	\$68,419
DR-1419-0006-P	Mille Lacs Band of Ojibwe	93.1: Tribal (Local) Multihazard Mitigation Plan	\$27,935	\$20,951
DR-4069-0019-F	Mille Lacs Indian Reservation	601.1: Generators	\$390,236	\$292,677
DR-4131-0010-P	East Central Regional Development Commission	91.1: Local Multihazard Mitigation Plan	\$32,656	\$20,025

SOURCE: (FEMA, 2024)

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 Mille Lacs 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 and 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 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 Mille Lacs County website

3.4 Jurisdictional Change in Risk or Vulnerability Assessment

Jurisdictions in Mille Lacs 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, Mille Lacs 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. 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.

The following is a compilation of common responses taken directly from jurisdictional representatives as preserved in Appendix C: Part A. Responses here are edited only for clarity.

Mille Lacs County

Windstorms, Tornadoes: Quanex is a woodworking supply business in Foreston with a large staff who work in a stick-built building. The business owners have expressed concern over safety for them and community members if there were to be extreme weather events. They have interest in possibility applying for a future FEMA grant to construct a tornado safe room.

Flooding, Landslides: The Mille Lacs SWCD has identified 2 homes along the Rum River that could be potential for purchase by the county due to flood and landslide concerns. These homes are on the outside bends of the Rum River which are highly vulnerable to failure of the bank. There is also a home just south of the Milaca city limits that experiences frequent flooding. Significant outside grant funding would be necessary for Mille Lacs County to work with these homeowners to conduct property buyouts.

City of Bock

All Hazards: The building where we store our city supplies and information are vulnerable to all the hazards.

City of Foreston

Windstorms, Tornadoes: Quanex is a woodworking supply business in Foreston with a large staff who work in a stick-built building. The business owners have expressed concern over safety for them and community members if there were to be extreme weather events. They have interest in possibility applying for a future FEMA grant to construct a tornado safe room.

City of Isle

All Hazards: We need to inform people that the school, IREC, Fire Hall and City Center are their locations for storm/emergency protections. We need a system to designate who would need assistance getting to these locations (shut ins, assisted living, & non-driving). We also have a large population of senior citizens that do not use cell phones or computers to receive emergency notifications.

Flooding: We have had incidents of sewer backflow to homes and have had insurance claims to help mitigate and prevent damages to private property. Our Isle St. drainage flows directly to the school practice field, which it is supposed to, but with severe rain, the flooding creates damages and concerns for all properties along that storm drainage route.

Lightning: From a city standpoint, we have addressed the issues of grounding rods and service breakers, but it is hard to prepare for lightning. Our City Hall needs to be updated with the

surge protection in the building for the main server and the Public Works building which operates the Warning Siren bank and all of the control boards.

Wildfire: With an increase in wetter winters, vegetation is getting more dense in the surrounding city areas. Our public works department has created a more aggressive approach to keeping ditches, alleys and ROWs cleared and mowed, but with the surrounding parks and natural areas, it is increasing the chances of more uncontrollable fires. There are more outlying areas that the fire dept have been called to assist when a controlled burn becomes uncontrolled either by wind or by lack of numbers of people on hand.

City of Milaca

All Hazards: We need to obtain a portable generator for our City Hall and Community Center. Those buildings serve as our local shelter if people are displaced from a severe storm event or extended power outage.

Flooding: We have a city lift station near the Rum River that is prone to flooding during high rain events, it has been sandbagged during these times. The city's biggest park is vulnerable to flooding and park equipment has been damaged in the past. We needed to upsize several culverts to better handle high rain events. We have two homes along the river that have experienced repetitive flooding. The city would like to work with the property owners to buy out these homes.

Ice Storms, Blizzards: Much of the city's municipal electrical service consists of overhead power lines and electrical poles. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches.

Windstorms, Tornadoes: We have 1 mobile home park within the city that does not have a storm shelter and residents are vulnerable to high wind and tornado events. Our municipal campground is active during summer and fall months with RVs and campers and does not have a storm shelter. We also have a new development in the west end of the city that should have an outdoor warning siren installed. We have experienced power outages from strong wind events that brought down power lines.

Extreme Cold: We have a high population of senior citizens and low-income residents who are more vulnerable during periods of extreme cold with power outages. In the past we have experienced frozen water services and some residential homes experienced burst pipes from extended extreme cold. The city has experienced damage to roads from spring frost heaves and frozen culverts that cause localized flooding. We also average about 6 watermain breaks per winter due to frost being pushed down into the ground, our soils are clay and rock, this results in rocks being pushed into the watermain breaking them.

Lightning: We have 7 sanitary lift stations that are prone to power outage during lightning events. One of the lift stations has a built-in generator, the other 6 we use a portable trailer

generator to power during outages. If a lift station remains without power for over 24 hours it would result in homes being flooded with sewage.

City of Onamia

Severe Winter/Summer Storms: In the event of long-term power outages, the city would benefit from having permanent generators installed at both the Fire Hall and City Hall to insure proper response to emergency situations.

Extreme Heat, Drought: Extreme heat has caused less rainfall in our area. Severe droughts have an impact on our water system.

City of Pease

Ice, Wind, Lightning Storms: Much of the city's municipal electrical service consists of overhead power lines and electrical poles. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches.

City of Princeton

All Hazards: We need to improve and expand the siren network and emergency warning information system to ensure all essential businesses are receiving important information. We need to obtain funding to plan and prepare for disasters. We also have several buildings inside the city that do not have the ability to transmit radio transmissions from inside the building. The city of Princeton and Mille Lacs County need to obtain funding for a simulcast system to help with radio coverage. This is important to all public safety entities and first responders.

Drought, Wildfire: The city has the potential to have a disaster from wildfire. With the lack of snow this year, we also have a potential for a drought thus increasing the potential for a wildfire.

Windstorms, Tornadoes: We have mobile home parks within the city that do not have a storm shelter and residents are vulnerable to high wind and tornado events. Our municipal campground is active during summer and fall months with RVs and campers that needs improvement to hear the emergency warning system. We also need to install another warning siren to help cover all parts of the city and expand the siren network.

Severe Weather: The city continues to mirror the Federal Response Plan for severe weather. We need to ensure that we have resources available for mitigating a disaster. We need to obtain funding for preparing and planning for disasters.

City of Wahkon

High Rainfall: The city's sanitary sewer system is susceptible to infiltration and inflow noted during high rainfall events. As these events seem to be increasing the potential for a backup impacting residential and commercial property increases.

Windstorms, Tornadoes: The city has a large seasonal campground just outside of its city limits. This facility is served by the city's municipal wastewater system, but is not located within the city itself. A large-scale wind or tornadic storm would certainly impact the city by proximity alone.

3.4.2 Future Development

Because Mille Lacs 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. Mille Lacs 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 Mille Lacs 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. The following is a compilation of common responses taken directly from jurisdictional representatives as preserved in Appendix C: Part A. Responses here are edited only for clarity.

Mille Lacs County

New construction in the county has added additional residents and property that would potentially be damaged due to severe weather. Some community members may have access to cell phone notification methods in the event of a disaster and/or a primary dwelling with sufficient protection against inclement weather.

City of Bock

A new twin home was built in the city.

City of Foreston

Nothing to report.

City of Isle

Short-term rental properties within the city bring in many people who do not know the city or any of the emergency locations in town. This creates a flow of uninformed visitors that will most likely need more assistance than regular residents in the event of an emergency.

City of Milaca

Between 2019 and 2021 we had a development project where 60 new homes were constructed in the city, which has increased our population and potential for damage to new structures. Many homes have been built slab-on-grade, so residents do not have a basement for safety during high wind or tornado events. With an increase in population and construction of more homes and commercial properties, we have also witnessed more storm water discharging to our stormwater system. We feel this is due to more impermeable surface which has increased stormwater runoff, and the amount of precipitation seems to have increased per rain event. With the construction of a new assisted living facility, there is also a large concentration of senior residents in one location that will need assistance during a disaster event.

City of Onamia

A recent town home project added 30 residents to our area. These residents do not have access to any storm shelter of any sort. These homes do have crawl spaces, but they are not sufficient as sheltering locations.

City of Pease

Between 2022 and 2023 4 sets of twin homes were built, slab-on-grade. In 2006 there were 5 townhomes built slab-on-grade. These homes consist of mostly senior residents and have no basements to take shelter in during extreme wind and tornado events.

City of Princeton

The city has new apartments and businesses built inside the city limits. With the redesign of the highway in Elk River and Zimmerman, additional growth in Princeton is expected. This is going to require more growth in the sewer and water systems.

City of Wahkon

Nothing to report.

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 Mille Lacs 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 Mille Lacs 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](#)

The following hazard profiles address hazards that the Mille Lacs County Planning Team deemed moderate to high risk. Hazards that were determined to be low risk or without substantive mitigation actions are not required to be included.

4.1 Flooding

Flooding is the most significant and costly natural hazard in Minnesota. Flooding was the primary hazard in six of the 12 federal disaster declarations in Mille Lacs County.

4.1.1 Probability of Occurrence

From 1997 through February 2024, the NCEI Storm Events Database has recorded 13 flood and flash flood events. Mille Lacs County has experienced one flash flood event every 2.3 years and one riverine flood event every 5.2 years on average during this period.

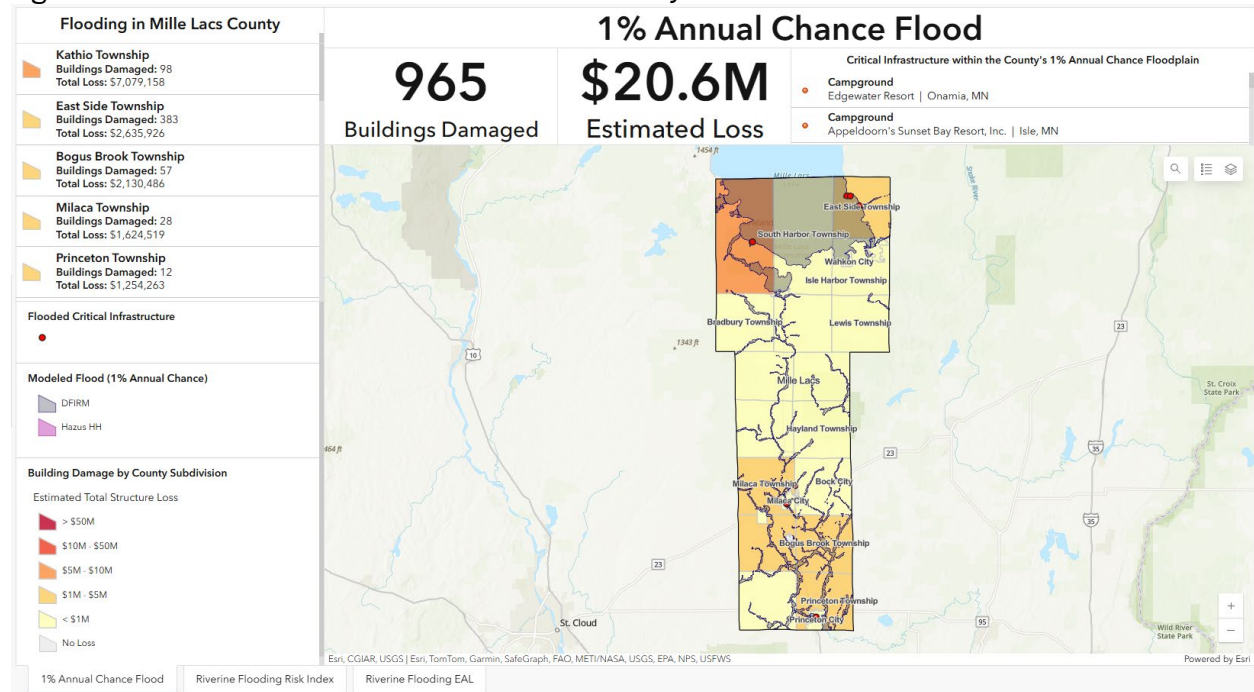
[View interactive maps and see information about flooding history, risk, and vulnerability](#)

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 Mille Lacs HMP website (Figure 1), where it is available in an interactive form.

4.1.2 Vulnerability

Potential economic loss estimates were based on county-specific building data. Mille Lacs 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.

Figure 1. 1% Annual chance flood in Mille Lacs 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, 26,330 points were input to Hazus to represent buildings with a total estimated building plus contents value of \$4.7 billion. Approximately 75% of the buildings (and 73% of the building value) are associated with residential housing.

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

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	19,702	\$3,398,208,686	852	\$286,392,150	798	\$18,989,722
Commercial	1,379	\$214,674,850	138	\$12,213,600	131	\$163,852
Other	5,249	\$1,081,286,734	44	\$43,034,400	36	\$1,485,484
Totals	26,330	\$4,694,170,270	1034	\$341,640,150	965	\$20,639,058

SOURCE: (FEMA, 2023A)

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.

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

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 Mille Lacs 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. Milaca Elementary School (also a shelter), Rum River North South School, and Wyanett Evangelical Church (shelter) are shown to fall within the 1% annual chance floodplain. The local sites should be reviewed to determine actual vulnerability.

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. One electric substation just north of Milaca was found to be at risk in the 1% annual chance flood. This substation is mapped in the [Mille Lacs County HMP website](#). No other information is available.

Other vulnerable locations, including four campgrounds and one manufactured home park (Edgewater Resort in Onamia) were determined to be in the 1% chance flood boundary using the available facility data.

Community Vulnerability

The highest potential economic losses were estimated by Census Minor Civil Division. Kathio, East Side, and Bogus Brook Townships would suffer significant estimated losses in the 1% annual chance flood. Milaca and Wahkon Cities are the incorporated cities with significant potential estimated losses. All jurisdictions with buildings identified in the 1% annual chance flood zone can also be viewed on the Mille Lacs County HMP website.

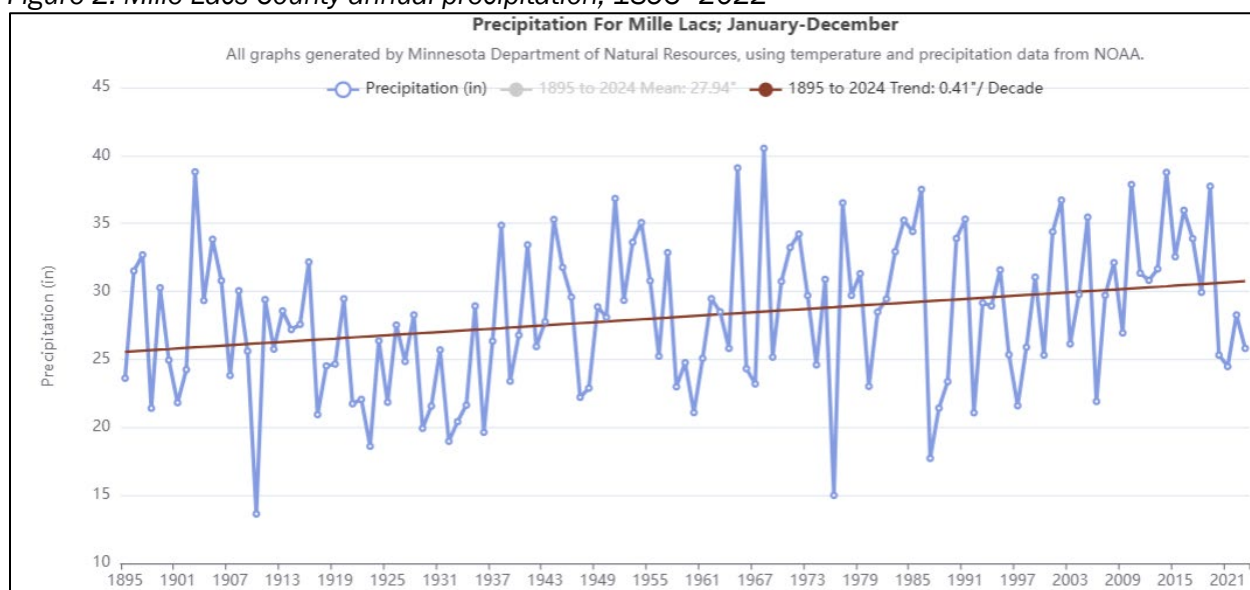
The status of jurisdictional participation in the National Flood Insurance Program and any repetitive loss properties are detailed in Section 5.1.1. National Flood Insurance Program (NFIP).

Section 3.4 provides jurisdictional responses to 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 Mille Lacs County, the result has been increased precipitation, with annual totals increasing at an average rate of just under a half inch per decade since 1895 (see Figure 2).

Figure 2. Mille Lacs 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

4.1.4 Program Gaps and Deficiencies

Mille Lacs County Emergency Management identified existing program gaps and deficiencies that make its residents more vulnerable to flooding. The following gaps and deficiencies should be addressed with new mitigation efforts to reduce that vulnerability:

Road Infrastructure: Flood mitigation for county and township roads (i.e., culvert replacements, road repair) is an ongoing need. The county and many of our townships have limited funding for road

infrastructure. Mille Lacs County continues to provide assistance on road infrastructure mitigation projects to reduce the impacts of localized flooding.

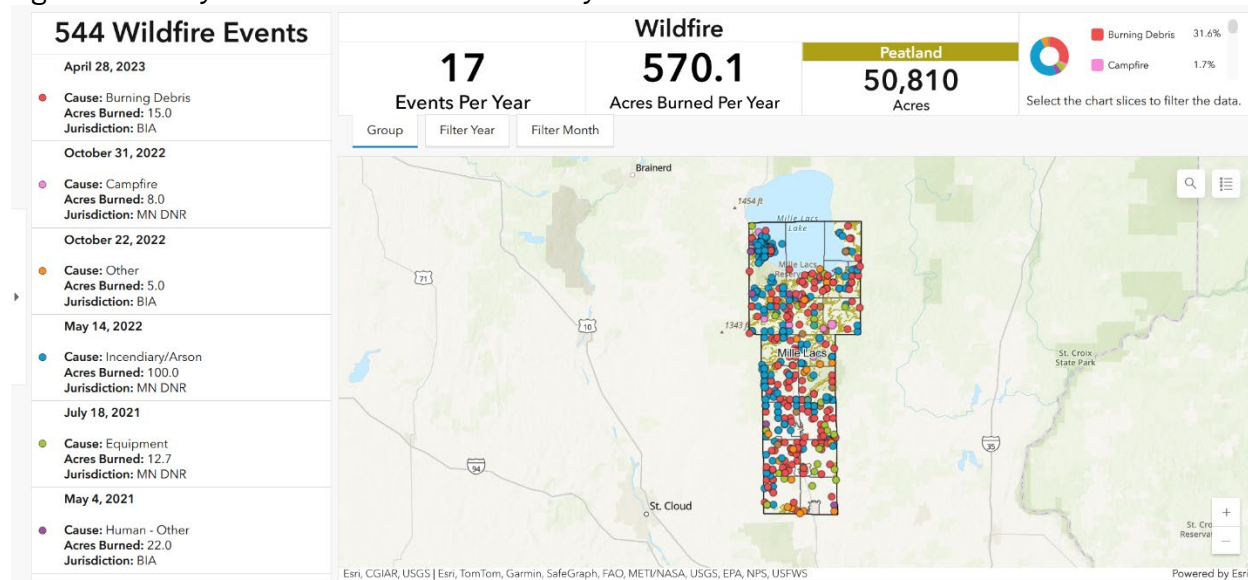
Funding: The county needs funding assistance to improve roads and culverts that experience repetitive flooding. Significant State and Federal funding is needed to construct infrastructure projects to prevent, reduce, and mitigate the impacts of high rain events and flooding.

4.2 Wildfire

Wildfire is an uncontrolled fire spreading through vegetative fuels, posing danger and destruction to property. Minnesota experienced an average of 1,400 wildfires each year between 1985 and June 2021 (MN DNR, 2021b). Wildfires occur throughout the spring, summer and fall; however, most wildfires in Minnesota take place in March, April and May. The history of wildfire in Mille Lacs County is shown in Figure 2; an interactive map is available on the Mille Lacs County HMP website.

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

Figure 3. History of wildfire in Mille Lacs County



4.2.1 Probability of Occurrence

To determine the probability of future wildfires, records of previous wildfire events in Mille Lacs 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 17 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 percentage of the county’s land, housing, and population in the WUI area.

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

	Total WUI 2000	Total WUI 2010	Total WUI 2020	% Change (2000–2020)
Land Area	5.6%	8.1%	7.8%	+41.2%
Housing	46.4%	46.2%	46.3%	-0.3%

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

Communities with higher proportions of WUI areas are more vulnerable to wildfires. The percentage of WUI within individual jurisdictions in Mille Lacs County is shown in Table 10.

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

Township / City	Percent WUI
Wahkon	70.3
Isle	59.2
Milaca	12.3

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

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

Mille Lacs 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:

Community Wildfire Protection Plan: Mille Lacs County does not have a CWPP in place. Developing a CWPP in coordination with local fire departments and the MN DNR will allow Mille Lacs 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.

Wildland Fuels Mitigation and Water Resources: Wildfire is an increasing concern with continued expansion of the wildland urban interface in the southern portion and human activity in wildlands. Mille Lacs County can seek to work in greater coordination with MN DNR Forestry and local jurisdictions to address wildland fuels mitigation in wildland-urban interface areas within the county. Local fire departments should also assess needs for rural water supplies such as cisterns.

4.3 Windstorms

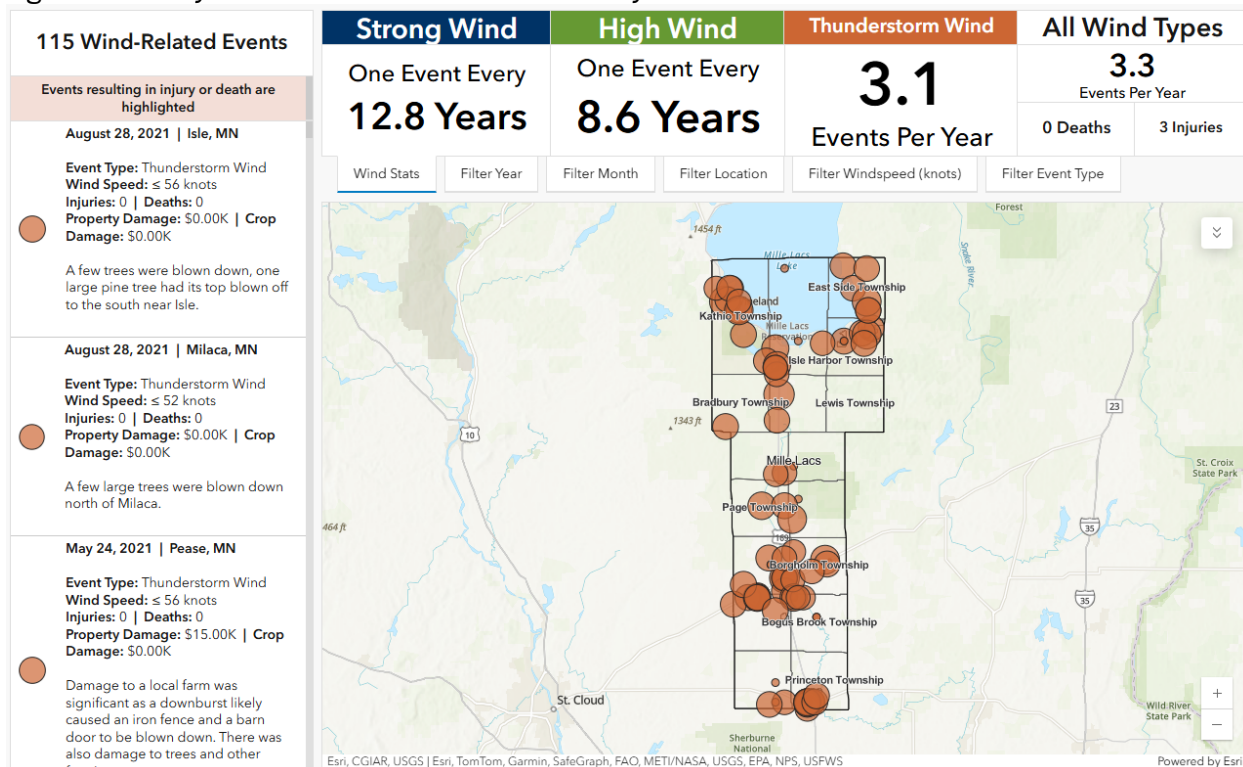
A windstorm is a wind strong enough to cause damage to trees and buildings and typically exceeding 34 mph (Pielke, 2012). Windstorm events encompass a variety of types of damaging wind. The history of windstorms in Mille Lacs County is shown in Figure 4; an interactive version of this map can be found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

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

4.3.1 Probability of Occurrence

To determine the probability of future wind-related events in Mille Lacs County, records of previous wind-related events (strong wind, high wind, and thunderstorm wind) in Mille Lacs 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 3.3 per year. These relative frequencies can be used to infer the probability of these events occurring in the future.

Figure 4. History of windstorms in Mille Lacs County



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

Mille Lacs County Emergency Management identified 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 Mille Lacs 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. Mille Lacs 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 Mille Lacs 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 Mille Lacs County is shown in Figure 5; an interactive version of this map can be found on the Mille Lacs County HMP website.

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

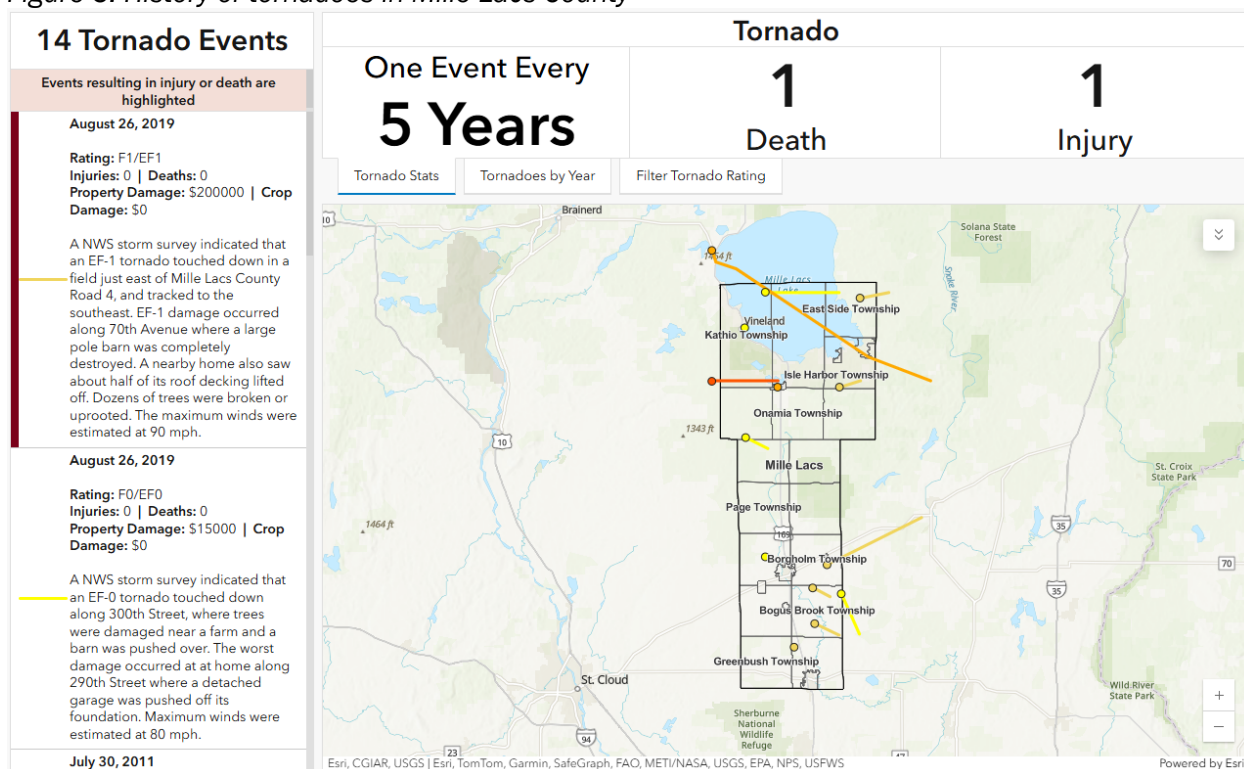
4.4.1 Probability of Occurrence

Estimating the probability of future tornadoes in Mille Lacs 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 5 years in Mille Lacs County. These 14 tornadic events occurred in 12 of the 72 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 Mille Lacs County, there was an annual frequency of 1.0–4.0 tornadoes within a 50-mile radius. The historical frequency was lower in the north than the south within the county. These relative frequencies can be used to infer the probability of these events occurring in the future.

Figure 5. History of tornadoes in Mille Lacs County



4.4.2 Vulnerability

The likelihood of a tornado does not vary significantly across geography within Mille Lacs 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 to localized vulnerabilities to specific hazards.

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

People living in mobile homes are particularly vulnerable to tornadoes because they cannot 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

Mille Lacs County Emergency Management identified 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 Mille Lacs 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. Mille Lacs 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.

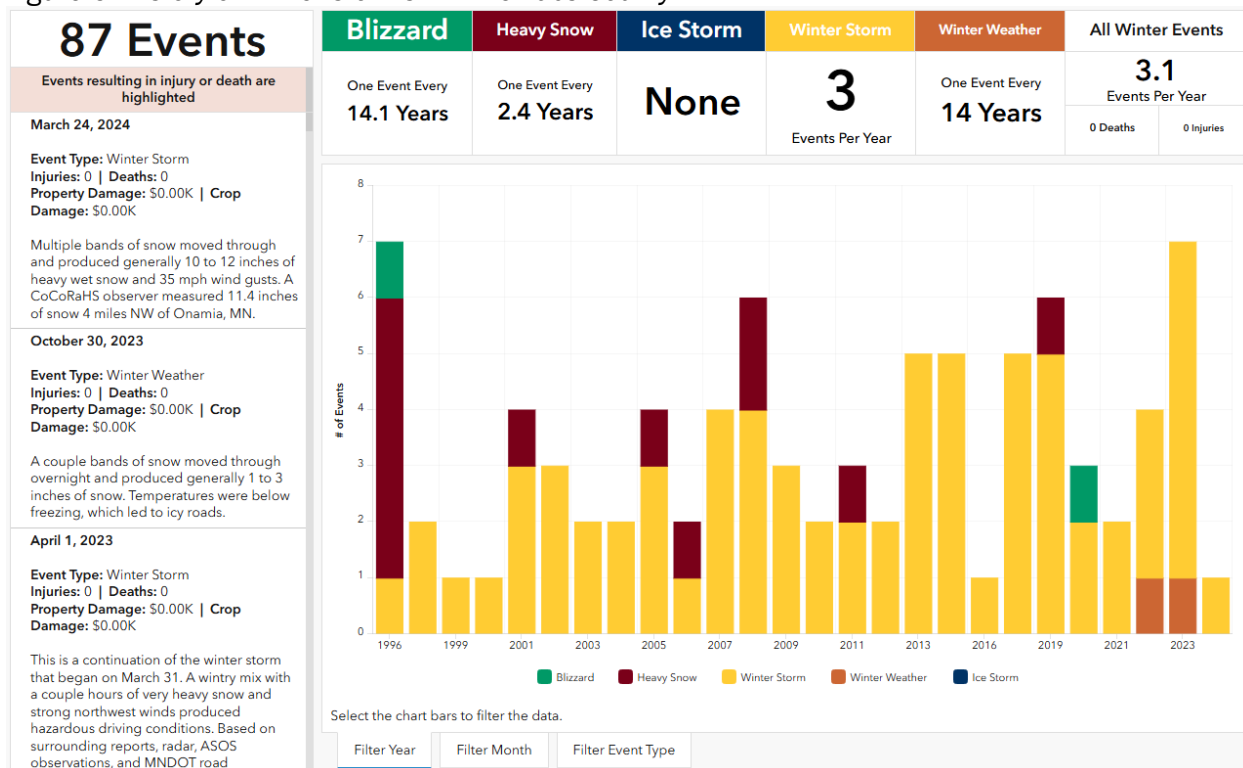
Storm Shelters and Tornado Safe Rooms: There are areas throughout Mille Lacs County without viable storm shelters or tornado safe rooms where there are populations vulnerable to high wind and storm events, such as mobile home parks and campgrounds. A coordinated approach is needed to identify where storm 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 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 Mille Lacs County is shown in Figure 6; an interactive version of this map can be found on the Mille Lacs County HMP website.

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

Figure 6. History of winter storms in Mille Lacs County



4.5.1 Probability of Occurrence

To determine the probability of future winter-related storm events in Mille Lacs 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 Mille Lacs County is 3.1 per year. This relative frequency can infer the probability of these events occurring in the future.

4.5.2 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 to localized vulnerabilities to specific hazards.

4.5.3 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.

4.5.4 Program Gaps and Deficiencies

Mille Lacs 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 Mille Lacs 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.

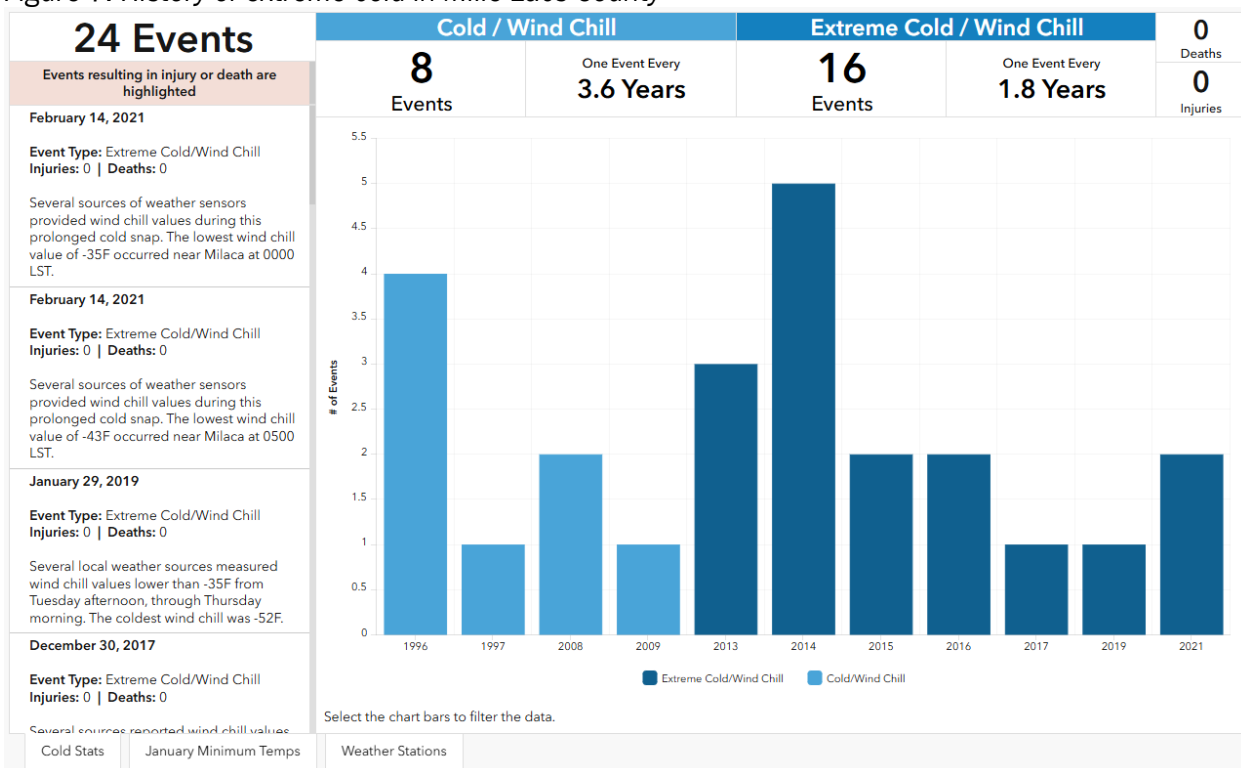
Backup Power: Not all designated shelter facilities have generator back-up power to provide the ability to care for residents if displaced during a severe winter event coupled with an extended power outage.

4.6 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 Mille Lacs County can be especially dangerous when low temperatures and wind create arctic-like wind chills. The history of extreme cold in Mille Lacs County is shown in Figure 7; an interactive version of this dashboard can be found on the Mille Lacs County HMP website.

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

Figure 7. History of extreme cold in Mille Lacs County



4.6.1 Probability of Occurrence

To determine the probability of future cold-related events in Mille Lacs 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 Mille Lacs County is one event every 1.8 years. (NCEI, 2023). This relative frequency can be used to infer the probability of these events occurring in the future.

4.6.2 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 Mille Lacs 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 to localized vulnerabilities to extreme cold.

4.6.3 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.

4.6.4 Program Gaps and Deficiencies

Mille Lacs 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 coupled with a period of extreme cold.

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

4.7 Extreme Heat

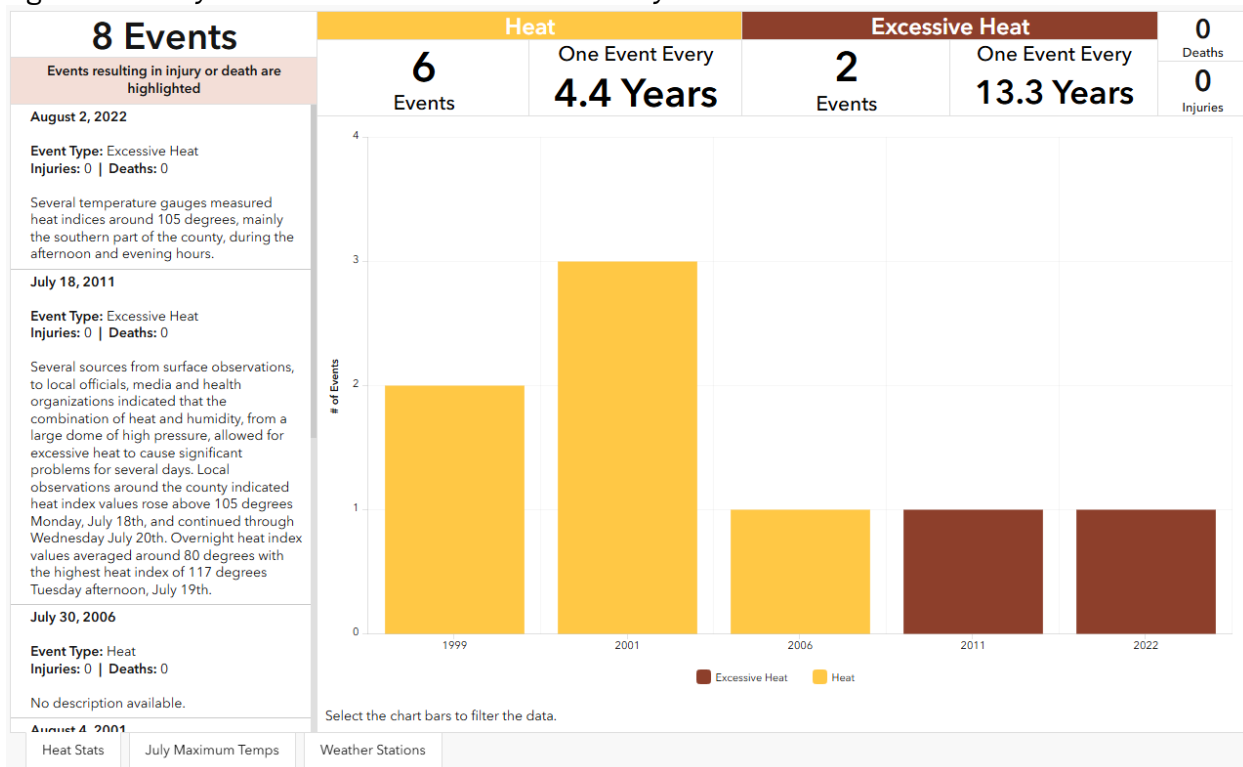
Extreme heat is the combination of very high temperatures and exceptionally humid conditions. Mille Lacs County's agricultural lands and structures are vulnerable to heat damage and its residents to injury, exacerbation of pre-existing chronic conditions, and even death (Moss, 2017). Medical costs related 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. The history of extreme heat in Mille Lacs County is shown in Figure 8; an interactive version of this chart can be found on the Mille Lacs County HMP website.

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 72nd among Minnesota counties in crop indemnity payments, heat-related losses for Mille Lacs County totaled over \$272,685 (2021 ADJ) for the period of record spanning 1989 to 2022 (CEMHS, 2023).

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

Figure 8. History of extreme heat in Mille Lacs County



4.7.1 Probability of Occurrence

To determine the probability of future heat-related events in Mille Lacs County records of previous heat and excessive heat events were summed and divided by the dataset's period of record, resulting in the annual relative frequency of heat-related events. Based on records in the NCEI Storm Events Database through January 2024, the relative frequency of extreme heat events in the county is one event every 13.3 years. This relative frequency can infer the probability of these events occurring in the future. The Milaca Weather Station in Mille Lacs County has reported daily maximum temperatures above 90 °F a total of 168 times, an average of five days per year.

4.7.2 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 Mille Lacs County](#)

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

4.7.3 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).

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).

On average, by mid-century (2040–2059), under a high emissions (SSP 585) scenario, Mille Lacs County may reach 8.71 days/year of temperature greater than 95 °F, an increase in 5.65 more days to the historical (1995–2014) simulations average of 3.06 days/year (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).

4.7.4 Program Gaps and Deficiencies

Mille Lacs 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 heating systems in the event of a power outage coupled with a period of extreme cold.

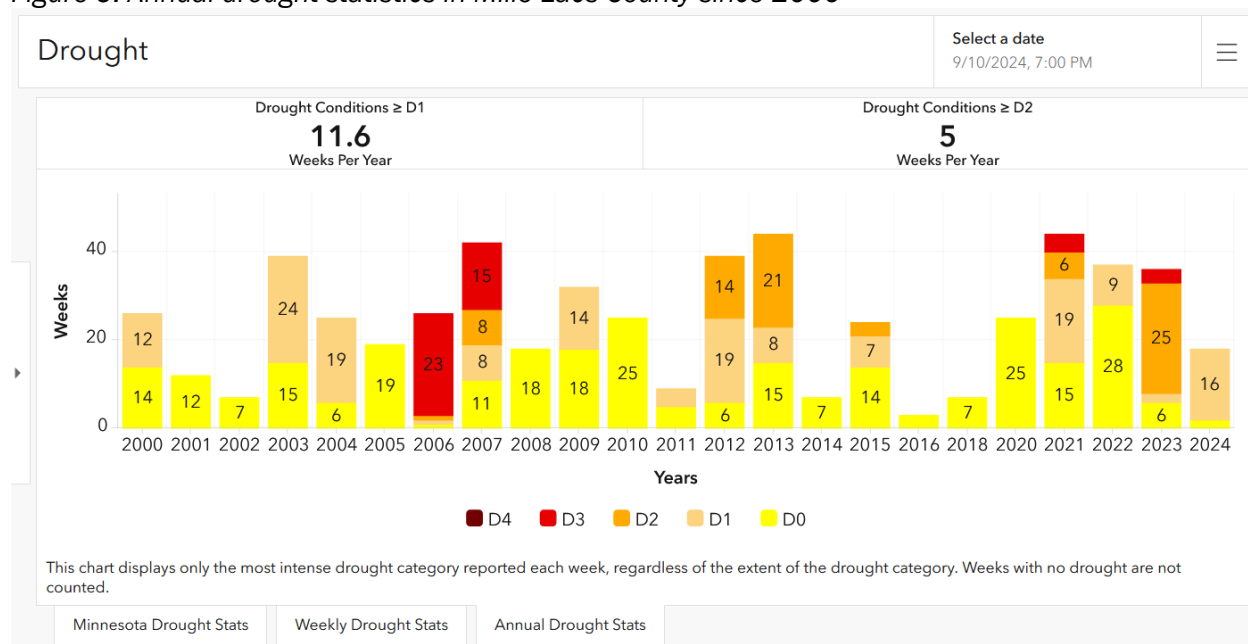
Public Education: Ongoing public education is needed to encourage residents to be prepared for extreme weather, including power outages during periods of extreme cold. Mille Lacs County Emergency Management continues to do public education through the local schools, senior and health care centers, and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

4.8 Drought

There are numerous approaches to assessing drought conditions. The current gold standard for accurate drought conditions in the United States is the United States Drought Monitor (USDM). Annual drought statistics since 2000 can be seen in Figure 9; an interactive version of this dashboard can be found on the Mille Lacs County HMP website.

[See interactive information about drought, including history and the USDM Dashboard, on the Mille Lacs County HMP website](#)

Figure 9. Annual drought statistics in Mille Lacs County since 2000



4.8.1 Probability of Occurrence

To determine the probability of future droughts in Mille Lacs County, records of previous droughts were summed and divided by the dataset's period of record, resulting in the annual relative frequency of droughts. The USDM database was examined from January 2000–September 10, 2024 for any occurrence of drought $\geq$ D1 in Mille Lacs County, regardless of the duration of the drought. According to the weekly reported data, the relative frequency of the county experiencing drought conditions $\geq$ D1 is 11.6 weeks per year, and the relative frequency of drought conditions $\geq$ D2 is 5 weeks per year (NDMC, 2024b). The relative frequency of past droughts can be used to infer the probability of similar droughts occurring in the future.

4.8.2 Vulnerability

One way to identify county assets vulnerable to drought is by examining the impacts of previous droughts. Overseen by the National Drought Mitigation Center (NDMC), the Drought Impact Reporter (DIR) is a comprehensive database that gathers drought-related reports from a variety of sources and identifies the sector(s) impacted by each drought. The NDMC (NDMC, 2024b) defines a drought impact as “[a]n observable loss or change that occurred at a specific place and time because of drought.” A drought meeting this definition is categorized based on the sector(s) the drought impacts; therefore, a single drought affecting multiple sectors will be counted once for each respective sector it impacted.

DIR records show 12 reported drought incidents in Mille Lacs County between 2000 and 2023, impacting eight sectors with greatest impacts to the following sectors: agriculture; and relief, response & restrictions (NDMC, 2024). Since droughts are regional in nature, jurisdictions within Mille Lacs County do not vary in their vulnerability to drought; however, the impact from droughts are not equal.

Drought conditions may impact soil moisture reserves, groundwater supplies, lake levels, and stream flows. Water-dependent industries that experience the greatest impacts include: agriculture, public

utilities, forestry, and tourism (MN DNR, 2021a). In addition, droughts may negatively affect an individual's health by contributing to poor air quality caused by wildfire smoke and particulate, or a dusty environment. The 2021 drought resulted in elevated fire danger in roughly the northern two-thirds of the state, and record high particulate readings across Minnesota due to the Canadian wildfires (Huttner, 2021). [Populations vulnerable to these conditions](#) include children, older adults, and those with respiratory issues.

According to the DIR, Mille Lacs County's agriculture sector has been impacted by drought more than once, and with 15% of Mille Lacs County's land devoted to cultivated crops, the county's agriculture community is also vulnerable to the economic impact a drought may have on crops. From 1989–2022, Mille Lacs County received \$15,240,096 (2021 ADJ) in crop indemnity payments due to drought, placing it as the 58th-highest-paid county in Minnesota (CEMHS, 2023).

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

4.8.3 Drought and Climate Change

Droughts have been happening throughout Minnesota's history. While the degree at which climate change will impact future droughts is not certain, an increase in efforts and resources are being devoted to project these impacts. In 2023, the NCA5 was completed by the U.S. Global Change Research Program. It provided a comprehensive scientific review of how climate change is impacting the U.S. as well as providing climate change projections.

According to the report, a warming climate is contributing to oscillations between extreme droughts and floods, threatening the agriculture and livestock in the Midwest which produces more than 30% of the world's corn and soybeans (Wilson et al., 2023). Climate change is attributed to an estimated \$31.9 billion (2022 USD adjusted) of US crop indemnity payments over the last 30 years, with the largest portion of payments going to farmers affected by drought (Wilson et al., 2023). In Minnesota, drought alone represents 25% of the total crop indemnity payments made in the state (CEMHS, 2023).

Climate projections indicate an increase in annual precipitation of 0.2%–0.5% in the western Midwest and the increase in cumulative runoff is expected to continue through the midcentury (Wilson et al., 2023).

Key Message #5 in the Midwest Chapter of the NCA5 states that managing extremes is necessary to minimize impacts on water quality and quantity. The extreme variability between wet and dry periods is expected to negatively impact the water quality and quantity of the Mississippi River System and adversely affect dependent ecosystems and commerce (Wilson et al., 2023).

4.8.4 Program Gaps and Deficiencies

Mille Lacs County Emergency Management did not identify any program gaps or deficiencies that make its citizens more vulnerable to drought.

4.9 Landslides

The USGS definition of landslides includes a wide range of ground movement, such as rock falls, deep failure of slopes, and shallow debris flows. Although gravity acting on an over-steepened slope is the primary reason for a landslide, there are other contributing factors. Rivers create steepened slopes with erosion over time, rock and soil slopes are weakened through saturation by snowmelt or heavy rains, and the excess weight from accumulation of rain or snow or from man-made structures can stress weak slopes (DeLong, et al., 2022).

The most common type of landslides in Minnesota are shallow slope failures that occur during heavy rain (DeLong, et al., 2022). Landslides and mudslides often occur together with other major natural disasters, thereby exacerbating relief and reconstruction efforts. Wildfires may remove vegetation from hillsides, significantly increasing runoff and landslide potential. Floods and landslides are closely related, and both involve precipitation, runoff, and ground saturation that may be the result of severe thunderstorms. However, landslides also take place over time and often take place when no natural disaster is evident.

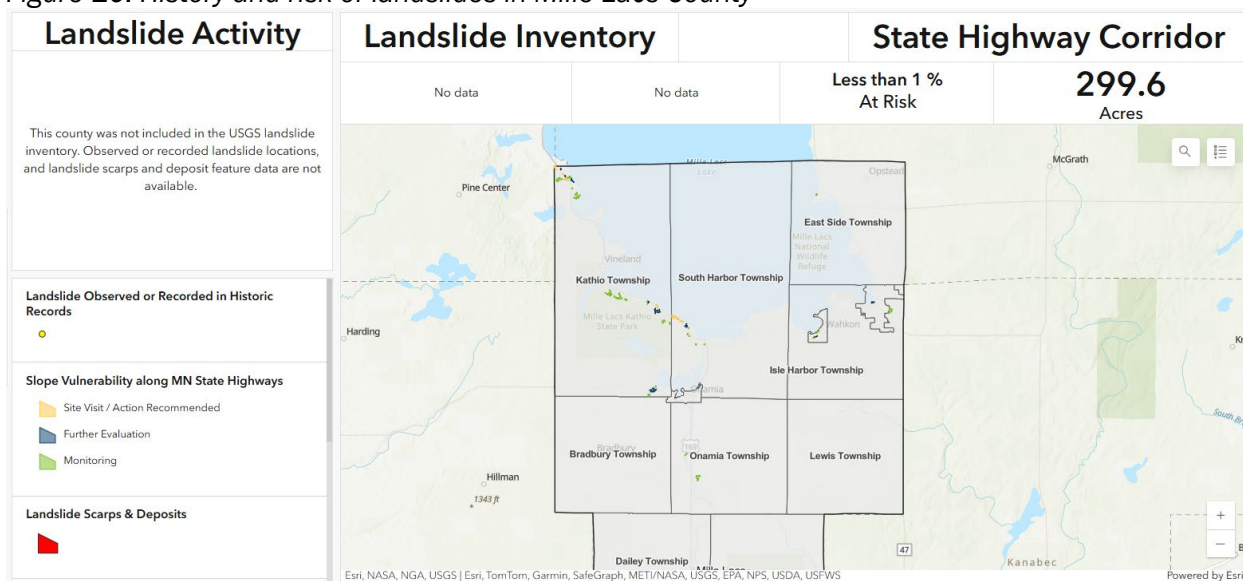
Streambank erosion is a natural process, but acceleration of this natural process leads to land loss, stream channel instability, increased sediment, habitat loss, and other adverse effects. Bank erosion takes place by two processes, channel migration and channel widening. Channel widening can be caused by natural processes of incision and bank erosion or by direct modification of construction activities. The result is more erosion from stream bed and banks, increased sediment deposition, and loss of habitat. Increased flows due to watershed changes, stormwater runoff, reservoir releases, and scour below culverts and bridges can all contribute to channel enlargement and therefore bank erosion (Day, 2013).

Researchers from eight colleges and universities across Minnesota examined the prevalence of landslides across the state and compiled an inventory of geological activity. This historical landslide inventory was published by USGS (DeLong, et al., 2022). Unfortunately, Mille Lacs County was not included in the USGS landslide inventory. Observed or recorded landslide locations, and landslide scarps and deposit feature data are not available.

State highway corridor slope vulnerability in Mille Lacs County is almost all found in the north west part (Figure 10); an interactive version of this map can be found on the Mille Lacs County HMP website.

[See interactive information about landslides, including history, on the Mille Lacs County HMP website](#)

Figure 10. History and risk of landslides in Mille Lacs County



4.9.1 Probability of Occurrence

To determine the frequency of landslides in Mille Lacs County, we require records of previous landslides and the period in which they occurred. Comprehensive data for historical landslide events are not available. Statewide and national maps suggest that landslide risk in Mille Lacs County is relatively low; however, the MN DOT highway study does indicate that there is a risk of slope failure, especially in Kathio and South Harbor Townships.

There is a documented increase in frequency of the heaviest 1% of extreme precipitation events (NOAA Climate Adaptation Partnerships, 2022). These extreme rain events are the most likely to cause landslides. Although the risk to infrastructure and property in Mille Lacs County is low, landslides remain a concern to Mille Lacs County Emergency Management.

4.9.2 Vulnerability

The Minnesota Department of Transportation (MnDOT) provided spatial data from a slope vulnerability assessment completed statewide in 2019. This assessment sought to identify slope failure risks along state trunk highways in several MnDOT districts. Then using GIS modeling, researchers mapped and ranked slopes along highways according to failure vulnerability and then developed a method for MnDOT to quantify failure risk for asset and emergency management planning. The assessment resulted in a statewide map (viewable in the Landslide Risk Dashboard) classifying potential risks areas into four categories: high risk—a site visit or action is recommended; moderate risk—further evaluation is required, low risk—the area should be monitored, or no action is required. In Mille Lacs County, about 300 acres of highway corridor are at moderate or high risk for slope failure. There has been no evaluation of risk outside of these corridors in Mille Lacs County.

4.9.3 Landslides and Climate Change

The conditions that make certain lithologies more vulnerable to erosion, landslides, and mudslides will be exacerbated by the expected increase in the magnitude and frequency of flooding events. The expected increase in storm activity from climate change may increase the risk of soil saturation. Changing summer storm intensity may result in increased runoff and higher flows, leading to near-channel erosion (DeLong, et al., 2022).

According to NCA5, Key Message #1 in the Land Chapter, climate change has increased regional intensity and frequency of extreme rain, droughts, temperature highs, fires, and urban floods, threatening roads and other infrastructure.

Structures of all kinds are at risk where there may be increases in erosion, slope failure, fire, flooding, and shoreline retreat. Water supplies have been threatened in California years fire, as erosion and extreme rain washes excess sediment and pollutants downstream, shortening the lifespan of water-storage reservoirs (Thornton et al., 2023).

4.9.4 Program Gaps and Deficiencies

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

Property Buyouts: The Mille Lacs SWCD has identified two homes along the Rum River that could be potential for purchase by the county due to flood and landslide concerns. These homes are on the outside bends of the Rum River which are highly vulnerable to failure of the bank. Significant outside grant funding would be necessary for Mille Lacs County to work with these homeowners to conduct property buyouts.

4.10 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).

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

4.10.1 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 is one noted dam incident in Mille Lacs County. In 2013, pipe separation at Korsness Pool led to erosion and an emergency breach being cut in the spillway. This was a dam 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 Mille Lacs County is low.

4.10.2 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).

4.10.3 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.

4.10.4 Program Gaps and Deficiencies

Mille Lacs 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 Mille Lacs County as related to hazard mitigation.
- Appendix C: As part of the Mille Lacs 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 Mille Lacs 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 Mille Lacs County

FEMA Plan Requirements Plan Review Tool, Section C2		Description
Name of Community	Mille Lacs County	
Participation in the NFIP	Participating – Entry date 09/27/1985	
FEMA Map	FEMA-mapped high-risk areas	
Current Effective Map Date	03/04/2013	
Potential Buildings Damaged in Floodplain (including all townships and cities)	965	
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 6/6/2019	
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	6/6/2019	
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	Mille Lacs County enforces requirements of the NFIP through the county's floodplain ordinance (Mille Lacs County Development Ordinance, Article 3 Flood Plain Standards), adopted 6/6/2019. 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 Mille Lacs County Zoning Office 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: Keenan Hayes, Mille Lacs County Zoning Administrator (320-983-8296/ keenan.hayes@millelacs.mn.gov)	
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 Foreston	
Participation in the NFIP	Participating – Entry date 09/27/1985	
FEMA Map	FEMA-mapped high-risk areas	
Current Effective Map Date	03/04/2013	
Potential Buildings Damaged in Floodplain	2	

FEMA Plan Requirements Plan Review Tool, Section C2		Description
Name of Community		Mille Lacs County
1.	Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 11/13/2012
2.	Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	11/13/2012
3.	Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Foreston enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 11/13/2012 and made effective 1/17/2013 (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: Rebecca Haugen, 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 Isle
Participation in the NFIP		Participating – Entry date 11/01/1979
FEMA Map		FEMA-mapped high-risk areas
Current Effective Map Date		03/04/2013
Potential Buildings Damaged in Floodplain		26
1.	Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 1/8/2013
2.	Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	1/8/2013
3.	Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	c
4.	Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Jamie Hubbel, City Clerk

FEMA Plan Requirements Plan Review Tool, Section C2	Description
Name of Community	Mille Lacs County
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 Milaca
Participation in the NFIP	Participating – Entry date 05/05/1981
FEMA Map	FEMA-mapped high-risk areas
Current Effective Map Date	03/04/2013
Potential Buildings Damaged in Floodplain	13
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 1/17/2013
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	1/17/2013
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Milaca enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 1/17/2013 and made effective 1/24/2013 (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: Gary Kirkeby, Public Works Supervisor
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 Onamia
Participation in the NFIP	Participating – Entry date 09/18/1985
FEMA Map	FEMA-mapped high-risk areas
Current Effective Map Date	03/04/2013
Potential Buildings Damaged in Floodplain	15

FEMA Plan Requirements Plan Review Tool, Section C2		Description
Name of Community		Mille Lacs County
1.	Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 2/13/2013
2.	Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	2/13/2013
3.	Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Onamia enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 2/13/2013 and made effective 2/20/2013 (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: Gene Falconer, Maintenance Supervisor
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 Princeton
Participation in the NFIP		Participating – Entry date 06/15/1981
FEMA Map		FEMA-mapped high-risk areas
Current Effective Map Date		03/04/2013
Potential Buildings Damaged in Floodplain		8
1.	Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 1/10/2013
2.	Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	1/10/2013
3.	Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Princeton enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 1/10/2013 and made effective 1/17/2013 (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: Stacy Marquardt, Community Development Planner

FEMA Plan Requirements Plan Review Tool, Section C2	Description
Name of Community	Mille Lacs County
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 Wahkon
Participation in the NFIP	Participating – Entry date 05/13/2013
FEMA Map	FEMA-mapped high-risk areas
Current Effective Map Date	03/04/2013
Potential Buildings Damaged in Floodplain	52
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 4/8/2013
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	4/8/2013
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Wahkon enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 4/8/2013 and made effective 4/17/2013 (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: Jacon Weinreich, Public Works Supervisor
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 Bock
Participation in the NFIP	NOT Participating
FEMA Map	No FEMA-mapped high-risk areas 3/4/2013 NSFHA (No Special Flood Hazard Area)
Name of Community	City of Pease
Participation in the NFIP	NOT Participating

FEMA Plan Requirements Plan Review Tool, Section C2	Description
Name of Community	Mille Lacs County
FEMA Map	FEMA-mapped high-risk areas
Current Effective Map Date	03/04/2013
Potential Buildings Damaged in Floodplain	0
<i>Description of why community does not participate in the NFIP.</i>	The city of Pease has no structures within the mapped flood risk 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.

Mille Lacs County has four RL properties and no SRL properties. The properties are all single-family homes: two in Princeton with first loss dates in 1985, one in Onamia with a first loss date in 2010, and one in Isle with a first loss date in 2019.

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

5.1.2 Plans and Ordinances

Mille Lacs 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

Mille Lacs 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 Mille Lacs County to support mitigation for the hazards addressed in this plan.

All Hazards

All Hazards Emergency Operations Plan: Mille Lacs 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.

Smart911 Emergency Notification System and IPAWS: Mille Lacs County maintains the Smart911 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 homepage of the Mille Lacs County website. Mille Lacs 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: Mille Lacs County has a strong relationship with the Twin Cities/Chanhassen 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: Mille Lacs County utilizes the Mille Lacs County Emergency Management website page, Mille Lacs 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 Mille Lacs County Emergency Management website page provides educational links on severe weather awareness and preparedness.

Mass Care Sheltering: In the event of a disaster where temporary sheltering is needed, Mille Lacs County Emergency Management works in coordination with Mille Lacs County 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: Mille Lacs 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.

Weather-Ready Nation Ambassador: Mille Lacs County is a registered NOAA and NWS Weather-Ready Nation (WRN) Ambassador, supporting initiatives to improve readiness, responsiveness, and overall resilience to weather. As an ambassador, the county promotes weather-ready messages and themes to our stakeholders, engages with NOAA personnel on collaborative opportunities, shares success stories of preparedness and resiliency, and educates employees, partners, and the public on preparedness actions.

Backup Power: Mille Lacs 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 Historic Courthouse, Justice Center, Community Veterans Services Building, Sheriff's Office, Jail, and Wahkon Tower.

Schools Support: Mille Lacs 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: Mille Lacs County Emergency Management works closely with the MN HSEM Region 4 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.): Mille Lacs County Emergency Management works to relay winter weather statements received from the NWS via the Mille Lacs County Sheriff's Office Facebook page and by Smart911 emergency notifications as necessary to help alert residents and visitors to hazardous conditions.

Winter Hazard Awareness Week: Mille Lacs 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. Mille Lacs 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 Mille Lacs County Public Works Department conducts winter road maintenance in accordance with the Mille Lacs County Public Works Department Snow & Ice Control Policy, adopted May 7, 2013. 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.): Mille Lacs County works to relay severe spring and summer weather statements (such as for thunderstorms, windstorms, or tornadoes) received from the NWS via the Mille Lacs County Sheriff's Office Facebook page and by Smart911 emergency notifications as necessary to help alert residents and visitors to hazardous conditions.

Outdoor Warning Sirens: There are outdoor warning sirens located throughout the county. Locations include: Bock (1), Foreston (1), Isle (1), Milaca (1), Onamia (1), Princeton (1), Wahkon (1), South Harbor (1), and Mille Lacs Reservation (1). All sirens are tested monthly by the Mille Lacs County Sheriff's Office in coordination with local jurisdictions. Warning sirens are owned and maintained by the communities where they are located.

Skywarn Program: Mille Lacs 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: Mille Lacs 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. Mille Lacs 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.

Extreme Cold

Emergency Notifications: Extreme cold temperature warnings are issued by the National Weather Service. Mille Lacs County Emergency Management assists with sharing this information with the public via the Mille Lacs County EM Facebook page. The Mille Lacs 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: Mille Lacs County Emergency Management and Mille Lacs 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, Mille Lacs County Public Health will work with Mille Lacs 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 heat temperature warnings are issued by the National Weather Service. Mille Lacs County Emergency Management assists with sharing this information with the public via the Mille Lacs County EM Facebook page. The Mille Lacs 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: Mille Lacs County Emergency Management and Mille Lacs County Public Health 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, Mille Lacs County Public Health will work with Mille Lacs County Emergency Management and local Fire or EMS agencies as needed to assist vulnerable residents such as the elderly who may need temporary sheltering.

Drought

Public Awareness & Outreach: In the event of extreme drought conditions, Mille Lacs County works in concert with the NWS, MN DNR, and local communities to raise public awareness of drought conditions, increased danger of wildfire, and recommended water use restrictions as per MN DNR guidance.

Mille Lacs County Local Resource Water Management Plan (2018-2027): The MLC Local Resource Water Management Plan addresses drought in the category of “Amplified Weather Events”. Goal 6. “Plan for local resiliency to withstand and respond to changing conditions” includes actions related to alleviate drought conditions.

Wildfire

Public Awareness & Emergency Notifications: In event of wildfire, Mille Lacs 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 Mille Lacs County are obtained through the MN DNR website or local office.

Wildland Fire Fighting: Local fire department and DNR Forestry resources respond to woodland or grassland fires within their boundaries or in coordination with other fire departments as needed via mutual aid agreements. The MN DNR provides wildfire suppression resources to Mille Lacs County for initial and extended attack of wildfires.

Landslides

Bluff/Steep Slope Setback Regulations –Mille Lacs County Development Ordinance Section 313.2, Placement of Structures includes regulations for construction in bluff impact zones and on steep slopes. These regulations help to reduce the potential for erosion and landslides in these areas.

Mille Lacs Soil & Water Conservation District: The Mille Lacs SWCD has worked with property owners along the Rum River in the past regarding significant bank failure. This is an ongoing effort in coordination Mille Lacs County.

Flooding

National Flood Insurance Program (NFIP): Mille Lacs County has FEMA-mapped high-risk areas and participates in the NFIP. The county's NFIP entry date into the program is 09/27/1985.

Floodplain Administrator: The Mille Lacs County Zoning Administrator is the county's designated Floodplain Administrator, who is responsible to implement the requirements of the NFIP. The Zoning Office is within the Mille Lacs County Land Services Department.

Floodplain Ordinance: Mille Lacs County Development Ordinance, Article 3 Flood Plain Standards establishes the flood plain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts. The Mille Lacs County Zoning 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: Mille Lacs County's current effective FEMA flood map date is 03/04/2013. The county's Zoning Office is the repository for the floodplain maps for the county. The Zoning Office assists county residents in determining whether their property is affected by an officially mapped flood area.

Shoreland Ordinance: Mille Lacs County Development Ordinance, Article 3 Shoreland Standards 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.

Subdivision Ordinance: Mille Lacs County Development Ordinance, Article 7 Subdivisions establishes regulations for the subdividing of land in Mille Lacs County including Section 702.4 Subdivisions in Floodplains.

Transportation Plans: The Mille Lacs County Public Works Department maintains update of the county's Mille Lacs County Five Year Transportation Plan (2017-2021). The department also oversees implementation of the Mille Lacs County Transportation Capital Improvement Plan 2022-2026. These plans include projects that address localized flood risk reduction.

Property Buyout Acquisitions: Mille Lacs County has not done any past property buyouts, but the cities of Cannon Falls, Zumbrota, and Pine Island have conducted property buyouts in the past for flooding. Mille Lacs County may work on property buyouts in the future for homes at risk to flood/landslide dangers.

Minnesota Buffer Law: The Mille Lacs 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.

Mille Lacs County Buffer Ordinance: The Mille Lacs County Buffer Ordinance was adopted on October 17, 2017 and provides for the local enforcement of the MN state buffer law.

One-Watershed One Plan (1w1P): Mille Lacs County participates in the comprehensive watershed management plans (One Watershed, One Plan - 1W1P) efforts that Mille Lacs SWCD helps to develop. These include the Rum River 1W1P, Mississippi River St. Cloud 1W1P and Snake River 1W1P.

Dam/Levee 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 Mille Lacs County Plan. This framework, as outlined below, will allow for integration of the mitigation actions that are listed by Mille Lacs 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). A fifth strategy type was determined by Minnesota HSEM 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.	• 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

Mitigation Strategy	Description	Example Mitigation Actions
Structure and Infrastructure Projects	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. This type of action also involves projects to construct manmade structures to reduce the impact of hazards. Many of these types of actions are projects eligible for funding through the FEMA Hazard Mitigation Assistance program.	• 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.	• Sediment and erosion control • Stream corridor restoration • Forest management • Conservation easements • Wetland restoration and preservation
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.	• 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.	• Emergency operations plan • Flood fight plans and preparedness • Dam emergency action plans • Warning • Backup power • Emergency capabilities

Local leaders work together with the Mille Lacs 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 Mille Lacs 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 Mille Lacs 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 Bock, Foreston, Isle, Milaca, Onamia, Pease, Princeton, and Wahkon.

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 13 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 2017 Mille Lacs 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	• 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.
Moderate Priority	• 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	• 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 Mille Lacs County Mitigation Action Chart

The Mille Lacs 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. Mille Lacs 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	SMART911 EMERGENCY NOTIFICATION Encourage all county residents to sign-up for the county's Smart911 Emergency Notification System.	Existing High Ongoing	Mille Lacs County Emergency Management (MLCEM)	Mille Lacs County (MLC) maintains the Smart911 Emergency Notification System. A link to sign up for the system is located on the Mille Lacs County website. MLC is working to expand the users available on the Smart911 platform by using a wider range of outreach methods.	County Funding
2	All-Hazards	Education & Awareness Programs	PUBLIC AWARENESS & EDUCATION 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	MLCEM in coord with MLC Public Health/Emergency Preparedness & MLC Administrative Services Office	MLC actively utilizes the county's website, social media, and local news media to provide information to residents, visitors, schools, and long-term care facilities on emergency preparedness, severe weather, and other hazard conditions throughout the year. MLC participates in the NWS Severe Weather Awareness Weeks held in April and November of each year. MLC also provides annual SkyWarn training on an annual basis.	County 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	MLCEM	MLC 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.	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	MLC Land Services Office, MLC Public Works in coord with local gov'ts	MLC continues to address planning for increased growth and development that will affect emergency response services as well as an increase in vulnerable systems and infrastructure. MLC uses its Development Ordinance Comprehensive Land Use Plan, 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	MLCEM, MLCPH	MLC continues to provide outreach to and assistance as needed to facilities such as schools, long-term care facilities, and directly to individuals. The county works in coordination with agencies such as the Red Cross and Salvation Army. MLC works to maintain information on the location of key facilities such as hospitals, nursing homes, and day cares. MLC 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.	County Funding other agencies & organizations
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	MLCEM & MLC Administrative Services Office	MLC has generators and uninterruptable power supplies to support critical county facilities and infrastructure, and has detailed plans in place to test, maintain, and repair those units. MLC encourages local jurisdictions to evaluate and address where backup power is needed.	County 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	MLCEM, MLCPH	In the event of a disaster where temporary sheltering is needed, MLC will work with the American Red Cross, and local governments/Fire & EMS to provide mass care services as needed. The county's EOP includes plans, procedures, and resources available for mass care sheltering.	County Funding
8	Extreme Temps (Cold/Heat)	Education & Awareness Programs	EXTREME TEMPS PUBLIC OUTREACH Provide outreach and education to the public on personal safety measures to take during periods of extreme cold or heat.	In-Progress High 2024	MLCEM	MLC works to share information received from the Twin Cities/Chanhassen National Weather Service (NWS) Forecast Office when periods of extreme temperatures are forecast and occurring. Public education regarding extreme heat or cold safety also occurs during the NWS Winter Weather Awareness week that occurs in April and November each year.	County Funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
9	Extreme Cold	Mitigation Preparedness & Response Support	WARMING/COOLING CENTERS Work with local communities to develop plans for operating warming or cooling centers for those who are vulnerable during extreme temperatures events.	New High 2025-2030	MLCEM in coord with MLCPH	MLC encourages communities to have plans in place for a local facility (i.e., school, church, community center, Fire Hall) to be designated to operate for temporary sheltering and prepared with backup power and other supplies. MLC 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	MLC Public Works Dept.	MLC conducts winter road maintenance in accordance with the Mille Lacs County Snow & Ice Control Policy. 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
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	MLCEM in coord with NWS	MLC works with the Twin Cities/Chanhasen 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	MLCEM in coord with local jurisdictions	Outdoor warning sirens are located throughout the county and are tested monthly by the Mille Lacs County Sheriff's Office in coordination with local jurisdictions. Warning sirens are owned and maintained by the cities where they are located. MLC will work with local jurisdictions that are seeking to upgrade their existing warning sirens or to purchase a new one. FEMA 5% Initiative Grant Funding may be a possible source for communities seeking to apply for grant funding for a warning siren.	County Funding & local jurisdictions, FEMA 5% Initiative Grant Funding

#	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 Work with the City of Foreston and the Mille Lacs County Fair Board to address the need for the construction of storm shelters for the protection of vulnerable workers at the Quannex factory (Foreston) and visitors to the Mille Lacs County Fairgrounds.	Existing High 2025- 2030	MLCEM in coord with local jurisdictions	MLC will provide assistance to the city of Foreston in seeking potential grant funding for a tornado safe room for this local business they have identified is vulnerable to extreme wind events. Funding may be available from FEMA Hazard Mitigation grant program funding, based on funding availability and application approval. MLC will also work with the Mille Lacs County Fair Board to address the construction of additional bathrooms on site that would be built out to serve as severe weather shelters.	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	MLCEM, local jurisdictions in coord with electric utility providers	MLC works with the utility cooperatives 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
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	MLC Land Services Office	MLC oversees building and land use permits for new development in areas under its jurisdiction. 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	MLC Public Works., Local Utility Providers	MLC 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 Mille Lacs County Community Wildfire Protection Plan to identify high-risk wildfire areas and wildfire mitigation activities.	New High 2025-2030	MLCEM in coord with NE MN DNR Firewise Coordinator	MLC will work with the MN DNR Central MN Firewise Coordinator to evaluate and apply for possible grant funding from the federal Community Wildfire Defense Grants to develop a new CWPP. When the plan is being updated, MLC will work with local city and township fire departments and government officials to assess current wildfire 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	MLCEM in coord with local FDs	MLC will work to include new information on the county website to MN DNR homeowner Firewise information. MLC will encourage local fire departments 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
19	Local Planning & Regulations	Local Planning & Regulations	FLOODPLAIN ORDINANCE Continue participation in the National Flood Insurance Program and enforce the county's floodplain ordinance.	Existing Moderate 2025-2030	MLC Land Services Office	Mille Lacs County Development Ordinance, Article 3 Flood Plain Standards establishes the flood plain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts. 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.	County Funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
20	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	MLC Land Services Office	Mille Lacs County Development Ordinance, Article 3 Shoreland Standards establishes allowable uses and development standards in shoreland areas designated within the county. In addition to establishing setback requirements, the ordinance outlines that local shoreland-specific local controls regulating placement of structures in relation to high water elevation, bluffs, and other sensitive features for flood protection and damage minimization.	County 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	MLC Public Works Dept.	MLC maintains a five-year capital improvement plan (CIP) which includes identification of critical transportation infrastructure. This plan includes projects that address localized flood risk reduction.	County Funding
22	Flooding	Local Planning & Regulations	WATERSHED PLANNING Continue to work with the Mille Lacs Soil and Water Conservation District on plans and projects that address risk reduction for localized flooding and erosion.	Existing Moderate 2025-2030	Mille Lacs SWCD in coord with MLC Land Services Office and MN DNR	MLC has an existing partnership with the Mille Lacs SWCD on related watershed flood and erosion mitigation planning and projects. Current activities the SWCD hopes to work on include: - Restoring wetlands which would create more holding capacity during heavy rainfall events - Encourage private lands to stay forested as the trees uptake and slow the enormous amount of water with each rainfall event - Begin DNR level hydrologic culvert inventories that can be used to make sizing and placement decisions watershed-wide (a tool to mitigate how quickly water moves through the system).	SWCD, Watershed District funding, MN DNR

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
23	Landslides	Local Planning & Regulations	PROPERTY ACQUISITION Work with the Mille Lacs SWCD and the cities of Milaca and Princeton to acquire grant funding to conduct property buyouts of homes at risk of slope failure along the Rum River.	New Low 2025-2030	MLCEM in coord with SWCD and cities of Milaca & Princeton	MLC will work with the Mille Lacs SWCD and the city governments of Milaca and Princeton with developing potential grant applications to the MN DNR Flood Hazard Mitigation grant program or to the FEMA BRIC grant program for identified property acquisitions with willing homeowners. These homes are located along the Rum River and area at risk of failure due to significant river bank erosion.	Mille Lacs County, Possible MN DNR FHM and/or FEMA BRIC Grant Funding
24	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	MLCEM	MLC continues to provide public outreach and education during heightened drought periods using the county website and social media platforms. MLC encourages city and townships to promote drought awareness to residents at the local level.	Mille Lacs County
25	Drought	Local Planning & Regulations	WATERING RESTRICTIONS Implement watering restrictions during periods of drought as per MN DNR guidance.	Existing High 2025-2030	MN DNR and local jurisdictions	Local jurisdictions may establish and enforce watering restrictions as per MN DNR guidelines during periods of severe drought.	Local Gov'ts

Section 6 – Plan Maintenance

6.1 Monitoring, Evaluation, and Updating the Plan

The Mille Lacs 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 Mille Lacs County HMP.

The Mille Lacs 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 Mille Lacs 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 Bock, Foreston, Isle, Milaca, Onamia, Pease, Princeton, and Wahkon, 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 Mille Lacs 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 Mille Lacs 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 Mille Lacs 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 Mille Lacs 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 Mille Lacs County EMD so that progress notes may be maintained for the next plan update.

6.2 Implementation

Mille Lacs 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 Mille Lacs County and its jurisdictions (see Appendix H and Section 5.3). The cities of Bock, Foreston, Isle, Milaca, Onamia, Pease, Princeton, and Wahkon 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 Mille Lacs 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 Mille Lacs County. Regulation plays a vital role in 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 Mille Lacs 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 Mille Lacs 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, Mille Lacs County will take the following measures:

- The Mille Lacs County HMP website link will be posted on the Mille Lacs 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, Mille Lacs 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 Mille Lacs County HMP website). Each respective jurisdiction will be required to report on the status of mitigation actions in their charts to the Mille Lacs County EMD.
- Mille Lacs 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



Mille Lacs County Local Mitigation Survey Report

Overview

As part of Mille Lacs 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

Mille Lacs County	Yes
City of Bock	Yes
City of Foreston	No
City of Isle	Yes
City of Milaca	Yes
City of Onamia	Yes
City of Pease	Yes
City of Princeton	Yes
City of Wahkon	Yes

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

Mille Lacs 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: MILLE LACS COUNTY

Point of Contact:

Name: Andy Beckstrom
Job Title: Emergency Management Director
Phone: (320) 983-8288
Email: andy.beckstrom@millelacs.mn.gov

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	No change
Winter Storms	X	High	No change
Tornadoes	X	Moderate	No change
Windstorms	X	High	No change
Lightning		Low	
Hail		Low	
Extreme Cold	X	Moderate	No change
Extreme Heat	X	Moderate	No change
Drought	X	Moderate	Increasing
Wildfire	X	High	No change
Landslides	X	Moderate	No change
Dam/Levee Failure		Low	

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 winter of 2022-2023, our county experienced a large volume of snowfall. This snowfall did cause some tree and power line damage, along with larger than expected removal costs. While this did not rise to the point of a disaster declaration, the resulting flooding that took place during a rapid warm up in

April did. We were part of DR4722 that received reimbursement funding from FEMA and the state of Minnesota to repair roadways, culverts, and other infrastructure that was damaged during the flooding.

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.
Windstorms / Tornadoes	Woodcraft Industries (now Quanex) in Foreston is a woodworking supply business with a large staff who work in a stick-built building. The business owners have expressed concern over safety for them and community members if there were to be extreme weather events. They have interest in possibility applying for a future FEMA grant to construct a tornado safe room.
Flooding / Landslides	The Mille Lacs SWCD has identified 2 homes along the Rum River that could be potential for purchase by the county due to flood and landslide concerns. These homes are on the outside bends of the Rum River which are highly vulnerable to failure of the bank. There is also a home just south of the Milaca city limits that experiences frequent flooding. Significant outside grant funding would be necessary for Mille Lacs County to work with these homeowners to conduct property buyouts.

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.

After the flooding in 2023, Mille Lacs County completed a number of repairs and improvements to existing culverts and roadways. Mille Lacs County has also worked to expand the use of the Smart911 platform for opt-in emergency notifications. The Sheriff elected in 2022 has also increased public visibility and communication with our social media.

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 construction in the county has added additional residents and property that would potentially be damaged due to severe weather. New community members living a primitive lifestyle may not have sufficient access to traditional notification methods in the event of a disaster and/or a primary dwelling with sufficient protection against inclement weather.

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.

Mille Lacs County utilizes the Mille Lacs County Emergency Management website page, Mille Lacs 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 Mille Lacs County Emergency Management website page provides educational links on severe weather awareness and preparedness.

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?

Mille Lacs County maintains the Smart911 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 homepage of the Mille Lacs County website. Mille Lacs County public health is also working with Emergency Management to put up a billboard with the sign-up information as well.

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: Mille Lacs 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.

Snow Removal & Ice Control: The Mille Lacs County Public Works Department conducts winter road maintenance in accordance with the Mille Lacs County Public Works Department Snow & Ice Control Policy, adopted October 17, 2013. Other road jurisdictions conduct winter road maintenance on their respective road systems in accordance with each of their established policy and/or practice.

Mille Lacs County Local Resource Water Management Plan (2018-2027): The MLC Local Resource Water Management Plan addresses drought in the category of "Amplified Weather Events". Goal 6. "Plan for local resiliency to withstand and respond to changing conditions" includes actions related to alleviating drought conditions.

Rum River 1W1P & Snake River 1W1P: These plans outline a variety of goals and objectives for funding consideration with an eye towards resilience and adaption for climate change. These two watersheds cover the vast majority of Mille Lacs County.

Floodplain Ordinance: Mille Lacs County Development Ordinance, Article 3 Flood Plain Standards establishes the flood plain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts. The Mille Lacs County Zoning 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.

Shoreland Ordinance: Mille Lacs County Development Ordinance, Article 3 Shoreland Standards establishes allowable uses and development standards in shoreland areas designated within the county. In addition to establishing setback requirements, the ordinance outlines that local shoreland-specific local controls regulating placement of structures in relation to high water elevation, bluffs, and other sensitive features for flood protection and damage minimization.

Subdivision Ordinance: Mille Lacs County Development Ordinance, Article 7 Subdivisions establishes regulations for the subdividing of land in Mille Lacs County including Section 702.4 Subdivisions in Floodplains.

Building Code: Mille Lacs County has adopted and enforces MN State building code.

Comprehensive Land Use Plan: This plan was last adopted in 2013, and an update process is currently underway. While the risks associated with natural hazards aren't addressed with much detail in the current plan, it's anticipated that the update will do so. Furthermore, as the basis for the County's Development Ordinance, this plan is important for the consideration of future regulatory action to do so.

Transportation Plans: The Mille Lacs County Public Works Department maintains update of the county's Mille Lacs County Five Year Transportation Plan (2017-2021). The department also oversees implementation of the Mille Lacs County Transportation Capital Improvement Plan 2022-2026. These plans include projects that address localized flood risk reduction.

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.

Mille Lacs County departments work together to accomplish mitigation goals through integrated policies and programs. Key departments include Mille Lacs County Emergency Management, Mille Lacs County Sheriff's Office, Mille Lacs County Public Works, Mille Lacs County Zoning Office, Mille Lacs County Land Services, Mille Lacs County Public Health Services, Mille Lacs County Administration, and Mille Lacs Soil and Water Conservation District.

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

Mille Lacs County Emergency Management works closely with the MN HSEM Region 4 regional program coordinator and neighboring county emergency managers on an annual basis for joint planning, training, and exercises.

Mille Lacs 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.

Mille Lacs County has a strong relationship with the Twin Cities/Chanhassen 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.

5. PROGRAMS IN PLACE

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

Severe Weather Statements (Watch, Advisory, Warning, etc.): Mille Lacs 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: Mille Lacs 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.

Weather-Ready Nation Ambassador: Mille Lacs County is a registered NOAA and NWS Weather-Ready Nation (WRN) Ambassador, supporting initiatives to improve readiness, responsiveness, and overall resilience to weather. As an ambassador, the county promotes weather-ready messages and themes to our stakeholders, engages with NOAA personnel on collaborative opportunities, shares success stories of preparedness and resiliency, and educates employees, partners, and the public on preparedness actions.

National Weather Service – Severe Weather Awareness Weeks: Mille Lacs 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. Mille Lacs 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 Mille Lacs County Office of Emergency Management in coordination with local jurisdictions.

Skywarn Program: Mille Lacs 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 Mille Lacs County Public Works 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.

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, which may include property tax levy and/or CSAH funding, to address mitigation projects on County roads. The County has considered other grants and revenue sources, both at the State and Federal level, for furthering mitigation and climate resiliency efforts.

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.

Landslides – Work with the Mille Lacs SWCD and the City of Princeton to purchase 2 properties that are located in areas of significant bank failure. MLC Emergency Management role may be to assist the SWCD with developing a grant application to FEMA for these property buyouts.

Windstorms/Tornadoes – Work with the Mille Lacs County Fair Board to address the construction of additional bathrooms on site that would be built out to serve as severe weather shelters.

Windstorms/Tornadoes – Work with the City of Foreston to apply for future FEMA HMA grant funding to construct a tornado safe room for Quannex Industries to provide safety for workers during extreme weather events.

Flooding – Coordinate with the Mille Lacs SWCD on watershed planning efforts in the next few years. Some activities the SWCD hopes to work on include:

- Restoring wetlands which would create more holding capacity during heavy rainfall events
- Encourage private lands to stay forested as the trees uptake and slow the enormous amount of water with each rainfall event
- Begin DNR level hydrologic culvert inventories that can be used to make sizing and placement decisions watershed-wide (a tool to mitigate how quickly water moves through the system).

Communication – Working with Mille Lacs County Public Health/Emergency Preparedness to create a short code text in process to expand the users available on the Smart911 platform. This will be displayed on a billboard in the county for a year, as well as on flyers handed out at events and a placard on the back tailgate of the county Emergency Management Director's vehicle.

2. GAPS OR DEFICIENCIES

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

Not all Mille Lacs County residents are signed up for the Smart911 platform. While social media is a huge means of communication for the Sheriff's Office/Emergency Management, not all residents have social media at routine and easy access. Funding is also an issue that most agencies deal with, and Mille Lacs County is no exception. Careful planning and effective strategies are needed to move projects forward for county funding.

PART D: SURVEY PARTICIPANTS

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

Andy Beckstrom, County Emergency Management Director
Dillon Hayes, County Administrator
Susan Shaw, Soil and Water Conservation District Administrator

Mille Lacs 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 BOCK

Point of Contact:

Name: Patricia Buss
Job Title: Clerk/Treasurer
Phone: 320-556-3379
Email: cityofbock@yahoo.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	Low	No change
Windstorms	x	Low	No change
Lightning	x	Moderate	No change
Hail	X	Moderate	No change
Extreme Cold	x	Low	No change
Extreme Heat	x	Low	No change
Drought	x	Moderate	Increased
Wildfire	x	Low	Increased
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 to note.

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	The building where we store our city supplies and information are vulnerable to all the hazards.

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 placed a new layer of tar on some of the roads to help with the pot holes and drainage along with replacing some culverts.

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.

A new twin home was built in the city.

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 Facebook page and we announce most of our information at council meetings or place information in posting areas as we are not allowed to place in the post 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?

We do not have one.

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.

Our Zoning - we have maps and all building codes are to the MN state building codes.

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 are a member of MNWarn. Our power comes from East Central Energy, phone service is Benton Coop.

5. PROGRAMS IN PLACE

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

Each year home owners are reminded to clean up their yards in the spring and fall.

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.

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.

We let homeowners know when we need them to watch their water and if there are other issues by letters, council meetings, and posting on posting signs

2. GAPS OR DEFICIENCIES

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

We do not have a website. We are very small and have very limited funds and staff to do many of the local migration projects.

PART D: SURVEY PARTICIPANTS

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

Patricia Buss, Clerk/ Treasurer

Mille Lacs 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 ISLE

Point of Contact:

Name: Jamie Hubbell
Job Title: Clerk
Phone: 320-676-3641
Email: jamie@cityofisle.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	High	Increased
Winter Storms	X	High	No change
Tornadoes	X	Moderate	
Windstorms	X	Moderate	
Lightning	X	Moderate	No change
Hail			
Extreme Cold			
Extreme Heat			
Drought			
Wildfire	X	Low priority	increased
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.

In 2018 we had an electrical storm where lightning struck our PW building and completely fried our Well and Lift station control board. Another year we had severe rain storm that created flooding issues in

downtown Isle where the storm sewer and sewer systems could not with stand the amount of water that quickly. Multiple homes suffered from sewer backflow damages on the lake side of the roads.

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 need to inform people that the school, IREC, Fire Hall and City Center are their locations for storm/emergency protections. We need a system to designate who would need assistance getting to these locations (shut ins, asst living, & non-driving). We also have a large population of senior citizens that do not use cell phones or computers to receive emergency notifications.
Flooding	We have addressed the issues with two of our lift stations that regularly do not keep up with flow when we have excess rain events. Although, some of the homes that are in the path of the flood drainage always seem to get flooded. We have had incidents of sewer backflow and have had insurance claims to help mitigate and prevent damages to private property. Our Isle St. flooded all flows directly to the school practice field, which it is supposed to, but with severe rain, the flooding creates damages and concerns for all properties along that storm drainage route.
Lightning	From a city standpoint, we have addressed the issues of grounding rods and service breakers, but it is hard to prepare for lightning. The City Hall needs to update the surge protection in the building for the main server and the PW building which operates the Warning Siren bank and all of the control boards.
Wildfire	With these wetter winters, vegetation is getting more dense in the surrounding city areas. PW has created a more aggressive approach to keeping ditches, alleys and ROWs cleared and mowed, but with the surrounding parks and natural areas, it is increasing the chances of more uncontrollable fires. There are more outlying areas that the fire dept have been called to assist when a controlled burn becomes uncontrolled either by wind or by lack of numbers of people on hand.

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.

Our reduction efforts have been more reactive than proactive in the past. With our 2020-2023 sewer project, we have improved our storm sewer systems. We have acquired more land to expand our ponds and we have upgraded all of our lift station control boards. New street, curb and gutters created in the new ROW areas of the new sewer lines.

After our lightning strike damages, we were able to upgrade and install grounding options and surge protections in our main server building.

Eliminating all grasses and dead-fall from city properties have occurred to help prevent spread of wild fire and hazards incase of flooding.

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.

Honestly the only increase in vulnerability that I can think of is the increase of short-term rental properties bringing in many people who do not know the city or any of the emergency locations in town. This creates a flow of uninformed visitors that will most likely need more assistance than regular residents and take away emergency personnel More so than residents could. Additional vehicles to evacuate, additional people to house and care for, additional people in panic mode with no knowledge of where to go or what to do. We saw this during Covid as well. Many people leaving the cities to come to their cabins to "escape" the mass population and then increasing the population in our small community where supplies became harder to find, and the strain on the emergency departments taking care of increased calls for medicals and issues between neighbors.

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 the severe weather siren system and it is checked daily at the noon bell to make sure it is functioning. We have police, fire and PW who are able to drive around town for additional emergency warnings. We make announcements at Council meetings, post notices at City Hall, Post Office and the bank. We have a public alert system that contacts ALL Utility customers via method of their choice (phone, email, text). We also post on our city website and facebook pages.

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?

Yes, we provided a link to the county's emergency notification system and we also state in our public alert messages to tune to local news and alert systems in severe instances.

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 enforces the MN Basic Code and has established a full Zoning Ordinance for land use and permitting. We have a 20-year comp plan that is designed to plan and guide the city for future physical and population growth. We work constantly with the county and the state transportation departments for roads, bridges, and storm sewer systems. The city works with the City Engineer annually to identify any major concerns and remedies that need attention and place them on the priority lists accordingly.

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.

All of our city departments work together as our Emergency Management Team; Mayor (Vice), Admin, PW, Police and Fire to delegate and control situations as necessary. Our Public Utility is operated by public works and most law enforcement officers know how to check controls and shut down/switch on in case of emergency. All staff is trained on both the mobile generators and lift generators and we have a system in place that alerts PW to any alarms or issues at each well and lift station. Our Fire and Police departments have direct contact with the county departments. We have worked with the Mille Lacs SWCD to help enforce and mitigate blight weed and grass issues, and erosion on waterfront properties. Our emergency siren is connected to the MNWarn and the NOAA weather alerts systems.

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 and NOAA for our monthly siren tests and also the annual Winter and Spring weather awareness tests. Our schools do all of their required drills and incorporate fire and police when necessary. All year we stay connected with our residents notifying them of street and yard maintenance and hazards. We have a strict blight inspection team and alert offenders immediately for corrective actions. We make sure no one blows their grass, leaves or yard debris into the streets and gutters. Our PW dept check drains and ditches on their rounds and makes sure all vegetation is cleared as needed.

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.

99% of our funding comes from our city general budget. We have been awarded weed mitigation grants and some park grants in the past for improvements and proactive maintenance and mitigations. PW works with the county departments on joint cooperative areas.

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.

We have been very proactive in doing a lot of successful mitigation work already in the city to address local flooding concerns and also to reduce the impact of future lightning strikes. Future mitigation activities would focus on continued efforts to make sure we minimize the impacts of high rain events (i.e. Our Isle St. flooded all flows directly to the school practice field, which it is supposed to, but with severe rain, the flooding creates damages and concerns for all properties along that storm drainage route). We do have a floodplain ordinance in place and mitigation is part of our Zoning Ordinance as well. Although there are older ROW areas and streets that could use storm sewer upgrades, and more education to the neighboring residents to keep these ditches clear.

We should address a potential upgrade to our siren system over the next 5 years. We do not have a mobile home park, but we do have the state park and many campgrounds that evacuation and shelters should be reviewed and updated.

We will also plan to continue doing public education and awareness outreach; planning for emergency response for seniors, and making sure that our outdoor warning siren is maintained and functional.

2. GAPS OR DEFICIENCIES

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

Not aware of any gaps at this time.

PART D: SURVEY PARTICIPANTS

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

Jamie Hubbell, City Clerk
Jason Minenko, Public Works Supervisor
Mark Reichel, Chief of Police
David Miller, Fire Chief
Tim Schug, Fire Chief

Mille Lacs 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 MILACA

Point of Contact:

Name: Gary Kirkeby
Job Title: Public Works Supt.
Phone: 320-362-4055
Email: gkirkeby@milacacity.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	Moderate	Decreased
Winter Storms	X	Moderate	No change
Tornadoes		Low	No change
Windstorms		Low	No change
Lightning		Low	No change
Hail		Low	No change
Extreme Cold	X	Moderate	No change
Extreme Heat	X	Moderate	Increased
Drought	X	Moderate	Increased
Wildfire		Low	Increased
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 October, 2021 our municipal campground experienced damage from a severe thunderstorm with high winds and falling trees which brought down tree limbs and caused danger to campers. In July 2021 we had a strong wind event resulting in many downed trees in town. In the summer months of 2022 and 2023 we had severe drought conditions; water use restrictions were enforced.

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 need to obtain a portable generator for our City Hall and Community Center. Those buildings serve as our local shelter if people are displaced from a severe storm event or extended power outage.
Flooding	We have a city lift station near the Rum River that is prone to flooding during high rain events, it has been sandbagged during these times. The city's biggest park is vulnerable to flooding and park equipment has been damaged in the past. We needed to upsize several culverts to better handle high rain events. We have two homes along the river that have experienced repetitive flooding. The city would like to work with the property owners to buy out these homes.
Ice Storms, Blizzards	Much of the city's municipal electrical service consists of overhead power lines and electrical poles. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches.
Windstorms and Tornadoes	We have 1 mobile home park within the city that does not have a storm shelter and residents are vulnerable to high wind and tornado events. Our municipal campground is active during summer and fall months with RVs and campers and does not have a storm shelter. We also have a new development in the west end of the city that should have an outdoor warning siren installed. We have experienced power outages from strong wind events that brought down power lines.
Extreme Cold	We have a high population of senior citizens and low-income residents who are more vulnerable during periods of extreme cold with power outages. In the past we have experienced frozen water services and some residential homes experienced burst pipes from extended extreme cold. The city has experienced damage to roads from spring frost heaves and frozen culverts that cause localized flooding. We also average about 6 watermain breaks per winter due to frost being pushed down into the ground, our soils are clay and rock, this results in rocks being pushed into the watermains breaking them.
Lightning	We have 7 sanitary lift stations that are prone to power outage during lightning events. One of the lift stations has a built-in generator, the other 6

	we use a portable trailer generator to power during outages. If a lift station remains without power for over 24 hours it would result in homes being flooded with sewage.
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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 2019 the city completed a street reconstruction project which included adding more storm sewer and catch basins. In 2020 the city rebuilt and raised the height of a sanitary sewer lift station that was prone to flooding and adopted a stormwater ordinance. Currently our Public Works Department is working on several culvert improvements. Over the last 5 years our municipal utility has worked to convert overhead powerlines to underground. We have worked with our mobile home park to establish evacuation plans to the City Hall for shelter if needed during inclement weather.

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.

Between 2019 and 2021 we had a development project where 60 new homes were constructed in the city, which has increased our population and potential for damage to new structures. Many homes have been built slab-on-grade, so residents do not have a basement for safety during high wind or tornado events. With an increase in population and construction of more homes and commercial properties, we have also witnessed more storm water discharging to our stormwater system. We feel this is due to more impermeable surface which has increased stormwater runoff, and the amount of precipitation seems to have increased per rain event. With the construction of a new assisted living facility, there is also a large concentration of senior residents in one location that will need assistance during a disaster 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.

We post information on our city website and Facebook page. We also post information on bulletin boards at the Senior Center and at the Post Office. We also have our own municipal newspaper. We make announcements at City Council meetings and post flyers on our community bulletin board outside of City Hall, as well as electronic message boards on the main street in town and one in the park.

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?

Yes. We have a place on the homepage of our city website with a link to the county's sign-up page. We include information on emergency notification sign-ups twice annually in utility bills.

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 enforces the MN State Building Code and the City Code zoning requirements for new development. We have a 20-year Comprehensive Plan that is designed to plan for the future physical growth of the city and appropriate land uses. We have a 5-year Transportation Plan that identifies and schedules road, bridge, and culvert improvement projects to reduce over-the-road repetitive flooding. The city works with our 2 mobile home parks on emergency evacuation and sheltering of residents. The city also has ordinances we enforce during periods of drought to ensure our water supply is impacted as little as possible.

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. Our City Council includes a Public Safety Committee. We have a city engineer and a public works superintendent that address road maintenance issues for flooding (culverts, repetitive flooding). We have worked with our local energy coop to mitigate against power outages. We have worked with the SWCD to address bank stabilization issues. We have worked with the county emergency manager to address an upgrade of our outdoor warning siren. We are also members of MnWARN.

5. PROGRAMS IN PLACE

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

Our city works with the county to participate in the National Weather Service's annual Severe Winter/Spring Weather Awareness Week by posting severe weather awareness information out on our city Facebook page. Our local school practices tornado drills on an annual basis. Each spring and fall we do outreach to homeowners to remind them to clear leafy and woody debris from roadside gutters to prevent clogging and over the road flooding in these areas. Each spring and winter we do outreach to encourage residents to maintain their sump pumps to reduce the chances of basement flooding. The energy coop has a program to manage vegetation near powerlines to reduce the risk of power outages during storms. We are currently looking for more permanent generators through GSA to station at our lift stations and water supply wells.

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, such as replacement of culverts. We have also worked closely with the county highway engineer on local flood mitigation projects for roads and the county zoning department when we updated our local floodplain ordinance. In 2019 the city received grant funding from the MN DNR Flood Hazard Mitigation Grant Assistance Program to assist with the buyout of 2 flood prone homes. The city has also worked with the SWCD to address erosion issues. In 2020 the city successfully applied for grant funds from the USDA to install a new warning siren to replace our old one. We have worked with our local electric cooperative in the past to convert overhead powerlines to underground.

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 any actions that benefit underserved communities or socially vulnerable populations in your community. Please be as specific as possible in your responses.

Windstorms/Tornadoes - Add another siren to the emergency alarm system. Work with the local mobile home park owner to construct a storm shelter or tornado safe room.

Flooding – Work with the MN DNR to enroll in the NFIP and establish a floodplain ordinance. Implement new storm sewer upgrades and purchase additional pumps in the event of flooding. Work with the city and county engineer on local flood reduction measures. Enforce the city’s sump pump ordinance to minimize impacts to the city’s stormwater system.

Drought – Continue to enforce water use restrictions when in periods of severe drought.

Severe Winter / Summer Storms – Post information on the city’s website and electronic message boards to encourage residents to sign up for the county’s emergency notification system. Participate in the National Weather Service’s – Severe Weather Awareness Weeks. Acquire a permanent generator for our Community Center, which is our designated community mass care shelter. Acquire permanent generators for more of our sanitary lift stations.

Extreme Cold – Encourage residents to be prepared for periods of extreme cold and potential power outages. Use our city website and utility bills to notify residents to avoid freezing pipes during sub-zero weather. Work with the local nursing home to prepare emergency plans for extended power outages. Work with the county and partner agencies to establish a warming center facility and program for those who are homeless and exposed to extreme cold.

Landslides: Work to secure grant funding to work to conduct 2 property buyouts of homes that are at risk of sliding into the river due to streambank erosion.

Wildfire: Work to increase public awareness of creating defensible space in woodland areas that are experiencing new development. Work with our fire department to address the need for water resources outside of the municipal water system.

2. GAPS OR DEFICIENCIES

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

Not all our residents are signed up for the county's emergency notification system. The city needs significant funding assistance to buy out residential properties that have experienced repetitive loss from flooding. We need to update our city's 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.

Gary Kirkeby, Public Works Superintendent

Mille Lacs 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 ONAMIA

Point of Contact:

Name: Michelle Peterson
Job Title: City Clerk/Treasurer
Phone: 320-532-3311
Email: michelle@cityofonama.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	Moderate	Increased
Winter Storms	X	High	Increased
Tornadoes	X	Moderate	No Change
Windstorms	X	High	Increased
Lightning	X	Moderate	No Change
Hail	X	Moderate	No Change
Extreme Cold	X	High	No Change
Extreme Heat	X	High	No Change
Drought	X	High	Increased
Wildfire	X	Moderate	No Change
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.

Heavy Rain & Snow events have caused ice buildup and flooding events in the City. These events also lead to downed tree branches and dangerous conditions on the roads. Large amounts of snow caused dams accumulating on residential, commercial, and government buildings.

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.
Power Outage	In the event of long-term power outages, the city would benefit from having permanent generators installed at both the Fire Hall and City Hall to insure proper response to emergency situations.
Extreme Heat / Drought	Extreme heat has caused less rainfall in our area. Severe droughts have an impact on our water system.

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 2021 our city underwent a large infrastructure repair plan that largely included repairs on our sanitary sewer system. As a result of this work, the collection system is much less prone to flooding and back up situations.

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.

A recent town home project added 30 residents to our area. These residents do not have access to any storm shelter of any sort. These homes do have crawl spaces, but they aren't accessible to the residents.

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 civil defense siren, local police department, local fire department, the ability to post on our website, a water customer calls out system, and we can post notices in public places.

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 answer

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 answer

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 are members of MNRWA, and they provide help for our water and wastewater systems in the event of emergencies. Public Works covers most of the city when they can in the event of emergencies.

5. PROGRAMS IN PLACE

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

The Fire Department are the emergency weather watchers.

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.

No answer

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.

No answer

2. GAPS OR DEFICIENCIES

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

No answer

PART D: SURVEY PARTICIPANTS

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

Josh True, Public Works Director
Michelle Peterson, Clerk/Treasurer
Sandy Nelson, City Council Member

Mille Lacs 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 PEASE

Point of Contact:

Name: Jeffery T. Hansen
Job Title: Clerk
Phone: 320-369-3630
Email: cityofpease@gmail.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	High	No change
Tornadoes	X	High	No change
Windstorms			
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.

The city experienced some high winds taking down some trees and taking the blades off our historic windmill.

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.
Ice, wind, lightning Storms.	Much of the city's municipal electrical service consists of overhead power lines and electrical poles. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches.

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 current city infrastructure such as the sewer lift stations and storm water systems have been able to handle current conditions.

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.

Between 2022 and 2023 4 sets of twin homes were built, slab on grade. The homes consist of mostly senior residents. No basements for extreme wind and tornado events. In 2006 there was a 5 townhomes built slab on grade, no basements, senior population.

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.

None at this time

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?

None at this time

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 enforces the MN State Building Code and the City Code zoning requirements for new developments and housing.

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.

Mayor works with city engineer and contractors on infrastructure issues

5. PROGRAMS IN PLACE

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

None

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 use our own budget funds for 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.

Have worked on getting a grant for a siren, but that did not pan out. Grant shortage.

2. GAPS OR DEFICIENCIES

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

The city has own website that residents can access. Not aware of how the residents are connected to emergency notification systems or even if they are.

PART D: SURVEY PARTICIPANTS

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

Diane Kiel, Mayor
Jeffery T. Hansen, Clerk

Mille Lacs 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 PRINCETON (partly in Sherburne County)

Point of Contact:

Name: Ron Lawrence
Job Title: Emergency Manager
Phone: 763-234-4495
Email: rlawrence@princetonmn.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	No Change
Winter Storms	X	Moderate	Decreased
Tornadoes	X	Moderate	No Change
Windstorms	X	Moderate	No Change
Lightning	X	Moderate	No Change
Hail	X	Moderate	No Change
Extreme Cold	X	Moderate	Decreased
Extreme Heat	X	Moderate	Increased
Drought	X	High	Increased
Wildfire	X	High	Increased
Earthquakes		Low	No Change
Landslides		Low	Decreased
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.

The City of Princeton has had one declaration in the last five years. We did have a couple of hailstorms that caused some damage to vehicles and homes. Several hundred houses in 2022 had roof and siding damage that needed repair. Several hundred building permits were issued in 2022 for house repairs.

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 need to improve and expand the siren network and emergency warning information system to ensure all essential businesses are receiving important information. We need to obtain funding to plan and prepare for disasters. Portable Radio System - We have several buildings inside the city that do not have the ability to transmit radio transmissions from inside the building. The City and Mille Lacs County need to obtain funding for a simulcast system to help with radio coverage. This is important to all public safety entities and first responders. IT - The city should go through its IT plan for acts of terrorism. Funding for preparing and planning to mitigate such an act. The City needs to update its contingency plan for business continuation planning and funding.
Drought, Wildfire,	The city has the potential to have a disaster from wildfire. With the lack of snow this year, we also have a potential for a drought thus increasing the potential for a wildfire.
Windstorms and Tornadoes	We have mobile home parks within the city that do not have a storm shelter and residents are vulnerable to high wind and tornado events. Our municipal campground is active during summer and fall months with RVs and campers that needs improvement to hear the emergency warning system. We also need to install another warning siren to help cover all parts of the city and expand the siren network.
Severe Weather	The city continues to mirror the Federal Response Plan for severe weather. Ensure that we have resources available for mitigating a disaster. We need to obtain funding for preparing and planning for disasters.

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 is working on upgrading our warning sirens and possibly adding another siren. The emergency management team is starting to prepare and plan for disasters. The city is looking forward to working and training with the county's emergency management to mitigate future disasters.

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 city has new apartments and businesses built inside the city limits. With the redesign of the highway in Elk River and Zimmerman, additional growth in Princeton is expected. This is going to require more growth in the sewer and water systems.

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.

Currently we can post information on our website and Facebook page. We also have an electronic bulletin board that we can post information on. We can also send out information with the electric bills. We also work with Sherburne and Mille Lacs Counties to send information out on their emergency networks. We need to improve our capabilities to ensure that the citizens are getting the 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 need to ensure we are informing the residents of the counties warning systems and teaching them disaster preparedness. Because we straddle two counties, we need to ensure that we distribute information to multiple counties during an emergency at the same time.

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 Princeton is looking into adopting ordinances to help with enforcing building and fire code inspections. This would help with preparing and planning for some disasters. The city is expected to grow in size and population in the next five years. The city needs to start planning for this growth and develop a five- and ten-year 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.

The Emergency Management team is becoming more involved with preparing, planning, and mitigating any possible disasters that may happen to the City of Princeton and its residents. The City of Princeton is part of the MnWARN program.

5. PROGRAMS IN PLACE

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

The City of Princeton has an annual fire prevention program for school age students. The city also supports other agencies with making a clear open water way on the Rum River. The city has a program to manage vegetation near powerlines to reduce risk of power outages during storms. The city also works with Princeton Public Utilities to convert overhead powerlines to underground. The city also publishes information about non flushable items in the sewer system to prevent sewer backups and completes annual septic maintenance.

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. The city has also applied for grants for assistance. Some have been successful, and some have not. The city needs to explore more grants and funding to help with mitigating disasters. We applied for a grant from the USDA for upgrading our warning sirens and were not successful.

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.

The city is currently working on upgrading its emergency sirens. Upgrades to the county sirens may also be needed. Funding for both projects would be helpful. One private warning siren located in the city limits needs to be updated as well.

Work with the mobile home parks inside the city limits to have an evacuation and sheltering plan during severe weather. Create MOU's with business and churches to be able to accommodate residents.

Participate in the National Weather Service's "Severe Weather Awareness Week" to help teach and train the citizens for better preparedness.

Work with essential business to have emergency action plans and backup power sources for their buildings. This would include business's but not limited to: banks, health care facilities, emergency services, local government, information technology, transportation services and food/agriculture.

Work with the DNR to help decrease the chances for a wildland fire disaster. Prevent areas like the airport, waste water plant, and parks around the city from catching fire. The city completes controlled burns around the city to prevent large-scale fires from happening.

2. GAPS OR DEFICIENCIES

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

Unsure how many residents have signed up for the county or City's emergency notification system. The city has never had an informational meeting with the residents to let them know they can or how to sign up for the city's emergency notification system. More presentation needs to be done to the city residents.

The City of Princeton lies in two counties and needs to have more communication with both counties to update its comprehensive plan relating to for all hazard emergencies. Public Safety continues to promote the notifications for emergencies for the counties.

The city needs to gain more funding to plan for future disasters. City staff need to have table top exercises to help plan and prepare for disasters.

PART D: SURVEY PARTICIPANTS

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

Michele McPherson, City Administrator

Ron Lawrence, Emergency Manager

Bob Gerold, Deputy Emergency Manager, Public Works Director

Todd Frederick, Deputy Emergency Manager, Chief of Police

Mille Lacs 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 WAHKON

Point of Contact:

Name: Karrie Roeschlein
Job Title: Clerk/Treasurer
Phone: 320-495-3441
Email: karrie@cityofwahkon.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	Decreased
Tornadoes	X	Moderate	Increased
Windstorms	X	Moderate	Increased
Lightning	X	Moderate	Increased
Hail	X	Moderate	Increased
Extreme Cold	X	Moderate	Decreased
Extreme Heat			
Drought	X	Moderate	Increased
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.

None

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.
Excessive rainfall	The city's sanitary sewer system is susceptible to infiltration and inflow noted during high rainfall events. As these events seem to be increasing the potential for a backup impacting residential and commercial property increases.
Windstorms and Tornadoes	The city has a large seasonal campground just outside of its city limits. This facility is served by the city's municipal wastewater system, but is not located within the city itself. A large-scale wind or tornadic storm would certainly impact the city by proximity alone.

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 bid a standby generator for its main lift station to prevent sewer backups during long term power outages. The city is also in the process of updating its sanitary sewer force main increasing its capacity to better handle high infiltration and inflow events during large rainfalls which have increased in frequency.

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 city has not seen a significant increase in population or changes to its systems in the recent past. No new increases in vulnerability have been noted.

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.

City has a website which could be used for notifications. We haven't required any such notices during my tenure of 30 years.

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, our city does not do this currently, but we could post a flyer at city hall and add link on our city website. No one from the county has reached out to us with such a flyer and/or link to do this. Would appreciate having a template to follow to ensure accurate information is passed along.

Wahkon has one emergency siren located at city hall which is connected to the county. Monthly tests are conducted by the county.

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 received a grant from Mille Lacs Soil & Water Conservation to produce a Stormwater Management Plan for Wahkon through our city engineer. Report dated 5/28/2021 was supplied to Council and is available to the public at city hall.

Zoning regulations being enforced are Shoreland Management Ordinance and Floodplain Ordinance. County handles wetlands. All zoning is handled by a professional consultant to ensure compliance.

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.

Wahkon is a member of MnWARN.

5. PROGRAMS IN PLACE

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

Nothing at this time.

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, such as replacement of culverts. Received grant from MLSWCD for our 2021 Stormwater Management Plan. Future projects noted within could be accomplished with SWCD grant funds in the future. At this time, none are planned.

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.

Excessive Rainfall: As noted above, the city is in the process of upgrading its municipal sanitary sewer collection system by upgrading a force main, installation of a standby generator, and upgrades at its lift stations. This project should mitigate some of the deficiencies noted in heavy rainfall events.

2. GAPS OR DEFICIENCIES

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

We are a small city with limited financial and staff resources to address local mitigation projects. Wahkon does not have a Comprehensive Plan.

PART D: SURVEY PARTICIPANTS

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

Karrie Roeschlein, City Clerk/Treasurer
Jacob Weinreich, City Public Works Supervisor
Dave Blommel, City Engineer

Appendix D – Plans & Programs in Place

Mille Lacs County

HMP Plans & Programs in Place Form

EMERGENCY PLANNING CAPABILITIES	Yes/No	Comments
Emergency Mass Notification System	Yes	Smart 911
Outdoor Warning Sirens (#'s and location)		Bock – 1 Foreston – 1 Isle – 1 Milaca – 1 Onamia – 1 Pease – Princeton – 1 Wahkon – 1 South Harbor – 1 Tribal - 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	Yes	Mille Lacs County Emergency Management is a designated WRN Ambassador
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
<i>Other (please describe)</i>	Yes	PH has preparedness plans in place

PLANNING & REGULATORY CAPABILITIES	Yes/No	Comments
Comprehensive/Land Use Plan	Yes	Mille Lacs County Comprehensive Plan, adopted 11/19/2013
Capital Improvements Plan	Yes	Mille Lacs County Budget & Capital Improvement Plan, adopted 12/27/2022
Economic Development Plan	Yes	Mille Lacs County Community & Organizational Development (Business funding, Residential funding)
Climate Adaptation Plan	No	
Continuity of Operations Plan (COOP)	Yes	Mille Lacs County Emergency Management in coordination with other county depts.
Transportation Plan (Roads, Bridges, Culverts, Ditches)	Yes	Mille Lacs County Five Year Transportation Plan 2017-2021
Stormwater Management Plan / Drainage Plan	No	Mille Lacs County Drainage Authority – Drainage Policy (overseen by MLC Public Works). The City of Wahkon has a stormwater management plan (2021) developed with the SWCD.
Burning Permits/Restrictions (Sheriff's Office or MN DNR)	Yes	MN DNR
Comprehensive Local Water Management Plan	Yes	Mille Lacs County Local Water Resource Management Plan 2018-2027

Watershed Plan (One Watershed, One Plan)	Yes	Snake River 1W1P
Wellhead Protection Plan		Municipal level plans are done in coordination with MDH
Forest Management Plan	Yes	Mille Lacs County Assessor's Office manages applications for Managed Forest Land
Community Wildfire Protection Plan (CWPP)	No	
Participation in MN DNR Firewise Program	No	
Database of Dry Hydrants/Well Access	No	Local information on rural access points maintained by area fire departments
<i>Other (please describe)</i>		

LOCAL POLICY / PROGRAM CAPABILITIES	Yes/No	Comments
Land Use, Planning, & Zoning Ordinance	Yes	The current Mille Lacs County Development Ordinance was approved April 7, 2015,
Subdivision Ordinance	Yes	Mille Lacs County Development Ordinance, Article 7 Subdivisions
Building Codes	Yes	Mille Lacs County enforces the State Building Code. MLC Land Services – Zoning Offices oversees permitting for new development.
National Flood Insurance Program (NFIP)	Yes	Mille Lacs County NFIP entry date 09/27/1985
Flood insurance rate maps	Yes	Current effective map date 03/04/2013. Digital maps are available on the MLC website
Floodplain Ordinance	Yes	Mille Lacs County Development Ordinance, Article 3 Flood Plain Standards

Shoreland Ordinance	Yes	Mille Lacs County Development Ordinance, Article 3 Shoreland Standards
Minnesota Buffer Law / Soil Erosion Ordinance	Yes	Mille Lacs County has a Buffer Ordinance. The Mille Lacs SWCD enforces Buffer Law compliance requirements
Home Buyouts for flood or erosion mitigation	No	Mille Lacs County Zoning has confirmed that we have not done any buyouts in the past.
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	Mille Lacs County Development Ordinance, Article 3, Section 310.1 Manufactured Homes addresses anchoring requirements.

ADMINISTRATIVE/TECHNICAL CAPABILITIES	Yes/No	Comments
Emergency Management Director	Yes	Mille Lacs County Emergency Management Director
Sheriff/Police Department	Yes	Mille Lacs County Sheriff's Office
Floodplain Administrator	Yes	Mille Lacs County Zoning Administrator
Chief Building Official	Yes	Mille Lacs County Zoning Administrator
County Engineer	Yes	Mille Lacs County Public Works Director
Mapping Specialist (GIS)	Yes	Mille Lacs County GIS Director
Public Health Coordinator/Department	Yes	Mille Lacs County Public Health Dept.

Planning Commission	Yes	Mille Lacs County Planning Commission – comprised of residents appointed by the County Board
Soil and Water Conservation District	Yes	Mille Lacs 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	The Mille Lacs County Emergency Management website page provides educational links on severe weather awareness and preparedness.

Appendix E – Past Mitigation Action Review Status Report

Mille Lacs County

Past Mitigation Action Review Status Report

Following is a report on the status of mitigation actions related to natural hazards included in the Mille Lacs County 2017 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 Mille Lacs County and by city jurisdictions, as applicable.

Hazard	Mitigation Action	Jurisdiction	Status	Comments
Wildfire	Wildfire risks reduced by minimizing fuel in areas, within parks systems and using multiple jurisdictions to prevent spread.	Mille Lacs County	Ongoing	Fuel risk reduction measures for forests in Mille Lacs County are under the authority of MN DNR Forestry – Little Falls Office
Wildfire	Structures protected from wildfires	Mille Lacs County & Cities	Ongoing	Under directive of local fire departments
Wildfire	The safety of residents by wildfire education	Mille Lacs County	Ongoing	MN DNR, Mille Lacs County Sheriff's Office, and local FD's continue to alert the public to high risk wildfire conditions and burn bans.
Flood	Elimination of nonconforming structures in the 100 year floodplain	Mille Lacs County & Cities	Ongoing	Mille Lacs County addresses zoning for nonconforming structures and flood risks through local land use ordinances.
Flood	100 year flood risks addressed by high-resolution digital elevation model floodplain mapping for all jurisdictions	Mille Lacs County & Cities	Ongoing	Mille Lacs County has existing flood risk maps by MN DNR. Current effective map date for the county is 03/04/2013.
Severe Storms	Safe and accessible shelter from violent storms	Mille Lacs County & Cities	Ongoing	Local jurisdictions will continue to identify and address areas that should have storm shelters such as mobile home parks.
Severe Storms	Adequate severe storm warning system for all county residents by ensuring they are aware of NWS warning systems especially in townships	Mille Lacs County	Ongoing	Mille Lacs County uses the RAVE emergency notification system and encourages all residents to sign up for it. The county also works with local jurisdictions to ensure that outdoor warning sirens are tested and functioning properly.

Hazard	Mitigation Action	Jurisdiction	Status	Comments
Severe Storms & Extreme Temperatures	Infrastructure is protected and wisely used in regard to storms & extreme temps	Mille Lacs County & Cities	Ongoing	The county and all jurisdictions are encouraged to address any vulnerable infrastructure as needed.
Severe Storms & Extreme Temperatures	Providing support and relief to people affected by temperature extremes	Mille Lacs County	Ongoing	Emergency plans are in place for sheltering for periods of extreme cold or extreme heat coupled with a power outage.
Drought	Ample and high- quality ground water supplies per drought	Mille Lacs County	Delete	Mille Lacs County and local jurisdictions will enforce local watering restrictions as per MN DNR guidance during a period of severe drought. Ensuring adequate water supplies would otherwise be addressed under the county Emergency Operations Plan as needed in coordination with HSEM.

Appendix F – Planning Team Meetings

Mille Lacs 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 Mille Lacs 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

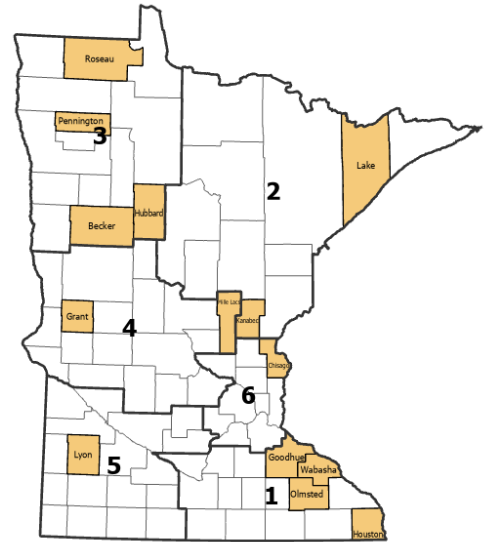
The U-Spatial@UMD team will coordinate with each Emergency Manager throughout the plan update process to engage participating jurisdictions and other stakeholders in the planning process. Following is an overview of key tasks that the U-Spatial@UMD team will facilitate to meet FEMA requirements in the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

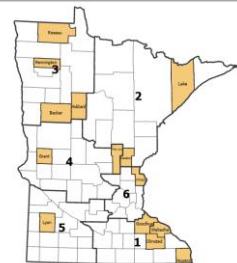
Minnesota HSEM:

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

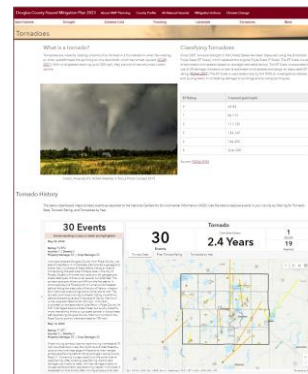
ArcGIS Hub (website) companion

- 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

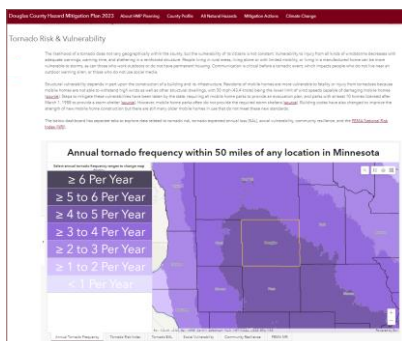
Stacey Stark



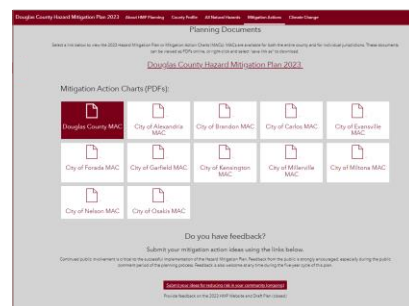
Example Web Site



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>

Mille Lacs County HMP Planning Team

Meeting #1 Presentation and Discussion

11/20/23 Meeting Summary & Documentation

Summary: On Monday, November 20, 2023 Mille Lacs 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 Mille Lacs County Hazard Mitigation Plan (HMP). The purpose of the meeting was to formally present information about the Mille Lacs 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: Mille Lacs 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 **24** people attended the meeting. Representation included elected officials and departmental staff from Mille Lacs County and the cities of Isle, Onamia, and Wahkon. Representatives from the cities of Bock, Foreston, Milaca, Pease, and Princeton were not available to attend. Other stakeholders, including neighboring jurisdictions, participated in the meeting. A participant list is provided below:

	Name	Organization	Job Title
1	Andy Beckstrom	Mille Lacs County Sheriff's Office	Emergency Management Director
2	John Henderson	Mille Lacs County Sheriff's Office	Deputy Emergency Manager
3	Beth Crook	Mille Lacs County Community and Veterans Services	Director
4	Brenda Eklund	Mille Lacs County	Auditor-Treasurer
5	Kristine Klopp	Mille Lacs County	Community Health Services Administrator
6	Heidi Culbertson	Mille Lacs County Public Health	PHEP/CRI Coordinator
7	Dillon Hayes	Mille Lacs County	County Administrator
8	Dan Whitcomb	Mille Lacs County	County Commissioner
9	Noelan Lange	Mille Lacs County	Facility & Fleet Operations Manager
10	Jamie Hubbell	City of Isle	Clerk-Treasurer
11	Michelle Peterson	City of Onamia	City Clerk/Treasurer

12	Karrie Roeschlein	City of Wahkon	City Clerk/Treasurer
13	Ronda Bjornson	City of Wahkon	Mayor
14	Ben Barton	Princeton Schools	Superintendent
15	David Wedin	Milaca Public Schools	Superintendent
16	Dean Kapsner	Isle School District	Superintendent
17	Chris Carlson	Borgholm township	Supervisor
18	Al Anderson	Bogus Brook TWP	Supervisor
19	Kurt Beckstrom	Borgholm township	Board Chair
20	Fred Miller	Fairview Health Services	Manager, Security and Emergency Management
21	Gina Becker	Mille Lacs Health System Ambulance	Ambulance Manager
22	Michele Heaver	The Salvation Army	Emergency Disaster Services Director
23	Chad Meyer	Isanti County Sheriff	Captain/Emergency Manager
24	Victoria MacKissock	Morrison County	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

MILLE LACS 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)

- Tornadoes (13/18) 72%
- Flooding (8/18) 44%
- Wind Storms (5/18) 28%
- Wildfire (1/18) 6%
- Hail (2/18) 11%
- Lightning (1/18) 6%
- Drought (4/18) 22%
- Extreme Heat (2/18) 11%

The top 3 hazards noted were tornadoes, flooding, and windstorms.

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 (10/15) 67%
- Yes (3/15) 20%
- Not Sure (2/15) 13%

What hazard risk has changed, and in what jurisdiction?

- Jamie Hubbell, City of Isle, City Clerk-Treasurer: “If anything, maybe more flooding increased risk just due to years with more rain.”
- Kurt Beckstrom, Borgholm Township Board Chair: “Increased populations and more septic systems.”
- Fred Miller, Fairview Health Services, Manager, Security and Emergency Management: “Winter storms has not changed, but our preparedness for it has. Transportation and staffing.”
- Dillon Hayes, Mille Lacs County Administrator: “Increased risk of severe weather (climate), changing frequency and severity of rain events.”

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 Mille Lacs County or within your own local jurisdiction? If so, are there any best outreach methods to used in order to provide an opportunity to participate?

- Jamie Hubbell, City of Isle, City Clerk-Treasurer: “Our senior citizens, most don’t have access to computers or access to internet.”
- Chad Meyer, Isanti County Emergency Management Director: “Homeless populations”
- Kristine Klopp, Mille Lacs County Community Health Services Administrator: “Lack of public transportation in MLC – makes it difficult for individuals with transportation barriers to access services in an emergency.”
- Fred Miller, Fairview Health Services, Manager, Security and Emergency Management: (method of outreach) “Town hall meetings, local newspaper”
- Post-meeting Discussion Question response form submitted by Michelle Peterson, Onamia City Clerk:
 - Senior Citizens have limited access to food, funds, transportation, and the internet.
 - The tribal community within the city faces discrimination.

- The community has a large number of fixed income citizens or very low-income citizens.
- Not sure on the best outreach method to give them an opportunity to participate. Newspaper? Internet?

DQ#2: What do you feel should be recorded as the updated Hazard Prioritizations for the Mille Lacs County 2023 HMP? Why? Following are the updated hazard priorities noted by planning team members during the meeting, as well as follow up input from agency partners following the meeting.

Hazards	2023 Risk Priority (Low, Moderate, or High)	Priority Change from past plan?
Flooding	Moderate	No change
Windstorms	High	No change
Tornadoes	Moderate	Decreased
Hail	Low	No change
Lightning	Low	No change
Winter Storms (heavy snow, blizzards, ice storms)	High	No change
Extreme Heat	Moderate	No change
Extreme Cold	Moderate	Decreased
Drought	Moderate	No change
Wildfire	High	Increased
Landslides	Moderate	Increased
Dam/Levee Failure	Low	No change

Comments:

- Regarding Wildfire: Dan Whitcomb, Mille Lacs County Commissioner - “I would like to see wildfire increased from low because of drought, increased development, and lack of fire department personnel. I think that is the hazard that is increasing the most.”
- Regarding Wildfire: Following the meeting, Jason Kern, MN DNR Resource Protection Program Forester followed up to provide wildfire data for Mille Lacs County and noted he felt the priority ranking for wildfire should be High for Mille Lacs County. Mille Lacs County ranks as #19th in the state of MN for wildfires, with numbers increasing from previous 10 year data.
- Regarding Flooding: Andy Beckstrom, Mille Lacs County EMD - “I think that flooding can remain as moderate. We are already started doing some mitigation work under Section 404 funding.”
- Regarding Tornadoes/Windstorms: Noelan Lange, Mille Lacs County Facility & Fleet Operations Manager - Suggested to drop tornadoes to moderate (vs. being grouped with windstorms as high).
- Regarding Landslides: Following the meeting, Susan Shaw, District Manager of the Mille Lacs Soil & Water Conservation District contacted Bonnie Hundrieser with an emailed Discussion Question response form. Regarding the prioritization for landslides, she noted that *“There are a few homes on outside bends of the Rum which are highly vulnerable to failure of the bank.”* Based on this information, the prioritization for landslides was increased from low to moderate

so that a hazard profile will be developed for landslides in the HMP update. The U-Spatial team will work with the SWCD to get data to support the risk analysis and development of mitigation actions for the landslide risks addressed.

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

- During the presentation there were no comments.
- Following the meeting, feedback was received via Discussion Question response forms:
 1. Michelle Peterson, City Clerk, City of Onamia:
 - Rain Gardens for areas that have standing water in the summer.
 - Inspect damaged trees in the area.
 - Continue to enforce leaf dumping to prevent lake from getting choked with weeds.
 2. Susan Shaw, District Manager, Mille Lacs SWCD
We need to install drainage management structures to reduce and moderate flow during high peak rainfall events. Floodwater retention basins, wetland restoration, WASCOBs, 2 stage ditches on public ditch systems, floodplain restoration where streams have been altered into private ditches.

ADDITIONAL QUESTIONS/COMMENTS

Following are additional comments or questions addressed during the planning team meeting and responses from meeting presenters:

Question - Dan Whitcomb, Mille Lacs County Commissioner: *Should we include our nuclear planning into an addendum to this plan since the plan does not cover non-natural hazards?*

Response - Andy Beckstrom, MLC Emergency Management Director: *That would not be necessary, Mille Lacs County participates in the REP Program (Radiological Emergency Preparedness) and we have separate plans in place under that program that address things such as evacuation and sheltering.*

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

MEETING DOCUMENTATION

Attached are additional documentation items for the Mille Lacs 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: [Andy Beckstrom](#)
To: [Andy Beckstrom](#); [John Henderson](#); [Kyle Burton](#); [Dillon Hayes](#); [Noelan Lange](#); [Lainy Hoskins](#); [Brandon Reinking](#); [beth crook](#); [Doug Hansen](#); [Brenda Eklund](#); [Lisa Olson](#); [Keenan Hayes](#); [Kevin Schultz](#); [Heidi Culbertson](#); [Genny Reynolds](#); [Dan Whitcomb](#); [Phil Peterson](#); [Roger Tellinghuisen](#); [David Oslin](#); [cityofbock@yahoo.com](#); [pdiadam@yahoo.com](#); [cityofforeston@yahoo.com](#); [marylongfield54@gmail.com](#); [jamie@cityofisle.com](#); [ernie@cityofisle.com](#); [tpfaff@milacacity.com](#); [davedillan4@gmail.com](#); [michelle@cityofonamia.com](#); [marge@cityofonamia.com](#); [cityofpease@gmail.com](#); [mmcperson@princetonmn.org](#); [sjenkins@princetonmn.org](#); [rlawrence@princetonmn.org](#); [Mayor@princetonmn.org](#); [karrie@cityofwahkon.com](#); [mayor.ronda@cityofwahkon.com](#); [tlarsen@citlink.net](#); [twedell@frontiernet.net](#); [Bradbury.clerk.treasurer@gmail.com](#); [rstraka@hotmail.com](#); [eastsidetownshipmichelle@gmail.com](#); [dsgrgreenbushtwp@outlook.com](#); [Kathyshipman69@yahoo.com](#); [mcquirepamelaj@gmail.com](#); [Tomcunz@frontiernet.com](#); [bobhoe@frontiernet.net](#); [sehemmerich@outlook.com](#); [milotownship@yahoo.com](#); [cstogsdill@hotmail.com](#); [dlee2018@yahoo.com](#); [kyle@pagetownship.org](#); [Clerk@princetonmn.org](#); [southharbor17@gmail.com](#); [Lisa.Villcheck@state.mn.us](#); [susan.shaw@millelacsSWCD.org](#); [barbara.zeroth@usda.gov](#); [brett.repulske@usda.gov](#); [mike.ginnaty@state.mn.us](#); [Jason.kern@state.mn.us](#); [Michele.heaver@usc.salvationarmy.org](#); [Kayla.hagfors@ecemn.com](#); [Ben.barton@isd477.org](#); [David.wedin@milaca.k12.mn.us](#); [jvold@onamia.k12.mn.us](#); [gbecker@mlhealth.org](#); [Fred.miller@fairview.org](#); [dkapsner@isle.k12.mn.us](#); [office@fcssaints.com](#); [abanks@ccspease.com](#); [Heidi.Culbertson](#); [robert.voss@ecrdc.org](#); [mlindell@found.org](#); [Scott.Heide@crowwing.us](#); [dan.guida@co.aitkin.mn.us](#); [kelly.schmitt@co.kanabec.mn.us](#); [Chad.Meyer@sheriff.co.isanti.mn.us](#); [kyle.breffle@co.sherburne.mn.us](#); [ktschida@co.benton.mn.us](#); [victoriam@co.morrison.mn.us](#); [monte.fronk@millelacsband.com](#)
Cc: [Bonnie K Hundrieser](#); [Stacey Stark](#)
Subject: HAZARD MITIGATION PLAN UPDATE – MEETING INVITATION
Date: Tuesday, October 17, 2023 11:08:41 AM
Attachments: [image001.png](#)

MILLE LACS COUNTY

HAZARD MITIGATION PLAN UPDATE – MEETING INVITATION

Greetings,

Your presence is requested at a Planning Team Meeting for the update of the **Mille Lacs 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, November 20, 2023

Time: 1:00 p.m. – 2:30 p.m.

Zoom Link: https://umn-private.zoom.us/webinar/register/WN_HO4iYxxRTGKozqxrW_93xg

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 Mille Lacs 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 Mille Lacs 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 Mille Lacs 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,

Andy Beckstrom | *PSAP Manager*

Emergency Management Director

ARMER Administrator / TAC

Mille Lacs County Sheriff's Office

O: 320.983.8288 | C: 320.241.0718

24H: 320.983.8257



From: [Bonnie K Hundrieser](#)
To: [andy.beckstrom@millelacs.mn.gov](#); [John.Henderson@millelacs.mn.gov](#); [kyle.burton@millelacs.mn.gov](#); [dillon.hayes@millelacs.mn.gov](#); [noelan.lange@millelacs.mn.gov](#); [lainy.hoskins@millelacs.mn.gov](#); [Brandon.reinking@millelacs.mn.gov](#); [beth.crook@millelacs.mn.gov](#); [douq.hansen@millelacs.mn.gov](#); [brenda.eklund@millelacs.mn.gov](#); [lisa.olson@millelacs.mn.gov](#); [keenan.hayes@millelacs.mn.gov](#); [Kevin.Schultz@millelacs.mn.gov](#); [Heidi.culbertson@millelacs.mn.gov](#); [Genny.Reynolds@millelacs.mn.gov](#); [Dan.Whitcomb@millelacs.mn.gov](#); [Phil.Peterson@millelacs.mn.gov](#); [Roger.Tellinghuisen@millelacs.mn.gov](#); [David.Oslin@millelacs.mn.gov](#); [cityofbock@yahoo.com](#); [pdiadam@yahoo.com](#); [cityofforeston@yahoo.com](#); [marylongfield54@gmail.com](#); [jamie@cityofisle.com](#); [ernie@cityofisle.com](#); [tpfaff@milacacity.com](#); [davedillan4@gmail.com](#); [michelle@cityofonamia.com](#); [marge@cityofonamia.com](#); [cityofpease@gmail.com](#); [mmcperson@princetonmn.org](#); [sjenkins@princetonmn.org](#); [rlawrence@princetonmn.org](#); [Mayor@princetonmn.org](#); [karrie@cityofwahkon.com](#); [mayor.ronda@cityofwahkon.com](#); [tlarsen@citlink.net](#); [twedell@frontiernet.net](#); [Bradbury.clerk.treasurer@gmail.com](#); [rstraka@hotmail.com](#); [eastsidetownshipmichelle@gmail.com](#); [dsgreenbushtwp@outlook.com](#); [Kathyshipman69@yahoo.com](#); [mcquirepamelaj@gmail.com](#); [Tomcunz@frontiernet.com](#); [bobhoe@frontiernet.net](#); [sehemmerich@outlook.com](#); [milotownship@yahoo.com](#); [cstogsdill@hotmail.com](#); [dlee2018@yahoo.com](#); [kyle@pagetownship.org](#); [Clerk@princetonmn.org](#); [southharbor17@gmail.com](#); [Lisa.Villcheck@state.mn.us](#); [susan.shaw@millelacsSWCD.org](#); [barbara.zeroth@usda.gov](#); [brett.repulske@usda.gov](#); [mike.ginnaty@state.mn.us](#); [Jason.kern@state.mn.us](#); [Michele.heaver@usc.salvationarmy.org](#); [Kayla.hagfors@ecemn.com](#); [Ben.barton@isd477.org](#); [David.wedin@milaca.k12.mn.us](#); [jvold@onamia.k12.mn.us](#); [gbecker@mlhealth.org](#); [Fred.miller@fairview.org](#); [dkapsner@isle.k12.mn.us](#); [office@fcssaints.com](#); [abanks@ccspease.com](#); [Heidi.culbertson@millelacs.mn.gov](#); [robert.voss@ecrdc.org](#); [mlindell@ifound.org](#); [Scott.Heide@crowwing.us](#); [dan.guida@co.aitkin.mn.us](#); [kelly.schmitt@co.kanabec.mn.us](#); [Chad.Meyer@sheriff.co.isanti.mn.us](#); [kyle.breffle@co.sherburne.mn.us](#); [ktschida@co.benton.mn.us](#); [victoriam@co.morrison.mn.us](#); [monte.fronk@millelacsband.com](#)
Cc: [Stacey Stark](#); [Jane Lindelof](#)
Subject: Mille Lacs County HMP Planning Team Meeting Materials – Please Review
Date: Tuesday, November 14, 2023 10:55:00 AM
Attachments: [Mille Lacs County 2023 HMP Overview handout.pdf](#)
[Mille Lacs County HMP Mtg. #1 Discussion Questions.docx](#)
[HSEM HMA Grants Program Overview.pdf](#)
Importance: High

Greetings,

The Mille Lacs County Hazard Mitigation Plan (HMP) Update – Planning Team Meeting #1 will be held via Zoom on **Monday, November 20, 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. **Mille Lacs County 2023-2024 Hazard Mitigation Plan Update Overview**
2. **Mille Lacs 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. Please return your form prior to the meeting so that we may include you in the list of meeting participants and include your feedback in the meeting documentation.
3. **HSEM Hazard Mitigation Assistance (HMA) Grants Program Overview**

If you have not registered yet but wish to do so, please control+click on the link below:

Zoom Link: https://umn-private.zoom.us/webinar/register/WN_HO4iYxxRTGKozqxrw_93xg

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

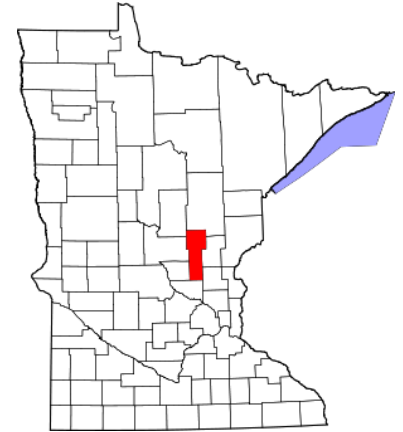
Hundrieser Consulting LLC

Phone: 218-343-3468



Mille Lacs 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 **Mille Lacs 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 Mille Lacs 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 Mille Lacs 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 Mille Lacs 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 Mille Lacs 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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Mille Lacs County Hazard Mitigation Plan Update

Planning Team Meeting #1 Discussion Questions

As part of the Mille Lacs 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 Mille Lacs County or within your own local jurisdiction? If so, are there any best outreach methods to use in order 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.

MILLE LACS COUNTY 2017 HAZARD MITIGATION PLAN

Hazards	Risk Priority
Winter Storms	High
Windstorms/Tornado	High
Extreme Cold	High
Hail	Moderate
Extreme Heat	Moderate

Flooding	Moderate
Drought	Moderate
Lightning	Low
Wildfire	Low
Dam Failure	Low
Landslides	Not Addressed

DISCUSSION QUESTION: What do you feel should be recorded as the updated hazard prioritizations for the Mille Lacs 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.

MILLE LACS 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 Mille Lacs 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>

MILLE LACS COUNTY Hazard Mitigation Plan Update 2023

Planning Team Meeting #1
Presentation & Discussion, 11/20/23



Welcome & Introductions

U-Spatial@UMD Project Leads



Stacey Stark
Project Manager
U-Spatial@UMD



Bonnie Hurdieser
HM Planning Specialist
Hurdieser Consulting LLC

Mille Lacs County Project Lead

- Andy Beckstrom, Mille Lacs County Emergency Management 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 name 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 **Mille Lacs County HMP Planning Team** for a presentation on the plan update and to discuss key items required for the plan update.

AGENDA

- 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

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

PRESENTER: STACEY STARK

HMP OVERVIEW – KEY POINTS

MILLE LACS 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.

Mille Lacs County HMP Update 2023

- Last plan was adopted in 2017.
- 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 Mille Lacs 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 Mille Lacs 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

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 Mille Lacs 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
MILLE LACS COUNTY

Mille Lacs County 2017 HMP Risk Rankings

Winter Storms	High
Windstorms/Tornado	High
Extreme Cold	High
Hail	Moderate
Extreme Heat	Moderate
Flooding	Moderate
Drought	Moderate
Wildfire	Low
Lightning	Low
Dam Failure	Low

Has the level of priority for the following natural hazards changed for Mille Lacs County?

Please consider:

- Increase or decrease of events (probability)
- Local vulnerabilities (impacts to people, systems, and infrastructure)
- New development and population growth

PRESENTER: STACEY STARK

Discussion Question #2

What should be recorded as the updated Hazard Prioritizations for the Mille Lacs County 2023 HMP?

Please share your feedback as we go through the hazard risk assessment

PRESENTER: STACEY STARK

Natural Hazards Assessment on Website- Demo

MILLE LACS 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

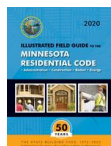
PRESENTER: BONNIE HUNDRIESER

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 Mille Lacs 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

218-726-7438

U-SPATIAL

UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover

Bonnie Hundrieser, HM Planner

Hundrieser Consulting LLC

hundrieserconsulting@outlook.com

218-343-3468



PRESENTER: STACEY STARK

Mille Lacs County HMP Planning Team Meeting #2

11/7/24 Meeting Summary & Documentation

Summary: On Thursday, November 7, 2024, Mille Lacs 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 Mille Lacs County Hazard Mitigation Plan (HMP). The purpose of the meeting was to formally convene the Mille Lacs 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: Mille Lacs 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 **25** people attended the meeting. Representation included elected officials and departmental staff from Mille Lacs County and the cities of Isle, Milaca, Onamia, Princeton, and Wahkon. The cities of Bock, Foreston, and Pease 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	Andy Beckstrom	Mille Lacs County Emergency Management	Emergency Management Director
2	Gina Becker	Mille Lacs Health System	Ambulance Manager & Disaster Chair
3	Dillon Hayes	Mille Lacs County	County Administrator
4	Doug Hansen	Mille Lacs County	Land Services Director
5	Heidi Culbertson	Mille Lacs County Public Health	PHEP/CRI Coordinator
6	Kris Klopp	Mille Lacs County Public Health	CHS Administrator
7	Lainy Hoskins	Mille Lacs County	Community & Organizational Development Manager
8	Noelan Lange	Mille Lacs County	Facility & Fleet Operations Manager
9	Susan Shaw	Mille Lacs Soil & Water Conservation District	District Administrator
10	Jamie Minenko	City Of Isle	Clerk-Treasurer
11	Tammy Pfaff	City of Milaca	City Manager
12	Michelle Peterson	City of Onamia	City Clerk/Treasurer
13	Michele McPherson	City of Princeton	City Administrator
14	Ron Lawrence	City of Princeton Emergency Management	Emergency Manager
15	Karrie Roeschlein	City of Wahkon	City Clerk/Treasurer

16	Jason Kern	MN DNR Forestry	Resource Protection Program Forester
17	Frederick Miller	M Health Fairview Northland Medical Center	Manager, Security and Emergency Management
18	David Wedin	Milaca Public Schools	Superintendent
19	Kayla Hagfors	East Central Energy	Finance & Assets Manager
20	Dean Kapsner	Isle Schools	Superintendent
21	Ben Mueller	Milo Township	Supervisor
22	Richard Bronson	Greenbush Townboard	Supervisor
23	JesseDaniel Hadrava	Borgholm Township	Supervisor
24	Clinton Maxson	Isanti County	Emergency Manager
25	Derek Baas	Sherburne County Sheriff's Office	Deputy Director of Emergency Management

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.

MILLE LACS COUNTY HMP PLANNING TEAM MEETING #2 DISCUSSION NOTES

- There were no questions or comments from participants during the meeting.

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 Mille Lacs 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: [Andy Beckstrom](#)
To: [Andy Beckstrom](#); [John Henderson](#); [Kyle Burton](#); [Dillon Hayes](#); [Noelan Lange](#); [Lainy Hoskins](#); [Brandon Reinking](#); [beth crook](#); [Doug Hansen](#); [Brenda Eklund](#); [Lisa Olson](#); [Keenan Hayes](#); [Kyle Lau](#); [Heidi Culbertson](#); [Kristine Klopp](#); [Genny Reynolds](#); [Dan Whitcomb](#); [Phil Peterson](#); [Roger Tellinghuisen](#); [David Oslin](#); [cityofbock@yahoo.com](#); [pdiamad@yahoo.com](#); [cityofforest@yahoo.com](#); [jamie@cityofisle.com](#); [ernie@cityofisle.com](#); [tpfaff@milacacity.com](#); [davedillan4@gmail.com](#); [michelle@cityofonamia.com](#); [marge@cityofonamia.com](#); [cityofpease@gmail.com](#); [mmcperson@princetonmn.org](#); [sienkins@princetonmn.org](#); [rlawrence@princetonmn.org](#); [Mayor@princetonmn.org](#); [karrie@cityofwahkon.com](#); [mayor.ronda@cityofwahkon.com](#); [tlarsen@citlink.net](#); [twedell49@gmail.com](#); [Bradbury.clerk.treasurer@gmail.com](#); [rstraka@hotmail.com](#); [eastsidetownshipmichelle@gmail.com](#); [dsgreenbushtwp@outlook.com](#); [Kathyshipman69@yahoo.com](#); [mcquirepamelaj@gmail.com](#); [Tomcunz@frontiernet.com](#); [bobhoe@frontiernet.net](#); [sehemmerich@outlook.com](#); [milotownship@yahoo.com](#); [cstogsdill@hotmail.com](#); [dleeve2018@yahoo.com](#); [kyle@pagetownship.org](#); [Clerk@princetontownshipmn.us](#); [southharbor17@gmail.com](#); [Lisa.Villcheck@state.mn.us](#); [susan.shaw@millelacsSWCD.org](#); [barbara.zeroth@usda.gov](#); [alexander.ostrovsky@usda.gov](#); [mike.ginnaty@state.mn.us](#); [Jason.kern@state.mn.us](#); [Michele.heaver@usc.salvationarmy.org](#); [Kayla.hagfors@ecemn.com](#); [Ben.barton@isd477.org](#); [David.wedin@milaca.k12.mn.us](#); [jvold@onamia.k12.mn.us](#); [gbecker@mlhealth.org](#); [Fred.miller@fairview.org](#); [dkapsner@isle.k12.mn.us](#); [office@fcssaints.com](#); [abanks@ccspease.com](#); [Heidi.Culbertson](#); [robert.voss@ecrdc.org](#); [mlindell@found.org](#); [Scott.Heide@crowwing.us](#); [dan.guida@co.aitkin.mn.us](#); [kelly.schmitt@co.kanabec.mn.us](#); [Chad.Meyer@sheriff.co.isanti.mn.us](#); [kyle.breffle@co.sherburne.mn.us](#); [ktschida@co.benton.mn.us](#); [victoriam@co.morrison.mn.us](#); [monte.fronk@millelacsband.com](#)
Cc: [Bonnie K Hundrieser](#)
Subject: Mille Lacs County Hazard Mitigation Planning Team Meeting #2 Invitation
Date: Tuesday, September 17, 2024 8:01:25 AM
Attachments: [image001.png](#)

MILLE LACS COUNTY HAZARD MITIGATION PLAN UPDATE – MEETING INVITATION

Greetings,

Your presence is requested at the **2nd Planning Team Meeting** for the update of the **Mille Lacs 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: Thursday, November 7, 2024

Time: 1:00 p.m. – 2:30 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 Mille Lacs 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 Mille Lacs 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,

Andy Beckstrom | *PSAP Manager*

Emergency Management Director

ARMER Administrator / TAC

Mille Lacs County Sheriff's Office

O: 320.983.8288 | C: 320.241.0718

24H: 320.983.8257



Mille Lacs County Hazard Mitigation Plan Update 2024 Planning Team Meeting #2

November 7, 2024



Welcome & Introductions

U-Spatial@UMD Project Leads



Stacey Stark
Project Manager
U-Spatial@UMD



Bonnie Hundrieser
HMP Planning Specialist
Hundrieser Consulting LLC

Mille Lacs County Project Lead

- Andy Beckstrom, Mille Lacs County 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 Mille Lacs 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
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- 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 **Mille Lacs 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

Mille Lacs 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 2017.

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.

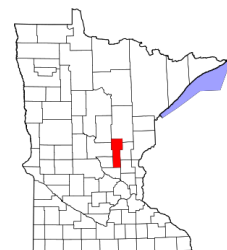
PRESENTER: BONNIE HUNDRIESER

Who the Plan Covers



This is a **multi-jurisdictional plan** that covers Mille Lacs 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 Mille Lacs County



Prioritization of hazards by the Mille Lacs 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
Winter Storms	High
Windstorms	High
Wildfire	High
Tornadoes	Moderate
Flooding	Moderate
Landslides	Moderate
Extreme Cold	Moderate
Extreme Heat	Moderate
Drought	Moderate
Dam Failure	Low
Lightning	Low
Hailstorms	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/MilleLacsHMP

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
- Bury Overhead Powerlines
- Wildfire Mitigation
- Soil Stabilization
- Flood Risk Reduction
- Green Infrastructure
- Other projects difficult to conduct a standard BCA (i.e., tornado warning sirens, generators for critical facilities)

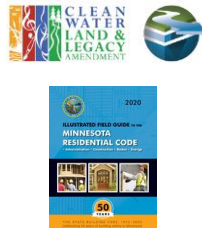
PRESENTER: BONNIE HUNDRIESER

Local Planning & Regulations



Mille Lacs County Examples:

- Enforcement of ordinances that reduce impacts of high rain events.
- Participation in regional watershed planning with SWCD and area WD's (1W1P).
- Enforcement of watering restrictions during periods of extreme drought.
- Development of a Mille Lacs County Community Wildfire Protection Plan (CWPP)



PRESENTER: BONNIE HUNDRIESER

Structure & Infrastructure Projects

Mille Lacs County Examples:

- Installation of new outdoor warning sirens
- Construction of tornado safe rooms
- Burying powerlines to reduce power failure
- Conducting property buyouts for flooding (Cities of Milaca & Princeton, SWCD)
- Stormwater management projects to handle high rain events
- Road and bridge improvements



PRESENTER: BONNIE HUNDRIESER

Natural Systems Protection



Mille Lacs 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
 - Wildland fuels reduction projects
 - Installing Rain Gardens to reduce impacts of high rain events



PRESENTER: BONNIE HUNDRIESER

Education & Awareness Programs

Mille Lacs County Examples:

- Promoting sign-up for the county's emergency notification system.
- Personal Preparedness for severe weather, temps & power outages
- Firewise Education
- Tornado Shelter in Place awareness
- Extreme Cold – avoiding frozen pipes
- Drought – water use restrictions / water conservation tips



Ready

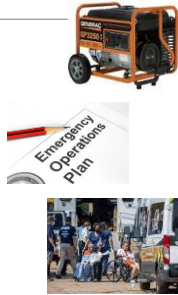


PRESENTER: BONNIE HUNDRIESER

Mitigation Preparedness & Response Support

Mille Lacs County Examples:

- Acquire generators for backup power of critical infrastructure and key facilities
- Update of county EOP
- Planning for warming/cooling centers, community shelter locations
- 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?



November, 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



December, 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

Stacey Stark, MS, GISP

U-Spatial@UMD

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218-726-7438

Bonnie Hundrieser, HM Planner

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218-343-3468

U-SPATIAL
UNIVERSITY OF MINNESOTA DULUTH
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.	• 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	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. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.	• 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 <i>Many of these types of actions are projects eligible for funding through FEMA HMA grant programs.</i>

Mitigation Strategy	Description	Example Mitigation Actions
Natural Systems Protection	These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.	• 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 <i>Many of these types of actions are projects eligible for funding through FEMA HMA grant programs.</i>
Education and Awareness Programs	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.	• 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 <i>Some of these types of actions may be projects eligible for funding through the FEMA HMA "5 Percent Initiative Program".</i>
Mitigation Preparedness and Response Support	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.	• 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

Mille Lacs County MHMP News Release #1

Record of Public Input & Incorporation

Overview: On **June 8, 2023**, Mille Lacs 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. Mille Lacs 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 Mille Lacs 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 Mille Lacs 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: Mille Lacs County Emergency Management and local jurisdictions did not receive any public input following News Release #1.

From: [Andy Beckstrom](#)
To: [Andy Beckstrom](#); [John Henderson](#); [Kyle Burton](#); [Dillon Hayes](#); [Noelan Lange](#); [Lainy Hoskins](#); [Brandon Reinking](#); [beth crook](#); [Doug Hansen](#); [Brenda Eklund](#); [Lisa Olson](#); [Keenan Hayes](#); [Kevin Schultz](#); [Heidi Culbertson](#); [Genny Reynolds](#); [Dan Whitcomb](#); [Phil Peterson](#); [Roger Tellinghuisen](#); [David Oslin](#); [cityofbock@yahoo.com](#); [pdiadam@yahoo.com](#); [cityofforest@yahoo.com](#); [marylongfield54@gmail.com](#); [jamie@cityofisle.com](#); [ernie@cityofisle.com](#); [tpfaff@milacacity.com](#); [davedillan4@gmail.com](#); [michelle@cityofonamia.com](#); [marge@cityofonamia.com](#); [cityofpease@gmail.com](#); [mmcpherson@princetonmn.org](#); [sjenkins@princetonmn.org](#); [rlawrence@princetonmn.org](#); [Mayor@princetonmn.org](#); [karrie@cityofwahkon.com](#); [mayor.ronda@cityofwahkon.com](#); [tlarsen@citlink.net](#); [twedell@frontiernet.net](#); [Bradbury.clerk.treasurer@gmail.com](#); [rstraka@hotmail.com](#); [eastsidetownshipmichelle@gmail.com](#); [dsgreenbushtwp@outlook.com](#); [Kathyshipman69@yahoo.com](#); [mcquirepamelaj@gmail.com](#); [Bgwelly0@gmail.com](#); [bobhoe@frontiernet.net](#); [sehemmerich@outlook.com](#); [milotownship@yahoo.com](#); [cstogsdill@hotmail.com](#); [dleeve2018@yahoo.com](#); [kyle@pagetownship.org](#); [Clerk@princeton townshipmn.us](#); [southharbor17@gmail.com](#); [Lisa.Villcheck@state.mn.us](#); [susan.shaw@millelacsSWCD.org](#); [barbara.zeroth@usda.gov](#); [brett.repulske@usda.gov](#); [mike.ginnaty@state.mn.us](#); [Jason.kern@state.mn.us](#); [Michele.heaver@usc.salvationarmy.org](#); [Kayla.hagfors@ecemn.com](#); [Ben.barton@isd477.org](#); [David.wedin@milaca.k12.mn.us](#); [jvold@onamia.k12.mn.us](#); [gbecker@mlhealth.org](#); [Fred.miller@fairview.org](#); [dkapsner@isle.k12.mn.us](#); [office@fcssaints.com](#); [abanks@ccspease.com](#); [Heidi.Culbertson](#); [robert.voss@ecrdc.org](#); [mlindell@found.org](#); [Scott.Heide@crowwing.us](#); [dan.guida@co.aitkin.mn.us](#); [kelly.schmitt@co.kanabec.mn.us](#); [Chad.Meyer@sheriff.co.isanti.mn.us](#); [kyle.breffe@co.sherburne.mn.us](#); [ktschida@co.benton.mn.us](#); [victoriam@co.morrison.mn.us](#); [monte.fronk@millelacsband.com](#)
Cc: [Bonnie K Hundrieser](#)
Subject: Mille Lacs County Hazard Mitigation News Release
Date: Thursday, June 8, 2023 10:38:58 AM
Attachments: [image001.png](#)
[Press Release 1.docx.pdf](#)

Greetings,

Mille Lacs County Emergency Management is commencing work on the update of the Mille Lacs 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 Mille Lacs County HMP update.

If you have any questions, please let me know.

Thank you,

Andy Beckstrom | *PSAP Manager*

Emergency Management Director

Mille Lacs County Sheriff's Office

O: 320.983.8288 | C: 320.241.0718

24H: 320.983.8257



From: [Andy Beckstrom](#)
To: mlm@apgecm.com; jeff.hage@apgecm.com
Cc: [Bonnie K. Hundrieser](#)
Subject: Hazard Mitigation Press Release
Date: Thursday, June 8, 2023 10:44:56 AM
Attachments: [image001.png](#)
[Press Release 1.docx.pdf](#)

Greetings,

Please see attached press release in regards to soliciting feedback towards the Mille Lacs County Emergency Management Hazard Mitigation Plan update. Please disseminate this notice on your platforms. Thank you!

Andy Beckstrom | *PSAP Manager*

Emergency Management Director

Mille Lacs County Sheriff's Office

O: 320.983.8288 | C: 320.241.0718

24H: 320.983.8257



Sheriff Kyle A. Burton
Chief Deputy Aaron Evenson

Mille Lacs County



MILLE LACS COUNTY NEWS RELEASE

June 8, 2023

Public Input Wanted as County Updates Hazard Mitigation Plan

Mille Lacs 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 Mille Lacs 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 Mille Lacs County HMP is a multi-jurisdictional plan that covers Mille Lacs County, including the cities of Bock, Foreston, Isle, Milaca, Onamia, Pease, Princeton, and Wahkon. The Mille Lacs 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 Andy Beckstrom, Mille Lacs County Emergency Management 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

Mille Lacs County Sheriff's Office

640 3rd St SE, Milaca, MN 56353

Phone: (320) 983-8250

Fax: (320) 983-8343

<https://www.millelacs.mn.gov/2395/Sheriffs-Office>

Follow us on Facebook

Mille Lacs County Jail & Dispatch

640 3rd St SE, Milaca, MN 56353

Phone-Jail: (320) 983-8244

Phone-Dispatch: (320) 983-8257

Fax-Jail: (320) 983-8419

Fax-Dispatch: (320) 983-8270

Sheriff Kyle A. Burton

Chief Deputy Aaron Evenson

Mille Lacs County



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, Mille Lacs 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 Mille Lacs 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.

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Sheriff Kyle A. Burton
Chief Deputy Aaron Evenson

Mille Lacs County



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

ANDY BECKSTROM
MILLE LACS COUNTY EMERGENCY MANAGEMENT DIRECTOR
Phone: (320) 983-8288

Email: andy.beckstrom@millelacs.mn.gov



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Mille Lacs County HMP News Release #1 – June 8, 2023
Chart Documentation of News Release Postings

Jurisdiction or Agency	Posting Representative	Date & Location of News Release Posting
Mille Lacs County	Andy Beckstrom, Mille Lacs County EMD, Heidi Culbertson, Public Health Director	6/8/23, Mille Lacs County Public Health website page, Emergency Management website page, county press releases website page, and Mille Lacs County Facebook page
City of Bock	Pat Buss, City Clerk	6/20/23, Borgholm Township town hall, which is where the City of Bock holds its city council meetings
City of Foreston	Rebecca Haugen, City Clerk	6/23/23, City Hall bulletin board
City of Isle	Jamie Hubbell, City Clerk	6/9/23, City Hall community bulletin board
City of Milaca	Tammy Pfaff, City Clerk	6/18/23, City Facebook page
City of Onamia	Michelle Peterson, City Clerk	6/8/23, City Hall notice board, Woodlands National Bank, Cedarwood Family Restaurant, and Onamia Post Office.
City of Pease	Jeff Hansen, City Clerk	6/16/23, City Hall community notice board
City of Princeton	Shawna Jenkins, City Clerk,	6/8/23, City Facebook page and City Hall bulletin board
City of Wahkon	Karrie Roeschlein, Clerk/Treasurer	6/9/23, City website, City Hall bulletin board & office counter, and Wahkon Post Office. It was also included in the 6/12/23 City Council meeting packet and agenda.
Isle Harbor Township	Pamela McGuire, Township Clerk	6/8/23, Township website
Princeton Township	Terry L. Pfleghaar, Township Clerk	6/13/23, Township office bulletin board, and on the outdoor bulletin board.
Borgholm Township	Trudy Wedell, Township Clerk	6/20/23, Town Hall bulletin board
Isle Public Schools	Jennifer Ernest, Principal	6/8/23, IPS Facebook page
Mille Lacs Soil and Water Conservation District	Susan Shaw, District Administrator	6/8/23, SWCD Facebook page
Natural Resources Conservation Services (NRCS)	Barbara Zeroth, Soil Conservationist	6/8/23, Entry way of the NRCS office.
Union Times Newspaper	Jeffrey Hage, Managing Editor	6/8/23, Union Times online news article

Mille Lacs County HMP News Release #2

Record of Public Input & Incorporation

Overview: On December 2, 2024 Mille Lacs 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 Mille Lacs 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 12/2/24 – 12/16/24 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 Mille Lacs 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 Mille Lacs 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 Mille Lacs County or local jurisdictions.**

From: [Andy Beckstrom](#)
To: [Andy Beckstrom](#); [John Henderson](#); [Kyle Burton](#); [Dillon Hayes](#); [Noelan Lange](#); [Lainy Hoskins](#); [Brandon Reinking](#); [beth crook](#); [Doug Hansen](#); [Brenda Eklund](#); [Lisa Olson](#); [Keenan Hayes](#); [Justin Bergerson](#); [Heidi Culbertson](#); [Kristine Klopp](#); [Genny Reynolds](#); [Dan Whitcomb](#); [Phil Peterson](#); [Roger Tellinghuisen](#); [David Oslin](#); [cityofbock@yahoo.com](#); [pdiadam@yahoo.com](#); [cityofforeston@yahoo.com](#); [jamie@cityofisle.com](#); [ernie@cityofisle.com](#); [tpfaff@milacacity.com](#); [davedillan4@gmail.com](#); [michelle@cityofonamia.com](#); [marge@cityofonamia.com](#); [cityofpease@gmail.com](#); [mmcperson@princetonmn.org](#); [sjenkins@princetonmn.org](#); [rlawrence@princetonmn.org](#); [Mayor@princetonmn.org](#); [karrie@cityofwahkon.com](#); [mayor.ronda@cityofwahkon.com](#); [tlarsen@citlink.net](#); [twedell49@gmail.com](#); [Bradbury.clerk.treasurer@gmail.com](#); [rstraka@hotmail.com](#); [eastsidetownshipmichelle@gmail.com](#); [dsgreenbushtwp@outlook.com](#); [Kathyshipman69@yahoo.com](#); [mcquirepamelaj@gmail.com](#); [Tomcunz@frontiernet.com](#); [bobhoe@frontiernet.net](#); [sehemmerich@outlook.com](#); [milotownship@yahoo.com](#); [clerkmudgett@gmail.com](#); [dlee2018@yahoo.com](#); [kyle@pagetownship.org](#); [Clerk@princetonmnmn.us](#); [southharbor17@gmail.com](#); [Lisa.Villcheck@state.mn.us](#); [susan.shaw@millelacsSWCD.org](#); [barbara.zeroth@usda.gov](#); [alexander.ostrovsky@usda.gov](#); [mike.ginnaty@state.mn.us](#); [Jason.kern@state.mn.us](#); [Michele.heaver@usc.salvationarmy.org](#); [Kayla.hagfors@ecemn.com](#); [Ben.barton@isd477.org](#); [David.wedin@milaca.k12.mn.us](#); [jvold@onamia.k12.mn.us](#); [gbecker@mlhealth.org](#); [Fred.miller@fairview.org](#); [dkapsner@isle.k12.mn.us](#); [office@fcssaints.com](#); [abanks@ccspease.com](#); [Heidi.Culbertson](#); [robert.voss@ecrdc.org](#); [agray@ifound.org](#); [Scott.Heide@crowwing.us](#); [dan.guida@co.aitkin.mn.us](#); [kelly.schmitt@co.kanabec.mn.us](#); [Chad.Meyer@sheriff.co.isanti.mn.us](#); [kyle.breffle@co.sherburne.mn.us](#); [ktschida@co.benton.mn.us](#); [victoriam@co.morrison.mn.us](#); [monte.fronk@millelacsband.com](#)
Cc: [Bonnie K Hundrieser](#); [Stacey Stark](#)
Subject: FW: MLC HMP News Release #2 - materials and instructions
Date: Monday, December 2, 2024 12:40:36 PM
Attachments: [image001.png](#)
[12-2-24 Mille Lacs County News Release Hazard Mitigation Plan Public Review.pdf](#)
[12-2-24 Mille Lacs County News Release Hazard Mitigation Plan Public Review.docx](#)
Importance: High

Greetings,

The public review and comment period is now open for the Mille Lacs County Hazard Mitigation Plan. Please see the attached news release.

The public review period will run from **December 2 to December 16**, prior to submission of the plan to FEMA.

Mille Lacs County and the cities of Bock, Foreston, Isle, Milaca, Onamia, Pease, Princeton, and Wahkon are requested to please post the release. Townships and other related stakeholders involved in the plan update are also encouraged to share the news release. Please post the news release to areas 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, and 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.

As this is a 15-day public review period, your prompt attention to this is appreciated.

Thank you,

Andy Beckstrom | *PSAP Manager*

Emergency Management Director

ARMER Administrator / TAC

Mille Lacs County Sheriff's Office

O: 320.983.8288 | C: 320.241.0718

24H: 320.983.8257



Sheriff Kyle A. Burton ***Chief Deputy Aaron Evenson***

Mille Lacs County



MILLE LACS COUNTY NEWS RELEASE

December 2, 2024

Public Comment Sought for Mille Lacs County's Hazard Mitigation Plan

Mille Lacs County has completed an updated draft of its Hazard Mitigation Plan (HMP) and is now seeking public feedback. Like all Minnesota counties, Mille Lacs 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 December 16, 2024. The public can access the plan using the following hyperlinks:

[Mille Lacs County HMP Website Homepage](#) (feedback form at the bottom of page)

[Mille Lacs County Mitigation Action Charts](#) (feedback form at the bottom of page)

The Mille Lacs County HMP is a multi-jurisdictional plan that covers Mille Lacs County, including all cities and townships within the county. The Mille Lacs 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 Mille Lacs 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.

Mille Lacs County Sheriff's Office

640 3rd St SE, Milaca, MN 56353

Phone: (320) 983-8250

Fax: (320) 983-8343

<https://www.millelacs.mn.gov/2395/Sheriffs-Office>

Follow us on Facebook

Mille Lacs County Jail & Dispatch

640 3rd St SE, Milaca, MN 56353

Phone-Jail: (320) 983-8244

Phone-Dispatch: (320) 983-8257

Fax-Jail: (320) 983-8419

Fax-Dispatch: (320) 983-8270

Sheriff Kyle A. Burton

Chief Deputy Aaron Evenson

Mille Lacs County



Hazard mitigation planning helps Mille Lacs 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 Mille Lacs 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. Mille Lacs 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 Mille Lacs County Emergency Management.

Contact:

Andy Beckstrom
Mille Lacs County Emergency Management Director
Phone: (320) 983-8288
Email: andy.beckstrom@millelacs.mn.gov

Please scan the following QR code to go directly to the Mille Lacs County Hazard Mitigation Plan interactive website:



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Fax-Dispatch: (320) 983-8270

Mille Lacs County HMP News Release #2 (12/2/24)
Chart Documentation of News Release Postings

Jurisdiction or Agency	Posting Representative	Date & Location of News Release Posting
Mille Lacs County	Andy Beckstrom, Mille Lacs County EMD, Heidi Culbertson, Public Health Director	Sheriff's Office Facebook 12-2-24
City of Bock	Pat Buss, City Clerk	City Facebook 12-9-24
City of Foreston	Rebecca Haugen, City Clerk	Foreston City Hall 12-2-24
City of Isle	Jamie Hubbell, City Clerk	Public Board Isle Lobby and webpage 12-3-24
City of Milaca	Tammy Pfaff, City Clerk	City notice board city hall, Facebook page, website 12-11-24
City of Onamia	Michelle Peterson, City Clerk	Posted City Hall Cedarwood café and Woodlands National Bank City Website 12-6-24
City of Pease	Jeff Hansen, City Clerk	Posted at city hall 12-12-24
City of Princeton	Shawna Jenkins, City Clerk,	City Facebook 12-2-24
City of Wahkon	Karrie Roeschlein, Clerk/Treasurer	Wahkon Website, post office, bulletin board (outside), city hall (inside) 12-11-24 Posted on city blog 12-2-24
Greenbush Township	Darrel Shelley, Supervisor	Township website and Facebook 12-3-24
Milo Township	Lindsey, Clerk	Township announcement board 12-5-24

Appendix H – Mitigation Actions by Jurisdiction

CITY OF BOCK

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 such as blizzards, ice storms, windstorms, tornadoes, and flooding that can result in power outages, property damage, and risk to life safety.	Existing High 2025-2030	City Admin / City EM	We have a Facebook page and we announce most of our information at council meetings or place information in posting areas as we are not allowed to place in the post office. The city will work with Mille Lacs County Emergency Management to participate in the National Weather Service's – Severe Weather Awareness Weeks and share information with our residents locally.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's Smart911 system to receive timely emergency notifications.	Existing High 2025-2030	City Admin / City EM	We can do this by using our city Facebook page, posting local flyers, and making occasional announcements at City Council meetings.	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 Moderate 2025-2030	City Admin	We have zoning ordinances and maps that determine where development can take place, and all building codes are to the MN state building codes.	City Funding
4	Extreme Temps (Heat/Cold)	Education & Awareness Programs	Encourage residents to be aware of and prepared for periods of extreme heat and cold and the steps they can take to protect themselves when extreme temperatures occur.	Existing Moderate 2025-2030	City Admin / City EM	The city will work to share important temperature safety information that comes to us from the Mille Lacs County emergency manager and the NWS. Residents are encouraged to follow local media for weather reports or download weather apps to stay aware of extreme temp conditions.	City Funding
5	Extreme Cold	Education & Awareness Programs	Encourage residents to be prepared for periods of extreme cold and potential power outages, and to avoid frozen pipes.	Existing Moderate 2025-2030	City Admin / City EM, City Public Works	When we have periods of extreme cold in the winter, we will do outreach to remind residents to be ready for possible power outages and to run a stream of hot water to avoid frozen pipes.	City funding

CITY OF BOCK**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Drought	Local Planning & Regulations / Education & Awareness Programs	Enforce watering use restrictions when in periods of severe drought and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city enforces emergency water use restrictions as per direction from the MN DNR. The city also does outreach to residents ask them to be aware aware of water use restrictions.	City Funding
7	Flooding	Structure & Infrastructure Projects	Address where improvements are needed to improve the city's ability to handle stormwater from high rain events.	Existing Moderate 2025-2030	City Public Works	Our public works department continues to address any infrastructure improvements as needed. We recently placed a new layer of tar on some of the roads to help with the pot holes and drainage along with replacing some culverts.	City Funding
8	Flooding	Education & Awareness Programs	Encourage residents to clean up leaves and other yard debris to avoid clogging the city sewer system.	Existing Moderate 2025-2030	City Admin	Each year the city does outreach to remind home owners to clean up their yards in the spring and fall.	City Funding
9	Wildfire	Education & Awareness Programs	Promote public awareness of the risk of wildfire and burning restrictions, especially during periods of drought.	Existing High 2025-2030	City Admin / City EM	When the National Weather Service and Mille Lacs County Sheriff's Office puts out warnings that conditions are at high-risk in the county for wildfire, the city will work to share information with the public to be aware of burning bans.	City Funding

CITY OF FORESTON

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 such as blizzards, ice storms, windstorms, tornadoes, and flooding that can result in power outages, property damage, and risk to life safety.	Existing High 2025-2030	City Admin / City EM	We use our Foreston Fire & Rescue Facebook page, local flyers, and city council meetings to provide the community with needed information. The city will work with Mille Lacs County Emergency Management to participate in the National Weather Service's – Severe Weather Awareness Weeks and share information with our residents locally.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's Smart911 system to receive timely emergency notifications.	Existing High 2025-2030	City Admin / City EM	We will provide occasional reminders to residents to sign up by using our Foreston Fire & Rescue Facebook page, local flyers, and announcements at city council meetings.	City Funding
3	Extreme Temps (Heat/Cold)	Education & Awareness Programs	Encourage residents to be aware of and prepared for periods of extreme heat and cold and the steps they can take to protect themselves when extreme temperatures occur.	Existing Moderate 2025-2030	City Admin / City EM	The city will work to share important temperature safety information that comes to us from the Mille Lacs County emergency manager and the NWS. Residents are encouraged to follow local media for weather reports or download weather apps to stay aware of extreme temp conditions.	City Funding
4	Extreme Cold	Education & Awareness Programs	Encourage residents to be prepared for periods of extreme cold and potential power outages, and to avoid frozen pipes.	Existing Moderate 2025-2030	City Admin / City EM, City Public Works	When we have periods of extreme cold in the winter, we will do outreach to remind residents to be ready for possible power outages and to run a stream of hot water to avoid frozen pipes.	City funding
5	Drought	Local Planning & Regulations / Education & Awareness Programs	Enforce watering use restrictions when in periods of severe drought and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city enforces emergency water use restrictions as per direction from the MN DNR. The city also does outreach to residents ask them to be aware aware of water use restrictions.	City Funding

CITY OF FORESTON

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Flooding	Local Planning & Regulations	Continue participation in the National Flood Insurance Program and enforce the city's floodplain ordinance.	Existing Moderate 2025-2030	City Admin	The city of Foreston enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 11/13/2012 and made effective 1/17/2013 (date of publication). This ordinance regulates development in the flood hazard areas of the city.	City Funding
7	Severe Summer Storms	Structure & Infrastructure Projects	Work with Quanex woodworking supply business to construct a tornado safe room for their facility to protect vulnerable employees from severe windstorm or tornado events.	New High 2025-2030	City EM in coord with MLCEM and local business owner	The city will seek to work with Mille Lacs County Emergency Management and the business owners of Quanex to explore solutions for construction of a tornado safe room at their facility. The city would work with the business and MLCEM to apply for a possible future FEMA grant to construct a tornado safe room.	City Funding, FEMA BRIC grant funding
8	Wildfire	Education & Awareness Programs	Promote public awareness of the risk of wildfire, especially during periods of drought.	Existing High 2025-2030	City Admin / City EM	When the National Weather Service and Mille Lacs County Sheriff's Office puts out warnings that conditions are at high-risk in the county for wildfire, the city will work to share information with the public to be aware of burning bans. We use the Foreston Fire & Rescue Facebook page to post this information.	City Funding

CITY OF ISLE

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 such as blizzards, ice storms, windstorms, tornadoes, and flooding that can result in power outages, property damage, and risk to life safety.	Existing High 2025-2030	City Admin / City EM	We make announcements at Council meetings, post notices at City Hall, Post Office and the bank. We have a public alert system that contacts all utility customers via method of their choice (phone, email, text). We also post on our city website and Facebook pages. The city will work with Mille Lacs County Emergency Management to participate in the National Weather Service's – Severe Weather Awareness Weeks and share information with our residents locally.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's Smart911 system to receive timely emergency notifications.	Existing High 2025-2030	City Admin / City EM	We encourage residents to sign up for the city's public alert system as well as the county Smart911 system. We get the word out by using our city website and Facebook page, as well as by way of flyers and occasional city council announcements.	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, Public Works, City Engineer	The city enforces the MN Basic Code and has established a full Zoning Ordinance for land use and permitting. We have a 20-year comp plan that is designed to plan and guide the city for future physical and population growth. We work constantly with the county and the state transportation departments for roads, bridges, and storm sewer systems. The city works with the City Engineer annually to identify any major concerns and remedies that need attention and place them on the priority lists accordingly.	City Funding

CITY OF ISLE

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
4	All-Hazards	Local Planning & Regulations	Plan for emergency sheltering and evacuation for a range of hazard events.	Existing High 2025-2030	City Emergency Management Team	We have an Emergency Management Team that consists of city departments, our Mayor (Vice), Admin, PW, Police and Fire to plan for emergency sheltering and evacuation. This is an ongoing effort we continue to improve upon.	City Funding
5	Severe Summer Storms	Structure & Infrastructure Projects	Upgrade the city's outdoor warning siren.	Existing Moderate 2025-2030	City Admin / City EM	The city would like to upgrade our existing warning siren in the next 5 years. This may be something we would look to apply for FEMA HMA grant funding for. We currently work to make sure our siren is maintained and functional.	City Funding, FEMA BRIC Grant funding
6	Extreme Temps (Heat/Cold)	Education & Awareness Programs	Encourage residents to be aware of and prepared for periods of extreme heat and cold and the steps they can take to protect themselves when extreme temperatures occur.	Existing Moderate 2025-2030	City Admin / City EM	The city will work to share important temperature safety information that comes to us from the Mille Lacs County emergency manager and the NWS. Residents are encouraged to follow local media for weather reports or download weather apps to stay aware of extreme temp conditions.	City Funding
7	Extreme Cold	Education & Awareness Programs	Encourage residents to be prepared for periods of extreme cold and potential power outages, and to avoid frozen pipes.	Existing Moderate 2025-2030	City Admin / City EM, City Public Works	When we have periods of extreme cold in the winter, we will do outreach to remind residents to be ready for possible power outages and to run a stream of hot water to avoid frozen pipes.	City funding
8	Drought	Local Planning & Regulations / Education & Awareness Programs	Enforce watering use restrictions when in periods of severe drought and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city enforces emergency water use restrictions as per direction from the MN DNR. The city also does outreach to residents ask them to be aware aware of water use restrictions.	City Funding

CITY OF ISLE

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
9	Flooding	Structure & Infrastructure Projects	Address where improvements are needed to improve the city's ability to handle stormwater from high rain events.	Existing High 2025-2030	City Public Works Dept.	Our public works department addresses stormwater projects as needed. Currently our Isle St. drainage is an area of focus to avoid high rain impacts to properties along that drainage route.	City Funding
10	Flooding	Education & Awareness Programs	Encourage residents to clean up leaves and other yard debris to avoid clogging the city sewer system.	Existing Moderate 2025-2030	City Admin	We remind residents not to blow their grass, leaves or yard debris into the streets and gutters. Our PW dept check drains and ditches on their rounds and makes sure all vegetation is cleared as needed.	City Funding
11	Flooding	Local Planning & Regulations	Continue participation in the National Flood Insurance Program and enforce the city's floodplain ordinance.	Existing High 2025-2030	City Admin	The city of Isle enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 1/8/2013 and made effective 1/16/2013 (date of publication). This ordinance regulates development in the flood hazard areas of the city.	City Funding
12	Wildfire	Education & Awareness Programs	Promote public awareness of the risk of wildfire, especially during periods of drought.	Existing High 2025-2030	City Admin / City EM	When the National Weather Service and Mille Lacs County Sheriff's Office puts out warnings that conditions are at high-risk in the county for wildfire, the city will work to share information with the public to be aware of burning bans.	City Funding
13	Wildfire	Natural Systems Protection	Conduct vegetation management and create fire breaks in high-risk areas to help prevent the spread of wildfire.	Existing High 2025-2030	City Public Works & City Fire Dept.	Our public works department has created a more aggressive approach to keeping ditches, alleys and ROWs cleared and mowed and continues to do so.	City Funding

CITY OF MILACA

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 such as blizzards, ice storms, windstorms, tornadoes, and flooding that can result in power outages, property damage, and risk to life safety.	Existing High 2025-2030	City Admin / City EM	We post information on our city website and Facebook page. We also post information on bulletin boards at the Senior Center and at the Post Office. We also have our own municipal newspaper. We make announcements at City Council meetings and post flyers on our community bulletin board outside of City Hall, as well as electronic message boards on the main street in town and one in the park. Our city works with the county to participate in the National Weather Service's annual Severe Winter/Spring Weather Awareness Week by posting severe weather awareness information out on our city Facebook page. Our local school practices tornado drills on an annual basis.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's Smart911 system to receive timely emergency notifications.	Existing High 2025-2030	City Admin / City EM	We have a place on the homepage of our city website with a link to the county's sign-up page. We include information on emergency notification sign-ups twice annually in utility bills.	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 / Planning & Zoning	The city's planning and zoning department enforces the MN State Building Code and the City Code zoning requirements for new development. We have a 20-year Comprehensive Plan that is designed to plan for the future physical growth of the city and appropriate land uses. The city also has ordinances we enforce during periods of drought to ensure our water supply is impacted as little as possible.	City Funding

CITY OF MILACA

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
4	Extreme Temps (Heat/Cold)	Education & Awareness Programs	Encourage residents to be aware of and prepared for periods of extreme heat and cold and the steps they can take to protect themselves when extreme temperatures occur.	Existing Moderate 2025-2030	City Admin / City EM	The city will work to share important temperature safety information that comes to us from the Mille Lacs County emergency manager and the NWS. Residents are encouraged to follow local media for weather reports or download weather apps to stay aware of extreme temp conditions.	City Funding
5	Extreme Cold	Education & Awareness Programs	Encourage residents to be prepared for periods of extreme cold and potential power outages, and to avoid frozen pipes.	Existing Moderate 2025-2030	City Admin / City EM, City Public Works	When we have periods of extreme cold in the winter, we will do outreach to remind residents to be ready for possible power outages and to run a stream of hot water to avoid frozen pipes.	City funding
6	Severe Winter & Summer Storms	Structure & Infrastructure Projects.	Continue to manage vegetation near powerlines to reduce the risk of power outages.	Existing Moderate 2025-2030	Public Works	The energy coop has a program to manage vegetation near powerlines to reduce the risk of power outages during storms.	
7	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Obtain a portable generator for our City Hall and Community Center.	New High 2025-2030	City Admin / City EM	Our City Hall and Community Center serve as our local shelter if people are displaced from a severe storm event or extended power outage. The city will work to obtain a generator as funding is available. The city may also consider applying for FEMA grant funding.	City Funding, FEMA HMA grant funding
8	Severe Summer Storms	Structure & Infrastructure Projects	Work with the mobile home park within the city that does not have a storm shelter to address the need for construction of a new storm shelter or tornado safe room.	Existing High 2025-2030	City EM	The city works with our 2 mobile home parks on emergency evacuation and sheltering of residents. We will work with the city to assess potential solutions for on-site sheltering. The city may possibly seek future FEMA grant funding for construction of a tornado safe room	City funding, FEMA HMA grant funding

CITY OF MILACA

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
9	Severe Summer Storms	Structure & Infrastructure Projects	Purchase and install a new outdoor warning siren to cover the new development in the west end of the city.	Existing High 2025-2030	City EM	The city will work with Mille Lacs County Emergency Management on this effort to ensure the siren can be tied into the county's remote activation system. The city may possibly seek future FEMA grant funding for a warning siren.	City funding, FEMA HMA grant funding
10	Drought	Local Planning & Regulations / Education & Awareness Programs	Enforce watering use restrictions when in periods of severe drought and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city also has ordinances we enforce during periods of drought to ensure our water supply is impacted as little as possible. The city also does outreach to residents ask them to be aware of water use restrictions.	City Funding
11	Flooding	Structure & Infrastructure Projects	Work to reduce flood risk to the city's lift station near the Rum River that is prone to flooding.	New High 2025-2030	City Public Works	This falls under our city public works department work. PW addresses infrastructure improvement projects and flood risk reduction measures for all of the city's transportation and water system infrastructure.	City Funding
12	Flooding	Local Planning & Regulations	Continue participation in the National Flood Insurance Program and enforce the city's floodplain ordinance.	Existing Moderate 2025-2030	City Admin	The city of Milaca enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 1/17/2013 and made effective 1/24/2013 (date of publication). This ordinance regulates development in the flood hazard areas of the city.	City Funding

CITY OF MILACA**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
13	Flooding	Local Planning & Regulations / Structure & Infrastructure Projects	Work with willing property owners to conduct property buyouts for flood-prone properties.	New High 2025-2030	City Admin / City EM	We have two homes along the Rum River that have experienced repetitive flooding. The city would like to work with the property owners to buy out these homes. The city will need to seek outside grant funding to support these buyouts. The MN DNR Flood Hazard Mitigation grant program and FEMA BRIC grant funding may be possible sources of outside grant funding that the city would apply for.	City Funding, MN DNR FHM grant funding, FEMA BRIC grant funding
14	Wildfire	Education & Awareness Programs	Promote public awareness of the risk of wildfire, especially during periods of drought.	Existing High 2025-2030	City Admin / City EM	When the National Weather Service and Mille Lacs County Sheriff's Office puts out warnings that conditions are at high-risk in the county for wildfire, the city will work to share information with the public to be aware of burning bans.	City Funding

CITY OF ONAMIA

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 such as blizzards, ice storms, windstorms, tornadoes, and flooding that can result in power outages, property damage, and risk to life safety.	Existing High 2025-2030	City Admin / City EM	We use our city website and posting of information in public places to provide the community with needed information. The city will work with Mille Lacs County Emergency Management to participate in the National Weather Service's – Severe Weather Awareness Weeks and share information with our residents locally.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's Smart911 system to receive timely emergency notifications.	Existing High 2025-2030	City Admin / City EM	We will work with Mille Lacs County Emergency Management to provide us with a link we can put on our city website.	City Funding
3	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Obtain permanent generators for the Fire Hall and City Hall to ensure we have backup power during power outages.	New High 2025-2030	City Admin / City EM	The city will work to purchase new generators as funding is available. The city may also consider future application to FEMA for a grant to support this effort.	City Funding, FEMA HMA grant funding
4	Extreme Temps (Heat/Cold)	Education & Awareness Programs	Encourage residents to be aware of and prepared for periods of extreme heat and cold and the steps they can take to protect themselves when extreme temperatures occur.	Existing Moderate 2025-2030	City Admin / City EM	The city will work to share important temperature safety information that comes to us from the Mille Lacs County emergency manager and the NWS. Residents are encouraged to follow local media for weather reports or download weather apps to stay aware of extreme temp conditions.	City Funding
5	Extreme Cold	Education & Awareness Programs	Encourage residents to be prepared for periods of extreme cold and potential power outages, and to avoid frozen pipes.	Existing Moderate 2025-2030	City Admin / City EM, City Public Works	When we have periods of extreme cold in the winter, we will do outreach to remind residents to be ready for possible power outages and to run a stream of hot water to avoid frozen pipes.	City funding

CITY OF ONAMIA

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 / Education & Awareness Programs	Work to address the need for a storm shelter to serve the new town home development of approximately 30 people.	New High 2025-2030	City Admin / City EM	The city may potentially look to apply for future FEMA HMA grant funding for the construction of a tornado safe room to serve this town home development. The city will also encourage homeowners to be aware of severe wind/tornado events and to have a plan to shelter in place since there are no basements.	City Funding, FEMA HMA grant funding
7	Drought	Local Planning & Regulations / Education & Awareness Programs	Enforce watering use restrictions when in periods of severe drought and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city enforces emergency water use restrictions as per direction from the MN DNR. The city also does outreach to residents ask them to be aware aware of water use restrictions.	City Funding
8	Flooding	Structure & Infrastructure Projects	Address where improvements are needed to improve the city's ability to handle stormwater from high rain events.	Existing High 2025-2030	City Public Works	In 2021 our city underwent a large infrastructure repair plan that largely included repairs on our sanitary sewer system. As a result of this work, the collection system is much less prone to flooding and back up situations. Our public works department continues to oversee projects as needed to ensure the city is able to handle future high rain events.	City Funding
9	Flooding	Local Planning & Regulations	Continue participation in the National Flood Insurance Program and enforce the city's floodplain ordinance.	Existing High 2025-2030	City Admin	The city of Onamia enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 2/13/2013 and made effective 2/20/2013 (date of publication). This ordinance regulates development in the flood hazard areas of the city.	City Funding

CITY OF ONAMIA**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
10	Wildfire	Education & Awareness Programs	Promote public awareness of the risk of wildfire, especially during periods of drought.	Existing High 2025-2030	City Admin / City EM	When the National Weather Service and Mille Lacs County Sheriff's Office puts out warnings that conditions are at high-risk in the county for wildfire, the city will work to share information with the public to be aware of burning bans.	City Funding

CITY OF PEASE

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 such as blizzards, ice storms, windstorms, tornadoes, and flooding that can result in power outages, property damage, and risk to life safety.	Existing High 2025-2030	City Admin / City EM	We post flyers and make announcements at City Council meetings to provide information to the community. The city will work with Mille Lacs County Emergency Management to participate in the National Weather Service's – Severe Weather Awareness Weeks and share information with our residents locally.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's Smart911 system to receive timely emergency notifications.	Existing High 2025-2030	City Admin / City EM	We will work with Mille Lacs County Emergency Management to provide us with a flyer on how to sign up for the county's CodeRED system, and we can promote that locally.	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 enforces the MN State Building Code and the City Code zoning requirements for new developments and housing.	City Funding
4	Extreme Winter & Summer Storms	Natural Systems Protection / Structure & Infrastructure Projects	Reduce the risk of damages from downed trees and branches from high wind events.	Existing High 2025-2030	City Public Works / East Central Energy	Our public works department and East Central Electric to trim trees and branches as necessary. ECE also works to convert overhead powerlines to underground in the area where they determine it is needed.	City Funding, East Central Energy
5	Severe Summer Storms	Structure & Infrastructure Projects	Seek grant funding for the purchase and installation of a new outdoor warning siren.	Existing High 2025-2030	City Admin / City EM	The city has previously worked on getting a grant for a siren, but that did not pan out. We may seek future FEMA grant funding for the purchase of an outdoor warning siren. We will work with Mille Lacs County Emergency Management on this effort.	City Funding, FEMA HMA grant funding

CITY OF PEASE

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Extreme Temps (Heat/Cold)	Education & Awareness Programs	Encourage residents to be aware of and prepared for periods of extreme heat and cold and the steps they can take to protect themselves when extreme temperatures occur.	Existing Moderate 2025-2030	City Admin / City EM	The city will work to share important temperature safety information that comes to us from the Mille Lacs County emergency manager and the NWS. Residents are encouraged to follow local media for weather reports or download weather apps to stay aware of extreme temp conditions.	City Funding
7	Extreme Cold	Education & Awareness Programs	Encourage residents to be prepared for periods of extreme cold and potential power outages, and to avoid frozen pipes.	Existing Moderate 2025-2030	City Admin / City EM, City Public Works	When we have periods of extreme cold in the winter, we will do outreach to remind residents to be ready for possible power outages and to run a stream of hot water to avoid frozen pipes.	City funding
8	Drought	Local Planning & Regulations / Education & Awareness Programs	Enforce watering use restrictions when in periods of severe drought and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city enforces emergency water use restrictions as per direction from the MN DNR. The city also does outreach to residents ask them to be aware aware of water use restrictions.	City Funding
9	Flooding	Structure & Infrastructure Projects	Address where improvements are needed to improve the city's ability to handle stormwater from high rain events.	Existing Moderate 2025-2030	City Admin / Public Works	The city mayor works with our city engineer and contractors on any infrastructure issues.	City Funding
10	Wildfire	Education & Awareness Programs	Promote public awareness of the risk of wildfire, especially during periods of drought.	Existing High 2025-2030	City Admin / City EM	When the National Weather Service and Mille Lacs County Sheriff's Office puts out warnings that conditions are at high-risk in the county for wildfire, the city will work to share information with the public to be aware of burning bans.	City Funding

CITY OF PRINCETON

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 such as blizzards, ice storms, windstorms, tornadoes, and flooding that can result in power outages, property damage, and risk to life safety.	Existing High 2025-2030	City Admin / City EM	Our city Emergency Management department posts information on our website and Facebook page to share information with residents. We also have an electronic bulletin board that we can post information on. We can also send out information with the electric bills. We also work with Sherburne and Mille Lacs Counties to send information out on their emergency networks. We will continue to improve our capabilities to ensure that residents are getting information. The city participates annually in the National Weather Service's – Severe Weather Awareness Weeks and provides information on the EM webpage.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's Smart911 system to receive timely emergency notifications.	Existing High 2025-2030	City Admin / City EM in coord with Sherburne County Emergency Management	We encourage residents to sign up for either the Mille Lacs County or Sherburne County emergency notification system. Links to Mille Lacs County Emergency Management and Sherburne County Emergency Management are provided on our city EM webpage. Our Public Safety dept continues to promote the notifications for emergencies for the counties.	City Funding

CITY OF PRINCETON

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible 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 Princeton is looking into adopting ordinances to help with enforcing building and fire code inspections. This would help with preparing and planning for some disasters. The city is expected to grow in size and population in the next five years. The city needs to start planning for this growth and develop a five- and ten-year plan.	City Funding
4	All-Hazards	Mitigation Preparedness & Response Support	Work with essential business to have emergency action plans and backup power sources for their buildings.	Existing High 2025-2030	City EM	Our emergency manager is available to provide planning support to businesses in the community such as banks, health care facilities, emergency services, local government, information technology, transportation services and food/agriculture. Local businesses are encouraged to have emergency plans and backup power sources in place.	Local Businesses
5	Severe Winter & Summer Storms	Natural Systems Protection	Manage vegetation near powerlines and convert overhead powerlines to underground to reduce the risk of power outages from severe storm events.	Existing High 2025-2030	City Public Works, Princeton Public Utilities	The city has a program to manage vegetation near powerlines to reduce risk of power outages during storms. The city also works with Princeton Public Utilities to convert overhead powerlines to underground.	City Funding, Princeton Public Utilities
6	Severe Summer Storms	Structure & Infrastructure Projects	Install a new outdoor warnings siren to help cover all parts of the city and expand the siren network.	New High 2025-2030	City EM	Our city emergency manager will work with Mille Lacs County Emergency Management to seek potential grant funding from FEMA for purchase and installation of a new outdoor warning siren. We will also ensure that the siren is connected to the county's remote activation system.	City Funding, FEMA 5% Initiative Grant funding

CITY OF PRINCETON

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
7	Severe Summer Storms	Structure & Infrastructure Projects	Work with the owners of our mobile home parks within the city to address the need for evacuation and sheltering plans, and pursue construction of new on-site storm shelters or tornado safe rooms.	New High 2025-2030	City EM	The city will work with the mobile home parks inside the city limits to have an evacuation and sheltering plan during severe weather. We will work to create MOU's with business and churches to be able to accommodate residents. Our city emergency manager will work with Mille Lacs County Emergency Management to explore the possibility of making a grant application to FEMA for tornado safe rooms. We will also work with the local mobile home parks on establishing a location where residents can go to take shelter until a new solution is reached for on-site sheltering.	City Funding, FEMA BRIC grant funding
8	Extreme Temps (Heat/Cold)	Education & Awareness Programs	Encourage residents to be aware of and prepared for periods of extreme heat and cold and the steps they can take to protect themselves when extreme temperatures occur.	Existing Moderate 2025-2030	City Admin / City EM	The city will work to share important temperature safety information that comes to us from the Mille Lacs County emergency manager and the NWS. Residents are encouraged to follow local media for weather reports or download weather apps to stay aware of extreme temp conditions.	City Funding
9	Extreme Cold	Education & Awareness Programs	Encourage residents to be prepared for periods of extreme cold and potential power outages, and to avoid frozen pipes.	Existing Moderate 2025-2030	City Admin / City EM, City Public Works	When we have periods of extreme cold in the winter, we will do outreach to remind residents to be ready for possible power outages and to run a stream of hot water to avoid frozen pipes.	City funding
10	Drought	Local Planning & Regulations / Education & Awareness Programs	Enforce watering use restrictions when in periods of severe drought and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city enforces emergency water use restrictions as per direction from the MN DNR. The city also does outreach to residents ask them to be aware aware of water use restrictions.	City Funding

CITY OF PRINCETON

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
11	Flooding	Structure & Infrastructure Projects	Address where improvements are needed to improve the city's ability to handle an increase in development and stormwater from high rain events.	Existing High 2025-2030	City Public Works	The city of Princeton is planning for expected growth with the addition of new apartments and businesses within the city. Our Public Works dept oversees planning for growth in the sewer and water systems, including stormwater infrastructure improvements to handle high-rain events.	City Funding
12	Flooding	Local Planning & Regulations	Continue participation in the National Flood Insurance Program and enforce the city's floodplain ordinance.	Existing High 2025-2030	City Admin	The city of Princeton enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 1/10/2013 and made effective 1/17/2013 (date of publication). This ordinance regulates development in the flood hazard areas of the city.	City Funding
13	Flooding / Landslides	Local Planning & Regulations / Structure & Infrastructure Projects	Work with willing property owners and the Mille Lacs SWCD to conduct property buyouts of homes at risk of falling into the Rum River.	New High 2025-2030	City Admin, City EM in coord with SWCD	The city will work in coordination with the Mille Lacs SWCD and affected property owners (2 properties) to conduct property buyouts for at-risk homes. Outside grant funding would be sought from sources such as the MN DNR Flood Hazard Mitigation grant program and the FEMA BRIC grant program.	City Funding, SWCD Cost Share, MN DNR FHM, FEMA BRIC
14	Wildfire	Education & Awareness Programs	Promote public awareness of the risk of wildfire, especially during periods of drought.	Existing High 2025-2030	City Admin / City EM	When the National Weather Service and Mille Lacs County Sheriff's Office put out warnings that conditions are at high-risk in the county for wildfire, our city emergency manager and the Princeton Fire & Rescue Dept. will work to share information with the public to be aware of burning bans.	City Funding

CITY OF PRINCETON**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
15	Wildfire	Natural Systems Protection	Work with the MN DNR to conduct targeted wildland fuels reduction projects around critical facilities in high-risk wildfire areas.	New High 2025-2030	City EM / City Fire Dept in coord with MN DNR Forestry	The city will work with the MN DNR to help decrease the chances for a wildland fire disaster in key high-risk areas. We will target protection of critical infrastructure including the airport, waste water plant, and parks around the city. The city completes controlled burns around the city to prevent large-scale fires from happening. We may seek grant funding from the Community Wildfire Defense Grant (CWDG) program to support our efforts.	City Funding, MN DNR, CWDG grant program

CITY OF WAHKON

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 such as blizzards, ice storms, windstorms, tornadoes, and flooding that can result in power outages, property damage, and risk to life safety.	Existing High 2025-2030	City Admin / City EM	We use the city of Wahkon website to provide the community with needed information, as well as posting flyers in public areas. The city will work with Mille Lacs County Emergency Management to participate in the National Weather Service's – Severe Weather Awareness Weeks and share information with our residents locally.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's Smart911 system to receive timely emergency notifications.	Existing High 2025-2030	City Admin / City EM	We will work with Mille Lacs County Emergency Management to provide us with an informational flyer that we will post at City Hall and other community areas. We will also have MLEM assist us with adding a link on our city website directing residents to the county website.	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	City zoning regulations being enforced include our Shoreland Management Ordinance and Floodplain Ordinance. All zoning is handled by a professional consultant to ensure compliance.	City Funding

CITY OF WAHKON

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
4	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Purchase and install new generators for the city's sewer lift stations.	In-Progress High 2025	City Admin / City EM	In the spring of 2025, the City of Wahkon will be installing a permanent generator on Highway 27 to service our main sewer lift station. We will also have a portable generator for other sewer lift stations. These generators will allow us to continue to keep our lift stations operational in the event of power outages from severe storm events. Generators are part of Wahkon's 2024 Sanitary Sewer Improvements Project with funding provided via a 75% USDA/ACOE partner grant and low interest loan.	City Funding, 75% funded by USDA ACOE grant and low interest loan
5	Severe Winter & Summer Storms	Natural Systems Protection	Conduct vegetation management near overhead power lines to reduce risk of impacts from high wind and other storm events.	Existing Moderate 2025-2030	City Public Works in coord with East Central Energy	Our city public works department works in coordination with East Central Energy to manage vegetation near powerlines to reduce the risk of extended power outages resulting from severe storm events such as high winds, tornadoes, ice storms, and heavy snow.	City Funding, East Central Energy
6	Extreme Temps (Heat/Cold)	Education & Awareness Programs	Encourage residents to be aware of and prepared for periods of extreme heat and cold and the steps they can take to protect themselves when extreme temperatures occur.	Existing Moderate 2025-2030	City Admin / City EM	The city will work to share important temperature safety information that comes to us from the Mille Lacs County emergency manager and the NWS. Residents are encouraged to follow local media for weather reports or download weather apps to stay aware of extreme temp conditions.	City Funding
7	Extreme Cold	Education & Awareness Programs	Encourage residents to be prepared for periods of extreme cold and potential power outages, and to avoid frozen pipes.	Existing Moderate 2025-2030	City Admin / City EM, City Public Works	When we have periods of extreme cold in the winter we will do outreach to remind residents to be ready for possible power outages and to run a stream of hot water to avoid frozen pipes.	City funding

CITY OF WAHKON

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
8	Drought	Local Planning & Regulations / Education & Awareness Programs	Enforce watering use restrictions when in periods of severe drought and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city enforces emergency water use restrictions as per direction from the MN DNR. The city also does outreach to residents ask them to be aware aware of water use restrictions.	City Funding
9	Flooding	Structure & Infrastructure Projects	Plan for and address where infrastructure improvements are needed to improve the city's ability to handle stormwater from high rain events.	In-Progress High 2025-2030	City Public Works Dept.	The city is in the process of upgrading it municipal sanitary sewer collection system by upgrading a force main, installation of a standby generator, and upgrades at its lift stations. This project should mitigate some of the deficiencies noted in heavy rainfall events. The city received a grant from Mille Lacs Soil & Water Conservation to produce a Stormwater Management Plan for Wahkon through our city engineer. Report dated 5/28/2021 was supplied to our City Council and is available to the public at City Hall.	City Funding
10	Local Planning & Regulations	Local Planning & Regulations	Continue participation in the National Flood Insurance Program and enforce the city's floodplain ordinance.	Existing Moderate 2025-2030	City Admin	The city of Wahkon enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 4/8/2013 and made effective 4/17/2013 (date of publication). This ordinance regulates development in the flood hazard areas of the city.	City Funding
11	Wildfire	Education & Awareness Programs	Promote public awareness of the risk of wildfire, especially during periods of drought.	Existing High 2025-2030	City Admin / City EM	When the National Weather Service and Mille Lacs County Sheriff's Office puts out warnings that conditions are at high-risk in the county for wildfire, the city will work to share information with the public to be aware of burning bans.	City Funding