

Crow Wing County 2025 Hazard Mitigation Plan



Crow Wing County Minnesota

2025 Hazard Mitigation Plan

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Section 1 – Introduction

1.1 Hazard Mitigation Planning in Minnesota

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

Since 1980, damages from natural disasters in the U.S. have 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).

Crow Wing 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:

- Homepage (featuring Declared Disasters dashboard, feedback forms, links to Crow Wing County Emergency Management website, etc.)
- County Profile
- Risk Assessment & Natural Hazard Profiles
- Goals & Implementation
- Climate Change

[Crow Wing 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 Crow Wing County Emergency Management to facilitate an update to the 2017 Crow Wing 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 Crow Wing 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 Crow Wing County, including the cities of Baxter, Brainerd, Breezy Point, Crosby, Crosslake, Cuyuna, Deerwood, Emily, Fifty Lakes, Garrison, Ironton, Jenkins, Manhattan Beach, Nisswa, Pequot Lakes, and Trommald. Fort Ripley (pop. 97) and Riverton (pop. 118) were included in the planning process but ultimately did not participate and are not seeking to adopt the plan. The Crow Wing 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 has tribal lands within Crow Wing County but did not participate in the Crow Wing County HMP update. As a sovereign nation, the tribe develops and maintains an update of its own tribal hazard mitigation plan for the Mille Lacs Indian Reservation every five years.

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 Crow Wing County after final approval by FEMA (see Appendix B).

Crow Wing County has specified the following goals for this plan update:

- Include more recent data documenting the critical infrastructure and hazards faced by Crow Wing County.
- Reformat and reorganize the plan to reflect definitions of hazards as expressed in the 2024 Minnesota State Hazard Mitigation Plan.
- Reflect current hazard mitigation priorities in Crow Wing 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 two mitigation grant programs that the State of Minnesota administers: the Hazard Mitigation Grant Program (HMGP) and the Flood Mitigation Assistance (FMA) program. The HMGP and FMA programs are administered through the 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 Crow Wing County HMP planning team is headed by the Crow Wing 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 organizations that participated in virtual planning team meetings during the plan update process.

Note: Table 1 is not an exhaustive list of stakeholder participation in the Crow Wing County HMP update. Additional participation by jurisdictional and other agency representatives is documented in Table 3 of this section, as well as in Section 3.4, Appendix C, and Appendix G. The meeting summaries in Appendix F provide a comprehensive overview of each session. This includes a complete list of invited planning team stakeholders and information on other significant opportunities for engagement during the plan update.

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

Table 1. Hazard Mitigation Planning (HMP) Team

Name	Agency/Organization	Participant Title
Clayton Barg	Crow Wing County Sheriff's Office	Emergency Management Director
Liz Gleason	Crow Wing County Sheriff's Office	Emergency Management Coordinator
Jason Cline	Crow Wing County Sheriff's Office	Emergency Management Intern
Taylor Lesmeister	Crow Wing County Public Health	Public Health Educator
Jacklin Steege	Crow Wing County Public Health	Public Health Preparedness
Jason Walkowiak	Crow Wing County IT	Director
Kara Terry	Crow Wing County	Community Services Director
Gary Griffin	Crow Wing County Land Services Dept.	Land Services Director
Tom Strack	Crow Wing County Land Services Dept.	Environmental Services Supervisor
Maggie Young	Crow Wing County Land Services Dept.	Sr. Operations Specialist
Brian Berent	Crow Wing County Highway Dept.	Highway Maintenance Manager
Rob Hall	Crow Wing County Highway Dept.	Assistant County Engineer
Brian Berent	Crow Wing County Highway Dept.	Highway Maintenance Manager
Darcy Dwyer	Crow Wing County	Public Information Officer
Jason Walkowiak	Crow Wing County	IT Director
Jamie Lee	Crow Wing County	Commissioner
Melissa Barrick	Crow Wing SWCD	District Manager
Matt Maier	Baxter Police Dept.	Chief
Tim Holmes	Brainerd Fire Dept.	Fire Chief/ EM

Name	Agency/Organization	Participant Title
John Davis	Brainerd Police Dept.	Police Chief
Anthony Runde	Brainerd Police Dept.	Deputy Chief
Allie Polsfuss	City of Breezy Point	City Administrator
Brian Sandell	Breezy Point Police Dept.	Chief
Josef Garcia	Breezy Point Police Dept.	Sergeant
Micheal VanHorn	City of Crosby Police Dept.	Chief
Shayne Jacobs	City of Crosby Fire Dept.	Fire Chief
Dallas Dietz	City of Crosby Fire Dept.	Chief 2
Lori Conway	City of Crosslake	City Administrator
Chip Lohmiller	Crosslake Fire	Chief/EM
Bill Bedard	City of Cuyuna	Clerk/Treasurer
Jesse Smith	City of Cuyuna Police Dept.	Chief of Police
Mike Bodle	Deerwood Fire	Fire Chief
Mark Taylor	City of Deerwood Police Dept.	Police Chief
Brian Foster	City of Emily	Maintenance Supervisor / EM Director
Calen Spindler	City of Emily	Maintenance Worker
Blair Mileski	City of Emily Fire & Rescue	Fire Chief
Ann Raph	City of Fifty Lakes	Clerk-Treasurer
Mark Bradley	City of Fifty Lakes Fire Dept.	Fireman
Corri Erickson	Garrison Fire & Rescue	Fire Chief
Emma Pratt	City of Ironton	Clerk-Treasurer
Cassandra Delougherty	City of Jenkins	City Clerk / Planning & Zoning Administrator
Maggi Wentler	City of Nisswa	Finance Specialist
Kiki Lindberg	City of Nisswa	City Clerk
Scott Williams	City of Nisswa Police Dept.	Sergeant
Mike Davis	Pequot Lakes Police Dept	Chief
Patricia Gage	Nokay Township	Clerk
Linda Danielson	Rabbit Lake Township	Clerk
Mark Olson	Long Lake Township	Supervisor
Aaron Sloth	Platte Lake Township	Supervisor
Craig Wallace	Ideal Township	Clerk/Treasurer
Nathan Hulinsky	Crow Wing Township	Township Supervisor
Sue Kern	Crow Wing Township	Township Clerk
Robert L Smith	Jenkins Township	Supervisor
Giles Radtke	Pelican Township	Road Supervisor
Tom Malloy	Long Lake Township	Supervisor
Michael McDaid	Pelican Township	Supervisor
Virginia Smart	Long Lake Township	Treasurer
Jim Guida	St Mathias Township	Supervisor

Name	Agency/Organization	Participant Title
Jon Auge	Mission Township	Town Board Chair
Jim Guida	St. Mathias Township	Township Supervisor
David Peterson	Timothy Township	Town Board Supervisor
Kelvin McCuskey	HSEM	Region 1 RPC
Owen Fifield	American Red Cross Serving Northern and Central Minnesota	Community Disaster Program Manager
Mark Smith	Minnesota Pollution Control Agency	Environmental Emergency Responder
Joseph Moore	NOAA/National Weather Service Duluth MN	Warning Coordination Meteorologist
Michael Palmer	Minnesota DNR	Regional Firewise Specialist
Craig Schultz	Minnesota DNR	Wildfire Program
Jacob Frie	Minnesota DNR	Area Hydrologist
Joel Lemberg	MN DNR Forestry	Area Forest Supervisor
Cory Brix	Mille Lacs Energy Cooperative	Construction and ROW Manager
Ann Espeseth	Mille Lacs Energy Cooperative	System Data Analyst
Eric Quale	Crow Wing Power	Chief Executive Officer
Gina Wieler	MN Direct Care and Treatment	Emergency Manager
Sandra Youngblom	MN DNR-Brainerd Airtanker Base	Airtanker Base Manager
James Norwood	Brainerd Lakes Regional Airport	ARFF / Operations
Tyler Ostman	Cuyuna Regional Medical Center	Director of Ambulance & Emergency Management
Peter Grant	ISD 181	Superintendent
Ryan Franz	Pequot Lakes PD/Pequot Lakes Schools	Sergeant/School Liaison
Jamie Skjleveland	Crosby-Ironton I.S.D. #182	Superintendent
Chad Emery	Cass County Sheriff's Office	Deputy Sheriff / Deputy Director Emergency Management
Patrice Erickson	Aitkin County Sheriff's Office	Dispatch Supervisor/Deputy Emergency Manager

2.2 Review of Existing Plans, Capabilities & Vulnerabilities

Crow Wing 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 5.1.4 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 Crow Wing 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 Crow Wing 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.

Building codes offer a way to incorporate geographically relevant and best available building science with policies and programs. The Cities of Baxter, Brainerd, Breezy Point, Crosby, Cuyuna, Deerwood, and Irontown have adopted the Minnesota State Building Code. Crow Wing County has not adopted the State Building Code and does not issue building permits for incorporated municipalities within the county. For unincorporated areas within the county, land use requirements are governed by the specific provisions of the Crow Wing County Land Use Ordinance. The Land Use Ordinance requires a permit for the construction and placement of structures on property as well as additions and structural alterations to existing structures (see Appendix C).

The 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 Crow Wing 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 Crow Wing County to support mitigation.

Local Mitigation Surveys: As part of Crow Wing County's 2025 HMP update, participating jurisdictions, key county personnel, and additional agency stakeholders were asked to fill out a Local Mitigation Survey (LMS) form. Questions in the LMS form addressed the following:

- Hazard Identification, Risk Assessment & Vulnerability Analysis
- Local Mitigation Capabilities Assessment
- Local Mitigation Projects
- 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 Crow Wing County LMS report, see Appendix C).

2.3 Planning Process Timeline and Steps

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

2.3.1 Crow Wing County Stakeholder Coordination

Two planning team meetings took place via Zoom video conference hosted by U-Spatial. Meeting participants included representatives from Crow Wing 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, Crow Wing 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 Crow Wing 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 11/12/25 to 11/26/25, for a period of 15 days. Appendix G provides documentation of the public outreach for feedback on the draft plan by Crow Wing County and jurisdictions.

Table 2. Crow Wing County hazard mitigation update meetings and public outreach

Event	Date	Appendix
Kickoff Webinar	6/13/24	Appendix F, Planning Team Meetings
News Release #1	10/22/24	Appendix G, Public Outreach & Engagement Documentation
Planning Team Meeting #1	1/22/25	Appendix F, Planning Team Meetings
Planning Team Meeting #2	9/23/25	Appendix F, Planning Team Meetings
News Release #2	11/12/25	Appendix G, Public Outreach & Engagement Documentation

At the close of the public outreach period, the U-Spatial consultants worked with the Crow Wing 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, Crow Wing 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, and reviewing and providing feedback to the plan update.

U-Spatial and Crow Wing 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 Crow Wing 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.

- **Surveys, forms, and polls:** Input tools such as surveys, forms, and tools were used throughout the process to efficiently collect information in a format that could directly be fed into the written hazard mitigation plan. Polls were used to elicit feedback during the planning team meetings. The Local Mitigation Survey (LMS) was used to ensure feedback from every jurisdiction for critical input such as building code use, NFIP adoption, and changes in vulnerabilities. Feedback forms were posted on the website for easy access during the plan review.
- **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 Crow Wing 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. Crow Wing 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 Crow Wing County HMP update planning process and a reference to supporting documentation.

Table 3. Jurisdictional participation in planning process

Jurisdiction (2024 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
Crow Wing County (68,541)	X	X	X	X	X	X
City of Baxter (9,052)	X	X	X	X	X	X
City of Brainerd (14,864)	X	X	X	X	X	X
City of Breezy Point (2,733)	X	X	X	X	X	X
City of Crosby (2,438)	X		X	X	X	
City of Crosslake (2,481)	X	X	X	X	X	X
City of Cuyuna (292)	X	X	X	X	X	
City of Deerwood (532)	X	X	X	X	X	X
City of Emily (810)	X		X	X	X	
City of Fifty Lakes (448)	X	X	X	X	X	X
City of Fort Ripley (97)*	X					
City of Garrison (188)	X	X	X	X	X	
City of Ironton (630)	X		X	X	X	
City of Jenkins (501)	X		X	X	X	
City of Manhattan Beach (41)	X		X	X		
City of Nisswa (2,128)	X	X	X	X	X	X

Jurisdiction (2024 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
City of Pequot Lakes (2,651)	X	X	X	X		
City of Riverton (118)*						
City of Trommald (109)	X		X	X		
Neighboring Jurisdictions:						
Aitkin County		X			X	
Cass County		X			X	
Mille Lacs County						

*The cities of Fort Ripley and Riverton are not included in this plan as participating jurisdictions.

Section 3 – Risk Assessment and Vulnerability Analysis

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

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

3.1 Natural Hazard Identification

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

[See a list of all natural hazards covered in the 2025 HMP](#)

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

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

3.1.1 Hazard Prioritization

As part of the plan update process, the planning team reviewed, updated, and prioritized the hazards faced by residents of Crow Wing 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 Crow Wing 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 2025 Crow Wing County HMP Update

Natural Hazards Addressed in the Last Plan	Current Priority
Wildfire	High
Winter Storms	High
Windstorms	High
Tornadoes	High
Flooding	Moderate
Hail	Moderate
Extreme Cold	Moderate
Drought	Moderate
Extreme Heat	Low
Lightning	Low
Landslides	Low
Dam/Levee Failure	Low

3.1.2 FEMA- and Minnesota-Declared Disasters and Assistance

Another historical perspective is derived from FEMA-declared disasters. Between 1957 and August 2025, nine federal disasters, one fire management assistance, and three emergency declarations were made in Crow Wing County; see details on the [Crow Wing 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). Crow Wing County has been included in eight State Disaster Declarations.

The Hazard Mitigation Grant Program (HMGP), the Flood Mitigation Assistance (FMA) program, and the former Building Resilient Infrastructure and Communities (BRIC) 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 Crow Wing County

Project Identifier	Sub-Grantee	Project Type	Project Total	Federal Share
4182	Crow Wing County	206.2: Safe Room (Tornado and Severe Wind Shelter) - Public Structures	\$231,060	\$173,295
N/A	Crow Wing County	91.1: Local Multihazard Mitigation Plan	\$38,072	\$28,319
1288	Crow Wing Co-Op Power & Light	400.1: Utility Protective Measures (Electric, Gas, etc.)	\$240,000	\$180,000
1064	Crow Wing Power	400.1: Utility Protective Measures (Electric, Gas, etc.)	\$98,175	\$73,631

SOURCE: (FEMA, 2025)

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 in the Risk and Vulnerability dashboard on the webpage for each hazard. Additionally, summaries of at-risk populations in each jurisdiction are available on the county profile page. Vulnerable attributes of a population are addressed with each natural hazard.

The Risk and Vulnerability dashboard for each hazard also includes the FEMA Community Resilience Challenges Index (CRCI). The CRCI is a composite index of 22 community resilience indicators, including population and household characteristics, housing, healthcare, economic factors, and connection to community. The index value provides a relative composite value by census tract and is designed for emergency managers to target outreach strategies and understand the resilience challenges community members face (FEMA, 2024a).

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

3.3 Climate Change

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

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

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

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

To help the public understand how the changing climate has affected and is expected to affect the behavior of common weather hazards in 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.

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 areas 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 Crow Wing County website

3.4 Jurisdictional Change in Risk or Vulnerability Assessment

Jurisdictions in Crow Wing 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, Crow Wing 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: Question 2 – Local Vulnerabilities. Responses here are edited only for clarity.

Crow Wing County

Severe Storms, Flooding: We have multiple campgrounds and resorts, mobile home parks, assisted living facilities, levy, above ground power lines, and below ground gas lines that are vulnerable to the impacts of severe storm events and flooding.

City of Baxter

Severe Storms, Flooding: We have several assisted living facilities, apartment complexes, multiple hotels, water and wastewater treatment, Day center for homeless population, 1 mobile home neighborhood, 3 schools, above ground power lines, and multiple neighborhoods without multiple ingress or egress access.

City of Brainerd

Severe Storms, Flooding: We have a hospital, water treatment plant, wastewater treatment plant, schools, several nursing homes and assisted living facilities, a campground, a dam, and mobile home parks that are vulnerable to the impacts of severe storm events and flooding.

City of Breezy Point

Severe Storms, Flooding: We have 3 campgrounds and resort guests that are vulnerable to the impacts of severe storm events and flooding.

City of Crosby

Severe Storms, Flooding: We have 2 campgrounds, 1 mobile home park that are vulnerable to the impacts of severe storm events and flooding.

City of Crosslake

Severe Storms, Flooding: We have 2 campgrounds, 3 mobile home parks, 2 dams that are vulnerable to the impacts of severe storm events and flooding.

City of Cuyuna

Severe Storms, Flooding: We have 1 campground, 2 Mountain Bike Trail Heads that are vulnerable to the impacts of severe storm events and flooding.

City of Deerwood

Severe Storms, Flooding: We have 1 mobile home park, 2-3 older elderly living facilities, Lack of storm shelter, a couple lift stations that are exposed to flooding, a couple older intersections that flood during heavy rains and snow melting, aging sirens for storm warning. The mobile home park is very old and run down and at high risk during cold weather and storms.

City of Emily

Power Outages: We have experienced power outages from strong wind events that brought down power lines. The City's Emergency Shelter (City Hall) does not have a generator to provide power during outages.

City of Fifty Lakes

Windstorms, Tornadoes: We have one campground (200 users when full) and one trailer park association whose residents may look for shelter in severe weather. Our storm shelter is better than a camper or trailer, but can only house so many people. Judging by the year the shelter was built there are some concerns about the roof holding up to a tornado. Power outages also happen frequently in some areas during summer/winter storms from trees taking out overhead lines.

City of Fort Ripley

No response.

City of Garrison

Windstorms, Tornadoes: We have multiple campgrounds and mobile home parks, one mobile home park with 800+ sites (Aitkin County border). Our emergency shelter is located at City Hall, but is limited to the key holder's ability to get there to open it.

City of Ironton

Severe Storms, Flooding: We have multiple campgrounds and a couple larger apartments for the elderly/mobility impaired that are vulnerable to the impacts of severe storm events and flooding.

City of Jenkins

All-Hazards: We are a small city with limited staff and financial resources. Our City Hall is considered an emergency shelter but has very limited space and no backup power supply or generator.

City of Manhattan Beach

All-Hazards: We are a small city (population 57) with very limited financial and staff resources to address local mitigation projects.

City of Nisswa

Windstorms, Tornadoes: Our city has multiple resorts/campgrounds along with an elementary school. We also have a large elderly population along with a large amount of visitors frequenting the downtown area in the summer months. We do have our community center available as a storm shelter with limited space. Our city has several areas with old, large trees in residential areas making them a concern causing damage or injury during storms.

City of Pequot Lakes

Windstorms, Tornadoes: We have 1 mobile home park, several apartment complexes, several assisted living facilities, a school, our emergency shelter is in the basement of the community center which has limited capacity, 3 over passes, 2 of which are over Hwy 371 (Co Rd 11 and the bike trail), 2 campgrounds, 1 resort, numerous communication towers, city water system, and several day care facilities.

City of Riverton

No response.

City of Trommald

Wildfire: Some public areas with lots of downed trees from storms created elevated risk of possible wildfire spread/intensity.

3.4.2 Future Development

Because Crow Wing 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. Crow Wing 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 Crow Wing 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 responses taken directly from jurisdictional representatives as preserved in Appendix C: Question 4 – Increase in Vulnerability. Responses here are edited only for clarity.

Crow Wing County

Generally, we have seen an increase in population and construction across the county, but without any increase in vulnerability for natural hazard events.

City of Baxter

We have experienced rapid growth and construction in residential, commercial, office and industrial development. We have seen a 9% increase in population since 2020.

City of Brainerd

Brainerd has seen significant new single-family home development on its corporate boundaries, thus increasing new vulnerabilities to natural hazards. The Brainerd Oaks, Northtown, Serene Pines, and Delmar developments are now 95% built out. Most of the single-family home construction has occurred in the last 5 years. The development on our outer borders has a higher risk to wildfire due to location in or near the wildland-urban interface.

City of Breezy Point

The City of Breezy Point had Fairway Lane developed in the last ten years, yielding about 22 duplexes, the end of Chickasaw had some lots combined/rezoned yielding 4 duplexes, and Apple Lane was developed yielding 4 or 5 homes so far. We have also had redevelopment of existing sub-divisions.

City of Crosby

Increased population growth due the large influx of people using the mountain bike trail system.

City of Crosslake

We have continued to see a moderate increase of population. We feel we have been able to handle the moderate growth.

City of Cuyuna

Increased population growth due to the large mountain biking population.

City of Deerwood

Moderate Population Growth, Large increase in Bike trail activity resulting in increased traffic, area use and rescue needs.

City of Emily

We have had continued to have a moderate increase of population.

City of Fifty Lakes

There has been an increase in year-round occupancy vs. seasonal, which is still much less than our summer population.

City of Fort Ripley

No response

City of Garrison

Increase in population, also significant increase in seasonal population. Slow increase in development though a large resort is being built within city limits over the next few years.

City of Ironton

We have an increase in population due to the bike trails and REC Area.

City of Jenkins

We have experienced an increase in development as well as an increase in seasonal (summer) population.

City of Manhattan Beach

No new homes or developments.

City of Nisswa

Our city is experiencing continual growth which is mainly residential and has increased significantly since 2020.

City of Pequot Lakes

We have experienced an increase in new development which has caused us to increase infrastructure capacity.

City of Riverton

No response.

City of Trommald

Maybe not population increase, but we have seen an increase in traffic/seasonal visitors.

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 Crow Wing 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 Crow Wing 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. The county also conducted a capabilities assessment to review the plans and programs that are in place or lacking (program gaps or deficiencies) for implementing 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 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 Crow Wing County Planning Team deemed moderate to high risk. Hazards 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. Eight of the nine federal disaster declarations in Crow Wing County included flooding.

There have been several notable flood events in Crow Wing County. On June 20, 2013, Breezy Point recorded 7.75 inches of rain, and 6.14 inches were measured near Nisswa, causing significant widespread flooding. On July 11–12, 2016, Crow Wing County received six to seven inches of rain (with four to five inches in the south) as thunderstorms repeatedly regenerated and moved slowly over the area for a period of hours. Even heavier rains fell in a large area to the east, as this major flood event developed an enormous footprint.

4.1.1 Probability of Occurrence

From 1996 through May 2025, the NCEI Storm Events Database has recorded 25 flood and flash flood events. Crow Wing County has experienced one flash flood event every 2.4 years and one riverine flood event every 1.9 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.

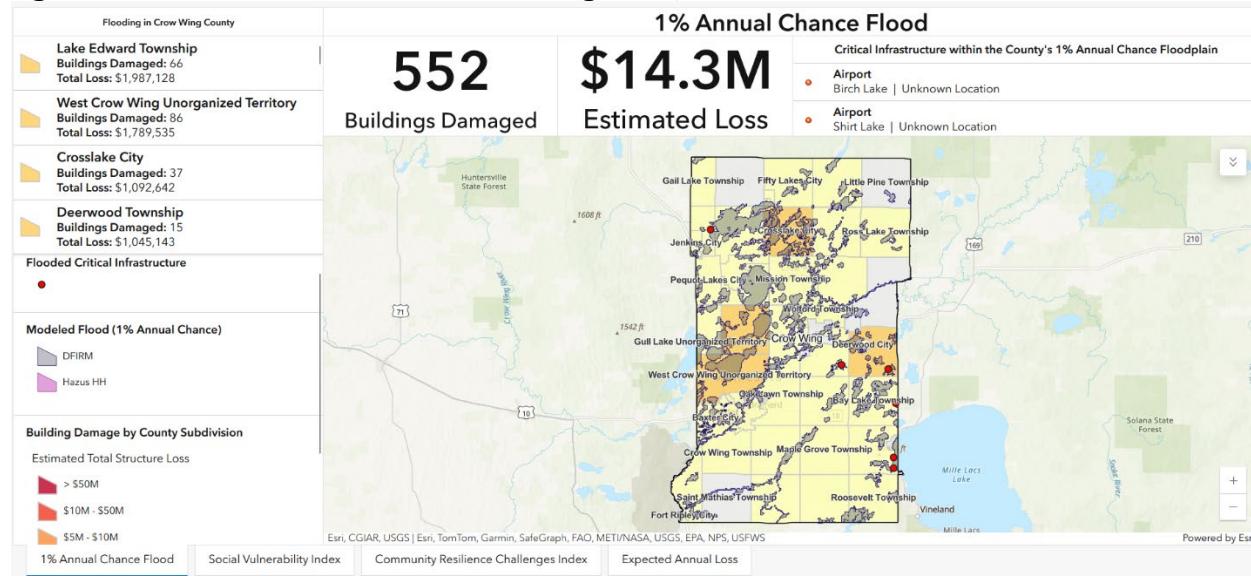
A raster layer (10m resolution) of flood water depths within the 1% annual chance flood boundary was calculated by taking the difference between the elevation of the ground and the surface of the flood water. Static base flood elevation (BFE) data was available for some areas in the flood boundary, but

the water surface elevation (WSEL) had to be calculated for the rest of the flooded areas. The method of calculating the WSEL varied by the data available.

For this analysis, water surface elevations were calculated by interpolating three different datasets: the regulatory water surface elevation values of cross section lines (primary data), the elevation values of base flood elevation lines (secondary data), and the elevation at the flood boundary where cross section and base flood line data were not available.

The resulting Hazus 1% annual chance floodplain is shown in the Flood Vulnerability dashboard on the Crow Wing County HMP website (Figure 1), where it is available in an interactive form.

Figure 1. 1% Annual chance flood in Crow Wing County



4.1.2 Vulnerability

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

[View at-risk populations in Crow Wing 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, 60,823 points were input to Hazus to represent buildings with a total estimated building plus contents value of \$17.5 billion. Approximately 88% of the buildings (and 72% 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	53,228	\$12,608,272,298	828	\$208,855,680	546	\$14,183,228
Commercial	2,631	\$1,973,483,557	2	\$655,820	1	\$878
Other	4,964	\$2,923,166,183	12	\$4,094,440	5	\$137,147
Totals	60,823	\$17,504,922,038	842	\$213,605,940	552	\$14,321,253

SOURCE: (FEMA, 2024c)

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.

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 Crow Wing County.

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

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

It is important to identify other critical infrastructure within the 1% annual chance floodplain, given the higher risk of the facility or infrastructure being incapacitated or destroyed during a flood. In Crow Wing County, five airports were determined to be at risk in the 1% annual chance flood:

- Birch Lake Airport
- Shirt Lake Airport
- Paul's Airport
- Lookout Lake Airport
- Lower Hay Lake Airport

These airports are mapped on the [Crow Wing County HMP website](#). This flood analysis did not evaluate flooding bridges, roads, or other linear features.

There were other important assets within the 1% annual chance flood boundary and worth further flood risk review. Buildings considered include places where critical leaders' offices may be, historical

resources, hazardous waste storage, and places where populations may be exposed, such as campgrounds or mobile home parks. In Crow Wing County, the assets vulnerable to a 1% annual chance flood are both in Garrison: the campground Shady Creek on Mille Lacs, and St. Alban's Bay Culvert at Mille Lacs Lake, which is on the National Register of Historic Places. These vulnerabilities should be reviewed in more detail.

Community Vulnerability

Potential economic losses were estimated by Census Minor Civil Division. Lake Edward Township would suffer an estimated loss of nearly \$2 million in the 1% annual chance flood. West Crow Wing Unorganized Territory, the City of Crosslake, and Deerwood Township each have estimated losses of over \$1 million. All jurisdictions with buildings identified in the 1% annual chance flood zone can also be viewed on the Crow Wing County HMP website.

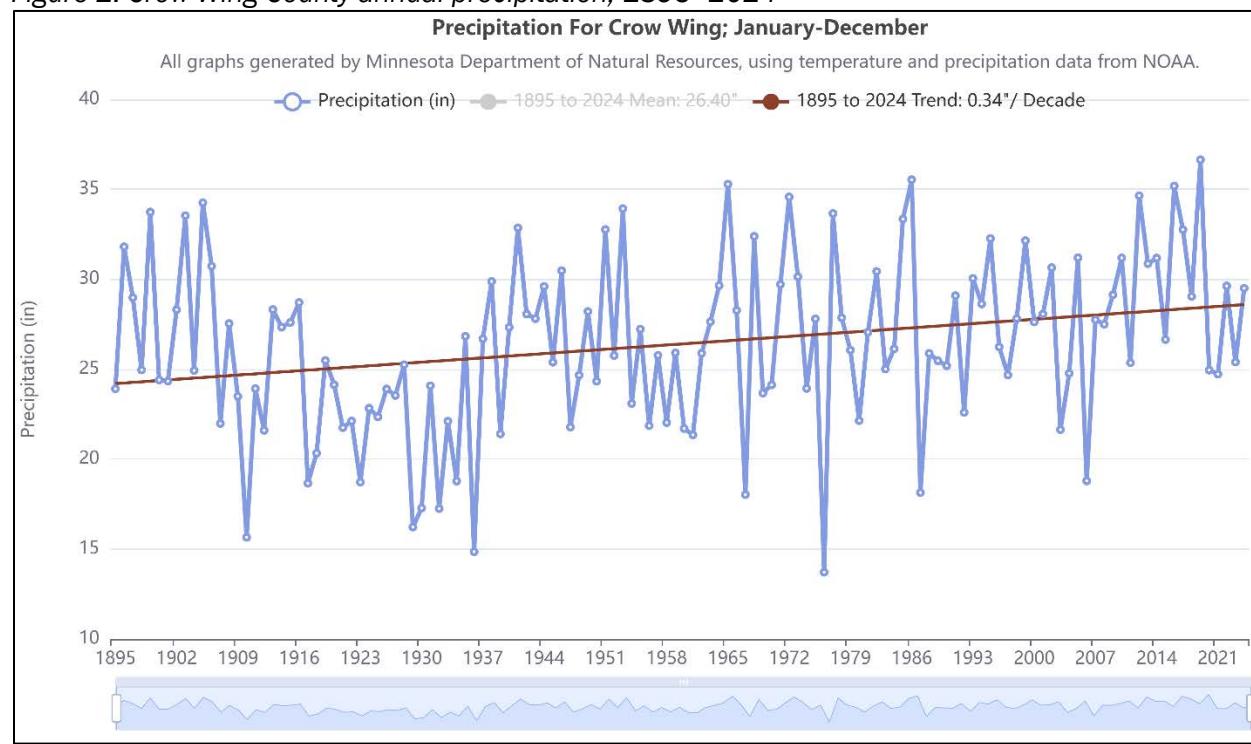
The status of jurisdictional participation in the National Flood Insurance Program and any repetitive loss properties are detailed in Section 5.1.1. National Flood Insurance Program (NFIP).

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 Crow Wing County, the result has been increased precipitation, with annual totals increasing at an average rate of just over a third of an inch per decade since 1895. (see Figure 2).

Figure 2. Crow Wing County annual precipitation, 1895–2024



SOURCE: (MN DNR, 2025B)

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, 2024).

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

Crow Wing 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 (e.g., culvert replacements, road repair) is an ongoing need. The county and many of our townships have limited funding for road infrastructure. Crow Wing County continues to assist with road infrastructure mitigation projects to reduce the impacts of localized flooding.

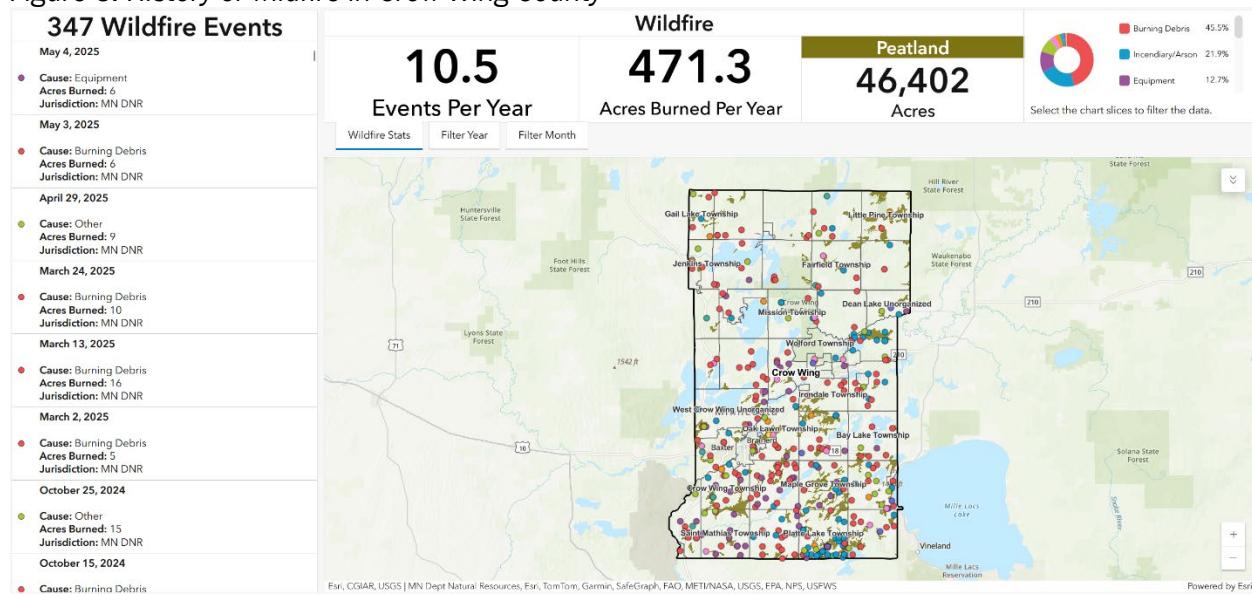
Funding: The county needs funding assistance to improve roads and culverts that experience repetitive flooding. Significant State and Federal funding is needed to construct infrastructure projects to prevent, reduce, and mitigate the impacts of high rain events and flooding.

4.2 Wildfire

Wildfire is an uncontrolled fire spreading through vegetative fuels, posing danger and destruction to property. Each year between January 1992 and July 2025, Minnesota experienced an average of 427 wildfires that burned at least five acres (MN DNR, 2025c). Wildfires occur throughout spring, summer, and fall; however, most wildfires in Minnesota take place in March, April, and May. The history of wildfire in Crow Wing County is shown in Figure 3; an interactive map is available on the Crow Wing County HMP website. The number of wildfires by type, acres, and cause includes aggregated data for Crow Wing County.

View interactive maps and see information about wildfire history, risk, and vulnerability

Figure 3. History of wildfire in Crow Wing County



4.2.1 Probability of Occurrence

To determine the probability of future wildfires, Minnesota DNR and National Interagency Fire Center records of previous wildfire events in Crow Wing County were summed and divided by the dataset's period of record, resulting in an annual relative frequency of wildfires for that period. From January 1992 to April 11, 2025, the relative frequency of wildfire events in the county is 10.5 per year (MN DNR, 2025c; National Interagency Fire Center, 2025). 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 2020. 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.

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

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

	Total WUI 2000	Total WUI 2010	Total WUI 2020	% Change (2000–2020)
Land Area	24.4%	29.1%	29.5%	+21.2%
Housing	89.9%	91.4%	91.5%	+1.8%

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

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

Township/City	Percent WUI
Garrison	95.3
Jenkins	88.0
Fort Ripley	82.0
Breezy Point	76.8
Cuyuna	72.6
Brainerd	68.3
Baxter	61.1
Deerwood	60.6
Manhattan Beach	55.8
Nisswa	52.2
Lake Edward	51.3
Crow Wing	51.0
Pequot Lakes	49.3
Crosslake	48.0
Crosby	45.4
Ideal	43.5
Oak Lawn	40.9
Riverton	40.9
Emily	39.8
Center	38.5
Bay Lake	37.2
Fifty Lakes	35.7
Deerwood Township	33.3
Fort Ripley Township	30.2
Jenkins Township	30.2
Pelican	29.8
Irondale	29.4
Garrison Township	26.9
Ross Lake	25.6

Township/City	Percent WUI
Trommald	23.6
Mission	22.5
Roosevelt	22.3
Nokay Lake	15.7
Ironton	15.3
Wolford	13.4
Long Lake	12.3
Maple Grove	12.3
Gail Lake	11.9
Little Pine	10.0
Rabbit Lake	9.8
Timothy	9.6
Platte Lake	6.9
Perry Lake	5.7
Fairfield	5.1
Daggett Brook	1.3
Saint Mathias	0.6

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

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

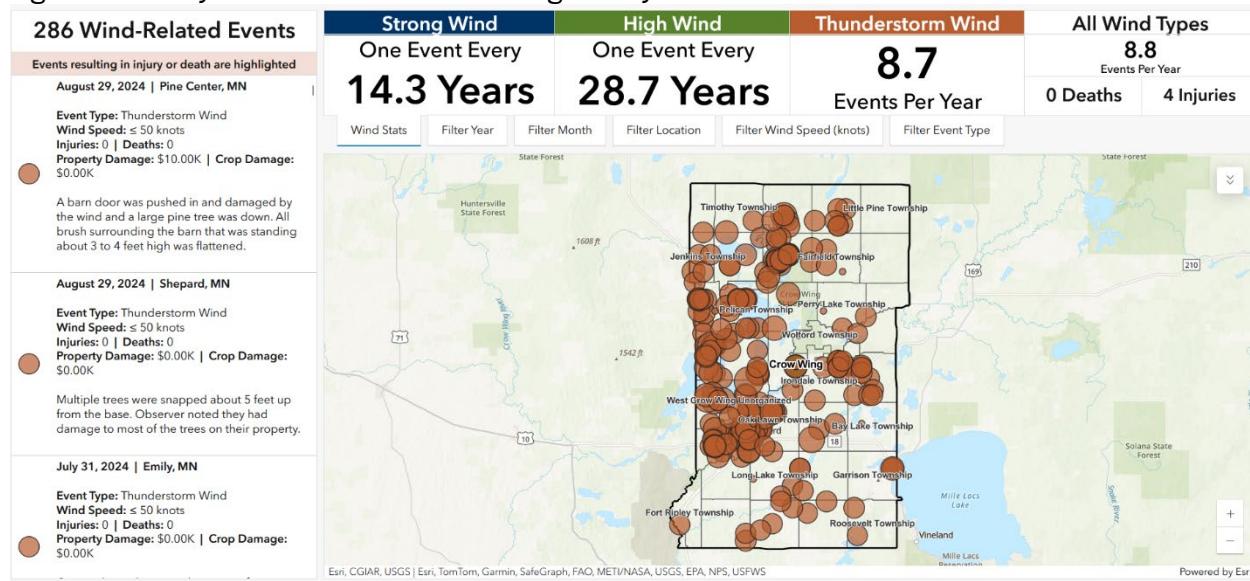
Public Awareness: Raising public awareness of the risk of wildfire is an ongoing area of need, especially with the seasonal population of visitors to Crow Wing County during summer, when periods of drought can cause higher risk for recreational wildfires.

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 Crow Wing County is shown in Figure 4; an interactive version of this map can be found on the Crow Wing County HMP website.

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

Figure 4. History of windstorms in Crow Wing County



4.3.1 Probability of Occurrence

To determine the probability of future wind-related events in Crow Wing County, records of previous wind-related events (strong wind, high wind, and thunderstorm wind) in Crow Wing 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 May 2025 is 8.8 per year. These relative frequencies can be used to infer the probability of these events occurring in the future.

4.3.2 Vulnerability

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

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

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

4.3.3 Windstorms and Climate Change

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

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

4.3.4 Program Gaps and Deficiencies

Crow Wing 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 power lines throughout Crow Wing County are above ground, exposing them to potential damage from high wind events. The county and local jurisdictions continue to work with electric utility providers to convert overhead power lines 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 a tornado watch/warning is and what to do when outdoor warning sirens are activated. Crow Wing 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 Crow Wing 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 (Hogebach, 2020). The history of tornadoes in Crow Wing County is shown in Figure 5; an interactive version of this map can be found on the Crow Wing County HMP website.

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

Figure 5. History of tornadoes in Crow Wing County



4.4.1 Probability of Occurrence

Estimating the probability of future tornadoes in Crow Wing 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 May 2025, there has been one tornado every 2.9 years in Crow Wing County. These 26 tornadic events occurred in 17 of the 75 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 Crow Wing County, there was an annual frequency of 1–3 tornadoes within a 50-mile radius. The historical frequency was slightly higher in the southwest than in the northeast of the county. These relative frequencies can be used to infer the probability of these events occurring in the future.

4.4.2 Vulnerability

The likelihood of a tornado does not vary significantly across geography within Crow Wing 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 Crow Wing 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

Crow Wing 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 power lines throughout Crow Wing County are above ground, exposing them to potential damage from high wind events. The county and local jurisdictions continue to work with electric utility providers to convert overhead power lines 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 a tornado watch/warning is and what to do when outdoor warning sirens are activated. Crow Wing 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.

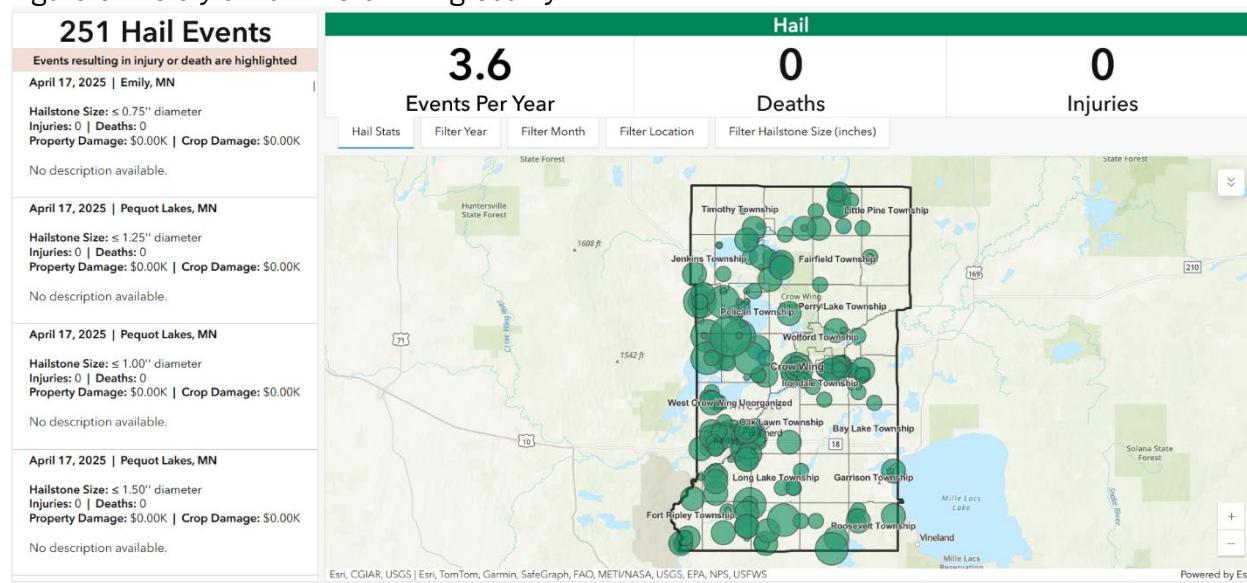
Storm Shelters and Tornado Safe Rooms: There are areas throughout Crow Wing County without viable storm shelters or tornado safe rooms where there are populations vulnerable to high wind and storm events, such as mobile home parks and campgrounds. A coordinated approach is needed to identify where storm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

4.5 Hail

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

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

Figure 6. History of hail in Crow Wing County



4.5.1 Probability of Occurrence

To determine the probability of future hailstorms in Crow Wing County, records of previous hail events in the county were examined for the period of record. From January 1955 through May 2025, the relative frequency of hail events was 3.6 per year. This relative frequency can be used to infer the probability of hail events occurring in the future. Please note that public reports of hail are often secondary to those of thunderstorm winds or tornadoes because if either damaging winds or tornadoes occur, the damaging wind and/or tornado are more important to the reporter and may result in underreporting of hail events.

4.5.2 Vulnerability

Crow Wing County's agricultural lands and structures are vulnerable to hail damage and its residents to injury and possibly death. Data from the Spatial Hazard Events and Losses Database for the United States (SHELDUS) was examined to identify the county's monetary losses due to hail damage to crops, property, injury, and death. From 1960 through 2022 Crow Wing County reported \$1,135,096 in hail damages, ranking 80th among Minnesota counties in total hail damages. Crow Wing County's losses are primarily due to property damages reported at \$1.38 million, followed by \$1.33 million in crop damages. Crop indemnity payments due to hail totaled over \$8.6 million for the period of record spanning 1989–2022 (CEMHS, 2023).

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

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

4.5.3 Hail and Climate Change

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

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

4.5.4 Program Gaps and Deficiencies

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

Above-Ground Power Lines: Most power lines throughout Crow Wing County are above ground, exposing them to potential damage from high wind events. The county and local jurisdictions continue to work with electric utility providers to convert overhead power lines 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 a tornado watch/warning is and what to do when outdoor warning sirens are activated. Crow Wing 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.

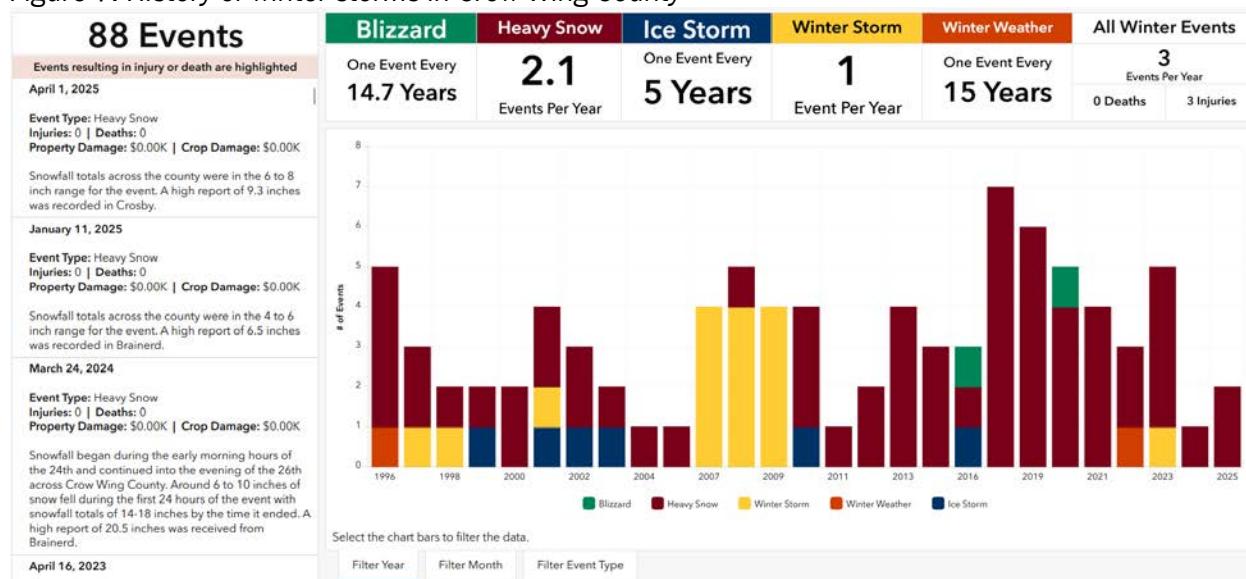
Storm Shelters and Tornado Safe Rooms: There are areas throughout Crow Wing County without viable storm shelters or tornado safe rooms where there are populations vulnerable to high wind and storm events, such as mobile home parks and campgrounds. A coordinated approach is needed to identify where storm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

4.6 Winter Storms

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

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

Figure 7. History of winter storms in Crow Wing County



4.6.1 Probability of Occurrence

To determine the probability of future winter-related storm events in Crow Wing 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 May 2025, the relative frequency of winter-related storm events in Crow Wing County is three per year. This relative frequency can infer the probability of these events occurring in the future.

4.6.2 Vulnerability

Transportation systems, electrical distribution systems, and structures are vulnerable to winter storms throughout the county. These events do not vary geographically within the county; all jurisdictions are equally vulnerable. While it is highly likely these events will continue occurring annually, the amount of snow and ice and number of winter-related storm events to occur each year are unpredictable. People residing 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.

4.6.3 Winter Storms and Climate Change

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

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

4.6.4 Program Gaps and Deficiencies

Crow Wing 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:

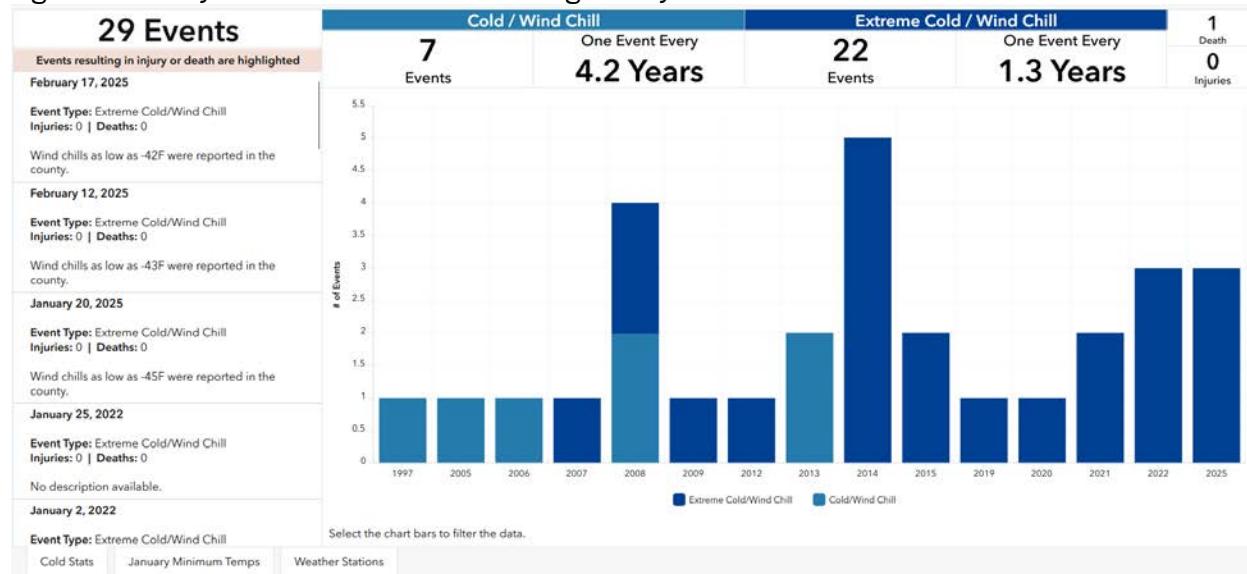
Above-Ground Power Lines: Most power lines throughout Crow Wing County are above ground, exposing them to impacts/damage from winter high wind and ice events, potentially leading to localized or extensive power outages.

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.

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 Crow Wing County can be especially dangerous when low temperatures and wind create arctic-like wind chills. The history of extreme cold in Crow Wing County is shown in Figure 8; an interactive version of this dashboard can be found on the Crow Wing County HMP website.

Figure 8. History of extreme cold in Crow Wing County



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

4.6.1 Probability of Occurrence

To determine the probability of future cold-related events in Crow Wing 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 May 2025, the relative frequency of extreme cold/wind chill events in Crow Wing County is one every 1.3 years. (NCEI, 2025). 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 Crow Wing 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

Crow Wing 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 facilities utilized for the care of residents & visitors, including designated severe weather/emergency shelters (schools, churches, etc.) have backup power to run heating systems in the event of a power outage.

Public Education: Ongoing public education is needed to encourage residents to be prepared for extreme weather, including power outages during periods of extreme cold. Crow Wing 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 describes weather that is much hotter and/or humid than typical for a place and time of year. In the United States, extreme heat is the deadliest weather-related hazard and causes more deaths than flooding, tornadoes, and hurricanes combined. While heat waves are infrequent in a northern state like Minnesota, they can have severe consequences for residents who are not acclimatized to their effects (Runkle et al., 2022).

While Crow Wing County has ranked extreme heat as a low-priority hazard, it is included in this plan due to its significant health impacts. The Minnesota Climate Action Framework states a goal for every county in Minnesota to profile the risk of extreme heat in its jurisdiction, regardless of its prioritization of this hazard. Minnesota Homeland Security and Emergency Management and the Minnesota Department of Health support this inclusion as a form of outreach. Counties do not need to have mitigation action addressing extreme heat unless the hazard is also a moderate or high priority for the county.

The National Weather Service (NWS) issues extreme heat watches, heat advisories, and extreme heat warnings based on the heat index, which is a combination of air temperature and relative humidity that determines how hot it feels. The heat index threshold differs based on locality, since people in colder climates are less prepared for heat events than people who live in warmer climates (NWS, 2025b).

More recently, the NWS has developed the HeatRisk tool to issue a forecast of heat-related impacts to occur over a 24-hour period. It is intended to provide risk guidance to decision-makers and heat-sensitive populations. Historical data from the HeatRisk tool, available back to 2015, provide a more comprehensive look at extreme heat events beyond those reported as Extreme Heat Events in the Storm Events Database. The HeatRisk tool takes into consideration:

- How unusual the heat is for the time of year
- The duration of the heat, including both daytime and nighttime temperatures
- If those temperatures pose an elevated risk of heat-related impacts based on data from the Centers for Disease Control and Prevention (NWS, 2025a).

Impacts of extreme heat are far-reaching and can be severe. Some impacts include infrastructure failures, such as roads buckling and power outages; strain on essential services, such as increased demand for emergency medical services and law enforcement (Guo, 2017; Williams et al., 2020); and disruptions to important social and economic networks, such as school and event cancellations, which reduce access to education, physical activity, and community support.

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

Crow Wing County's agricultural lands and structures are vulnerable to heat damage. Residents can suffer from increased heat-related illnesses, exacerbation of pre-existing chronic conditions, and even death (Moss, 2017). In the United States, heat is estimated to result in \$100 billion in economic losses annually, primarily due to lost productivity, and it accounts for \$1 billion in direct healthcare costs each year (American Public Health Association, 2025). In 2022, extreme heat led to 682 emergency department visits, 63 hospitalizations, and two deaths in Minnesota (MDH, 2025).

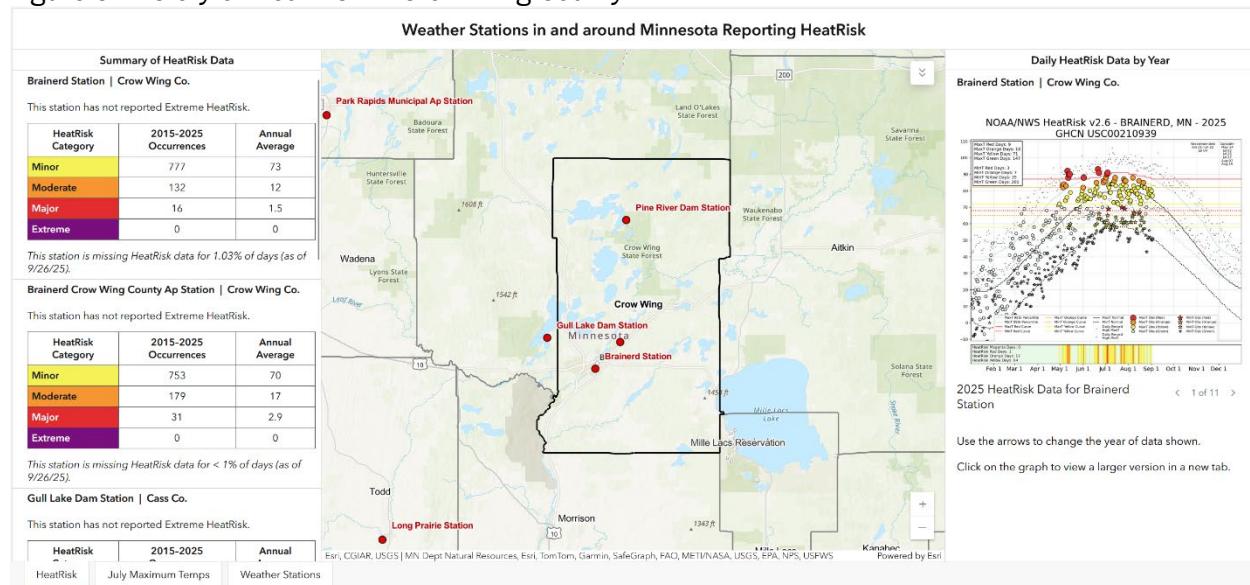
Extreme heat exacerbates poor air quality conditions because the stagnant air during a heat wave increases ozone and particulate pollution (Center for Science Education, 2025). Air pollution is particularly harmful for people over the age of 65, children under the age of five, outdoor workers, and people with respiratory or cardiovascular conditions. The [Minnesota Extreme Heat Toolkit](#) further details the health effects of poor air quality.

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 80th among Minnesota counties in crop indemnity payments, heat-related losses for Crow Wing County totaled over \$82,348 for the period of record spanning 1989 to 2022 (CEMHS, 2023).

The history of extreme heat in Crow Wing County is shown in Figure 9; an interactive version of this chart can be found on the Crow Wing County HMP website. This dashboard summarizes the occurrences of days when each HeatRisk category threshold was met for each year from 2015–2024. For the purposes of hazard mitigation planning, we have considered days in the Major (Red) Category (a level of heat affects anyone without effective cooling and/or adequate hydration. Impacts are likely in some health systems, heat-sensitive industries, and infrastructure) and the Extreme (Magenta) Category (level of rare and/or long-duration extreme heat with little to no overnight relief affects anyone without effective cooling and/or adequate hydration. Impacts are likely in most health systems, heat-sensitive industries, and infrastructure) as extreme heat-related events.

While Crow Wing County has ranked extreme heat as a low-priority hazard, it is included in this plan on the Minnesota Department of Health recommendation that every county consider this hazard in their HMP due to its significant health impacts.

Figure 9. History of HeatRisk in Crow Wing County



4.7.1 Probability of Occurrence

To determine the probability of future heat-related events in Crow Wing County, the average number of days exceeding the major or extreme HeatRisk categories is used to reflect heat events in the county. The Brainerd Station experiences major HeatRisk days an average of 1.5 days per year, and the Brainerd Crow Wing County Station experiences major events an average of 2.9 days per year based on the 11 years of record.. This relative frequency can infer the probability of these events occurring in the future.

Based on records in the Midwestern Regional Climate Center (MRCC) that date back to 1991, the average daily maximum temperature for July in Crow Wing County has historically been in the 78–79.9 °F range (MRCC, 2021), which is below the 90 °F for 2–3 days criteria for “extreme” heat events (FEMA, 2024b). However, Brainerd Station has reported daily maximum temperatures above 90 °F a total of 193 times, an average of six days per year. This historical average can be used to infer future events, although climate change projections show an increase in the number of days that exceed 90 °F by mid-century (see Section 4.7.3).

4.7.2 Vulnerability

The Minnesota Department of Health updated the Minnesota Extreme Heat Toolkit in 2025 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. In fact, extreme heat kills more people in the United States than all extreme weather events combined (Adams-Fuller, 2023). Minnesota does not have a mandated reporting system to report deaths and illnesses linked to extreme heat (MDH, 2025), but is important to not underestimate the danger of extreme heat events within the state.

High temperatures can be exacerbated by the urban heat island effect in developed areas, an effect that amplifies temperatures in areas with a higher concentration of impervious and paved surfaces.

These types of surfaces absorb more heat and hold it for longer than vegetation cover (EPA, 2019). Impervious surfaces are not spread evenly throughout the county, and attention should be given to cities or areas within the county where this type of surface cover is most dense. The city with the highest concentration of impervious surfaces is Brainerd at 30.91% (MDH & University of Minnesota, 2019). The distribution of heat-trapping surfaces and their proximity to tree canopy are more important than their total area.

The distribution of impervious surfaces can be viewed in the [Extreme Heat Risk & Vulnerability dashboard](#) in the Exposure tab. The metro counties have an additional layer that demonstrates tree canopy, an effective mitigation of extreme heat: urban tree canopy of at least 40% can result in as much as 7–9 °F cooler temperatures (Ziter et al., 2019). The Metropolitan Council [Growing Shade Tool](#) provides data and resources to inform tree planting and canopy preservation for the Twin Cities region to realize benefits, such as cooler temperatures, improved air quality, cleaner stormwater, improved mental health, and enhanced biodiversity.

Rural areas have higher rates of heat-related emergency department visits compared with urban areas (MDH, 2024), and Americans living in rural areas are twice as likely as those in urban areas to have pre-existing health conditions that make them more vulnerable to extreme heat (Pohl, 2025). Rural agricultural regions can have higher rates of humidity due to moisture-producing crops like corn (Minnesota Supercomputing Institute, 2016), which produces evapotranspiration, or “corn sweat,” that can add as much as 5–10 °F to the dew point temperature (Steil, 2016).

Key Message #3 in the Midwest Chapter of the NCA5 lists 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).

Everyone is susceptible to extreme heat, but certain individuals are at a higher risk of developing heat-related illnesses. According to the Centers 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 of 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 that exacerbates the effects of extreme heat, or have a condition that 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).

Table 11 shows characteristics that MDH has determined make individuals more at risk to adverse health effects from extreme heat, including how that vulnerability ranks among Minnesota counties.

The indicator's percentile rank within Minnesota determines the vulnerability level of Crow Wing County for that indicator (e.g., the 81st –100th percentile is associated with the highest vulnerability compared to other Minnesota counties). For more information on what makes individuals and communities more vulnerable, see the [Minnesota Extreme Heat Toolkit](#).

Table 11. Populations vulnerable to extreme heat in Crow Wing County

Vulnerability Indicator	Percentage of Population	Percentile Rank within Minnesota	Vulnerability Level
Adults with COPD	6.5%	33rd	Low
Adults with a self-care disability	3.3%	26th	Low
Adults with coronary heart disease	7.9%	50th	Moderate
Adults with diabetes	11.7%	49th	Moderate
Families at less than 200% of poverty level	20.2%	58th	Moderate
Households where a person age 65 or over lives alone	14.3%	53rd	Moderate
Households with no computing device	4.7%	14th	Lowest
Households with no vehicle available	4.8%	40th	Low
Households with rent over 50% of income	4.0%	57th	Moderate
Medicare beneficiaries who are electricity-dependent	4.3%	48th	Moderate
Medicare–Medicaid-enrolled beneficiaries	3.1%	49th	Moderate
People age 5 or over with limited English	0.7%	14th	Lowest
People age 65 or over	23.8%	79th	High
People over age 16 who work outdoors	6.3%	21st	Low
People under age 5	5.0%	10th	Lowest
People who are experiencing homelessness	0.1%	69th	High
People who are uninsured	5.7%	73rd	High
People who do not identify as “White alone, not Hispanic or Latino”	6.4%	9th	Lowest

Facilities where vulnerable populations may be concentrated, such as prisons, group homes, and childcare centers, are considered to be at higher risk during heat events.

[View interactive information about at-risk populations in Crow Wing 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). In Crow Wing County, the average temperature from July to September has increased 0.23 degrees Fahrenheit per decade since 1895 (MN DNR, 2025b)

Nights are warming at a much higher rate than days in Minnesota. In Crow Wing County, nighttime minimum temperatures from July to September have increased at a rate of 0.26 degrees Fahrenheit per decade (MN DNR, 2025b).

While 94% of Minnesota households have some form of air conditioning (including central air, room units, dehumidifiers, and ceiling fans), only 68% have the central air conditioning that can provide reliable whole-house cooling (U.S. Energy Information Administration, 2023). Furthermore, homes with air conditioning equipment may not use it; for example, low-income homes might not turn on their units due to the associated costs, and homes in areas with higher crime rates may be reluctant to use window units for security reasons (EPA, 2006).

The average number of days per year with temperatures over 90 °F under a high carbon emissions (SSP 585), mid-century (2040–2059) scenario is illustrated in the [Climate Dashboard](#) on the Plan website.

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).

Table 12 compares historical temperature averages to projections under a high emissions (SSP 585) scenario, demonstrating how many more days will reach above 90 °F and nights where the minimum does not go below 75.2 °F. The data in the table is taken from [Minnesota CliMAT](#), an interactive online tool that provides highly localized climate projections for Minnesota and visualize how even specific towns will likely be impacted in the coming decades (Liess, S. et al., 2023). While models differ on how many degrees of warming will be caused by climate change, all models agree that temperatures will continue to rise.

Table 12. Historical vs projected number of days reaching temperature thresholds in Crow Wing County

	Historical (1995–2014)	Projected (2040–2059)	Change
Days Above 90	8.39	24.29	+15.89
Nighttime Minimum > 75.2	0.25	2.15	+1.91

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 (MN DNR, 2025a).

4.7.4 Program Gaps and Deficiencies

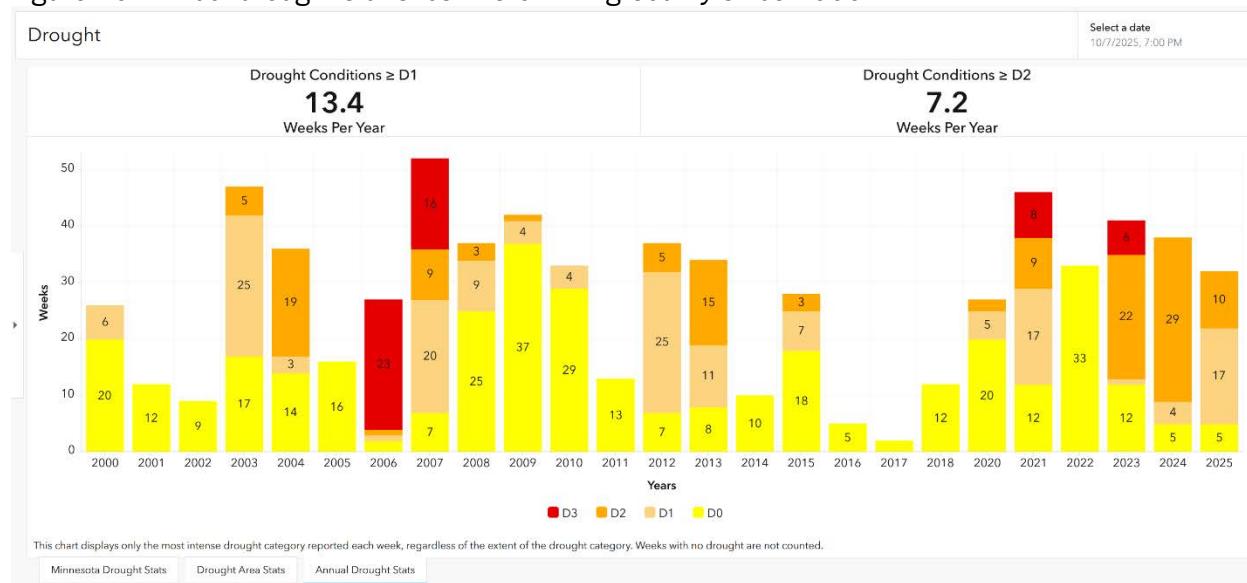
Extreme Heat was considered a low priority by the planning team for the 2025 HMP. Gaps and deficiencies were not addressed.

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 10; an interactive version of this dashboard can be found on the Crow Wing County HMP website.

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

Figure 10. Annual drought statistics in Crow Wing County since 2000



4.8.1 Probability of Occurrence

To determine the probability of future droughts in Crow Wing 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–October 10, 2025 for any occurrence of drought \geq D1 in Crow Wing 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 13.4 weeks per year, and the relative frequency of drought conditions \geq D2 is 7.2 weeks per year (NDMC, 2025b). 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, 2025b) 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 28 reported drought incidents in Crow Wing County from 2000 to 2024, impacting eight sectors, with greatest impacts to the food and relief, response & restrictions sector (NDMC, 2025a). Since droughts are regional in nature, jurisdictions within Crow Wing 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, 2021). In addition, droughts may negatively affect an individual's health by contributing to poor air quality caused by wildfire smoke and particulate matter, 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, Crow Wing County's agriculture sector has been impacted by drought once. With 3.1% of Crow Wing 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, Crow Wing County received over \$6.5 million (2021 ADJ) in crop indemnity payments due to drought, placing it as the 74th-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

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

4.9 Dam Failure

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

Dam Inventory: The National Dam Inventory reports that there are 15 dams in Crow Wing County. Dams are mapped on the [MN State 2024 HMP website](#). Crow Wing County has three dams classified as High Hazard Dams, zero dams classified as Significant Hazard Dams, nine dams classified as Low Hazard Dams, and three dams classified as having Undetermined hazard potential. The Minnesota Dam Safety Program office was consulted to identify dam incidents and concerns.

4.9.1 Probability of Occurrence

Extreme precipitation is only one factor contributing to dam failure, and the possibility of failure is dam-specific, relating to both environmental and structural conditions. There are no recorded dam incidents in Crow Wing County. Total dam failures are extremely unlikely if the dam is maintained in compliance with Minnesota's Dam Safety Program. The likelihood of failure in Crow Wing County is low.

4.9.2 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 13 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 13. 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).

The U.S. Army Corps of Engineers (USACE) – St. Paul District owns two dams that are classified as having high hazard potential in Crow Wing County (Table 14). These dams are Pine River Dam and Pine River Dam – Dikes 13 and 14. Brainerd Public Utilities owns the Brainerd dam, the third high hazard dam in the county. According to the National Inventory of Dams, the Pine River Dam and dikes are inspected every five years. Standard operating procedures are developed for the operation of the infrastructure during flooding events (USACE, 2024).

Table 14. High Hazard Dams in Crow Wing County

Name	Nearest City	River or Stream Name	Height (Ft)	Year	Max Storage (Acre-Ft)	Drainage Area (Sq Miles)	Max Discharge (Cubic Ft/Sec)
Brainerd	Brainerd	Mississippi River	20	1950	13,000	7,320	14,000
Pine River Dam	Crosslake	Pine River	23	1886	187,700	562	16,300
Pine River Dam - Dikes 13 & 14	Crosslake	Pine River	23	1886	187,700	562	16,300

The Pine River Dam, located on the eastern edge of Cross Lake in the city of Crosslake, was constructed by USACE in 1886 as one of several Mississippi River headwaters dams that supplemented river flows for navigation purposes. The original timber dam was replaced with a concrete structure in June 1906. Since the revision of water control plans in 1945, the Pine River Dam has served primarily to optimize recreational and environmental benefits. Dikes 13 and 14, located on the western edge of Cross Lake, are associated structures of the Pine River Dam.

Pine River Dam and its associated structures are inspected every five years; the most recent inspection was in May 2023. Pine River Dam has an EAP, but the National Dam Inventory does not provide the date of its last revision and states that the EAP does not meet FEMA guidelines. The EAP for Dikes 13 and 14, which was last revised in September 1990, does meet FEMA guidelines.

The following figures show areas of potential inundation in the event of a breach of the Pine River Dam. Five breach scenarios are mapped:

- Maximum High (MH) – the pool level near the top of dam resulting from water flowing into the reservoir from heavy rainfall, snowmelt, or other significant high-water events (Figure 11).
- Intermediate High (IH) – the pool level filling the storage capacity of the dam resulting from water flowing into the reservoir from heavy rainfall, snowmelt, or a combination of the two events. The spillway releases excess water (Figure 12).
- Top of Active Storage (TAS) – the pool level filling the storage capacity of the dam (Figure 13).
- High Pool (HP) – a yearly average high pool level not filling the storage capacity of the dam (Figure 14).
- Normal Pool (NP) – the pool level the dam maintains throughout the year when not in a flood operation. Minimal outflow releases (Figure 15).

Brainerd, the third High Hazard dam in Crow Wing County, is a gravity and timber crib hydroelectric dam that is located on the Mississippi River within the municipal boundary of the city of Brainerd. The dam is owned by Brainerd Public Utilities and regulated by the Federal Energy Regulatory Commission. Brainerd was assessed to be in Satisfactory condition in September 2022. The dam's EAP was last revised in December 2022.

Figure 11. MH Breach potential inundation map

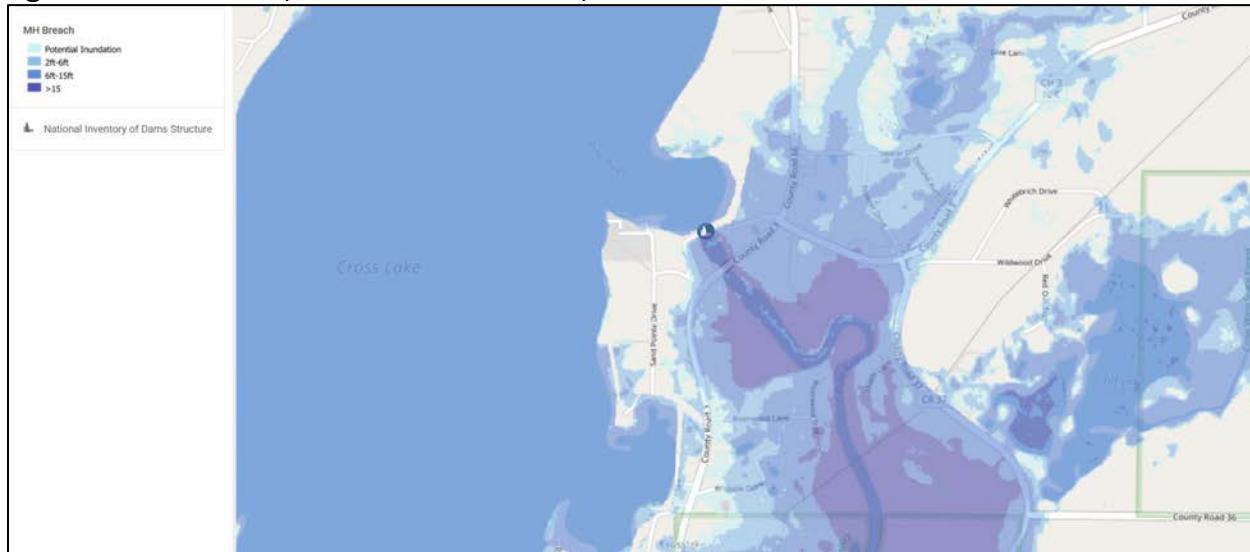


Figure 12. IH Breach potential inundation map

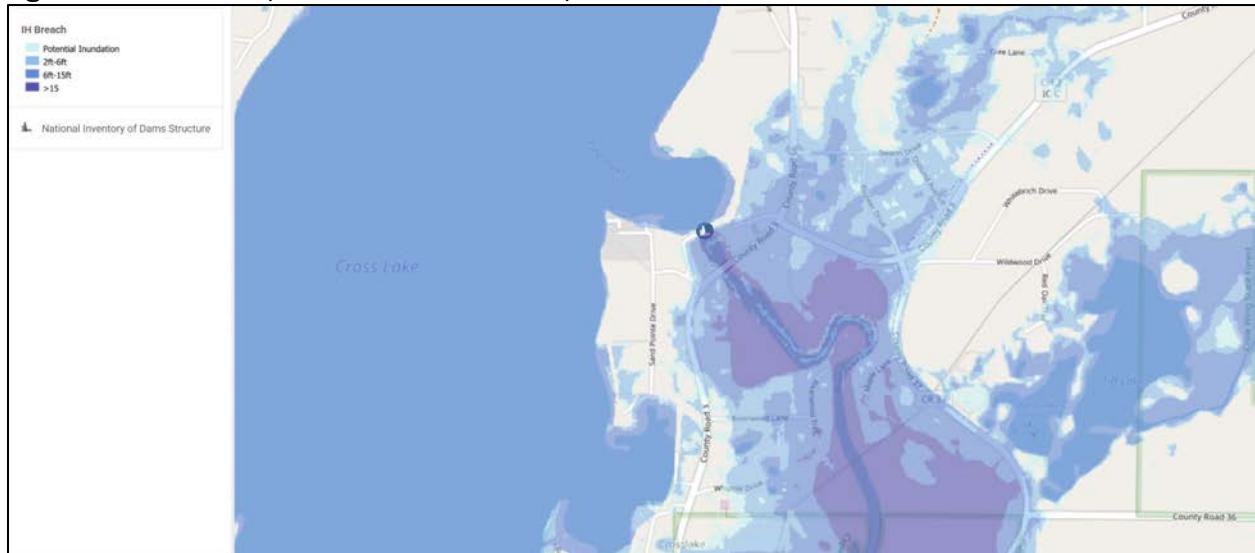


Figure 13. TAS Breach potential inundation map

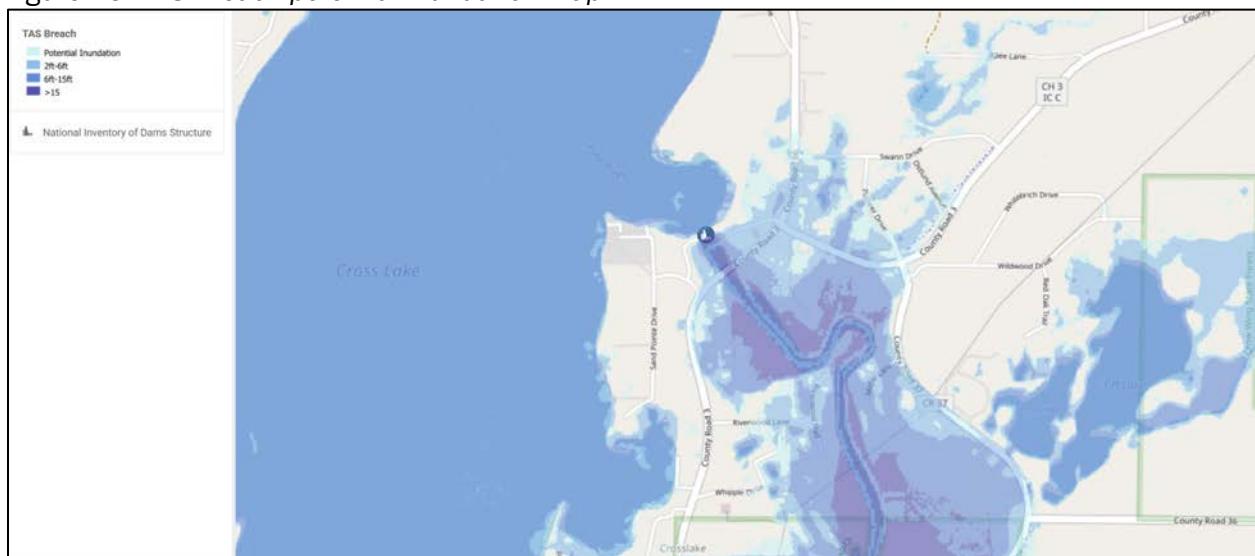


Figure 14. HP Breach potential inundation map

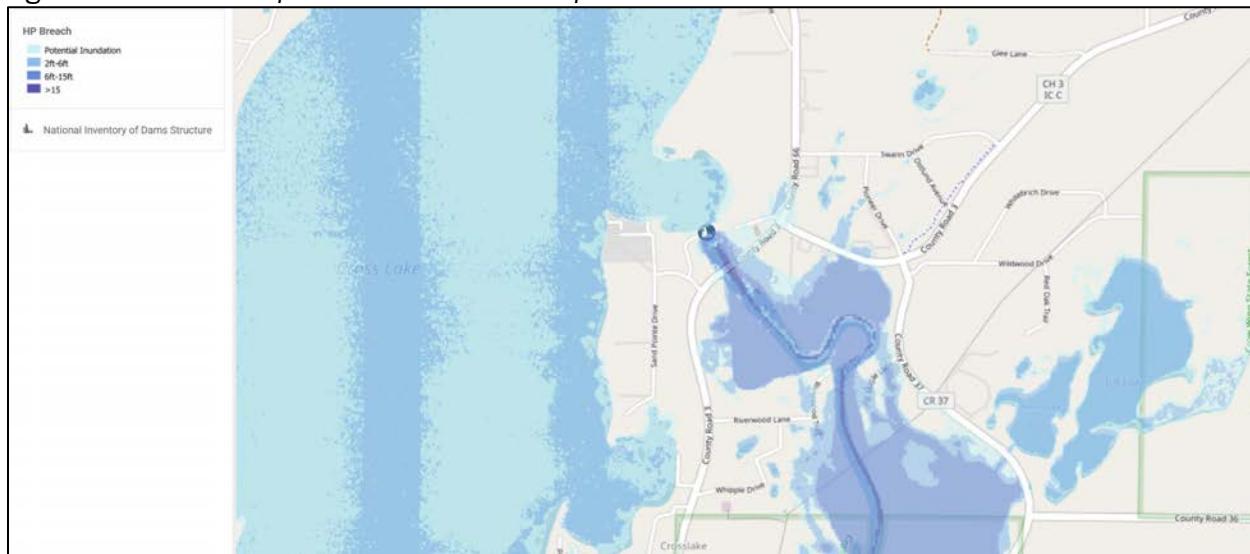
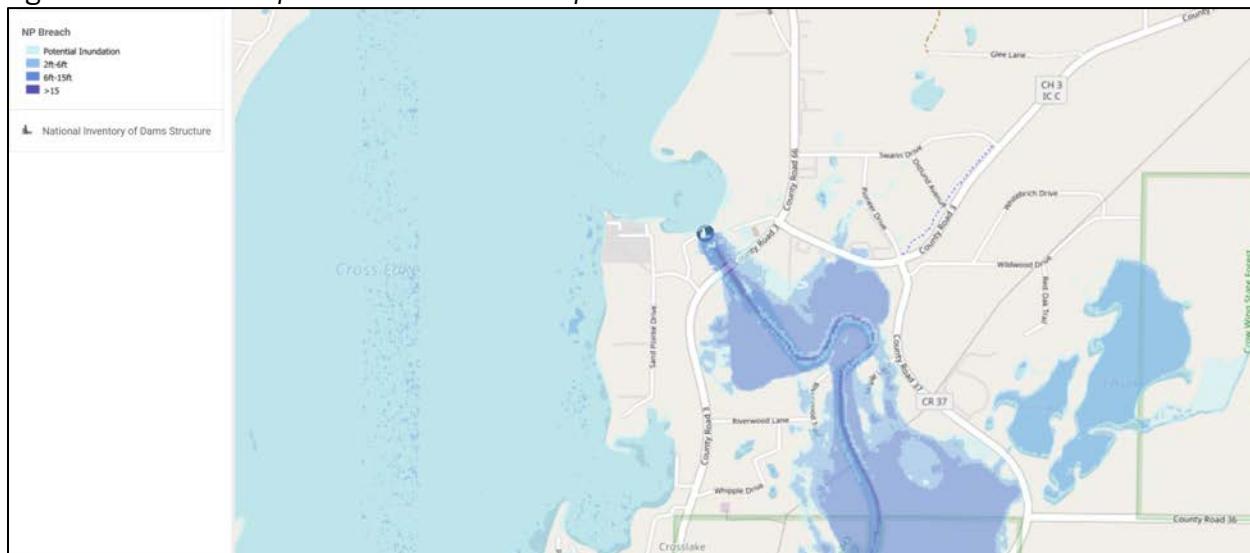


Figure 15. NP Breach potential inundation map



4.9.3 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.

4.9.4 Program Gaps and Deficiencies

Crow Wing 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 on recovery, and to build disaster-resistant communities. Mitigation actions and projects should be based on a well-constructed risk assessment as provided in Section 3 of this plan and on the HMP website. 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 reducing disaster damages. The assessment also evaluates these capabilities to determine whether the activities can be improved 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 Crow Wing County as related to hazard mitigation.
- Appendix C: As part of the Crow Wing 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 Crow Wing 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.

Jurisdictional participation in the National Flood Insurance Program (NFIP) is outlined below.

Crow Wing County

Status: NA

Entry Date: NA

FEMA Map: NA

Current Effective Map Date: NA

Potential Buildings Damaged in Floodplain: 428

Adoption of Current Floodplain Ordinance: NA

Adoption of latest DFIRM Map: NA

Floodplain Administrator: NA

Baxter

Status: Participating

Entry Date: 4/15/1974 (Emergency Entry); 05/15/1991 (Regular Entry)

FEMA Map: FEMA Mapped High Risk Areas

Current Effective Map Date: 8/15/2017

Potential Buildings Damaged in Floodplain: 12

Adoption of Current Floodplain Ordinance: 7/18/2017 (Effective 7/21/2017)

Adoption of latest DFIRM Map: 7/18/2017

Floodplain Administrator: Bradley Chapulis, City Administrator (cityhall@baxtermn.gov)

Brainerd

Status: Participating

Entry Date: 2/1/1974 (Emergency Entry); 09/02/1981 (Regular Entry)

FEMA Map: FEMA Mapped High Risk Areas

Current Effective Map Date: 8/15/2017

Potential Buildings Damaged in Floodplain: 3

Adoption of Current Floodplain Ordinance: 7/17/2017 (Effective 7/21/2017)

Adoption of latest DFIRM Map: 7/17/2017

Floodplain Administrator: Chris Pence, Zoning Administrator (chris.pence@crowwing.us)

Breezy Point

Status: NA

Entry Date: NA

FEMA Map: NA

Current Effective Map: NA

Potential Buildings Damaged in Floodplain: 5

Adoption of Current Floodplain Ordinance: NA

Adoption of latest DFIRM Map: NA

Floodplain Administrator: NA

Crosby

Status: NA

Entry Date: NA

FEMA Map: NA

Current Effective Map Date:

Potential Buildings Damaged in Floodplain: 4
Adoption of Current Floodplain Ordinance: NA
Adoption of latest DFIRM Map: NA
Floodplain Administrator: NA

Crosslake

Status: NA
Entry Date: NA
FEMA Map: NA
Current Effective Map Date: NA
Potential Buildings Damaged in Floodplain: 37
Adoption of Current Floodplain Ordinance: NA
Adoption of latest DFIRM Map: NA
Floodplain Administrator: NA

Cuyuna

Status: NA
Entry Date: NA
FEMA Map: NA
Current Effective Map Date: NA
Potential Buildings Damaged in Floodplain: NA
Adoption of Current Floodplain Ordinance: NA
Adoption of latest DFIRM Map: NA
Floodplain Administrator: NA

Deerwood

Status: NA
Entry Date: NA
FEMA Map: NA
Current Effective Map Date: NA
Potential Buildings Damaged in Floodplain: 2
Adoption of Current Floodplain Ordinance: NA
Adoption of latest DFIRM Map: NA
Floodplain Administrator: NA

Emily

Status: NA
Entry Date: NA
FEMA Map: NA
Current Effective Map Date: NA
Potential Buildings Damaged in Floodplain: 17
Adoption of Current Floodplain Ordinance: NA
Adoption of latest DFIRM Map: NA
Floodplain Administrator: NA

Fifty Lakes

Status: NA

Entry Date: NA

FEMA Map: NA

Current Effective Map: NA

Potential Buildings Damaged in Floodplain: 2

Adoption of Current Floodplain Ordinance: NA

Adoption of latest DFIRM Map: NA

Floodplain Administrator: NA

Fort Ripley

Status: NA

Entry Date: NA

FEMA Map: NA

Current Effective Map Date: NA

Potential Buildings Damaged in Floodplain: 5

Adoption of Current Floodplain Ordinance: NA

Adoption of latest DFIRM Map: NA

Floodplain Administrator: NA

Garrison

Status: NA

Entry Date: NA

FEMA Map: NA

Current Effective Map Date: NA

Potential Buildings Damaged in Floodplain: NA

Adoption of Current Floodplain Ordinance: NA

Adoption of latest DFIRM Map: NA

Floodplain Administrator: NA

Ironton

Status: Participating

Entry Date: 2/1/1974 (Emergency Entry); 09/02/1981 (Regular Entry)

FEMA Map: FEMA Mapped High Risk Areas

Current Effective Map Date: 8/15/2017

Potential Buildings Damaged in Floodplain: NA

Adoption of Current Floodplain Ordinance: 7/17/2017 (Effective 7/21/2017)

Adoption of latest DFIRM Map: 7/17/2017

Floodplain Administrator: Chris Pence, Zoning Administrator (chris.pence@crowwing.us)

Jenkins

Status: NA

Entry Date: NA

FEMA Map: NA

Current Effective Map Date: NA

Potential Buildings Damaged in Floodplain: 2
Adoption of Current Floodplain Ordinance: NA
Adoption of latest DFIRM Map: NA
Floodplain Administrator: NA

Manhattan Beach

Status: NA
Entry Date: NA
FEMA Map: NA
Current Effective Map Date: NA
Potential Buildings Damaged in Floodplain: 0
Adoption of Current Floodplain Ordinance: NA
Adoption of latest DFIRM Map: NA
Floodplain Administrator: NA

Nisswa

Status: NA
Entry Date: NA
FEMA Map: NA
Current Effective Map Date: NA
Potential Buildings Damaged in Floodplain: 15
Adoption of Current Floodplain Ordinance: NA
Adoption of latest DFIRM Map: NA
Floodplain Administrator: NA

Pequot Lakes

Status: NA
Entry Date: NA
FEMA Map: NA
Current Effective Map Date: NA
Potential Buildings Damaged in Floodplain: 19
Adoption of Current Floodplain Ordinance: NA
Adoption of latest DFIRM Map: NA
Floodplain Administrator: NA

Riverton

Status: NA
Entry Date: NA
FEMA Map: NA
Current Effective Map Date: NA
Potential Buildings Damaged in Floodplain: NA
Adoption of Current Floodplain Ordinance: NA
Adoption of latest DFIRM Map: NA
Floodplain Administrator: NA

Trommald

Status: NA

Entry Date: NA

FEMA Map: NA

Current Effective Map Date: NA

Potential Buildings Damaged in Floodplain: NA

Adoption of Current Floodplain Ordinance: NA

Adoption of latest DFIRM Map: NA

Floodplain Administrator: NA

Following a damaging flood event, any impacted jurisdiction would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The affected jurisdiction would also review the [Minnesota Post-Flood Substantial Damage Playbook for Local Officials](#).

5.1.2 Repetitive Loss Properties

Repetitive loss properties are defined as properties with 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.

There are no RL or SRL properties in Crow Wing County. For more on the areas that flood repeatedly in Crow Wing County, see the [Crow Wing County Flooding page](#).

5.1.3 Previous Integration of Hazard Mitigation into Planning Mechanisms

Crow Wing County and its incorporated communities are encouraged to integrate relevant information from this mitigation plan into their other planning mechanisms. This demonstrates local progress in mitigation efforts and strengthens the overall mitigation planning process. As part of this plan update, communities were asked to report whether and how information from the 2017 plan was incorporated into their existing plans, policies, programs, partnerships, or other documents. The following provides an overview of their responses.

Crow Wing County

The Crow Wing County has integrated the Crow Wing County 2017 HMP goals and mitigation actions into different county efforts to address risk reduction for natural hazards addressed in the plan such as flooding, wildfire, and severe winter and summer storms. Efforts have included:

- Development of the Crow Wing County 2024 Community Wildfire Protection Plan
- Continuous reviewing, updating, and exercising facets of the Emergency Operations Plan
- Continued use and promotion of the residential wireless alerts system along with automation of National Weather Service Alerts
- Continued partnership with the National Weather Service in both winter and spring weather awareness week by providing information on storm readiness
- Continued partnership with the National Weather Service to be a StormReady
- Monthly testing of the outdoor warning sirens
- Continued to install new or upgrade siren warning systems where needed in the county
- Shelter locations have been updated, and several shelter training classes have been offered for county employees in partnership with the American Red Cross
- Continued to provide winter snow removal, salting, and sanding of road to minimize the impacts of snow accumulation on motorists
- Promoted inspection and trimming of trees that may pose risk to falling on power lines during severe storm events
- Worked to improve the coverage of Doppler radar for Crow Wing County

City of Baxter

The city of Baxter has integrated the Crow Wing County 2017 HMP goals and mitigation actions into different city efforts to address risk reduction for natural hazards addressed in the plan such as flooding, wildfire, and severe winter and summer storms. Efforts have included: Removing deadfall in forested areas to reduce the risk of wildland fuels, installation of generators at lift stations to protect against power outages, continuous improvements to local and regional stormwater basin and continued investment to reduce vulnerability to sanitary conveyance system from flooding, and installation of outdoor warning sirens to warn the public of severe wind or tornado events. A new emergency warning siren was added to the Forestview neighborhood in 2024, and we added a siren to Timberwood Dr (West Industrial Park) in September 2025.

City of Brainerd

The city of Brainerd has integrated the Crow Wing County 2017 HMP into different city efforts to address mitigation for natural hazards addressed in the plan including flooding, wildfire, and severe winter and summer storms. Efforts have included: Participating in the planning of the Crow Wing County 2024 Community Wildfire Protection Plan, continued enforcement of building codes and the city shoreland ordinance, and update of the city's Emergency Operations Plan. In addition, Brainerd Public Utilities has incorporated the HMP in our

preparedness efforts in the following ways: Worked with the MN DNR on our Water Supply Plan, we are updating our Emergency Response Plan ERP for both water and wastewater, we are completing Phase 2 our Wellhead Protection Plan, and we participate in MnWarn.

City of Breezy Point

The City of Breezy Point integrated the 2017 Crow Wing County Hazard Mitigation Plan into ongoing city operations and planning mechanisms in the following ways:

- Emergency Operations Planning: In 2022, the City comprehensively re-wrote its Emergency Operations Plan (EOP), aligning with FEMA and county guidance, incorporating mitigation strategies identified in the 2017 plan.
- Planning and Zoning: The City enforces the Minnesota State Building Code and administers floodplain and shoreland ordinances to reduce risks in new development and redevelopment. These functions were explicitly incorporated into the 2022 Emergency Operations Plan (EOP) as essential municipal responsibilities for continuity of operations, ensuring permitting and land use remain tied to mitigation principles even during recovery.
- Training and exercises: In 2023, the City of Breezy Point, in concert with Crow Wing County Emergency Management, planned and conducted a multidisciplinary, multijurisdictional windstorm tabletop exercise that tested response capabilities, validated the EOP, and reinforced partnerships. Emergency response staff also conduct regular training with partner agencies to strengthen readiness for human-caused hazards.
- Public Education and Outreach: Routine use of the city website, Facebook, Nextdoor, and the Breezy Brief newsletter to share preparedness information; continued participation in the NWS Severe Weather Awareness Week (April) and Winter Hazards Awareness Week (November).
- Recognition Programs: Breezy Point is recognized as a National Weather Service StormReady Community and as a Heart Safe Community, reflecting sustained investment in early warning, community preparedness, and life-safety training.
- Warning and Preparedness: Monthly outdoor warning siren testing in coordination with Crow Wing County Sheriff's Office; implementation in 2025 of a preventative maintenance program for critical emergency infrastructure, including sirens and generators.
- Continuity and Critical Facilities: Ongoing planning for backup power to support city operations and lift stations; continued upgrades to lift stations and stormwater systems to handle high-rain events.
- County and Partner Coordination: Continued coordination with Crow Wing County Emergency Management for Everbridge enrollment promotion and event response planning; alignment of city messaging with county/federal guidance during drought, wildfire risk periods, and extreme temperature events.

City of Crosby

The city of Crosby has integrated the 2017 Crow Wing County HMP in our different efforts to mitigate for natural hazards. We unlock City Hall to offer protection/shelter during severe storms. We maintain a comprehensive plan to update roads/storm drains to handle high rain events. Our Public Works department continues to implement stormwater infrastructure improvement projects as they are planned and budgeted for. The city has adopted and enforces the MN State Building Code and contracts for code enforcement violations. We have a wellhead protection plan and enforce our land and zoning ordinances. The city has 2 outdoor warning siren which we test monthly in coordination with the Crow Wing County Sheriff's Office and are maintained as needed.

City of Crosslake

The City of Crosslake integrated the 2017 Crow Wing County HMP in our efforts to mitigate flooding through making stormwater management improvements. In the past five years we have updated catch basins and storm sewer up the CSAH 66 corridor. We also integrated the plan through our efforts to improve public alerts for severe wind and tornado events, replacing 3 outdoor warning sirens in 2024 and 3 sirens in 2025. The city is planning to purchase a new Tender Truck in 2026 to keep up with a growing community. This will support our wildland firefighting capabilities.

City of Cuyuna

The city of Cuyuna has integrated the 2017 Crow Wing County HMP in our different efforts to mitigate for natural hazards. We open City Hall to serve as a storm shelter for residents who are vulnerable. We have a Wellhead Protection Plan and enforce our land and zoning ordinances. We test our outdoor warning siren monthly in coordination with the Crow Wing County Sheriff's Office and maintain it as needed. The city subcontracts all its road maintenance requirements and yearly reviews with its engineer, who helps the city to assess and plan for possible upcoming needs.

City of Deerwood

The city of Deerwood integrated the Crow Wing County 2017 HMP into our emergency management and mitigation efforts in the following ways: The city put a section in the City Code on emergency management. The city maintains 2 warning sirens in order to warn the public of dangerous high wind or tornado events. The city's auditorium is also utilized as a storm shelter for those who are vulnerable during dangerous storm events.

City of Emily

The City of Emily implemented strategies from the Crow Wing County 2017 Hazard Mitigation Plan to enhance public safety and emergency preparedness. City efforts have included:

- Maintenance of the tornado siren system and support of a neighboring city in acquiring a tornado siren. This collaboration has increased the reach and effectiveness of early warning systems, benefitting both communities.
- Providing an emergency shelter for use as a safe and accessible location for residents during emergencies. The emergency shelter does not currently have a generator, but the city has requested CWC add a generator for City Hall to the City of Emily's new local Mitigation Chart. The City's Capital Improvement Plan includes applying for a FEMA HMGP grant for a generator once CWC's Hazard Mitigation Plan is complete.
- The Emily Fire and Rescue Department applied for a Sourcewell grant to purchase and install an emergency generator at the Fire Hall to ensure continuity of emergency services.
- Contracting with PeopleService to maintain the City's wastewater treatment system. PeopleService has generators for use when needed to power the lift stations and ensure wastewater service continuity.
- We have used the City's Facebook page and website to share a link to the CWC Emergency Alert System and share information, such as regarding Severe Weather Awareness Week.
- The Maintenance Department plows and applies salt sand as needed, including during severe winter storms, and manages city road rights of way by trimming or removing trees that look in danger of falling.
- The city's Planning and Zoning Department enforces city code regarding land use, shoreland, and floodplains, including for new developments.
- The city's Maintenance Department monitors drainage issues on road rights of way during periods of heavy rain and addresses flooding with pumps when possible.
- We have worked with the Minnesota Department of Transportation by allowing use of city property for MnDOT to construct a storm-sewer drain for the State Highway 6 storm sewer system to reduce flooding and improve drainage in the downtown area.

City of Fifty Lakes

The city of Fifty Lakes has worked to integrate the 2017 Crow Wing County HMP in several ways to help reduce our risk to severe storms and disasters. In 2024 we installed two new warning sirens in strategic locations to alert residences of severe weather. We test monthly in coordination with the Crow Wing County Sheriff's Office and maintain the sirens as needed. We make sure if there is severe weather coming to unlock the public storm shelter. The park has a new pavilion with some small areas that can hold some people as well during a severe storm. There is a link to CWC's Everbridge Emergency Alert System on the city's website and has been shared on the city's Facebook page. The city incorporates mitigation into our planning and policies through our Planning and Zoning Department enforcement of city ordinances and land use permits.

City of Fort Ripley

N/A. Did not participate in plan update.

City of Garrison

The city of Garrison has worked to integrate the 2017 Crow Wing County HMP in the following ways:

- We have a floodplain ordinance that is enforced.
- The city has 1 outdoor warning siren which we test monthly in coordination with the Crow Wing County Sheriff's Office and maintain as needed.
- The city continues to work with mobile home park operators to address evacuation and shelter planning.
- Our city Public Works Dept. continues to maintain and improve our city stormwater system to handle high rain events.

City of Ironton

The city of Ironton has worked to integrate the 2017 Crow Wing County HMP in several ways to help reduce our risk to severe storms and disasters. The city has adopted the MN State Building Code and it is enforced by our city building inspector to help protect new development against the effects of damaging storms. The city shares information with the public by posting information on our city website and city Facebook page. We have a Comprehensive plan and City code for Planning & Zoning. The city has 2 outdoor warning sirens we use to warn residents of severe wind or tornado events. The sirens are tested monthly in coordination with the Crow Wing County Sheriff's Office and are maintained as needed. Our city EM and Fire Department continue to work on evacuation and sheltering planning for vulnerable residents if they are seeking shelter. The city continues to maintain and improve our city stormwater system as needed to handle high rain events.

City of Jenkins

The City of Jenkins has continued to integrate and implement actions identified in its previous Hazard Mitigation Plan through coordination with Crow Wing County Emergency Management, routine maintenance of critical emergency systems, and incorporation of mitigation objectives into city planning, zoning, and operational procedures. Since adoption of the prior plan, the city has made measurable progress in maintaining and enhancing local preparedness and response capabilities. In 2025, the city's outdoor warning siren was repaired with the assistance of Clayton Berg and the City of Pequot Lakes throughout the process. The warning siren is now in full operational status. The system is tested monthly in coordination with the Crow Wing County Sheriff's Office to ensure its continued reliability for alerting residents during severe weather events. In late 2024, the city began the rollout of our resident text notification system as an additional mitigation strategy that will immediately notify participating residents of all hazards that the city is aware of.

The City of Jenkins also continues to enforce zoning and stormwater regulations that help reduce hazard risks associated with new development, promote public education and awareness through participation in the National Weather Service's Severe Weather Awareness Week and Winter Hazard Awareness Week, and collaborate with regional and state partners to enhance community resilience. Additionally, the City of Jenkins is actively seeking grant funding opportunities to obtain an emergency-backup generator for City Hall, as well as to construct a designated community storm shelter to provide safe refuge for residents and staff during severe weather emergencies. These ongoing efforts reflect the city's commitment to carrying forward and strengthening the goals, strategies, and mitigation actions established in its previous plan, ensuring consistency and alignment with countywide and state hazard mitigation priorities.

City of Manhattan Beach

The city of Manhattan Beach did not incorporate the past Crow Wing County Hazard Mitigation Plan into any plans or policies. However, we do actively use our city website and city council meetings to share information with residents. This would include any special announcements during periods of severe weather to encourage residents to be aware of and prepared for storm events.

City of Nisswa

The city of Nisswa has integrated the 2017 Crow Wing County Hazard Mitigation Plan mitigation action chart into our city's local planning and project efforts in the following ways:

- The city of Nisswa has a link on the city website to sign up for county-wide alerts. The city of Nisswa periodically uses social media to notify the public of severe weather or on-going emergencies.
- We maintain our outdoor warning sirens to warn the public of severe windstorm or tornado events. In August of 2025, the City of Nisswa participated in a drill with Crow Wing County. During the drill, all three of Nisswa's sirens were found to be functioning properly.
- The City of Nisswa public works regularly works within the road right of way to remove dead or old trees that could block roadways if fallen or pose a risk to power lines. This helps to mitigate against storm damages.
- The City of Nisswa is prepared with emergency plans and facilities for sheltering. We use the city's Community Center as an emergency reunification site and temporary shelter in the event of a displacement.
- The City's zoning dept enforces city code as it relates to floodplains, land use, and shoreland. This helps to regulate for new development in areas that could be impacted by flooding.
- The City's public works department monitors drainage issues during periods of heavy rain and maintains roadways and drainage systems. This allows us to address localized flood issues as needed.

City of Pequot Lakes

The City of Pequot Lakes has integrated the 2017 Pequot Lakes Hazard Mitigation Plan into regular city operations and ongoing efforts to reduce risk from flooding, wildfire, and severe weather events. Efforts have included:

- Sharing safety and hazard information with residents through the city website, social media, and the bulletin board at City Hall.
- Conducting annual tornado and evacuation training for staff.
- Participating in the National Weather Service Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November in partnership with Crow Wing County Emergency Management.
- Posting links and information to help residents sign up for emergency alerts.
- Maintaining and testing the city's outdoor warning siren monthly in coordination with the Crow Wing County Sheriff's Office.
- Maintaining the backup generator at City Hall to ensure essential operations and limited sheltering during power outages.
- Continuing regular snow removal, salting, and sanding to keep roads safe during winter storms.
- Maintaining and upgrading the stormwater system to handle heavy rain events and reduce localized flooding.
- Using utility billing and the community sign to notify residents of potential water line freeze conditions and maintain contact lists for those most at risk.
- Enforcing water use restrictions during droughts and promoting water conservation measures.
- Coordinating with Crow Wing County Emergency Management and the local fire department to plan for assistance or temporary sheltering during extreme temperature or power outage events.
- Promoting wildfire danger awareness and burning restrictions during dry periods through the city website, community sign and social media.

City of Riverton

N/A. Did not participate in plan update.

City of Trommald

The city of Trommald has worked to integrate the 2017 Crow Wing County HMP in several ways to help reduce our risk to severe storms and disasters. We have one siren and have a generator to operate our water system pump if needed. We have our own Planning & Zoning Ordinances and it is noted in them that standard building codes for Minnesota shall be followed. The city shares information with the public by posting information on our community Facebook page and by making announcements at City Council meetings. We utilize our outdoor warning siren and a call system if needed to notify residents of severe weather. The warning siren is tested

monthly in coordination with the Crow Wing County Sheriff's Office and keep maintained as needed. The city continues to maintain and improve our city stormwater system as needed to handle high rain events.

5.1.4 Plans and Programs in Place to Address Natural Hazards

Crow Wing 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"). To group related natural hazards, "Summer Storms" encompasses Tornadoes, Windstorms, Lightning, and Hail. The plans and programs in place by Crow Wing County to support mitigation for the hazards addressed in this plan are described as follows:

All Hazards

Crow Wing County Land Use Ordinance: For unincorporated areas within the county, land use requirements are governed by the specific provisions of the Crow Wing County Land Use Ordinance.

All Hazards Emergency Operations Plan: Crow Wing 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.

Emergency Notification System: Crow Wing County maintains the Everbridge 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 Crow Wing County Emergency Management website page. Crow Wing County also uses IPAWS (Integrated Public Alert Warning System), which allows for targeted and county-wide emergency notifications to both residents and visitors (not an "opt-in" service).

Preparedness Outreach & Education: Crow Wing County Emergency Management utilizes the Crow Wing County website, Crow Wing County Sheriff's Office website page, and local news media to communicate with the public on emergency preparedness, severe weather, and other hazard conditions throughout the year. The Crow Wing County Emergency Management website page provides information and resource links for public education on emergency preparedness. The county also receives all products/statements issued by the National Weather Service, and in turn shares or incorporates these into its community outreach and public education. Promotion of the use of NOAA weather radios occurs during the NWS Severe Weather Awareness Week as well as throughout the year. Crow Wing County Emergency Management provides special presentations or other planning assistance as requested to local governments, schools, or other local organizations and facilities within the county.

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

Backup Power: Crow Wing County works to ensure the continuity of operations of county government services and critical infrastructure in the event of an extended power outage. Local jurisdictions are encouraged to assess where backup power is needed and to obtain emergency generators.

Schools Support: Crow Wing 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: Crow Wing County Emergency Management works closely with the neighboring emergency managers on a range of planning, training, and exercises to support all-hazards preparedness, mitigation, response, and recovery capabilities. Crow Wing County Emergency Management also works closely with our regional National Weather Service (NWS) office, having access to all live and on-demand briefings, announcements, and educational opportunities, and contact information for direct collaboration as needed.

Severe Winter Storms

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

Winter Hazard Awareness Week: Crow Wing County participates in the Winter Hazard Awareness Week campaign sponsored by MN HSEM and the National Weather Service 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. Crow Wing County Emergency Management promotes and shares information during the week via social media and area news media. Communities, schools, churches or other civic programs are encouraged to share locally.

Snow Removal & Ice Control: The Crow Wing County Highway Department conducts winter road maintenance on county roads in accordance with the Crow Wing County Snow and 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 practices.

Severe Summer Storms

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

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

Skywarn® Program: Crow Wing 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: Crow Wing 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. Crow Wing County Emergency Management promotes and shares information during the week via social media with communities, schools, churches or other civic programs are encouraged to share locally.

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

Extreme Cold

Emergency Notifications: Extreme cold temperature warnings are issued by the National Weather Service. Crow Wing County Emergency Management works to relay extreme cold temperature warnings from the NWS to help alert residents and visitors to hazardous conditions. The Crow Wing 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: Crow Wing County Emergency Management and Crow Wing 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, Crow Wing County Emergency Management will work with Crow Wing County

Public Health 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, Crow Wing County works in concert with the NWS, MN DNR, and local communities to raise public awareness of drought conditions and recommended water use restrictions as per MN DNR guidance.

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

Wildfire

Crow Wing County Community Wildfire Protection Plan (CWPP): The 2024 Crow Wing County CWPP identifies and prioritizes Wildland/Urban interface areas within Crow Wing County for hazardous fuels reduction treatments and recommends methods for achieving hazardous fuels reduction. The plan also outlines measures for reducing fire danger to structures throughout Crow Wing County at risk communities.

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

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

Wildland Fuels Reduction: CWC Land Services works with salvage operations to harvest trees after a storm where it is feasible and practical. This helps to reduce fuels which can add to the spread of wildfires.

Flooding

Floodplain Management: Crow Wing County code of ordinances, Article 21- Floodplain Overlay District Standards establishes the floodplain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts within the county. GIS flood maps are available on the CWC website.

Shoreland Ordinance: Crow Wing County code of ordinances, Article 11 – Shoreland District Standards establishes allowable uses and development standards in shoreland areas designated within the county.

Subdivision Ordinance: Crow Wing County code of ordinances, Article 9 – Subdivision of Land is established to regulate the subdividing of land in Crow Wing County.

Transportation Plan: The Crow Wing County Highway Department maintains update of the county's Highway Improvement Plan, 2024-2028. The plan outlines the priorities and scheduling of road, bridge, and other projects that address localized flood risk reduction.

Minnesota Buffer Law: The Crow Wing County 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.

One-Watershed One Plan (1w1P): There are 5 One Watershed, One Plans for Crow Wing County. The Crow Wing SWCD is the entity that participates as a partner in developing these plans.

Dam/Levee Failure

Crow Wing County does not have any plans in place in regards to dam or levee failure.

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 Crow Wing County Plan. This framework, as outlined below, will allow for integration of the mitigation actions that are listed by Crow Wing County and its jurisdictions into the state plan. The state will then be able to develop a statewide strategy that will benefit all of Minnesota.

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

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

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

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

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

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

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

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

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

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

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

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

5.3 Mitigation Action and Project Strategies

The mitigation actions in this plan are summarized into four main strategy types, as described in the FEMA publications *Local Mitigation Planning Handbook* (2013) and *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards* (2013). Minnesota HSEM determined a fifth strategy type for use within the state: Mitigation Preparedness and Response. The strategies and example actions are listed in Table 15.

Table 15. Mitigation strategies and action types

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

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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • Radio or television spots • Websites with maps and information • Real estate disclosure • Presentations to school groups or neighborhood organizations • Mailings to residents in hazard-prone areas. • StormReady Certification • Firewise Communities
Mitigation Preparedness and Response	This is a State of Minnesota mitigation strategy with the intent of covering preparation and actions that protect life and property during a natural disaster.	<ul style="list-style-type: none"> • Emergency operations plan • Flood fight plans and preparedness • Dam emergency action plans • Warning • Backup power • Emergency capabilities

Local leaders work together with the Crow Wing 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 Crow Wing 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 Crow Wing 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 participating cities.

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

The 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 15 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 that will help to reduce or eliminate future risk, including in areas with existing or new development.

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 Crow Wing 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 16 provides criteria that were taken into consideration in the process.

Table 16. Criteria for Mitigation Action Priority Ranking

Ranking	Criteria
High Priority	<ul style="list-style-type: none"> • Methods for reducing risk from the hazard are technically reliable. • The jurisdiction 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 or are permanent risk reduction solutions.
Moderate Priority	<ul style="list-style-type: none"> • Mitigation methods are established. • The jurisdiction has limited experience with the types 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.
Low Priority	<ul style="list-style-type: none"> • Methods for reducing risk from the hazard are not well-established, are not proven reliable, or are experimental. • The jurisdiction has 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 within the next five-year planning cycle. If a mitigation action is considered an ongoing effort, the next five-year period in which the activity would occur is listed. If a mitigation activity has a defined period for implementation (i.e., a specific year), it will be noted.

Responsibility

Each mitigation action identifies what personnel, department, or agency will serve as 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. 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 potential funding sources to support implementation of the mitigation activity, such as existing county or city funding, or state or federal funding. Projects that may be eligible for future FEMA Hazard Mitigation Assistance grant funding are noted.

5.3.1 Crow Wing County Mitigation Action Chart

The Crow Wing County Mitigation Action Chart is provided in Table 17 at the end of this section. Appendix H provides the mitigation action charts developed for each city participating in the HMP update. A report on the status of mitigation actions related to natural hazards included in the Crow Wing County 2017 plan update can be found in Appendix E.

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

Table 17. Crow Wing County Mitigation Action Chart, 2026–2031

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All Hazards	Education & Awareness Programs	Utilize effective methods to share information with the community about severe weather, extreme temperatures, and personal preparedness.	Existing High 2026-2031	Crow Wing County Emergency Management (CWCEM)	CWCEM utilizes the county website, CWC Sheriff's Office website page, and local news media to communicate with the public on emergency preparedness, severe weather, and other hazard conditions throughout the year. CWCEM participates annually in the NWS Severe Weather Awareness weeks in April and November each year. We also coordinate with the NWS to hold Skywarn weather spotter classes. The CWCEM website page provides information and resource links for public education on emergency preparedness.	Internal: CWC SO/EM
2	All Hazards	Education & Awareness Programs	Conduct outreach to encourage residents to opt-in for the county's emergency notification system.	Existing High 2026-2031	CWCEM	Crow Wing County maintains the Everbridge 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 Crow Wing County Emergency Management website page.	Internal: CWC SO/EM
3	All Hazards	Local Planning & Regulations	Adopt and enforce regulations governing new construction to prevent damage to buildings and infrastructure from severe weather events.	Existing Moderate 2026-2031	CWC Land Services Dept.	Crow Wing County only issues permits to either a landowner (allowed to build a 1 house every two years) or to a licensed contractor that is required to follow the building code. Incorporated municipalities within the county oversee building permits locally.	Internal: CWC Land Services Budget
4	All Hazards	Local Planning & Regulations	Implement existing plans and policies in place that help to mitigate against the impacts of flooding and other natural hazards to future development.	Existing High 2026-2031	CWC Depts. (Land Services, Highway Dept, Sheriff's Office / Emergency Management)	Crow Wing County has the following plans and policies in place that help to address hazard mitigation: 2024 CWC Community Wildfire Protection Plan (CWPP), 2024-2040 Comprehensive Plan, CWC Highway Dept. Long Range Transportation Plan (2025-2040), Zoning Ordinance (amended 11/15/2024), Floodplain Ordinance (2024), and Shoreland Ordinance (2024).	Internal: CWC cross-departmental (Land Services, Hwy. Dept, SO/EM)

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	All Hazards	Local Planning & Regulations	Utilize departmental staff and elected officials to work together to accomplish identified mitigation efforts.	Existing High 2026-2031	CWCEM in coord with other county depts.	CWCEM works in collaboration with the Crow Wing County safety committee and individual county departments as needed on mitigation planning or project efforts.	Internal: CWC Cross-Departmental
6	All Hazards	Local Planning & Regulations	Develop and sustain partnerships with outside agencies, organizations, businesses, and neighboring jurisdictions to accomplish mitigation efforts.	Existing High 2026-2031	CWCEM in coord with other county depts.	CWCEM coordinates with local governments and regional agencies involved in mitigation and emergency response planning including SWCD, MN DNR, MnDOT, Rural and Municipal Electric Cooperatives, Watershed Districts, Public Health, American Red Cross, and Salvation Army. CWCEM also works closely with other county and tribal emergency managers in MN HSEM Region 2 on annual planning, training and exercise efforts.	Internal: CWC Cross-Departmental
7	All Hazards	Mitigation Preparedness & Response Support	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 2026-2031	CWCEM	Crow Wing 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.	Internal: CWC SO/EM
8	All Hazards	Mitigation Preparedness & Response Support	Identify critical infrastructure or facilities that need backup generators and work to obtain them.	Existing High 2026-2031	CWCEM in coord with other county depts.	Crow Wing County works to ensure the continuity of operations of county government services and critical infrastructure in the event of an extended power outage. Local jurisdictions are encouraged to assess where backup power is needed and to obtain emergency generators.	Internal: CWC Cross-Departmental

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
9	All Hazards	Mitigation Preparedness & Response Support	Ensure that plans, procedures, and designated facilities are in place to provide temporary sheltering due to a severe weather or other disaster event.	Existing High 2026-2031	CWCEM, Public Health	In the event of a disaster where temporary sheltering is needed, Crow Wing County Emergency Management works in coordination with Crow Wing 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.	Internal: CWC SO/EM, CWC PH External: American Red Cross, AREMA regional training funding
10	All Hazards	Mitigation Preparedness & Response Support	Encourage schools and other facilities that house seniors or other vulnerable populations to have emergency plans in place to deal with severe weather, extreme temperatures, and extended power outages.	Existing Moderate 2026-2031	CWCEM in coord with local jurisdictions	CWCEM continues to work with local jurisdictions provide outreach to and support to schools and other facilities on emergency planning. Schools and long-term care (LTC) facilities are required to have such plans in place. CWCEM provides direct training or planning support as requested.	Internal: CC SO/EM External: Schools, LTC Facilities
11	All Hazards	Local Planning & Regulations	Identify and work to secure internal as well as external funding (grant or loan sources) to help accomplish mitigation activities in the county.	Existing Moderate 2026-2031	CWCEM, Other County depts as related	Crow Wing County uses our general budget, EMPG grants, Sourcewell grants, and funding related to individual department budgets to fund related mitigation planning and project efforts. CWCEM will work to assist communities to apply for outside grant funding for eligible mitigation projects as applicable, including from FEMA, MN DNR, USDA, and other state, federal, or local resources.	Internal: CWC General Fund, CWC SO/EM, Hwy. Dept. External: FEMA EMPG, FEMA HMGP, MN DNR FHM, USDA CF
12	Flooding	Local Planning & Regulations	Enforce policies and ordinances that address development in high-risk flood areas.	Existing High 2026-2031	CWC Land Services Dept.	Crow Wing County code of ordinances, Article 21-Floodplain Overlay District Standards establishes the floodplain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts within the county. GIS flood maps are available on the CWC website.	Internal: CWC Land Services budget

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
13	Flooding	Local Planning & Regulations	Work with area watershed organizations to address mitigation plans and projects that address risk reduction for localized flooding and erosion.	Existing High 2026-2031	CWC SWCD	There are 5 One Watershed, One Plans for Crow Wing County. The Crow Wing SWCD is the entity that participates as a partner in developing these plans.	External: CWC SWCD, MN Board of Soil & Water
14	Flooding	Local Planning & Regulations / Structure & Infrastructure Projects	Plan for and implement measures to address flood risk reduction projects for roads, bridges, and culverts throughout the county.	Existing High 2026-2031	CWC Hwy. Dept.	In 2025, the Crow Wing County Highway Department is launching the development of its first-ever Long-Range Transportation Plan (2025-2040). The plan will help identify and prioritize long-term improvements including maintenance and upgrade of roads, bridges, and trails.	Internal: CWC Hwy. Dept. Budget External: MnDOT state grant funding, FHWA grants
15	Flooding	Local Planning & Regulations	Conduct property buyouts to acquire homes affected by repetitive flooding and physically relocate or remove those homes to eliminate future flood damages.	Existing Low 2026-2031	CWCEM	There are currently no potential property buyout projects identified by Crow Wing County. The county will continue to evaluate and assist with any potential future acquisition projects and application to FEMA or MN DNR for grant funding to conduct buyouts.	External: MN DNR FHM grant, FEMA EMGP grant
16	Flooding	Local Planning & Regulations / Structure & Infrastructure Projects	Work with township and city governments to address areas of local flooding concern.	Existing High 2026-2031	CWC Hwy. Dept in coord with municipal govt's	Crow Wing County and local jurisdictions maintain an annual inventory of problem areas due to flooding and plan for projects based on priority and available funding. CWC Highway Dept. has identified flood prone problematic areas on CR 105, CR 128, CSAH 11, CR 132, CR 106 & CR 144. In addition, there are bridges that are scour sensitive and pose a hazard risk during high water. CR 128 has a shoreline improvement plan to reduce the risk of water over the road and erosion of the roadbed during high water.	Internal: CWC Hwy. Dept (2025-2040 Tran. Comp plan budget) External: City and township governments

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
17	Severe Winter Storms	Local Planning & Regulations	Implement snow removal and ice control to ensure the safety of county roads impacted by winter storms.	Existing High 2026-2031	CWC Hwy. Dept.	The CWC Hwy. Dept. conducts winter road maintenance on county roads in accordance with the Crow Wing County Snow and 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 practices.	Internal: CWC Hwy. Dept.
18	Severe Winter Storms	Natural Systems Protection	Encourage the planting of "Living Snow Fences" or the placement of other snow fences along roadways to help prevent blowing and drifting snow onto key transportation routes.	Existing Moderate 2026-2031	CWC Hwy. Dept. in coord with SWCD and MnDOT	The planting of trees and natural vegetation is encouraged in areas of new development to minimize large snow accumulation to adjacent roads. CWC Highway Dept. has identified areas on CSAH 1, CSAH 12, CSAH 21, CSAH 16 & CR 131 to install living snow fence to reduce drifting snow. The CWC Hwy. Dept will work with the SWCD and MnDOT on these efforts.	External: CWC SWCD Cost Share funding, MnDOT Living Snow Fence funding
19	Severe Summer Storms	Education & Awareness Programs	Work with the National Weather Service (NWS) to provide SkyWarn training and develop a network of trained Storm Spotters throughout the county.	Existing High 2026-2031	CWCEM in coord with NWS	CWCEM works with the NWS 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.	External: National Weather Service
20	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure the county has an effective network of outdoor warning sirens and address the need for new sirens where needed.	Existing High 2026-2031	CWCEM in coord with local jurisdictions	CWCEM will work act in a supporting role to any city or township that wants to purchase and install a new outdoor warning siren in order to replace an outdated siren or to address gaps in area coverage. This may particularly pertain to townships within the county that are not within effective sound distance of established sirens in neighboring cities. Crow Wing County is not responsible to purchase sirens for communities, but will help to research possible funding.	Internal: CWC SO/EM External: Local Govt's, FEMA HMP, USDA CF grant programs

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
21	Severe Summer Storms	Mitigation Preparedness & Response Support	Work to improve the coverage of Doppler radar for Crow Wing County.	Existing High 2026-2031	CWCEM in coord with National Weather Service	This is an ongoing effort of CWC Emergency Management. Due to the locations of the NWS radars from Crow Wing County, there is a gap and/or deficiency in the predicting our local weather. We experience delays in warnings given out and gaps in the timing of precipitation. CWC is currently in talks with Climavision and the city of Brainerd to install a local weather radar.	External: National Weather Service, City of Brainerd
22	Severe Summer Storms	Structure & Infrastructure Projects	Address the need for the construction of storm shelters or tornado safe rooms in areas where residents or visitors are vulnerable to high wind events, such as mobile home parks and campgrounds.	Existing High Ongoing	CWCEM in coord with local jurisdictions	CWCEM will assist any communities in their effort to assess and address the need for construction of a storm shelter or tornado safe room. Grant funding may be available for tornado safe rooms from FEMA Hazard Mitigation Assistance (HMA) grant program funding, based on application approval.	Internal: CWC SO/EM External: Local Govt's, FEMA HMGP, USDA CF grant programs
23	Severe Winter & Summer Storms	Structure & Infrastructure Projects	Encourage municipal and rural electric cooperatives to address burying powerlines or strengthening power poles to avoid power outages from high wind events and storms.	Existing High Ongoing	CWCEM, local jurisdictions in coord with electric utility providers	CWCEM works with our utility coops 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.	External: Rural / Municipal Electric Coops, FEMA HMGP grant funding
24	Severe Winter & Summer Storms	Natural Systems Protection	Manage trees and other vegetation along roads from severe storm events to reduce risk to powerlines and passing motorists.	Existing Moderate Ongoing	Highway Dept., Local Utility Providers	The CWC Hwy. Dept continues to clear the ROW near power lines to prevent power outages in storms. Utility providers also regularly trim trees that may pose risk to overhead power lines.	Internal: CWC Hwy. Dept. budget External: Utility companies

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
25	Extreme Cold	Education & Awareness Programs	Provide outreach and education to the public on personal safety measures to take during periods of extreme cold.	In-Progress High 2026-2031	CWCEM & Public Health	CWCEM works to share information received from the National Weather Service when periods of extreme cold are occurring. CWCEM utilizes the county EM website page, and EM Facebook. Local radio and TV stations also provide this information to the public. School Districts have plans and policies in place for delaying or closing school to protect students from extreme temps.	Internal: CWC SO/EM, CWC PH
26	Extreme Cold	Mitigation Preparedness & Response Support	Work with local jurisdictions to plan for temporary warming facilities and promote their use for those that are vulnerable to extremely cold temperatures (i.e., homeless, elderly)	Existing High 2026-2031	CWCEM in coord with PH and local govt's	CWCEM addresses planning for extreme temperature sheltering within the county EOP and in coordination with Crow Wing County Public Health and local jurisdictions. Designated facilities in the county are identified for use for emergency warming centers.	Internal: CWC SO/EM, CWC PH External: Local Govt's, American Red Cross
27	Drought	Local Planning & Regulations	Continue to participate in the MnGAGE precipitation monitoring program to help track and report data related to periods of drought.	Existing Moderate 2026-2031	CWC SWCD	Crow Wing County SWCD participates in the MNgage Minnesota Volunteer Precipitation Observing Program, which is administered by the DNR Minnesota State Climatology Office.	External: CWC SWCD, MN DNR
28	Drought	Local Planning & Regulations	Encourage communities to establish and enforce watering restrictions during drought conditions and raise public awareness of water conservation measures.	Existing High 2026-2031	CWCEM in coord with MN DNR and local jurisdictions	CWCEM encourages cities with public water systems to promote drought awareness to residents on limiting non-essential water usage. Local communities establish watering restrictions as per MN DNR guidelines during periods of severe drought.	Internal: CWC SO/EM External: MN DNR

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
29	Wildfire	Local Planning & Regulations	Work with local communities and agency partners to implement the 3 priority projects outlined in the 2024 CWC Community Wildfire Protection Plan (CWPP) to address wildfire mitigation for dead-end roads.	New High 2026-2031	CWCEM and CWC Highway Dept. in coord with City of Crosslake, Fairfield Twp, Ideal Twp, Long Lake Twp, and South Lake Impr. Assn.	<p>The Crow Wing County 2024 CWPP outlines the following 3 top priority project efforts to implement for addressing wildfire mitigation for dead-end roads:</p> <p>1 - North Crow Wing County - Bonnie Lakes Road. (City of Crosslake and Fairfield Twp)</p> <p>2 - North Crow Wing County - CR 134 (Camp Foley Road) (CWC Hwy. Dept. and Ideal Twp Public Works)</p> <p>3 - Paradise Beach Road (Long Lake Twp and the South Lake Improvement Association)</p> <p>CWCEM and CWC Highway Dept. will work in coordination with local fire departments, local city and township governments, and agency partners such as the MN DNR to implement these top 3 priority wildfire mitigation activities identified in the plan.</p>	Internal: CWC SO/EM External: CWDG, MN DNR Firewise Grant, Local City and Twp funding, Possible FEMA HMGP grant funding for wildland fuels reduction
30	Wildfire	Natural Systems Protection	Continue to implement measures that improve forest health and reduce risk of wildland fuels build-up.	Existing High 2026-2031	CWC Land Services, CWC SWCD	CWC Land Services works with salvage operations to harvest trees after a storm where it is feasible and practical. This helps to reduce fuels which can add to the spread of wildfires.	Internal: CWC Land Services External: CWC SWCD MN DNR Firewise
31	Wildfire	Education & Awareness Programs	Conduct public outreach and education on wildfire risk and prevention during periods of high risk for wildfire.	Existing High Ongoing	CWCEM in coordination with local FD's	CWCEM uses the Sheriff's Office website page and shares information with local jurisdictions to help do outreach to the public on extreme dry conditions and wildfire risk as per MN DNR guidance.	Internal: CWC SO/EM External: MN DNR Firewise grant

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
32	Wildfire	Mitigation Preparedness & Response Support	Evaluate and seek to implement new wildfire mitigation activities in high-risk wildfire areas of the county, which may include installation of external wildfire sprinkler systems or installation of metal roofs to protect homes and other structures.	New High 2026-2031	CWCEM in coordination with local FD's	CWCEM will work with local fire departments to assess targeted wildfire risk reduction activities that may be eligible for FEMA HMGP grant funding, Community Wildfire Defense Grant funding, or MN DNR Firewise grant funding.	Internal: CWC SO/EM External: FEMA HMGP, CWDG funding
33	Dam Failure	Mitigation Preparedness & Response Support	Continue to have contact and coordination with the Crosslake, Big Pine Rock, and Brainerd Public Utility's Hydro dam operators.	Existing Moderate 2026-2031	CWCEM	CWC Emergency Management would help to communicates with dam owners and the public as needed in the event of a flood event that threatened public safety.	Internal: CWC SO/EM External: Hydro Dam operators

Section 6 – Plan Maintenance

6.1 Monitoring, Evaluation, and Updating the Plan

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

The Crow Wing County emergency management director (EMD) is the individual responsible for leading all efforts to monitor, evaluate, and update the HMP within the five-year window. Throughout the five-year planning cycle, the Crow Wing 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 cities participating in the plan update, 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 Crow Wing County EMD will conduct quarterly outreach to and communicate with the group 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 Crow Wing County EMD will convene the group to meet more regularly 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 Crow Wing 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 Crow Wing 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.

During the five-year plan period, the EMD will require all relevant county departments and jurisdictions to report on the status of their mitigation actions using the worksheets provided in Appendix I. This

information will be used to track progress for the next plan update. Additionally, the EMD will establish and implement an HMP maintenance schedule. Forms for these purposes are drawn from FEMA's 2023 Local Mitigation Planning Handbook and can be found in Appendix I (FEMA, 2023a).

The EMD will also solicit feedback from the emergency managers group using the following prompts (also found in Appendix I):

- Are there any new representatives from jurisdictions, agencies, or organizations that you feel should be included in our stakeholder outreach?
- Do you feel your community has any new vulnerabilities that may be impacted by hazard events? (critical infrastructure, systems, or populations)
- Has your community identified any new mitigation activities that would help reduce risk to future hazard events?
- Are there any funding opportunities or other resources that may be available to help implement local mitigation activities?
- How is your community integrating information from the mitigation plan into other planning mechanisms (such as plans, policies, or partnerships)?

6.2 Implementation

Crow Wing 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 Crow Wing County and its jurisdictions (see Appendix H and Section 5.3). The cities participating in the HMP planning process 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 Crow Wing 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 Crow Wing 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 Crow Wing 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 Crow Wing 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, Crow Wing County will take the following measures:

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

- Crow Wing 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.
- To ensure an equitable outreach strategy continues after the plan is adopted, the planning team will continue to seek to engage with underserved and vulnerable populations during the next five years. This will vary across jurisdictions, as underserved or vulnerable populations will differ across the planning area. Methods of engagement will include those listed above, as well as working with partner agencies, local organizations, facilities, or community interest groups (e.g., schools, nursing homes, Rotary Club) to conduct more targeted outreach or presentations to share information on hazard mitigation and solicit for feedback on concerns and ideas.

Appendices

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

Appendix I – Plan Maintenance & Monitoring Worksheets

Appendix A – References

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Appendix B – Adopting Resolutions

Appendix C – Local Mitigation Survey Report

Crow Wing County

LOCAL MITIGATION SURVEY

As part of the Crow Wing County 2025 Hazard Mitigation Plan update, the **Local Mitigation Survey (LMS)** Form is used to gather jurisdictionally-specific information that is used to meet FEMA requirements and to support development of local mitigation actions.

Jurisdictions to Complete LMS:

This form is to be completed by representatives from **Crow Wing County** and the **cities of Baxter, Brainerd, Breezy Point, Crosby, Crosslake, Cuyuna, Deerwood, Emily, Fifty Lakes, Fort Ripley, Garrison, Ironton, Jenkins, Manhattan Beach, Nisswa, Pequot Lakes, Riverton, and Trommald**.

Additional stakeholders on the Crow Wing County HMP contact list are also invited to provide feedback to this form in the designated areas. (See “Other Stakeholders” section with each question).

LMS - Main Point of Contact (Name, Work Title, and Email)

Crow Wing County	Liz Gleason, Crow Wing County EM Coordinator, Liz.Gleason@crowwing.gov
City of Baxter	Matt Maier, Police Chief mmaier@baxtermn.gov
City of Brainerd	Tim Holmes, Fire Chief, City EM. tholmes@ci.brainerd.mn.us
City of Breezy Point	Brian Sandell, Police Chief brian@cityofbreezypointmn.us Joe Zierden, Public Works Supervisor zierden@cityofbreezypointmn.us
City of Crosby	Michael Van Horn, Police Chief mike.vanhorn@cityofcrosby.com
City of Crosslake	Chip Lohmiller, chief1@crosslake.net
City of Cuyuna	Jesse Smith, Police Chief, jesse.smith@cuyunapd.org
City of Deerwood	Mike Bodle Fire Chief DFD Mbodle@graphicpkg.com ,
City of Emily	Brian Foster, Maintenance Supervisor/Emergency Management Director maintenancesup@cityofemily.com
City of Fifty Lakes	Jesse Anderson Fire Chief, Chief1@fiftylakesmn.com
City of Fort Ripley	
City of Garrison	Corri Erickson, Fire Chief, firedepartment@cityofgarrison.com
City of Ironton	Jeff Thompson, Fire Chief, sales@buildalllumber.com
City of Jenkins	Krista Okerman, City Clerk-Treasurer, krista.okerman@cityofjenkins.com
City of Manhattan Beach	Barb Hanson, Pro Temp. Mayor
City of Nisswa	Kiki Lindberg, City Clerk, kiki@cityofnisswa.gov
City of Pequot Lakes	Mike Davis, Police Chief mdavis@pequotlakes-mn.gov
City of Riverton	
City of Trommald	Rob Geske Public Works, LOSTIN50S@MLECWB.NET Jeff Thompson - Fire Chief sales@buildalllumber.com
OTHER STAKEHOLDERS	Craig Schultz -Local MN DNR Forestry/Fire, craig.schultz@state.mn.us

Review: Prioritization of Hazards

During the Crow Wing County HMP Planning Team Meeting #1, participants determined the following natural hazards below to be of high, moderate, or low priority as they relate at a countywide level.

Hazards noted as high or moderate priority are considered to be of greatest risk and concern, reflecting the frequency of past events, the probability of future events, and the severity of impacts that can occur. Hazards listed as a low priority are considered to be of lower risk and concern, reflecting an infrequency of past events and/or occurring without significant impacts to local vulnerabilities.

Prioritization of Hazards for 2025 Crow Wing County Update

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

SURVEY QUESTIONS (1-15)

#1 - HAZARD IDENTIFICATION	
Does the priority level listed for any of the hazards in the table above differ for your jurisdiction? If so, please describe how.	
Crow Wing County	Agree
City of Baxter	Agree
City of Brainerd	Agree
City of Breezy Point	Agree
City of Crosby	Agree
City of Crosslake	Agree
City of Cuyuna	Agree
City of Deerwood	Agree
City of Emily	Agree
City of Fifty Lakes	Agree
City of Fort Ripley	
City of Garrison	Agree
City of Ironton	Agree
City of Jenkins	Agree
City of Manhattan Beach	Agree
City of Nisswa	Agree
City of Pequot Lakes	Agree
City of Riverton	
City of Trommald	Agree
OTHER STAKEHOLDERS	

#2 - LOCAL VULNERABILITIES

Describe any specific community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from natural hazard events in your jurisdiction. Consider how recent severe storms or other natural hazard events have caused damages or threatened life safety to people in your community. Please list the natural hazards and related local vulnerabilities separately.

Crow Wing County	We have multiple campgrounds and resorts, mobile home parks, assisted living facilities, levy, above ground power lines, and below ground gas lines that are vulnerable to the impacts of severe storm events and flooding.
City of Baxter	We have several assisted living facilities, apartment complexes, multiple hotels, water and wastewater treatment, Day center for homeless population, 1 mobile home neighborhood, 3 schools, above ground power lines, and multiple neighborhoods without multiple ingress or egress access.
City of Brainerd	We have a hospital, water treatment plant, wastewater treatment plant, schools, several nursing homes and assisted living facilities, a campground, a dam, and mobile home parks that are vulnerable to the impacts of severe storm events and flooding.
City of Breezy Point	We have 3 campgrounds and resort guests that are vulnerable to the impacts of severe storm events and flooding.
City of Crosby	We have 2 campgrounds, 1 mobile home park that are vulnerable to the impacts of severe storm events and flooding.
City of Crosslake	We have 2 campgrounds, 3 mobile home parks, 2 dams that are vulnerable to the impacts of severe storm events and flooding.
City of Cuyuna	We have 1 campground, 2 Mountain Bike Trail Heads that are vulnerable to the impacts of severe storm events and flooding.
City of Deerwood	We have 1 mobile home park, 2-3 older elderly living facilities, Lack of storm shelter, a couple lift stations that are exposed to flooding, a couple older intersections that flood during heavy rains and snow melting, aging sirens for storm warning. The mobile home park is very old and run down and at high risk during cold weather and storms.
City of Emily	We have experienced power outages from strong wind events that brought down power lines. The City's Emergency Shelter (City Hall) does not have a generator to provide power during outages.
City of Fifty Lakes	We have one campground (200 users when full) and one trailer park association whose residents may look for shelter in severe weather. Our storm shelter is better than a camper or trailer, but can only house so many people. Judging by the year the shelter was built there are some concerns about the roof holding up to a tornado. Power outages also happen frequently in some areas during summer/winter storms from trees taking out overhead lines.
City of Fort Ripley	
City of Garrison	We have multiple campgrounds and mobile home parks, one mobile home park with 800+ sites (Aitkin County border). Our emergency shelter

	is located at City Hall, but is limited to the key holder's ability to get there to open it.
City of Ironton	We have multiple campgrounds and a couple larger apartments for the elderly/mobility impaired that are vulnerable to the impacts of severe storm events and flooding.
City of Jenkins	We are a small city with limited staff and financial resources. Our City Hall is considered an emergency shelter but has very limited space and no backup power supply or generator.
City of Manhattan Beach	We are a small city (population 57) with very limited financial and staff resources to address local mitigation projects.
City of Nisswa	<p>Our city has multiple resorts/campgrounds along with an elementary school.</p> <p>We also have a large elderly population along with a large number of visitors frequenting the downtown area in the summer months. We do have our community center available as a storm shelter with limited space.</p> <p>Our city has several areas with old, large trees in residential areas making them a concern causing damage or injury during storms.</p>
City of Pequot Lakes	We have 1 mobile home park, several apartment complexes, several assisted living facilities, a school, our emergency shelter is in the basement of the community center which has limited capacity, 3 over passes, 2 of which are over Hwy 371 (Co Rd 11 and the bike trail), 2 campgrounds, 1 resort, numerous communication towers, city water system, and several day care facilities.
City of Riverton	
City of Trommald	Some public areas with lots of downed trees from storms, created elevated wildfire possibility and spread/intensity
OTHER STAKEHOLDERS	

#3 - REDUCTION IN VULNERABILITY

In the last 5 years, has your jurisdiction taken any actions to reduce vulnerability against future severe weather or disaster events? Please describe.

Crow Wing County	Removing deadfall in forested area to prevent and or reduce the spread of wildfires
City of Baxter	Removing deadfall in forested areas, FEMA participation, installation of generators at lift stations, Continuous improvements to local and regional stormwater basin, Continued investment to reduce vulnerability to sanitary conveyance system. A emergency warning siren was added to Forestview neighborhood in 2024 and will be adding another siren to Timberwood (West Industrial Park) in 2025
City of Brainerd	2020 Brainerd Public Utilities has upgraded Evergreen lift station including overhead power to underground, Installation of an on-site generator 1 foot over 100-year floodplain elevation, installation of new control building raised 1 foot over 100-year floodplain elevation, added

	10-inch side wall on wet well cover. Installed on-site generation to Southwest 6 th street lift station. Tyrol and Buffalo Hills lift stations upgrades include controls, piping, and pumps to operate while submerged. 2025 budget included installation of on-site generators for Tyrol and Walnut and pine Lift stations.
City of Breezy Point	The city has maintained and updated lift stations; we have had small increase/improvements in storm water collection.
City of Crosby	We unlock City Hall to offer protection/shelter. City has a comprehensive plan to update roads/storm drains. Operational warning sirens.
City of Crosslake	In the past five years we have updated catch basins and storm sewer up the CSAH 66 corridor
City of Cuyuna	We open City Hall for storm shelter. We have 1 warning siren.
City of Deerwood	We open City Hall for Storm warning to offer protection/Shelter. We have done some storm and sewer reconstruction as funding was available and feasible. More needed with new funding. We continue to maintain warning sirens as we are able.
City of Emily	In 2018 MnDOT installed a storm sewer system with the reconstruction of State Highway 6. The City of Fifty Lakes purchased a tornado siren and installed it in a location that covers the northwest portion of Emily with financial assistance from the Emily Fire Relief Association.
City of Fifty Lakes	In 2024 we installed two new warning sirens in strategic locations to alert residences of severe weather. We make sure if there is severe weather coming to unlock the public storm shelter. The park has a new pavilion with some small areas that can hold some people as well during a severe storm.
City of Fort Ripley	
City of Garrison	Unsure.
City of Ironton	We have repaired one warning siren.
City of Jenkins	We have one warning siren located within our city.
City of Manhattan Beach	No actions taken. We are a very small community.
City of Nisswa	
City of Pequot Lakes	New developments have had power lines installed underground. We also had a generator installed at City Hall in case we would need to provide emergency shelter.
City of Riverton	
City of Trommald	We have one siren and have a generator to operate our water system pump if needed.
OTHER STAKEHOLDERS	

#4 – INCREASE IN VULNERABILITY

In the last 5 years, has your jurisdiction experienced an increase in new development? Has this new development created new vulnerabilities to natural hazards in your community? Please describe.

Crow Wing County	Generally, we have seen an increase population and construction across the county, but without any increase in vulnerability for natural hazard events.
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City of Baxter	We have experienced rapid growth and construction in residential, commercial, office and industrial development. We have seen a 9% increase in population since 2020.
City of Brainerd	Brainerd has seen significant new single-family home development on its corporate boundaries, thus increasing new vulnerabilities to natural hazards. The Brainerd Oaks, Northtown, Serene Pines, and Delmar developments are now 95% built out. Most of the single-family home construction has occurred in the last 5 years. The development on our outer borders has a higher risk due to location in or near the WUI.
City of Breezy Point	The City of Breezy Point had Fairway Lane developed in the last ten years, yielding about 22 duplexes, the end of Chickasaw had some lots combined/rezoned yielding 4 duplexes, and Apple Lane was developed yielding 4 or 5 homes so far. We have also had redevelopment of existing sub-divisions.
City of Crosby	Increased (seasonal) population growth due the large influx of people using the mountain bike trail system.
City of Crosslake	We have continued to see a moderate increase of population. We feel we have been able to handle the moderate growth.
City of Cuyuna	Increased population growth due to the large mountain biking population.
City of Deerwood	Moderate Population Growth, Large increase in Bike trail activity resulting in increased traffic, area use and rescue needs.
City of Emily	Continued moderate increase of population
City of Fifty Lakes	There has been an increase in year-round occupancy vs. seasonal, which is still much less than our summer population.
City of Fort Ripley	
City of Garrison	Increase in population, also significant increase in seasonal population. Slow increase in development though a large resort is being built within city limits over the next few years.
City of Ironton	We have an increase in population due to the bike trails and REC Area
City of Jenkins	We have experienced an increase in development as well as and increase in seasonal (summer) population.
City of Manhattan Beach	No new homes or developments.
City of Nisswa	Our city is experiencing continual growth which is mainly residential and has increased significantly since 2020.
City of Pequot Lakes	Yes we have experienced an increase in new development which has caused us to increase infrastructure capacity.
City of Riverton	
City of Trommald	Maybe not population increase, but we have seen an increase in traffic/seasonal visitors.
OTHER STAKEHOLDERS	

#5 - PUBLIC OUTREACH

How does your jurisdiction share information with community members about severe weather events and personal preparedness? If this is not something that is currently done, how could it be done in the future?

Crow Wing County	Outdoor warning sirens, Everbridge, social media, county website, severe weather awareness week
City of Baxter	Storm sirens for dangerous weather warnings - will be looking at adding notification/information to city website and social media.
City of Brainerd	Outdoor warning sirens, Everbridge, social media, city website
City of Breezy Point	Outdoor warning sirens, social media.
City of Crosby	Outdoor warning sirens, social media.
City of Crosslake	The Everbridge QR code is printed and put at City Hall, Corp and Chamber. The fire department also places it on their webpage. We post information on our city website and Facebook.
City of Cuyuna	Emergency storm siren for dangerous weather.
City of Deerwood	Emergency Storm sirens for dangerous weather warnings
City of Emily	Storm sirens for dangerous weather warnings.
City of Fifty Lakes	We do share information on social media as well as our information boards near city hall. The sirens are tested monthly to ensure they are working.
City of Fort Ripley	
City of Garrison	Warning siren, Fire department social media
City of Ironton	Warning siren and media
City of Jenkins	Text alerts, city website, warning siren
City of Manhattan Beach	Not something currently done, Property owners are widespread in our city nothing to be done.
City of Nisswa	Warning sirens, city website and social media.
City of Pequot Lakes	Outdoor warning sirens, city website, social media, city hall bulletin board
City of Riverton	
City of Trommald	Our siren system and a call system if needed.
OTHER STAKEHOLDERS	

#6 - EMERGENCY NOTIFICATIONS

Does your jurisdiction encourage residents to sign up for the county's emergency notification system and/or a local emergency alert system? If yes, how? If this not something that is currently done, how could it be done in the future?

Crow Wing County	Posts have been made on social media and we have a community alerts program which is posted on the county's website
City of Baxter	nothing at this time - will be looking at posting on city website or social media
City of Brainerd	Yes, monthly council reports, website, social media
City of Breezy Point	Posting on city website or social media
City of Crosby	City website/Facebook page
City of Crosslake	The Everbridge QR code is printed and put at City Hall, Corp and Chamber. The fire department also places it on their webpage. We post information on our city website and Facebook.
City of Cuyuna	We plan to add a link on our city webpage.
City of Deerwood	We plan to add a link and information on the city bulletin boards and website to reach the county website information.
City of Emily	There is a link to CWC's Emergency Alert System on the City's website.

City of Fifty Lakes	There is a link to CWC's Emergency Alert System on the City's website and has been shared on the City's Facebook page.
City of Fort Ripley	
City of Garrison	Not currently, could distribute this information on social media
City of Ironton	We don't have anything right now.
City of Jenkins	We have a newly implemented text notification and a warning siren.
City of Manhattan Beach	Not currently done but could post on website.
City of Nisswa	We currently do not but it could be added to our website and posted on social media accounts.
City of Pequot Lakes	This is not something that we have done but we could post information on our website, Facebook and our bulletin boards. We have a link to the County website but not to sign up for the emergency notification system. We could add a separate link for that.
City of Riverton	
City of Trommald	Could mention this at council meetings.
OTHER STAKEHOLDERS	

#7 - BUILDING CODES

Has your jurisdiction adopted the Minnesota State Building Code? Please clearly answer yes or no and provide supporting detail. IF YES, please describe how it is enforced. IF NO, please describe if there are other building codes or permitting processes in place to reduce the risk to future development.

Crow Wing County	No. Crow Wing County has not adopted the State Building Code and does not issue building permits for incorporated municipalities within the county. For unincorporated areas within the county, land use requirements are governed by the specific provisions of the Crow Wing County Land Use Ordinance. The Land Use Ordinance requires a permit for the construction and placement of structures on property as well as additions and structural alterations to existing structures.
City of Baxter	Yes. It is enforced through our Community Development Dept. with Building Official
City of Brainerd	Yes, It is enforced through our Community Development Dept. with Building Official
City of Breezy Point	Yes. The State building code is enforced through our city Building Official. The State of Minnesota Building Code is included on the city's website under Planning & Zoning. Building permit application forms are also available on the website.
City of Crosby	Yes. The city contracts for code enforcement violations
City of Crosslake	No. The city does have a Land Use Permit Application (for residents) and a Commercial & Industrial Land Use Permit Application that must be submitted to and approved by our Planning and Zoning Department. All applicants must sign a form acknowledging they understand that they understand that according to Minnesota State Statute 326B.85, the State of Minnesota requires that all residential building contractors, remodelers and roofers obtain a state license unless they qualify for a specific exemption from the licensing requirements.

City of Cuyuna	No, the city does not adopt and enforce the MN State Building Code, but we do have Planning and Zoning Ordinances that we do enforce.
City of Deerwood	Yes, the city contracts out for code enforcement/inspections.
City of Emily	No. The city's Planning & Zoning Department requires Land Use Permits to be submitted and approved prior to beginning any construction or improvement projects.
City of Fifty Lakes	No. The city's Planning & Zoning Department requires Land Use Permits to be submitted and approved prior to beginning any construction or The City of Fifty Lakes does not enforce the Minnesota State Building Code, however, all State Licensed Contractors and property owners are responsible for complying with the State Building Code. For your protection, it is recommended that all property owners have new construction inspected and approved by a State Licensed Building Official. Improvement projects.
City of Fort Ripley	No, the city does not adopt and enforce the MN State Building Code, but we do have Planning and Zoning Ordinances that we do enforce.
City of Garrison	No. The city has a Land Use Permit Application that must be submitted to and approved by the city's Zoning Administrator.
City of Ironton	Yes. The city's building inspector enforces the MN State Building Code.
City of Jenkins	No, the city does not adopt and enforce the MN State Building Code, but we do have Planning and Zoning Ordinances that we do enforce.
City of Manhattan Beach	No, the city does not adopt and enforce the MN State Building Code, but we do have Planning and Zoning Ordinances that we do enforce.
City of Nisswa	No, the city does not adopt and enforce the MN State Building Code, but we do have local ordinances for land use regulation that we enforce.
City of Pequot Lakes	No, the city does not adopt and enforce the MN State Building Code, but we do have Planning and Zoning Ordinances that we do enforce.
City of Riverton	No, the city does not adopt and enforce the MN State Building Code. The city requires a building permit and any required supporting documents to the Riverton City Council for approval.
City of Trommald	Yes. We have our own Planning & Zoning Ordinances and it is noted in them that standard building codes for Minnesota shall be followed.
OTHER STAKEHOLDERS	

#8 - OTHER PLANS AND POLICIES

What other plans or policies does your jurisdiction have in place to help mitigate against the impacts of flooding and other natural hazards to future development? Please describe.

Crow Wing County	Crow Wing County has the following plans and policies in place that help to address hazard mitigation: 2024 CWC Community Wildfire Protection Plan (CWPP), 2004 Comprehensive Plan, CWC Highway Improvement Plan (2024-2028), Zoning Ordinance (amended 11/15/2024), Floodplain Ordinance (2024), Shoreland Ordinance (2024), Shoreline improvement plans, stormwater ordinance adoption, and stormwater improvement projects.
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City of Baxter	Wellhead protection plan, comprehensive plan, 100-year stormwater plan, FEMA Ordinance, shoreland ordinance, long range transportation plan to reduce single entry points in neighborhoods
City of Brainerd	City has a Comprehensive Plan, Wellhead protection measures and acquired more land to protect wellheads
City of Breezy Point	The city's planning and zoning department administers shoreland and floodplain ordinances.
City of Crosby	We have WHP and enforce our land and zoning ordinances.
City of Crosslake	We replaced 3 sirens in 2024 and 3 sirens in 2025 after an inspection.
City of Cuyuna	We have a WHP and enforce our land and zoning ordinances
City of Deerwood	Warning sirens, Fire and Police traveling through town to send out warnings and help residents get to safety and be sure they are warned.
City of Emily	The city's planning and zoning department enforces our floodplain requirements, shoreland overlay, bluff land impact, and the City Code zoning requirements for new development. We have a 15-year Comprehensive Plan that is designed to plan physical growth of the city and appropriate land uses.
City of Fifty Lakes	Planning and zoning enforcement. For the Fire and Rescue Department our focus this year during Fifty Lakes Day will be public education and we an inform residences of the current storm shelters in the area.
City of Fort Ripley	Nothing. We are small city of 69.
City of Garrison	We have a floodplain ordinance that is enforced.
City of Ironton	We have a Comprehensive plan and City code for Planning & Zoning.
City of Jenkins	We have a Comprehensive plan and City code for Planning & Zoning.
City of Manhattan Beach	We have a Comprehensive plan as well as our city code for Planning & Zoning.
City of Nisswa	The city's planning and zoning department administers shoreland and floodplain ordinances.
City of Pequot Lakes	We have a Comprehensive Plan as well as our city code for Planning and Zoning. We also have a wellhead protection plan
City of Riverton	None
City of Trommald	We have a comprehensive plan that coordinates with our Ordinances.
OTHER STAKEHOLDERS	

#9 - ORGANIZATIONAL CAPACITY

What departmental staff or elected officials in your jurisdictional help to accomplish hazard mitigation in your community? Please describe.

Crow Wing County	All departments, Emergency management and the county's safety committee
City of Baxter	All departments, Police Chief is emergency manager
City of Brainerd	All departments Fire Chief is Emergency Manager
City of Breezy Point	All Departments. Our Public Works Dept. works on projects related to roads, storms, and flooding.
City of Crosby	Police Chief, is the current emergency manager along with help of Fire Chief and city staff.

City of Crosslake	Fire Chief is the city's designated Emergency Manager; we also have a Public Safety Committee. This is also brought to the attention of the City Council during our meetings if anything needs further appointment.
City of Cuyuna	Fire Chief is the current emergency manager, with assistance of the police.
City of Deerwood	Fire Chief is the current emergency manager and the Police Chief and his staff help during emergency activities.
City of Emily	Maintenance Supervisor is the Emergency Management Director
City of Fifty Lakes	Emergency Management and the Fire Department
City of Fort Ripley	Mayor and City Council.
City of Garrison	Mayor and City Council, Planning & Zoning Dept., Public Works Dept., and Fire Dept.
City of Ironton	Our Fire Chief, Public Works, Mayor, Council Members and City Clerk all work together.
City of Jenkins	Mayor, City Clerk-Treasurer. We have a contracted City Engineer and contract our police and fire services with the City of Pequot Lakes.
City of Manhattan Beach	Zoning Administrator, City Clerk and Mayor.
City of Nisswa	The Chief of Police is the designated Emergency Management Director. The city also has a fire department and public works department.
City of Pequot Lakes	The Police Chief, Fire Chief, Public Works Supervisor, City Administrator, Water/Wastewater Operations Manager, City Clerk, City Engineer, and the Zoning Administrator would be involved to help accomplish hazard mitigation in our community. The City Council would approve any plans that would come from this group.
City of Riverton	Mayor and City Council
City of Trommald	Public works and fire chief, Mayor, and City Council
OTHER STAKEHOLDERS	

#10 – PARTNERSHIPS

Are there any agencies, organizations, or businesses that your jurisdiction has worked with to address mitigation efforts in your community? Please describe.

Crow Wing County	Crow Wing County Emergency Management has continuous coordination with cities in the county to address hazards. The county also coordinates with local and regional agencies involved in mitigation and emergency response planning including SWCD, MN DNR, MnDOT, Rural and Municipal Electric Cooperatives, Watershed Districts, Public Health, American Red Cross, and Salvation Army. CWC Emergency Management also works closely with other county and tribal emergency managers in MN HSEM Region 2 on annual planning, training and exercise efforts.
City of Baxter	Members of the Minnesota Rural Water Association (MNRW), and Minnesota Municipal Utilities Association (MMUA) worked with Crow Wing County Soil and Water District, partners with the Nature Conservancy. Partners with Camp Ripley for open space property that borders the camp.
City of Brainerd	We are members of MnWarn, Minnesota Rural Water Association (MNRW), Minnesota Wastewater Operators Association (MWOA) and Minnesota Municipal Utilities Association (MMUA). The city is working

	with MnDOT to include multiple stormwater retention features to assist with reducing flood risk and increased flows to the Mississippi River as part of their upcoming Highway 210 Reconstruction project.
City of Breezy Point	The city is a member of MnWarn, Minnesota Rural Water Association (MNRW), Minnesota Wastewater Operators Association (MWOA) and Minnesota Municipal Utilities Association (MMUA).
City of Crosby	We are members of MnWarn, Minnesota Rural Water Association (MNRW), Minnesota Wastewater Operators Association (MWOA) and Minnesota Municipal Utilities Association (MMUA).
City of Crosslake	We are members of MnWarn, Minnesota Rural Water Association (MNRW), Minnesota Wastewater Operators Association (MWOA) and Minnesota Municipal Utilities Association (MMUA). We continue to use the Lion's Club assistance for cleanup efforts, MN DNR - along with Firewise and community outreach for fire education implementation and wildfire mitigation activities to reduce wildland fuel loads. Community outreach and education is being conducted by the Fire Department and to work with homeowners on defensible spaces.
City of Cuyuna	MRWA and MDH for well protection.
City of Deerwood	We have worked with the local schools on Fire prevention to help mitigate avoidable fire loss. We collaborate with the DNR on wildland fire prevention and education. Deerwood works with Soil and water to help reduce and avoid flooding issues.
City of Emily	We are a member of MnWARN (MN Water/Wastewater Agency Response Network).
City of Fifty Lakes	In 2024 Crow Wing County helped to install two new severe weather sirens in the city. We have also worked with Crow Wing County for Planning and Zoning.
City of Fort Ripley	None.
City of Garrison	None, we work with the county as needed.
City of Ironton	Minnesota Rural Water Association
City of Jenkins	CWC SWCD, MN DNR.
City of Manhattan Beach	No partnerships, we are a very small community. We would work with the county as needed.
City of Nisswa	We have worked with SWCD and the MN DNR.
City of Pequot Lakes	We have worked with the Soil & Water Conservation District, MN DNR and MN Rural Water and CWC for the warning siren.
City of Riverton	None.
City of Trommald	We work with the City of Ironton for fire and EMS services
OTHER STAKEHOLDERS	

#11 - PROGRAMS IN PLACE

What sort of programs does your jurisdiction participate in to help raise awareness and reduce risk from natural hazards in your community?

Crow Wing County	Crow Wing County Emergency Management participants annually in the NWS Severe Weather Awareness weeks in April and November each year. We also coordinate with the NWS to hold Skywarn weather spotter classes.
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City of Baxter	Public Works Department clears City owned rights of way of debris.
City of Brainerd	Public Works Department clears City owned rights of way of debris. NWS Weather awareness weeks - information on social media. Social media posts throughout the year.
City of Breezy Point	Public Works Department clears City owned rights of way of debris. NWS Weather awareness weeks - information on social media. Social media posts throughout the year. Own and operate 2 storm sirens.
City of Crosby	Public Works Department clears City owned rights of way of debris.
City of Crosslake	Public Works department clears city owned right of ways of debris. The local school practices tornado drills on an annual basis. Annual Wildfire Prevention Event and National Night Out.
City of Cuyuna	Fire protection information shared at local schools
City of Deerwood	Fire prevention at the local schools, occasional demonstrations of fire/rescue scenarios with the schools and during community events to expand training for prevention.
City of Emily	Maintenance Department clears City owned rights of way of debris.
City of Fifty Lakes	The maintenance department in conjunction with the Fire Department (when needed) help each other clear roads during and after a storm to get the residences in and out of their homes.
City of Fort Ripley	Nothing.
City of Garrison	City Maintenance worker works to clear roads.
City of Ironton	Public Works Department clears City owned rights of way of debris.
City of Jenkins	We have a tornado siren.
City of Manhattan Beach	We really don't have one.
City of Nisswa	Nothing
City of Pequot Lakes	We do a yearly tornado and evacuation training. We have safety trainings through MMUA. Our school does safety trainings.
City of Riverton	
City of Trommald	Public works department clears roads and storm damaged areas.
OTHER STAKEHOLDERS	

#12 - FUNDING & OTHER RESOURCES

What funding sources are available to help your jurisdiction to accomplish implementation of mitigation activities? Please describe. Include internal local government funding as well as external funding sources (grant or loan sources from local, state, or federal agencies).

Crow Wing County	General budget, EMPG grants, Sourcewell grants
City of Baxter	General Budget, and CWPP gives us the ability to apply for federal mitigation grants if needed, various state and federal grants
City of Brainerd	General Budget; and CWPP gives us the ability to apply for federal mitigation grants if needed. Recently, the city partnered with SWCD to obtain CWA grant funding to address erosion issues in the Buffalo Hills Gully that were endangering homes and structures.
City of Breezy Point	General Budget, and CWPP gives us the ability to apply for federal mitigation grants if needed, various state and federal grants
City of Crosby	General budget

City of Crosslake	General Budget; and CWPP gives us the ability to apply for federal mitigation grants if needed.
City of Cuyuna	City general Budget
City of Deerwood	City general budget
City of Emily	General City Budget. Fire Relief Association donated funds to pay for the City's portion of the City of Fifty Lakes/Emily tornado siren installation for additional coverage in Emily.
City of Fifty Lakes	There is a public safety budget as well as grants from Sourcewell.
City of Fort Ripley	
City of Garrison	General budget
City of Ironton	We use our city's general budget.
City of Jenkins	We have a Capital Improvements Plan and budget for projects as needed.
City of Manhattan Beach	None
City of Nisswa	General Budget
City of Pequot Lakes	General Budget; and CWPP gives us the ability to apply for federal mitigation grants if needed. We budget annually for mitigation projects. We have received a grant from MN Dept Public Safety for storm clean up.
City of Riverton	City General Budget
City of Trommald	City General budget and water budget for water service issues.
OTHER STAKEHOLDERS	

#13 - LOCAL MITIGATION PROJECTS

Please describe what mitigation actions would help to reduce risk to your community from future natural hazard events. Please include mitigation activities that address local vulnerabilities that were identified in Question #2. Please be as specific as possible in your responses. The mitigation actions you identify will be used to develop your local mitigation action charts. If you have any mitigation projects you are aware that your jurisdiction will be seeking to apply for FEMA HMA Grant Program funding for, please make note of that.

Crow Wing County	<p>Ongoing county highway dept to clear ROW near power lines to prevent power outages in storms</p> <p>Implement wildfire mitigation activities included in the 2024 CWC CWPP and apply for potential grant funding.</p> <p>Promote Firewise to communities</p> <p>Continue to encourage communities to sign up for Everbridge emergency notifications.</p> <p>Continue to provide EM support to local jurisdictions for emergency preparedness and implementation of local flood, wind, and wildfire mitigation activities.</p>
City of Baxter	Repair/ upgrade sirens as they approach end of life,
City of Brainerd	Upgrade 2-3 Outdoor warning sirens, Wildland fire awareness - creating defensible spaces and WUI building code.

City of Breezy Point	Repair/ replace sirens as they approach end of life, encourage residents to sign up for the county's emergency notification system. Wildfire is not a high concern. It is hard for us to do much to mitigate wildfires as most property in the city is private property. It also helps that we are predominately mixed hardwood forest which is one of the lowest risk of wildfire forest types in MN.
City of Crosby	encourage residents to sign up for the county's emergency notification system.
City of Crosslake	FEMA HMA and Wildfire Defense Grant - for windstorms and removal of trees in the ROW's which prevents loss of power from overhead power lines and wildfires that can happen.
City of Cuyuna	encourage residents to sign up for the county's emergency notification system.
City of Deerwood	Having the funding to provide public storm shelters for the mobile home park and HUD housing, both currently do not have storm shelters in place.
City of Emily	Funding is needed to purchase a generator for the City's Emergency Storm Shelter (Emily City Hall). The City plans to apply for FEMA grant funds.
City of Fifty Lakes	Funding would be needed for a larger storm shelter to house up to 300+ people for an extended period (due to home loss) and a stronger roof system in event of a tornado. Informing the public about the shelters and what to do during a storm by both public education and posting the information.
City of Fort Ripley	
City of Garrison	Continue to improve delivery of emergency notifications and address areas that should have storm shelters. We have multiple campgrounds and mobile home parks, one mobile home park with 800+ sites (Aitkin County border). Our emergency shelter is located at City Hall, but is limited to the key holder's ability to get there to open it.
City of Ironton	Repair/ upgrade sirens as they approach end of life.
City of Jenkins	Encourage residents to sign up for text alerts.
City of Manhattan Beach	Encourage Property Owners to sign up for County notifications
City of Nisswa	Continue to improve delivery of emergency notifications and address areas that should have storm shelters. Also work to address old trees that can come down from storms and result in major damages.
City of Pequot Lakes	Ensure the sirens are up to date. We have worked with the DNR to do clean up in stormwater areas. We do enforce water restrictions if there is a drought. We post severe information on our website and Facebook. We use our city utility billing to notify residents of potential freezes 7 relating to cold weather and we have a list residents contact information in areas that are highly susceptible to freezes during cold weather.
City of Riverton	
City of Trommald	Encourage residents to clean up deadfall, possible prescribed burns? Encourage residents to sign up for the county's emergency notification system.

OTHER STAKEHOLDERS	
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#14 - GAPS OR DEFICIENCIES

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

Crow Wing County	Funding
City of Baxter	Funding
City of Brainerd	None
City of Breezy Point	None
City of Crosby	None
City of Crosslake	None
City of Cuyuna	small city with limited financial and staff resources to address local mitigation projects.
City of Deerwood	Funding is both the gap and deficiency.
City of Emily	Funding for purchase of a generator
City of Fifty Lakes	Funding and the location of a sufficient storm shelter project would be a large barrier.
City of Fort Ripley	
City of Garrison	Limited financial resources and staff
City of Ironton	Limited staff and financial resources.
City of Jenkins	Limited financial resources and city staff.
City of Manhattan Beach	We are a small city with limited financial and staff resources to address local mitigation projects.
City of Nisswa	Limited financial resources and staff
City of Pequot Lakes	We are a small city with limited financial and staff resources to address local mitigation projects.
City of Riverton	
City of Trommald	Limited staff and financial resources.
OTHER STAKEHOLDERS	

#15 - SURVEY PARTICIPANTS

Please list the names & titles of all persons that contributed information to this survey. Participant information is important to ensure good jurisdictional participation, and each person's time will count towards the 25% in-kind match requirement for the HMP update.

Crow Wing County	Liz Gleason, CWC EM Coordinator Clayton Bard, CWC EM Director Jory Danielson, CWC Administrative Services Director
City of Baxter	Matt Maier, Police Chief/City Em Brad Chapulis, City Administrator Josh Doty, Community Development Trevor Walter, Public Works Director
City of Brainerd	Tim Holmes, Fire Chief/ City EM Jessie Dehn, City Engineer James Kramvik, Community Development Director Charlie Gammon, BPU Water/ Wastewater Manager
City of Breezy Point	Brian Sandell, Police Chief

	Joe Zierden, Public Works Supervisor
City of Crosby	Michael Van Horn, Police Chief
City of Crosslake	Chip Lohmiller, Fire Chief Lori Conway, City Administrator Jory Danielson, Deputy Fire Chief
City of Cuyuna	Jesse Smith, Police Chief, Bill Bedard, Clerk-Treasurer
City of Deerwood	Mike Bodle, Fire Chief Lee Russell, City Administrator Patrick Radtke, Public Works
City of Emily	Brian Foster, Maintenance Supervisor/EM Director Cari Johnson, City Clerk/Treasurer
City of Fifty Lakes	Jesse Anderson, Fire Chief Ann Raph, City Clerk/Treasurer
City of Fort Ripley	
City of Garrison	Corri Erickson Fire Chief
City of Ironton	Jeff Thompson, Fire Chief Josh Jacobson, Mayor Emma Pratt, City Clerk/Treasurer
City of Jenkins	Andrew Rudlang, Mayor Krista Okerman, City Clerk-Treasurer Roger Olmscheid, Public Works Director
City of Manhattan Beach	Barb Hanson, Pro Temp. Mayor
City of Nisswa	Todd Szymanski, Police Sergeant Steven Timblin, City Planner
City of Pequot Lakes	Mike Davis, Police Chief Mike Schwankl Fire Chief Nick Roy, Public Works Supervisor Angie Duus, City Administrator
City of Riverton	
City of Trommald	Jeff Thompson - Fire Chief, Rob Geske, Public Works Joe Seelen, Public Works, Jim Hiller, Mayor
OTHER STAKEHOLDERS	

Appendix D – Plans & Programs in Place

Crow Wing County

HMP Plans & Programs in Place Form

EMERGENCY PLANNING CAPABILITIES	Yes/No	Comments
Emergency Notification System (please specify, i.e., CodeRED, Smart911, Everbridge, etc)	Yes	Everbridge
Outdoor Warning Sirens (please note locations and # per jurisdiction)	Yes	Baxter- 7 Brainerd- 5 Crosby- 2 Crosslake- 10 Deerwood- 2 Emily- 1 Fifty Lakes- 2 Garrison- 1 Ironton- 2 Jenkins- 1 Nisswa- 3 Pequot Lakes- 1 Platte Lake Township- 1 Mission Township- 1
Emergency Operations Plan (EOP)	Yes	EOP is 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 (please list any existing specific locations)	No	Addressed in coordination with schools & local jurisdictions with local vulnerabilities
NWS Weather Ready Nation / StormReady Certification	Yes	
Coordination with Schools	Yes	Tornado Drills, other trainings
Coordination with Neighboring Jurisdictions	Yes	Annual regional planning and training; statewide AMEM conference
Coordination with Local and 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 (List as applicable)	Yes	Public Health, American Red Cross, Salvation Army

Past storm hazard data and information	Yes	Damage information is kept on file from past storm events and disaster declarations
<i>Other (please describe)</i>	Yes	Public Health has preparedness plans in place

PLANNING & REGULATORY CAPABILITIES	Yes/No	Comments
Comprehensive/Land Use Plan	Yes	2004
Capital Improvements Plan	Yes	2024
Economic Development Plan	Yes	Adopted 2024
Climate Adaptation Plan		No
Continuity of Operations Plan (COOP)	Yes	Crow Wing County Emergency Management
Transportation Plan	Yes	Crow Wing County Highway Dept. – Highway Improvement Plan, 2024-2028
Stormwater Management Plan / Drainage Plan	Yes	CWC Land Services
Burning Permits/Restrictions (i.e., identify if issued through Sheriff's Office or MN DNR)	Yes	MN DNR
Comprehensive Local Water Management Plan	Yes	CWC Land Services
Watershed Plan (One Watershed, One Plan)		CWC and Cass County partnered on Pine River 1W1P starting in 2019. CWC also participates in the Mississippi River Brainerd 1W1P
Wellhead Protection Plan		Municipal level plans are done in coordination with MDH
Forest Management Plan	Yes	CWC Land Services
Community Wildfire Protection Plan (CWPP)	Yes	CWC CWPP 2024 – available online
Participation in MN DNR Firewise Program	Yes	
Database of Dry Hydrants/Well Access	Yes	No Hydrant data/limited well access data
<i>Other (please describe)</i>		

LOCAL POLICY / PROGRAM CAPABILITIES	Yes/No	Comments
Land Use, Planning, & Zoning Ordinance	Yes	Ordinance amended 11/15/2024
Subdivision Ordinance	Yes	Adopted 8/8/2006
MN State Building Code Enforcement	No	
Participation in the National Flood Insurance Program (NFIP)	Yes	Adopted 1974
Adoption of Digital Flood Insurance Rate Maps	Yes	Adopted 8/15/2017
Floodplain Ordinance	Yes	Amended 2024
Shoreland Ordinance	Yes	Adopted 2024
Minnesota Buffer Law / Soil Erosion Ordinance	Yes	Enforced by Crow Wing County SWCD
Home Buyouts for flood or erosion mitigation	No	
Other natural hazard specific ordinances (i.e., stormwater, steep slope, wildfire)		
Maintenance programs to reduce risk	Yes	Highway Dept. ROW maintenance and drainage systems
<i>Other (please describe)</i>		

ADMINISTRATIVE/TECHNICAL CAPABILITIES	Yes/No	Comments
Emergency Management Director	Yes	CWC EMD
Sheriff/Police Department	Yes	CWC Sheriff/local municipalities
Floodplain Management Administrator	Yes	Zoning Administrator
Chief Building Official	Yes	CWC Land Services
Highway Engineer	Yes	CWC Highway
Mapping Specialist (GIS)	Yes	CWC IT
Public Health Coordinator/Department	Yes	CWC Community Services
Planning Commission	Yes	Land Services
Coordination with Soil and Water Conservation District	Yes	CWC SWCCD
Coordination with Minnesota Department of Natural Resources	Yes	
Mitigation Planning Committee	Yes	2025 HMP Update Planning Team of Stakeholders
Mutual Aid Agreements in place	Yes	Regional; MAA's also existing between local fire departments
<i>Other (please describe)</i>		

EDUCATION & OUTREACH CAPABILITIES	Yes/No	Comments
SKYWARN Program Training with NWS (annual training)	Yes	Held in coordination with the NWS
National Weather Service – Severe Weather Awareness Weeks	Yes	Emergency Management participates in coordination with HSEM and NWS each November and April
Promotion of NOAA Weather Radios	Yes	During NWS Severe Weather Weeks and Ongoing
<i>Other (please describe)</i>		

Appendix E – Past Mitigation Action Review Status Report

Crow Wing County

Past Mitigation Action Review Status Report

Following is a report on the status of mitigation actions related to natural hazards included in the Crow Wing County **2017** Hazard Mitigation Plan. This report covers the mitigation actions that were listed for implementation by Crow Wing County and by city jurisdictions or partner agencies, as applicable. The status of mitigation actions is defined as the following:

Completed – The action was a defined activity or project completed since the last plan update.

Ongoing – The action is continually being implemented and moving forward. Ongoing mitigation actions will be reviewed and revised as necessary for inclusion in the plan update.

Deleted – The action is deemed as not relevant and is not considered for inclusion in the plan update.

#	Hazard	Mitigation Action	2025 Status	Comments
1	All-Hazards	Work to ensure that all Crow Wing County residents are aware of and sign-up for the County's Emergency Warning System (EWS).	Ongoing	The CWC Emergency Management Program regularly promotes sign-up for the EWS system via the County EM Facebook Page and during in-person events. Cities also work to promote sign-up by local residents by sharing information on city websites and announcements at public meetings.
2	All-Hazards	Continue to upgrade and improve the County's Emergency Warning Systems.	Ongoing	Improvement to EWS system has been made with the ability to send alerts out via the county web page, Facebook, Twitter and IPAWS through our DLAN software. CWC continues to address advanced warning for areas of First Assessment District (unorganized area north of Brainerd/Baxter). To include upgrades and additional warning sirens.
3	All-Hazards	Continue to update the Crow Wing County Emergency Operation Plan and encourage cities to develop & update local-level EOPs.	Ongoing	Crow Wing County Emergency management is in the process of rewriting the EOP for the county.
4	All-Hazards	Ensure that the Crow Wing County Emergency Operations Center (EOC) and facilities designated as mass care shelters are prepared to be fully functional.	Ongoing	Crow Wing County completed a shelter training with the Red Cross and is in the process of reviewing current shelters and the mass care plan.

#	Hazard	Mitigation Action	2025 Status	Comments
5	All-Hazards	Promote education & awareness of severe weather and personal emergency preparedness for individuals, families, and businesses.	Ongoing	CWC Emergency Management participates annually in the National Weather Service's spring and winter Severe Weather Awareness Weeks in April and November. We provide posters, brochures, and material on severe storms to the media and to property owners. Social media is also used to distribute the information. Local cities are encouraged to participate and share this information through their own local channels such as Facebook and city websites.
6	Severe Winter Storms	Provide winter-specific preparedness information to homeowners and the public regarding personal safety precautions to protect life safety during severe winter storm events (i.e., blizzards, ice storms).	Ongoing	During Winter Weather Awareness week and throughout the winter CWC Emergency Management provides information on winter storm preparedness to residents, businesses, and to property owners (i.e., furnace inspections, emergency car kits, and safe winter driving techniques.) Social media, TV, radio and newspaper are used to distribute the information. Local cities are encouraged to help distribution information through their own channels.
7	Severe Winter Storms	Provide information to property owners on building materials and practices that increase structural safety, and increase energy conservation in cold weather conditions.	Ongoing	Homeowners are reminded to practice maintenance of their furnaces, and landowners with Individual Septic Treatment Systems are informed on ways to protect their systems from extreme cold.
8	Severe Winter Storms	Encourage the planting of "Living Snow Fences" (trees and other vegetation) or the placement of other snow fences along roadways to help prevent blowing and drifting snow onto key transportation routes.	Ongoing	The planting of trees and natural vegetation is encouraged in areas of new development to minimize large snow accumulation to adjacent roads. CWC Highway Dept. has identified areas on CSAH 1, CSAH 12, CSAH 21, CSAH 16 & CR 131 to install living snow fence to reduce drifting snow.

#	Hazard	Mitigation Action	2025 Status	Comments
9	Severe Winter Storms	Continue providing snow removal, salting, and sanding to minimize the impacts of snow accumulations on motorists.	Ongoing	This is a standing effort of the CWC Highway Dept. and local City Public Works.
10	Severe Winter & Summer Storms	Identify critical facilities or infrastructure that do not have back-up power in the event of a major power outage resulting from severe winter or summer storms.	Ongoing	Not all county & city government buildings and schools have back up power generators to ensure energy in the event of a severe power outage. CWC and each jurisdiction will work to identify their respective critical facilities that should have back up power.
11	Severe Winter & Summer Storms	Purchase and install generator hook-ups and encourage local generator purchases for identified critical facilities that require back-up power.	Ongoing	CWC, local city governments, and schools will evaluate feasibility to purchase and install generators for key facilities, and will do so as funding allows.
12	Severe Winter & Summer Storms	Work with rural electrical and municipal coops to identify and address mitigation measures for above ground power lines that are susceptible to damage from severe winter or summer storms in order to reduce potential power outages.	Ongoing	Loss of power due to extreme storm events in the County creates long outage times and costly repairs. There has been overhead power disruption in hard-hit areas of trees. There is a wind "tunnel" from Gull Lake in the Round Lake Area of CR 115. The County and cities will work with local utilities as needed. BCA studies will be conducted for potential project areas to see where underground wires are possible.
13	Severe Winter & Summer Storms	Promote inspection and trimming of trees that may pose risk to falling on power lines during severe storm events.	Ongoing	Tree management in the right-of-way of roads is addressed by our CWC Highway Dept. and/or City Public Works and Utility Companies.
14	Severe Winter & Summer Storms	Promote the use of NOAA weather radios as a key communications resource for residents, businesses, and facilities that house vulnerable populations (i.e., nursing homes, group homes, senior centers, and day care facilities).	Ongoing	This is an on-going effort of emergency management programs at the county and local city level. We promote weather radios through PSA's, County Fair, National Night Out, NWS Severe Weather Awareness Weeks and through social media. CWC also continues to work with local vendors and State programs for rebates on NOAA Weather radios.

#	Hazard	Mitigation Action	2025 Status	Comments
15	Severe Summer Storms	Provide/participate in the National Weather Service's SkyWarn "Storm Spotter" training in various parts of the County for first responders and community residents.	Ongoing	Each year CWC Emergency Management Program works with the National Weather Service to provide this training to local fire departments and local community volunteers. We will continue to encourage more volunteers to become active in the severe storm spotters network. Local cities will continue to remain active in this program.
16	Severe Summer Storms	Identify areas where vulnerable populations are susceptible to tornadoes or extreme wind events (i.e. schools, campgrounds, or mobile home parks) and evaluate for construction or retrofit of safe rooms or storm shelters.	Ongoing	CWC Emergency Management continues to work with local cities that have experienced severe wind damage and recreational facilities on development of storm shelter areas. We are aware that there are two mobile home parks and the Crow Wing County Fairgrounds have been identified for having a need of a storm shelter or Safe Room.
17	Severe Summer Storms	Implement construction or retrofit projects for safe rooms or storm shelters in identified vulnerable locations.	Ongoing	Any community safe room projects that the County is involved in will be part of the CWC Emergency Management program. FEMA grant funding may be sought to support an eligible safe room project.
18	Severe Summer Storms	Ensure that plans are in place for mass care sheltering and designated shelter facilities are established throughout the County.	Ongoing	CWC EM is currently reviewing the mass shelter care plan and current sheltering sites. Crow Wing County has designated shelter facilities that have agreements with the American Red Cross. In addition, the Emergency Operations Plan (EOP) identifies potential shelter sites (primarily schools) for displaced or injured citizens. We encourage all cities to identify and designate community storm shelters.

#	Hazard	Mitigation Action	2025 Status	Comments
19	Severe Summer Storms	Encourage the owners of all manufactured home parks (MHPs) and multiple family dwellings to plan for and establish storm shelters.	Ongoing	The encouragement of the storm shelter construction in all MHPs throughout Crow Wing County and has been made. Almost all of the parks do have storm shelters with the exception of a few that we encourage to build. Due to the seasonal & low income tenant in the MHPs, the return on investment is not equal to the cost of installation. All MHPs are required by the MN Dept. of Health to have a storm shelter plan in place.
20	Severe Summer Storms	Work to improve the coverage of Doppler radar for Crow Wing County.	Ongoing	This is an ongoing effort of CWC Emergency Management. Due to the locations of the NWS radars from Crow Wing County, there is a gap and/or deficiency in the predicting our local weather. We experience delays in warnings given out and gaps in the timing of precipitation. CWC is currently in talks with Climavision and the city of Brainerd to install a local weather radar.
21	Severe Summer Storms	Continue to encourage the cities of Crow Wing County to become a NWS "StormReady" community and provide support to help communities accomplish the requirements for designation.	Ongoing	CWC Emergency Management works to encourage all cities to become Storm Ready communities.
22	Severe Summer Storms	Continue to install new or upgrade siren warning systems where needed in the County.	Ongoing	Crow Wing County has a system of emergency warning sirens throughout the county which are used to alert residents during severe wind events. New outdoor warning sirens have been installed throughout Crow Wing County in the communities of Baxter, Nisswa, Pequot Lakes, Breezy Point, Emily, Riverton, Ideal Township, and Fairfield Township. The County and cities will continue to address the maintenance, testing, and upgrade of warning sirens as needed. Multiple jurisdictions have added additional sirens.

#	Hazard	Mitigation Action	2025 Status	Comments
23	Severe Summer Storms	Encourage the State of Minnesota to enhance building codes to prevent damage from high winds, including for areas of new development.	Ongoing	Although building codes are not enforced by Crow Wing County and many local municipalities, property owners, builders, and developers should continue to be made aware that any construction, reconstruction, alteration, and repair of all structures in the county must be done in accordance with the Minnesota State Building Code. The County's Land Services Department can only issue a permit to the property owner or a state licensed contractor who is required to build to the State building code.
24	Severe Summer Storms	Recommend the use of windbreaks in all new development where natural or man-made windbreaks do not exist. Recommend a list of building materials capable of handling high winds in areas without natural windbreaks.	Ongoing	This sort of outreach is provided through the SWCD programs with landowners.
25	Severe Summer Storms	Conduct outreach to encourage property owners to take mitigation actions to protect property from severe wind damage.	Ongoing	During severe weather awareness week and throughout the summer we provide information on severe storms to the media and to property owners. Social media is also used to distribute the information and can be found on the CWC webpage. Property owners are encouraged to trim trees near buildings, remove dead and diseased trees, and keep their lakeshore property in a natural state.

#	Hazard	Mitigation Action	2025 Status	Comments
26	Extreme Temps (Heat/Cold)	Provide outreach & education to vulnerable populations in the community (i.e., senior citizens, young adults) on personal safety measures to take during periods of extreme heat / cold.	Ongoing	<p>This is done as part of the NWS annual spring and winter severe weather awareness weeks. It is also done during actual periods of extreme temperatures.</p> <p>Information on staying safe during periods of extreme heat or cold is relayed to the public through channels such as Facebook, radio, and local newspapers. Emergency information is provided for emergency services offices and hospitals. All Schools work to educate students on the dangers of extreme heat and cold as well.</p>
27	Flooding	Identify and improve potential and historical areas of road washout, and replace aging or failing bridges and culverts that are inadequate in order to reduce future flood damages.	Ongoing	<p>Crow Wing County and local jurisdictions maintain an annual inventory of problem areas due to flooding and plan for projects based on priority and available funding. CW County Highway Dept. has identified flood prone problematic areas on CR 105, CR 128, CSAH 11, CR 132, CR 106 & CR 144. In addition there are bridges that are scour sensitive and pose a hazard risk during high water. CR 128 has a shoreline improvement plan to reduce the risk of water over the road and erosion of the roadbed during high water.</p>
28	Flooding	Encourage municipalities to require the development of new storm sewer infrastructure capable of handling a ten-to-twenty-year rain event in areas of new development (i.e., new subdivisions) and adoption of a Stormwater ordinance regulating onsite stormwater management for new construction.	Ongoing	<p>Facilitate adoption of stormwater ordinance through a series of workshops.</p>

#	Hazard	Mitigation Action	2025 Status	Comments
29	Flooding	Develop stormwater management plans and improve stormwater management systems at the county and city level to address future high-impact rain events throughout the County.	Ongoing	The County will seek outside grant funding where possible to fund eligible stormwater improvement projects, such as through MPCA and FEMA HMA funding for flood reduction projects. Local jurisdictions will be responsible for development of local stormwater management plans and identification of priority projects. Baxter is in the process of adding a stormwater retention pond in an area that is prone to flooding to mitigate the risk of the surrounding residences and businesses.
30	Flooding	Ensure that wellhead protection plans are in place to address flooding that may lead to contaminated drinking water.	Ongoing	Cities work directly with the Minnesota Department of Health on the development or update of wellhead protection plans to ensure they meet State requirements.
31	Flooding	Adopt the 2017 updated floodplain maps for Crow Wing County and ensure the update of local ordinances.	Ongoing	Crow Wing County has new maps that will go effective 8/15/2017. Communities participating in the NFIP will update their ordinances and adopt the new maps (and make other updates).
32	Flooding	Address the need for a high high capacity pump at the Black Bear/Miller Lake to reduce flooding to surrounding roads, and ensure there is a levee emergency plan in place.	Ongoing	Currently Highway and Black Bear Lake Association have an agreement in place for a vendor to supply pumps when the water reaches a certain height at the levy.
33	Flooding	Keep culverts and drainage ditches free of debris to mitigate against over-the-road flooding.	Ongoing	The maintenance of culverts and drainage ditches is done through our CWC Highway Department and City Public Works. We also have Ditch 13 that flows from Lake Edward to North Long Lake. Local municipalities' public works work to monitor and address any problem areas for drainage at the local level.
34	Flooding	Restrict building in floodplain areas that consistently flood.	Ongoing	This action is the responsibility of the CWC Land Services Department and local city ordinances as per NFIP requirements.

#	Hazard	Mitigation Action	2025 Status	Comments
35	Flooding	Identify properties that experience damage from repetitive flooding, and work with property owners to buy out structures and turn into open-space.	Ongoing	This is an ongoing effort of Crow Wing County Land Services in conjunction with local jurisdictions that have experience repetitive flooding.
36	Flooding	Encourage individual landowners who live within floodplain areas to participate in the FEMA National Flood Insurance Program (NFIP).	Ongoing	This is an ongoing effort of Crow Wing County Land Services in conjunction with local jurisdictions that have experience repetitive flooding.
37	Flooding	Regularly patrol streams and rivers for beaver dams and remove problem dams to mitigate against localized flood issues.	Ongoing	Monitoring and removal of problem beaver dams is an annual action carried out by the CWC Land Services Dept., Crow Wing County Highway Dept. and local townships.
38	Flooding	Maintain sandbags and flood fighting equipment.	Ongoing	CWC maintains 10,000 sandbags and flood fighting equipment. Sandbags are stored at the CWC Highway garage.
39	Flooding	Provide public education on dangers of flash flooding (i.e. Promote "Turn Around, Don't Drown" campaign).	Ongoing	During severe weather awareness week and throughout the summer CWC Emergency Management provides information on flash flooding to the media and to property owners. Social media is also used to distribute the information.
40	Flooding	Provide education and technical assistance to property owners on the application of green infrastructure methods to reduce localized flooding due to high rain events.	Ongoing	This task is done through our CWC Land Services Dept. as well as the SWCD. Possible green-infrastructure projects will be considered for eligible for FEMA HMA grant funding.
41	Wildfire	Work with the MN DNR to develop a Community Wildfire Protection Plan (CWPP) for high-risk wildfire areas of Crow Wing County.	Ongoing	CWC Emergency Management in partnership with local fire departments developed a CWPP with the MN DNR. In 2024 the CWP was approved and adopted by the CWC Board.
42	Wildfire	Work with MN DNR to conduct Level-1 wildfire risk assessments in areas with significant wildfire potential in the county, specifically around communities at risk.	Ongoing	Crow Wing County Fire Departments will continue to work with the MNDNR and communities in high-risk wildfire areas on this effort.

#	Hazard	Mitigation Action	2025 Status	Comments
43	Wildfire	Promote defensible space education and provide training for property owners that have properties at-risk for wildfire.	Ongoing	Crow Wing County Fire Departments will continue to work with the MNDNR and communities in high-risk wildfire areas on this effort. Public education is provided through CW Emergency Management, local Fire Departments and MNDNR. In 2024 a community education event was held at the Crosslake Fire Department.
44	Wildfire	Continue to enforce burning restrictions when necessary.	Ongoing	This action is done through local Fire Departments, MNDNR and Law Enforcement.
45	Wildfire	Continue to conduct controlled burns as necessary to prevent the spread of wildfires.	Ongoing	This action is done through local Fire Departments and MNDNR.
46	Wildfire	Ensure the strong coordination between local fire departments and associations as well as those from outside areas to provide fire protection, which will reduce the impact of wildfires.	Ongoing	This action is done through Cuyuna Range Fire Chief Association, Crow Wing County Fire Chiefs and MNDNR.
47	Wildfire	Promote positive forestry management techniques including the removal of dead, dry vegetation and trees which may ignite as a result of lightning or human related causes.	Ongoing	This action is done through Cuyuna Range Fire Chief Association, Crow Wing County Fire Chiefs, MNDNR, CWC Emergency Management and CWC Land Services Dept.
48	Wildfire	Evaluate areas in the county to install dry hydrants to support wildfire suppression.	Ongoing	CW County Emergency Management will work in coordination with local fire departments to review water access for fire suppression in rural areas. Where projects may be feasible we will seek to work in coordination with the MNDNR for dry hydrant projects.
49	Wildfire	Evaluate and implement defensible-space measures for homes and structures that are within forested, high-risk wildfire areas, such as installation of external wildfire sprinkler systems and fuels-reduction measures.	Ongoing	CW County Emergency Management will work in coordination with local fire departments and MN DNR Forestry to see where high risk areas in the County may benefit from specific mitigation measures such as sprinklers or wildland fuels reduction.

#	Hazard	Mitigation Action	2025 Status	Comments
50	Drought	Promote water conservation measures and fire safety awareness to residents during periods of drought. Enforce water conservation ordinances when needed (i.e., that prohibit watering lawns during drought).	Ongoing	Promoting water conservation during periods of drought is a standing effort of the County and local governments, as well as the USDA and FSA Office.
51	Drought	Work with farmers to encourage crop rotation and planting crops according to water needs.	Ongoing	This is a standing element of outreach to local agricultural landowners. SWCD and the NRCS.
52	Drought / Erosion	Provide education and awareness on landscaping practices to communities and private landowners to mitigate against the impacts of drought and erosion (i.e., installation of shelter belts, measure for shoreline / streambank stabilization, and tree plantings for shade).	Ongoing	This is a standing effort of the Crow Wing County Soil and Water Conservation District. SWCD conducts regular outreach and site visits to provide technical assistance to communities in practices to reduce the impacts of drought and erosion. CWC Land Services Dept. and MN Extension also provide technical assistance and information to the public.
53	Dam Failure	Continue to have contact and coordination with the Crosslake, Big Pine Rock, and Brainerd Public Utility's Hydro dam operators.	Ongoing	CWC Emergency Management and CWC Land Services Dept. maintain communication and coordination with the dam operators on the condition of dams and addressing any concerns during periods of high rain events. In addition, there is the Black Bear Levy in Tromald and the Crosslake Rock Dam.

Appendix F – Planning Team Meetings

Crow Wing County HMP Planning Team Meeting #1

1/22/25 Meeting Summary & Documentation

Synopsis: On January 22, 2025 Crow Wing 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 Crow Wing County Hazard Mitigation Plan (HMP). 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.

The purpose of the meeting was to present on the update of the Crow Wing County HMP update and gather stakeholder feedback on several key discussion items, including:

- 1) Prioritization of the natural hazards to be profiled in the plan,
- 2) Identification of local vulnerabilities (i.e., infrastructure and populations),
- 3) Ideas for local mitigation actions for implementation, and
- 4) Review of FEMA Hazard Mitigation Assistance grant funding opportunities.

Stakeholder Invitations: Crow Wing County Emergency Management invited all stakeholders included on the county's HMP Update Jurisdictional Contact List, 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.

Presentation Overview: The Power Point presentation covered the following items:

- Welcome & Introductions
- Meeting Purpose & Agenda
- Overview of HMP Key Points
- Overview of Plan Content (Hazard Identification, Risk Assessment, Vulnerability Analysis, Update of Hazard Prioritization)
- Overview of Mitigation Actions and FEMA Grants
- Overview of Mitigation Strategies for the development of mitigation actions
- Discussion of ideas for local mitigation ideas
- Overview of Next Steps following Planning Team Meeting #1

Materials: The following meeting summary includes documentation of the stakeholders that participated in the meeting, poll results, questions or comments provided during the meeting, and information on the FEMA Hazard Mitigation Assistance Grant Program. A list of stakeholders invited to participate is also included. A copy of the meeting invitation and a handout of the Power Point presentation slides accompany this meeting summary.

To submit comments or questions regarding this meeting summary, please contact:

Liz Gleason, Crow Wing County Emergency Management Coordinator

Liz.Gleason@crowwing.gov

Meeting Participants

Following is a list of representatives that participated in Planning Team Meeting #1. These individuals will be considered as part the formal planning team recorded in Table 1. Hazard Mitigation (HMP) Team of the Crow Wing County HMP Update.

	Name	Organization	Job Title
1	Clayton Barg	Crow Wing County Sheriff's Office	Emergency Management Director
2	Liz Gleason	Crow Wing County Sheriff's Office	Emergency Management Coordinator
3	Tyler Ostman	Cuyuna Regional Medical Center	Director of Ambulance & Emergency Management
4	Ryan Franz	Pequot Lakes PD/Pequot Lakes Schools	Sergeant/School Liaison
5	Linda Danielson	Rabbit Lake Township	Clerk
6	Mark Olson	Long Lake Township	Supervisor
7	Tom Malloy	Long Lake Township	Supervisor
8	Michael McDaid	Pelican Township	Supervisor
9	Virginia Smart	Long Lake Township	Treasurer
10	Taylor Lesmeister	CWC Public Health	Public Health Educator
11	Jacklin Steege	CWC Public Health	Public Health Preparedness
12	Jason Walkowiak	CWC IT	Director
13	Jim Guida	St Mathias Township	Supervisor
14	Chip Lohmiller	Crosslake Fire	Chief
15	Jason Cline	CWC Emergency Management	Intern
16	Peter Grant	ISD 181	Superintendent
17	Kelvin McCuskey	HSEM	RPC
18	Tim Holmes	Brainerd Fire Department	Fire Chief/ EM
19	Kara Terry	Crow Wing County	Director
20	Mike Davis	Pequot Lakes Police Dept	Chief
21	Owen Fifield	American Red Cross Serving Northern and Central Minnesota	Community Disaster Program Manager
22	Mark Smith	Minnesota Pollution Control Agency	Environmental Emergency Responder
23	Mike Bodle	Deerwood Fire	Fire Chief
24	Gary Griffin	Crow Wing County	Land Services Director
25	Chad Emery	Cass County Sheriff's Office	Deputy Sheriff / Deputy Director Emergency Management
2	Giles Radtke	Pelican Township	Road Supervisor
2	Brian Berent	Crow Wing County	Highway Maintenance Manager
28	Jamie Skjveland	Crosby-Ironton I.S.D. #182	Superintendent
29	Joseph Moore	NOAA/National Weather Service Duluth MN	Warning Coordination Meteorologist
30	ROBERT L SMITH	Jenkins Township	Supervisor
31	Jacob Frie	Minnesota DNR	Area Hydrologist
32	Lori Conway	City of Crosslake	City Administrator
33	Cory Brix	Mille Lacs Energy Cooperative	Construction and ROW Manager

34	Corri Erickson	Garrison Fire & Rescue	Fire Chief
35	Darcy Dwyer	Crow Wing County	Public Information Officer
36	Brian Sandell	Breezy Point Police Department	Chief
3	Patricia Gage	Nokay Township	Clerk
38	Nathan Hulinsky	Crow Wing Township	Township Supervisor
39	Sandra Youngblom	MN DNR-Brainerd Airtanker Base	Airtanker Base Manager
40	Jason Walkowiak	Crow Wing County	IT Director
41	Matt Maier	Baxter Police Department	Chief
42	Jamie Lee	Crow Wing County	Commissioner
43	Patrice Erickson	Aitkin County Sheriff Office	Dispatch Supervisor/Deputy Emergency Manager
44	Ann Espeseth	Mille Lacs Energy Cooperative	System Data Analyst
45	bill bedard	City of Cuyuna	Clerk/Treasurer
4	Joel Lemberg	MN DNR Forestry	Area Forest Supervisor
47	Melissa Barrick	Crow Wing SWCD	District Manager
48	James Norwood	Brainerd Lakes Regional Airport	ARFF / Operations
49	Maggi Wentler	City of Nisswa	Finance Specialist
50	Kiki Lindbery	City of Nisswa	City Clerk
51	Craig Wallace	Ideal Township	Clerk/Treasurer
52	Mark Bradley	50 Lakes fire department	Fireman
53	Aaron Sloth	Platte lake township	Supervisor
54	Gina Wieler	MN Direct Care and Treatment	Emergency Manager
55	John Davis	Brainerd Police Department	Police Chief
56	Anthony Runde	Brainerd Police Department	Deputy Chief
57	Josef Garcia	Breezy Point Police Department	Sergeant

Discussion Polls

The presentation included several polling questions to generate discussion and gather specific feedback from participants that would be used to support public outreach, identify local vulnerabilities, and determine the updated prioritization of hazards for inclusion in the plan. Following are the polling questions and participant responses.

POLL #1 (Slide 9, Who Participates)

Question 1 - How can you expand participation by the county residents, including vulnerable populations, in the planning process?

Brian Berent	Community groups such as first responder groups, civic groups, or other organizations.
Mike Bodle	My suggestion is to simply ask in a media release. Volunteers are obviously hard to come by.
Mike Davis	Get it out in newspapers or at city council and county board meetings to get the local population involved.
Jamie Lee	Involve the public housing entities as well as utilities local media outlets.
Ann Espeseth	Social Media

Owen Fifield	Feedback should be solicited in-person at hubs of community activity in a simple question/answer. It should be convenient and simple.
Anthony Runde	Invite key members from homeless and day shelters to attend and provide input (maybe they're already included?)
Kara Terry	Attend city council meetings and engage city leadership to help spread the word. Also, hold informational meetings in neighborhoods and offer food.
Corri Erickson	Utilize City/Fire Dept/Police Dept social media to survey residents
Jacob Frie	There are many Lake Associations in Crow Wing County - many are seasonal residents only and then leave in the winter and early-spring season. They have e-mails
John Davis	County representatives meet in person with nursing home and assisted living individuals.
JOSEF GARCIA	The use of public planning workshops or community listening sessions/meetings.
Chad Emery	Township Officers
Joseph Moore	Soliciting input at local township board meetings.
Darcy Dwyer	Work with Community Services staff that work closely with this population to get some feedback.
Giles Radtke	Besides requesting 1 supervisor from every township to attend I am not sure what else
Matt Maier	Engage in town hall / city / township meetings
Patrice Erickson	social media, newspaper, flyers in utility bills, local radio

Question 2 - Is there someone (or an organization) missing from this planning team who you think should be involved with the Hazard Mitigation Plan Development?

Tim Holmes	Bridges of Hope
Brian Berent	Are all utility groups within the county such as pipeline and long-range communication companies involved?
Mike Davis	I think churches should be involved in this.
Jamie Lee	Local churches as they will be the first to open their doors to the community as needed.
Ann Espeseth	None at this time
Owen Fifield	Not that I am aware.
Melissa Barrick	private landowners
Kara Terry	I think we have a good representation currently
ROBERT L SMITH	don't know
Corri Erickson	Not at this time
John Davis	Brainerd Public Utilities Director, Chris Evans
JOSEF GARCIA	Not knowing exactly who has been invited, perhaps members of large community organizations with significant representation such as Lutheran Social Services, Boy Scouts of America, Elks camp, etc.
Chad Emery	Not sure how many township officials are attending. But their input is valuable.

Giles Radtke	Include all major utilities like MN Power, Xcel, CTC, Spectrum, Any phone, power and gas providers. Storm damage to communication power and gas lines are all important.
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POLL #2, Slide 13 (Plan Content – Vulnerability Analysis)

Question 1 - Are there any factors in your community that may have increased the community's vulnerability? (please identify community)

Peter Grant	Increase in shuttered homes and businesses.	Brainerd Baxter
Joel Lemberg	Recent longer periods of drought. A lot of new development.	countywide
Brian Berent	Droughts have been an issue within the county in the past few years. Large number of development both commercial and residential.	countywide
Mike Bodle	Aging housing for elderly. 2-3 locations	City of Deerwood
Mike Davis	infrastructure of sewage lines for our city, power substations getting damages by storms	Pequot Lakes
Jamie Lee	Our homeless community is increasing and they are moving away from urban areas to more secluded public land.	Trommald area.
Anthony Runde	Unhoused	Brainerd
Owen Fifield	Extreme fluctuations in heat, cold, precipitation and other factors due to climate change.	countywide
Melissa Barrick	Tree diseases such as Ash bore. Dead timber in many private woodlands lots that is fire concern. Storm damage over the years has created a lot of down timber with little mitigation.	Brainerd and the Whitefish area and Crosslake.
Kara Terry	We do have community development throughout the county and we also have an increased unhoused population. Cities and townships have aging infrastructure and little budget to fix.	Crow Wing County as a whole
ROBERT L SMITH	Development	Jenkins Township
Corri Erickson	COVID led to a significant increase in our seasonal population	Garrison area
Jacob Frie	Recent droughts (past 3 years have been particularly dry)	Brainerd and Crosslake
John Davis	Increased homeless population	City of Brainerd
JOSEF GARCIA	For sure our areas have seen increased development. there has also been a noticeable increase in unhoused populations.	Breezy Point
Giles Radtke	Not in Pelican Township	Pelican Township
Matt Maier	Many new apartment complexes that have been built since the last Plan review was completed. We also have had a large increase	City of Baxter

	of homelessness in the area due to a "day center" that was established	
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Question 2 - Are there specific areas of concern in your community that you would consider to be more highly vulnerable to damages or danger resulting from future natural hazard events? (please identify community)

Brian Berent	Growth in the county has added population to the infrastructure. Also increased traffic volumes in the area during the summer season.	County in general
Mike Bodle	We have a trailer park that is run down and over populated.	City of Deerwood
Mike Davis	same as above	Pequot Lakes
Jamie Lee	Tornadoes are common across our county.	Trommald area.
Anthony Runde	Mississippi River landing area	Brainerd
Melissa Barrick	Floodplain of the Mississippi river. Areas that tornado went through last year.	Brainerd and the Whitefish area and Crosslake.
Kara Terry	Unhoused population, elderly and disabled, those who are not financially stable.	Crow Wing County as a whole
ROBERT L SMITH	Water quality	Jenkins Township
Corri Erickson	Mille Lacs Band tribal area just south of the Crow Wing County border	Garrison area
Jacob Frie	Brainerd public utilities dam, Crosslake Corps of Engineers Dam - they are still structurally good, but if "blown out" could be catastrophic	Brainerd and Crosslake
John Davis	Hospital	City of Brainerd
JOSEF GARCIA	For us, I believe the biggest areas of concern are our seasonal campgrounds, numbers of people participating in outdoor activities.	Breezy Point
Brian Sandell	Campgrounds	Breezy Point
Giles Radtke	Fire danger since we have lots of trees or wind damage from trees	Pelican Township

POLL #3 (Slide 17) Crow Wing County 2025 Update of Hazard Prioritization

Meeting participants ranked each of the natural hazards listed below as what they felt was a high, moderate, or low hazard priority to include in the plan update.

Which of the following hazards would you consider HIGH priority in your county?

Windstorms	26
Tornadoes	24
Wildfire	18
Winter Storms	13
Extreme Cold	11
Hail Storms	9

Flood	8
Drought	8
Extreme Heat	7
Lightning	5
Dam/Levee Failure	4
Landslides	0
Land Subsidence	0

Would you consider any of the hazards below low risk, low priority, or not applicable in your county?

Tornadoes	0
Winter Storms	0
Wildfire	1
Flood	1
Windstorms	1
Hail Storms	1
Extreme Cold	2
Extreme Heat	5
Lightning	5
Drought	6
Dam/Levee Failure	10
Landslides	24
Land Subsidence	22

Crow Wing County 2025 Prioritization of Hazards

The chart below reflects the planning team's updated prioritization of hazards that will be included in the Crow Wing County 2025 HMP Update.

HAZARD	Crow Wing County 2025
Wildfire	High
Winter Storms	High
Windstorms	High
Tornadoes	High
Flooding	Moderate
Hail	Moderate
Extreme Cold	Moderate
Drought	Moderate
Extreme Heat	Low
Lightning	Low
Landslides	Low
Land Subsidence	Low (N/A)
Dam/Levee Failure	Low

Other Comments or Questions

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

Clayton Barg - Fire danger is considered higher due to less snowfall and dry spring + wind storms that bring down trees. We would want to keep wildfire as a high priority hazard in our plan.

Participant question – Do you consider invasive species as a natural hazard?

Stacey Stark – the term “natural hazard” is a bit misleading. The plan does not cover invasive species as a natural hazard. FEMA is looking to mitigate against damages to structure and life safety from hazards. It is not something that FEMA has funding programs to address. However, with that said, it is important to note that other sorts of plans may address this concern.

Clayton Bark - The CWPP does mitigation for areas of downed trees and brush etc.

Peter Grant - With the road construction projects, in the immediate future and 2028 of HWY 210 and 371, are plans being made to address potential evacuations of the areas impacted by these projects? How would the new mitigation plan be impacted by these?

Bonnie Hundrieser - Good question. The HMP would not be addressing the details of evacuation routes since that is a function of emergency response planning. The Crow Wing County Emergency Operations Plan includes plans and procedures for evacuation in coordination with local law enforcement and EMS based on the emergency at hand and affected areas. So those evacuation route concerns for those roads in question would be a discussion to have with CWC Emergency Management and other local emergency managers.

Melissa Barrick – The CWC SWCD has a lot of funding for the green infrastructure realm of things. Is there a way to capture that?

Bonnie Hundrieser – Yes. If there are related mitigation projects that fall into the realm of green infrastructure, we would work to include information if the CWC SWCD was a project partner or had possible funding to support those project efforts.

Kelvin McCuskey – Made a comment regarding the difference between FEMA post-disaster funding (Public Assistance) and FEMA HMA grant funding. Public Assistance (Section 406 funding) helps communities with repairs to damaged infrastructure back to the status prior to the disaster. FEMA Section 404 grant funding programs are totally different – these funds are tied to the requirement to have a hazard mitigation plan in place.

Clayton Barg – Had a few questions if certain types of projects could be eligible for FEMA HMA grant funding (related to private property owner efforts).

Bonnie Hundrieser – Responded that these sorts of projects would not be the sort that would be eligible for FEMA grant funding. FEMA has defined categories of certain types of projects that may be eligible to apply for. It is recommended for anyone who may be interested in potential FEMA grant funding to carefully review the FEMA HMA grant funding guidance (see below).

FEMA HMA Grant Funding:

As part of the planning team meeting, participants were informed that having a FEMA-approved Hazard Mitigation Plan in place is a requirement in order to apply for FEMA Hazard Mitigation Assistance Grant Programs. Examples of eligible projects were reviewed for participants to consider for potential inclusion in their local mitigation action charts, as applicable. It was noted that representatives from the county, local governments, and other stakeholder agencies/organizations must have documented participation in the planning process in order to formally adopt the plan and be eligible to apply for future FEMA HMA grants.

To learn more about FEMA's HMA grant programs, please review the following:

[**FEMA Mitigation Assistance Program and Policy Guide, Effective July 30, 2024**](#)

At a glance info: See Table 4, Eligible Activities by Program (page 43)

CROW WING COUNTY HMP JURISDICTIONAL CONTACT LIST

Following is a list of the stakeholders that received an invitation to participate in Planning Team Mtg. #1 and will receive the meeting summary.

To submit suggested additions to this contact list, please contact Crow Wing County Emergency Management and provide the name of the jurisdiction, agency, or organization along with the person's full name, work title, and email address.

REPRESENTATION	NAME	TITLE
Crow Wing County Emergency Management	Clayton Barg	Emergency Management Director
Crow Wing Sheriff's Office	Eric Klang	County Sheriff
Crow Wing County Administration	Deborah Erickson	County Administrator
Crow Wing County Highway Department	Timothy Bray	County Engineer
Crow Wing County Highway Department	Robert Hall	Assistant County Engineer
Crow Wing County Land Services	Gary Griffin	Land Services Director
Crow Wing County Land Services	Maggie Young	GIS Specialist
Crow Wing County Community Services	Kara Terry	Community Services Director
Crow Wing County Community Services	Jacklin Steege	PHEP Coordinator
Crow Wing County Environmental Services Supervisor	Tom Strack	Environmental Services Supervisor
Crow Wing County IT Manager	Jason Walkowiak	IT Manager
Crow Wing County Information Technology	Nate Rose	GIS Coordinator
Crow Wing County Public Information Officer	Darcy Dwyer	Public Information Officer
Crow Wing County Board of Commissioners	Paul Koering	District 1 Commissioner
Crow Wing County Board of Commissioners	Jon Lubke	District 2 Commissioner/Chair
Crow Wing County Board of Commissioners	Steve Barrows	District 3 Commissiner/Vice Chair
Crow Wing County Board of Commissioners	Rosemary Franzen	District 4 Commissioner
Crow Wing County Board of Commissioners	Jamie Lee	District 5 Commissioner
Crow Wing County Board of Commissioners	Doug Houge	District 5 Commissioner
City of Baxter	Bradley Chapulis	City Clerk
City of Baxter	Matt Maier	Police Chief
City of Brainerd	Patrick Wussow	City Clerk
City of Brainerd	Nick Broyles	City Administrator
City of Brainerd	John Davis	Police Chief
City of Brainerd	Tim Holmes	Fire Chief
City of Breezy Point	David Chanski	City Clerk

City of Breezy Point	Brian Sandell	Police Chief
Crooked Lake Fire Department	Nick Usherwood	Fire Chief
City of Crosby	Trish Herren	City Administrator
City of Crosby	Matthew Hill	City Clerk
City of Crosby	Mike VanHorn	Police Chief
City of Crosby	Shayne Jacobs	Fire Chief
City of Crosslake	Char Nelson	City Clerk
City of Crosslake	Jake Maier	Police Chief
City of Crosslake	Chip Lohmiller	Fire Chief
City of Cuyuna	Bill Bedard	City Clerk
City of Cuyuna	Jesse Smith	Police Chief
City of Cuyuna	Karl Hasskamp	Fire Chief
City of Deerwood	Lee Russell	City Clerk
City of Deerwood	Michael Bondle	Fire Chief
City of Emily	Cari Johnson	City Clerk
City of Emily	Mark Taylor	Police Chief
City of Emily	Chad Genz	Fire Chief
City of Fifty Lakes	Ann M. Raph	City Clerk
City of Fifty Lakes	Jesse Anderson	Fire Chief
City of Fort Ripley	Sherry Chisholm	City Clerk
City of Garrison	Jeff Turk	City Clerk
City of Garrison	Cori Erickson	Fire Chief
City of Ironton	Emma Pratt	City Clerk
City of Ironton	Jeff Thompson	Fire Chief
Ideal Fire Department	J. Craig Wallace	Fire Chief
City of Jenkins	Cassandra Delougherty	Deputy City Clerk
City of Jenkins	Krista A. Okerman	City Clerk
City of Manhattan Beach	Marlene Yurek	City Clerk
Mission Fire Department	Chad Allord	Fire Chief
City of Nisswa	Kiki Lindberg	City Clerk
City of Nisswa	Jenny Max	City Administrator
City of Nisswa	Craig Taylor	Police Chief
City of Nisswa	Shawn Bailey	Fire Chief
City of Pequot Lakes	Angie Duus	City Clerk
City of Pequot Lakes	Mike Davis	Police Chief
City of Pequot Lakes	Mike Schwankl	Fire Chief
City of Riverton	Alexandra Booth	City Clerk
City of Trommald	Mona R. Geske	City Clerk
Bay Lake Township	Carol Pundt	Clerk
Center Township	Coralea Borden	Clerk
Crow Wing Township	Sue Kern	Clerk
Daggett Brook Township	Gretchen Nelson,	Clerk
Deerwood Township	Carol Pundt	Clerk
Fairfield Township	Marianne Auge	Clerk

Fort Ripley Township	Megan Lieser	Clerk
Gail Lake Township	Cathy Erickson	Clerk
Garrison Township	Amy Mickelson	Clerk
Ideal Township	Craig Wallace	Clerk
Ideal Fire	Luke Hanson	Fire Chief
Irondale Township	Angela Fort	Clerk
Jenkins Township	Jim Olsen	Clerk
Lake Edward Township	Loni Burnard	Clerk
Little Pine Township	Abra Hawley	Clerk
Long Lake Township	Patsy Olson	Clerk
Maple Grove Township	Norene Warta	Clerk
Mission Township	Anna Anderson	Clerk
Nokay Lake Township	Alan Cunningham	Clerk
Oak Lawn Township	Deb Borg	Clerk
Pelican Township	Linda Benson	Clerk
Perry Lake Township	Sherry Habighorst	Clerk
Platte Lake Township	Robert Dambowy	Clerk
Rabbit Lake Township	Linda Danielson	Clerk
Roosevelt Township	Breanna Cielinski,	Clerk
Ross Lake Township	Casey Tscheu	Clerk
Saint Mathias Township	Cassey Veith	Clerk
Timothy Township	Avalon (Loni) Porta	Clerk
Wolford Township	Kimberly Marquart	Clerk
LOCAL & REGIONAL AGENCIES INVOLVED IN HAZARD MITIGATION		
MN HSEM	Kelvin McCuskey	Region 2 Regional Program Coordinator
Crow Wing Soil & Water Conservation District	Melissa Barrick	District Manager
MN DNR Ecological and Water Resources Division	Jacob Frie	Area Hydrologist
MnDOT District 3A	Mike Ginnaty	District Engineer
MN DNR Firewise	Laura Murphy	NE MN Firewise Specialist
MN DNR Fire Division of Forestry	Craig Schultz	Backus Area Fire Program
MN DNR Wildland Aviation, Division of Forestry	Sandra Youngblom	Airtanker Base Manager, Brainerd Tanker Base
MN DNR Crow Wing State Park		Park Manager
National Weather Service - Duluth Office	Joseph Moore	Meteorologist
Minnesota Pollution Control Agency (MPCA)	Mark Smith	Environmental Specialist
Brainerd Airport	Kassandra Loftus	Deputy Director
Brainerd Airport	Steve Wright	Director
BUSINESSES, ACADEMIA, AND OTHER PRIVATE ORGS.		
Brainerd Public School District	Peter Grant	Superintendent (interim)

Pequot Lakes Public Schools	Kurt Stumpf	Superintendent
Crosby-Ironton Public School District	Jamie Skjveland	Superintendent
Essentia Health-St. Joseph's Medical Center (Brainerd)	Ashley Auge	Trauma Program Coordinator
Cuyuna Regional Medical Center	Dan Hoffard	CRMC
Crow Wing Power	Eric Quale	Crow Wing Power
Mille Lacs Energy Cooperative	Ann Espeseth	Mille Lacs Energy
Mille Lacs Energy Cooperative		Mille Lacs Energy
NONPROFIT ORGS/COMMUNITY-BASED ORGS THAT WORK WITH UNDERSERVED COMMUNITIES AND SOCIALLY VULNERABLE POPULATIONS		
MN Dept of Human Services - Direct Care & Treatment	Gina Wieler	Emergency Manager
MN Dept of Human Services - Direct Care & Treatment	Joel Nelson's	Direct Care and Treatment
American Red Cross	Owen Fifield	Disaster Program Manager
Salvation Army	Capt. Jeff Curran	Regional Contact
Brainerd Community Action		Executive Director
NEIGHBORING JURISDICTIONS		
Cass County Emergency Management	Chad Emery	Emergency Management Deputy Director
Aitkin County Emergency Management	Dan Guida	Sheriff / EM Director
Aitkin County Emergency Management Deputy	Patice Erickson	Deputy EM
Mille Lacs County Emergency Management	Andy Beckstrom	Emergency Management Director
Morrison County Emergency Management	Victoria MacKissock	EM Deputy Director
Mille Lacs Band of Ojibwe	Monte Fronk	Emergency Management Director

From: [Liz Gleason](#)
To: [Clayton Barg](#); [coadmin](#); [coadmin](#); [Tim Bray](#); [Rob Hall](#); [Gary Griffin](#); [Maggie Young](#); [Kara Terry](#); [Jacklin Steege](#); [Tom Strack](#); [Jason Walkowiak](#); [Nate Rose](#); [Darcy Dwyer](#); [Paul Koering](#); [Jon Lubke](#); [Steve Barrows](#); [Rosemary Franzen](#); [Doug Houge](#); [Bradley Chapulis](#); [Matt Maier](#); [admin@ci.brainerd.mn.us](#); [nbroyles@ci.brainerd.mn.us](#); [John Davis](#); [Tim Holmes](#); [cityadmin@cityofbreezypointmn.us](#); [Brian Sandell](#); [Crookedlakefire@gmail.com](#); [Matthew Hill](#); [Mike Vanhorn](#); [Jay DeCent](#); [Char Nelson](#); [jake.maier@crosslake.net](#); [Chip Lohmiller](#); [Bill Bedard](#); [Jesse Smith](#); [Karl Hasskamp](#); [Lee Russell](#); [Michael Bodle](#); [clerk@emily.net](#); [Mark Taylor](#); [Chad Genz](#); [clerk@fiftylakesmn.com](#); [andyhemphill@hotmail.com](#); [chisholm1269@gmail.com](#); [cityclerk@cityofgarrison.com](#); [firedepartment@cityofgarrison.com](#); [Amanda Meyer](#); [Craig Wallace](#); [cassandra.delougherty@cityofjenkins.com](#); [Krista Okerman](#); [Marlene Yurek](#); [chief1@missontownship.org](#); [kiki@ci.nisswa.mn.us](#); [jmax@cityofnisswa.gov](#); [craig@nisswapolice.com](#); [shawn@gullakemgmt.com](#); [aduus@pequotlakes-mn.gov](#); [Mike Davis](#); [Tom Nelson](#); [Alexandra Booth](#); [Mona Geske](#); [Carol Pundt](#); [Coralea Borden](#); [Duane Ruona](#); [GretchenNelson](#); [Carol Pundt](#); [Deerwood](#); [Marianne Auge](#); [Megan Lieser](#); [Carol Johnson](#); [Amy Mickelson](#); [Craig Wallace](#); [Gayle Hanson](#); [chefijo@gmail.com](#); [Loni Burnard](#); [Abra Hawley](#); [Patsy Olson](#); [norene50@outlook.com](#); [Anna Anderson](#); [Alan Cunningham](#); [Deb Borg](#); [Jody Wallin](#); [Sherry Rocholl](#); [plattelaketownship@yahoo.com](#); [Linda Danielson](#); [Breanna Cielinski](#); [rosslaketwp@gmail.com](#); [Cassey Veith](#); [lonip@timothytownship.com](#); [wolfordclerk@castle-web.com](#); [McCuskey, Kelvin \(DPS\)](#); [Melissa Barrick](#); [Jacob.Frie@state.mn.us](#); [mike.ginnaty@state.mn.us](#); [Laura.murphy@state.mn.us](#); [craig.schultz@state.mn.us](#); [sandra.youngblom@state.mn.us](#); [joseph.moore@noaa.gov](#); [mark.smith@state.mn.us](#); [peter.grant@isd181.org](#); [kstumpf@isd186.org](#); [jskjveland@ci.k12.mn.us](#); [ashley.auge@essentiahealth.org](#); [daniel.hoffard@cuyunamed.org](#); [quale@cwpower.com](#); [ANNE@mlecmn.com](#); [mlec@mlecmn.net](#); [gina.wieler@state.mn.us](#); [joel.p.nelson@state.mn.us](#); [Owen.fifield@redcross.org](#); [Jeff.Curran@usc.salvationarmy.org](#); [info@brainerdcommunityaction.org](#); [Chad Emery](#); [dan.guida@co.aitkin.mn.us](#); [Patrice Erickson](#); [andy.beckstrom@millelacs.mn.gov](#); [victoram@co.morrison.mn.us](#); [Monte.Fronk@millelacsband.com](#)
cc: [Bonnie K Hundrieser](#); [Stacey Stark](#)
Subject: CROW WING COUNTY Hazard Mitigation Plan Update - Meeting Invitation
Date: Tuesday, December 10, 2024 12:57:20 PM
Attachments: [image001.png](#)

Greetings,

Your presence is requested at a Planning Team Meeting for the update of the Crow Wing County Hazard Mitigation Plan. You are requested to participate in this meeting because you have a position of administrative or departmental responsibility within 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 conferencing:

Date: Wednesday, January 22, 2025

Time: 10:00-11:30 AM

RSVP: https://umn-private.zoom.us/webinar/register/WN_sgF1BLNYQV-fqcDXXPN4SA

(Ctrl+Click to follow link) When you register, you will be placed on an RSVP list and will be sent an email confirmation. If you are not able to attend, please seek to send another representative in your stead.

In-person meeting option: CWC Emergency Management will have a room available where you can join us for the meeting if you are not able to join remotely. Please email our EM Coordinator Liz Gleason (Liz.Gleason@crowwing.gov) if you wish to join us in person.

About the Hazard Mitigation Plan

In order to maintain eligibility for FEMA Hazard Mitigation Assistance (HMA) Grant Program funding, the county's hazard mitigation plan must be updated 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 Crow Wing County and will result in the identification of mitigation actions that will help to reduce or eliminate the impact of future hazard events.

Meeting Information

This meeting will be facilitated by personnel from U-Spatial at the University of MN Duluth who are working closely with us on this project. The purpose of this meeting is to present on the update of the Crow Wing County HMP update and gather stakeholder feedback on several key discussion items, including:

- 1) Prioritization of the natural hazards to be profiled in the plan,
- 2) Identification of local vulnerabilities (i.e., infrastructure and populations),
- 3) Ideas for local mitigation actions for implementation, and
- 4) Review of FEMA Hazard Mitigation Assistance grant funding opportunities.

About FEMA HMA Grant Funding:

To learn more about FEMA's HMA grant programs, please review the following: FEMA Mitigation Assistance Program and Policy Guide, Effective July 30, 2024
At a glance info: See Table 4, Eligible Activities by Program (page 43)

Please note that representatives from the county, local governments, and other stakeholder agencies/organizations must have documented participation in the planning process in order to formally adopt the plan and be eligible to apply for future FEMA HMA grants.

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

Thank you,

Liz Gleason

Emergency Management Coordinator
Crow Wing County Sheriff's Office
304 Laurel St
Brainerd, MN 56401
(218) 829-4749
Liz.Gleason@crowwing.gov
crowwing.us/sheriff



Leadership • Visibility • Preparation

The information contained in this email is intended only for the use of the individual or entity named above. If the reader of this email is not the intended recipient, you are requested to refrain from reading any of the attachments to the email. Please notify the person sending the message of the mistaken delivery immediately.

Crow Wing County Hazard Mitigation Plan Update 2025

Planning Team Meeting #1

JANUARY 22, 2025



U-SPATIAL
UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover

Meeting Participation

To make a comment or ask a question, please use the chat or raise your hand to speak.

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

USE CHAT:



➢ To send a message to everyone

➢ To send a message to individuals or the presenters

➢ To 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

Overview of HMP Key Points

CROW WING COUNTY 2025 HMP UPDATE

PRESENTER: BONNIE HUNDRIESER

Welcome & Introductions

U-Spatial@UMD Project Leads



Stacey Stark
Project Manager
U-Spatial@UMD



Bonnie Hundrieser
HM Planning Specialist
Hundrieser Consulting LLC

Crow Wing County Project Lead

- Clayton Barg, Crow Wing County Emergency Management Director
- Liz Gleason, EM Coordinator



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

PRESENTER: STACEY STARK

Meeting Purpose & Agenda



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

Agenda

- Overview of HMP Key Points
- Review of Past Plan Hazard Risk Priorities, Hazard Profiles, and Current Hazard Prioritization
- Overview of Mitigation Strategies
- Overview of FEMA HMA grant program
- Discuss local mitigation ideas
- Overview of Next Steps

PRESENTER: STACEY STARK

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.

Crow Wing County HMP Update 2025

- Last plan was adopted in 2017.
- The updated plan will cover a 5-year window for implementation and grant program eligibility (2026-2031)
- Participating jurisdictions must have documented engagement in the planning process and adopt the final plan.

PRESENTER: BONNIE HUNDRIESER

Plan Purpose



The purpose of the HMP is to:

- **Conduct risk assessment** (history, future probability, impacts of natural hazards)
- **Conduct vulnerability assessment** (at-risk critical infrastructure and populations)
- **Conduct capabilities assessment** (plans, programs, policies, partnerships, funding, etc in place or that are lacking)
- **Develop plan of action** (strategies and mitigation actions for implementation).

PRESENTER: BONNIE HUNDRIESER

Who the Plan Covers



This is a **multi-jurisdictional plan** that covers Crow Wing 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



Key Stakeholders

Local government as well as related non-governmental agencies & organizations must participate.

- 2 planning team meetings
- Public outreach
- Provision of local information (LMS forms, other data)
- Mitigation Action Charts
- Final plan review

POLL #1

PRESENTER: BONNIE HUNDRIESER

Overview of Plan Content

CROW WING COUNTY 2025 HMP UPDATE

PRESENTER: STACEY STARK

Plan Content

Hazard Identification

- 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: STACEY STARK

Plan Content

Risk Assessment

- History of events
- Probability of occurrence
- Severity
- Climate Change
- Identify if and how risk priorities have changed since the last plan. (Increased / Decreased)

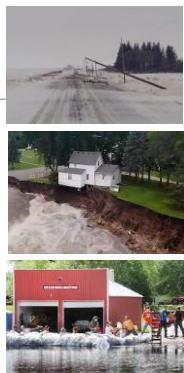


PRESENTER: STACEY STARK

Plan Content

Vulnerability Analysis

- Inventory of critical infrastructure.
- Identify specific, local-level impacts and vulnerabilities.
- Includes local-level capabilities assessment that supports mitigation or identifies gaps
- Identify any factors (e.g. new development) that may increase the community's vulnerability.
- Review social vulnerability factors.



POLL #2

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 Crow Wing County Plan will be completed in **2025**.

Format:

- PDF document (paper version)
- Interactive website companion
- Developed and hosted by U-Spatial at UMD



Example HMP website

PRESENTER: STACEY STARK

Hazard Prioritization

REVIEW OF THE HAZARD RISK PRIORITIES FOR CROW WING COUNTY

PRESENTER: STACEY STARK

Crow Wing County Past Prioritization of Hazards

This is at a county level

POLL #3

HAZARD	Crow Wing 2017
Flooding	Moderate
Winter Storms	High
Windstorms	High
Tornadoes	High
Hail	High
Lightning	High
Extreme Cold	Moderate
Extreme Heat	Moderate
Drought	Low
Wildfire	Moderate
Landslides	Low
Land Subsidence	n/a
Dam/Levee Failure	Low

PRESENTER: STACEY STARK

Crow Wing County 2025 Update of Hazard Prioritization

Considerations:

- Increase/Decrease of events
- Local vulnerabilities (impacts)
- New development/population growth

HAZARD	Crow Wing 2025
Flooding	
Winter Storms	
Windstorms	
Tornadoes	
Hail	
Lightning	
Extreme Cold	
Extreme Heat	
Drought	
Wildfire	
Landslides	
Land Subsidence	
Dam/Levee Failure	

PRESENTER: STACEY STARK

Hazard Prioritization Poll results and discussion

Do any of these countywide hazards NOT apply in a city?

PRESENTER: STACEY STARK

Comments or Questions?

Overview of Mitigation Actions & FEMA grants

DEVELOPMENT OF MITIGATION ACTIONS AND ACTIVITIES ELIGIBLE FOR FEMA HAZARD MITIGATION ASSISTANCE GRANT FUNDING

PRESENTER: STACEY STARK

PRESENTER: BONNIE HUNDRIESER

Mitigation Action Charts



MACs reflect each jurisdiction's plan of action to reduce the impacts of future natural hazard events. They are based on the information gathered from each community during the planning process.

- Must address hazards of moderate to high priority.
- Must address identified local vulnerabilities.
- Must identify priority, status, timeframe, responsibility, how incorporation/implementation will occur, and possible funding.

★ Eligible FEMA HMA grant activities **must** be identified in the risk assessment and plan of action.

CITY OF BALATON						Mitigation Action Chart	
#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority / Timeframe	Responsibility	Comments on Implementation & Possible Funding	Possible Funding
5	Extreme Cold	Education & Awareness Programs	Conduct outreach to property owners on how to avoid freezing pipes during periods of extreme cold.	Existing High 2025-2030	City Admin / City EM	We do not part of our outreach during periods of extreme cold. We remind homeowners to run a faucet with water in the frozen pipes during periods of extreme cold.	City Funding
6	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Obtain a portable generator for the local mobile home park owner for a local shelter that serves as our local shelter if people are displaced from a power outage or extended power outage.	New High 2025-2030	City EM / City Public Works	The city will work to purchase a generator as funding is available. If necessary, we will seek possible FEMA funding. If not, we will seek local funding for a tornado safe room.	City Funding, FEMA 5% Initiative Grant Funding
7	Severe Summer Storms	Structure & Infrastructure Projects	Work with the local mobile home park owner to construct a storm shelter or tornado safe room.	New High 2025-2030	City EM, Public Works	The city will work with our local mobile home park operator to evaluate possible shelter solutions, or the city will seek a suitable location for residents to take shelter. We will work with Lyon County Emergency Management to seek potential FEMA funding for a tornado safe room.	City Funding, FEMA 5% Initiative Grant Funding
8	Drought	Local Planning & Regulation / Education & Awareness Programs	Establish and enforce water use restrictions when in periods of drought. Increase public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will work to establish water use restrictions as per direction from the MVS DRC. The city will seek local funding to help make residents aware of limitations on water use. We have recently developed a new lawn irrigation ordinance.	City Funding
9	Flooding	Structure & Infrastructure Projects	Implement new storm sewer upgrades as construction progresses and handle additional work in the event of flooding.	Existing Moderate 2025-2030	City Public Works	Our city works to maintain and address any stormwater infrastructure upgrades and equipment as needed.	City Funding

PRESENTER: BONNIE HUNDRIESER

FEMA HMA Grant Funding



Example eligible grant activities:

- All applicants **must** be covered by an approved HMP and have formally adopted the plan.
- Projects **must** be addressed in the risk assessment and be identified in the plan of action.
- Several different grant programs
- State Hazard Mitigation Officer is the main POC for questions

- Property Acquisition
- Tornado Safe Rooms
- Burying Powerlines
- Wildfire Mitigation
- Soil Stabilization
- Minor Localized Flood Reduction
- Green Infrastructure
- "5% Initiative" (e.g. warning systems, generators, public awareness/education campaigns)

PRESENTER: BONNIE HUNDRIESER

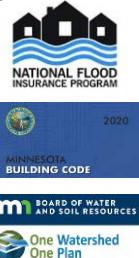
Overview of Mitigation Strategies

THE FOLLOWING STRATEGIES ARE RECOMMENDED GUIDANCE IN THE DEVELOPMENT OF LOCAL MITIGATION ACTIONS

LOCAL PLANNING & REGULATIONS

These actions include policies or codes that influence the way land is developed and structures are built, and also incorporate mitigation into other plans.

- Limit or restrict development in floodplain areas
- Adopt and enforce building codes
- Improve stormwater management planning
- Incorporate mitigation into comp plans
- Enforce watering / burning restrictions during periods of drought



PRESENTER: BONNIE HUNDRIESER

STRUCTURE & INFRASTRUCTURE PROJECTS

These actions protect structures and infrastructure by changing them or removing them from danger.

- Construction of tornado safe rooms.
- Burying powerlines
- Property acquisition for properties at risk to repetitive flooding or failure to landslides
- Infrastructure retrofit (upsizing culverts, other road & bridge projects)
- Protection of vulnerable critical infrastructure such as lift stations and Fire Halls



PRESENTER: BONNIE HUNDRIESER

NATURAL SYSTEMS PROTECTION

These actions use a natural systems approach to minimize damage and losses from natural hazard events.

- Tree management near roads & powerlines
- Floodplain and stream restoration
- Soil stabilization on at-risk slopes
- Wildfire fuels reduction & defensible space
- Living snow fences to reduce drifting
- Rain gardens to slow impacts of rain events



PRESENTER: BONNIE HUNDRIESER

EDUCATION & AWARENESS PROGRAMS



These actions inform and educate the community to raise awareness of hazards and ways to mitigate risk.

- Promoting sign up for CodeRED etc.
- Sharing information on severe weather awareness
- Promoting personal preparedness
- Tornado season education
- Outreach to vulnerable populations
- Wildfire safety (creation of defensible space, burning restrictions)



PRESENTER: BONNIE HUNDRIESER

MITIGATION PREPAREDNESS & RESPONSE SUPPORT

These actions are typically not considered mitigation, but support reduction of the effects of damaging natural hazard events.

- Flood fight plans and equipment
- Installing generator backup power
- Development of EOPs
- Shelter planning and training
- Working with facilities that care for vulnerable populations (e.g. schools, nursing homes)
- Installation of outdoor warning sirens.
- Joining MnWARN for utility disaster mutual aid



PRESENTER: BONNIE HUNDRIESER

Comments or Questions?

Do you have any ideas for specific mitigation activities for implementation?

PRESENTER: BONNIE HUNDRIESER



Following Planning Team Meeting #1

COMPLETION OF LOCAL MITIGATION SURVEY FORMS

Representatives from Crow Wing 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)
- Review past mitigation actions/identify new mitigation projects.

Questions?

What questions do you have for
U-Spatial@UMD about development of the
HMP or next steps?

PRESENTER: BONNIE HUNDRIESER

PRESENTER: STACEY STARK

Contact Information

Stacey Stark, MS, GISP

U-Spatial@UMD

sstark@d.umn.edu

218-726-7438

Bonnie Hundrieser, HM Planner

Hundrieser Consulting LLC

hundrieserconsulting@outlook.com

218-343-3468



PRESENTER: STACEY STARK

Crow Wing County HMP Planning Team Meeting #2

9/23/25 Meeting Summary & Documentation

Summary: On September 23, 2025, Crow Wing 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 Crow Wing County Hazard Mitigation Plan (HMP). The purpose of the meeting was to formally convene the Crow Wing 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 Jane Lindelof and Bonnie Hundrieser of the U-Spatial@UMD project team.

Stakeholder Invitations: Crow Wing 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 included with this meeting summary.

Meeting Participants: A total of **43** people attended the meeting. Representation included elected officials and departmental staff from Crow Wing County and the cities of Baxter, Brainerd, Breezy Point, Crosby, Crosslake, Cuyuna, Deerwood, Emily, Fifty Lakes, Garrison, Ironton, Jenkins, and Nisswa. The cities of Fort Ripley, Manhattan Beach, Pequot Lakes, Riverton, and Trommald 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:

- 1 Clayton Barg, Crow Wing County Sheriff's Office, Emergency Management Director
- 2 Liz Gleason, Crow Wing County Sheriff's Office, Emergency Management Coordinator
- 3 Darcy Dwyer, Crow Wing County, Public Information Officer
- 4 Gary Griffin, Crow Wing County, Land Services Director
- 5 Tom Strack, Crow Wing County - Land Services, Environmental Services Supervisor
- 6 Maggie Young, Crow Wing County - Land Services, Sr. Operations Specialist
- 7 Rob Hall, Crow Wing County Highway Dept., Assist. County Engineer
- 8 Brian Berent, Crow Wing County Highway Dept., Highway Maintenance Manager
- 9 Jacklin Steege, Crow Wing County Public Health, PHEP Coordinator
- 10 Jaimie Lee, Crow Wing County, County Commissioner
- 11 Jason Walkowiak, Crow Wing County I.T. Dept., I.T. Director
- 12 Matt Maier, City of Baxter Police Dept., Police Chief
- 13 Tim Holmes, City of Brainerd Fire Dept., Fire Chief/ EM
- 14 Brian Sandell, City of Breezy Point Police Dept., Chief of Police
- 15 Allie Polsfuss, City of Breezy Point, City Administrator
- 16 Michael Van Horn, City of Crosby Police Dept., Chief
- 17 Shayne Jacobs, City of Crosby Fire Dept., Chief

18 Dallas Dietz, City of Crosby Fire Dept., Chief 2
19 Chip Lohmiller, City of Crosslake Fire Dept., Chief/EM
20 William Bedard, City of Cuyuna, Clerk-Treasurer
21 Jesse Smith, City of Cuyuna Police Dept., Chief of Police
22 Mark Taylor, City of Deerwood, Police Chief
23 Brian Foster, City of Emily, Maintenance Supervisor/EM Director
24 Calen Spindler, City of Emily, Maintenance Worker
25 Blair Mileski, City of Emily Fire & Rescue, Fire Chief
26 Ann Raph, City of Fifty Lakes, Clerk-Treasurer
27 Corri Erickson, City of Garrison Fire & Rescue, Fire Chief
28 Emma Pratt, City of Ironton, Clerk/Treasurer
29 Cassandra Delougherty, City of Jenkins, City Clerk-Treasurer/Planning & Zoning Administrator
30 Scott Williams, City of Nisswa Police Dept., Sergeant
31 Sue Kern, Crow Wing Township, Township Clerk
32 Jon Auge, Mission Township, Town Board Chair
33 Jim Guida, St. Mathias Township, Township Supervisor
34 Linda Danielson, Rabbit Lake Township, Township Clerk
35 David Peterson, Timothy Township, Town Board Supervisor
36 Kelvin McCuskey, HSEM, Regional Program Coordinator
37 Eric Quale, Crow Wing Power, Chief Executive Officer
38 Craig Schultz, MN DNR, Wildfire Program
39 Gina Wieler, Direct Care and Treatment, Emergency Manager
40 Jacob Frie, MN DNR, Area Hydrologist
41 Michael Palmer, Minnesota DNR, Regional Firewise Specialist
42 Patrice Erickson, Aitkin County Sheriff Office, Dispatch Supervisor/Deputy EM Director
43 Chad Emery, Cass County Sheriff's Office, Deputy Sheriff / Deputy EM Director

Presentation Overview: The PowerPoint presentation covered the following items about the process and content of the plan update. A PDF of the presentation slides is included with this meeting summary.

- Meeting Purpose and Agenda
- About the Project Team
- Overview of Plan Update
- Who the Plan Covers
- Who Needs to Participate
- Overview of the Structure of the HMP (Website and PDF)
- Prioritization of Natural Hazards
- Review of Risk Assessment Factors and Hazard Profiles
- Overview of Mitigation Action Charts and FEMA HMA Grant Funding
- Review of Mitigation Strategies and Actions
- Open Discussion (Comments and Questions)
- Discussion of Next Steps & answer your questions

The opening PowerPoint presentation covered a re-cap of key points about the plan update, a review of the Risk Assessment & Vulnerability Analysis, an overview of FEMA Hazard Mitigation Assistance (HMA) grant funding; an overview of how mitigation actions are developed and an overview of the jurisdictional Mitigation Action Charts (MACs). Following the presentation, participants were provided with an opportunity to review and discuss the county and local mitigation action charts. This discussion period offered a facilitated opportunity for participants to consider any changes or new additions to the MACs prior to completion of the draft plan for public review.

CROW WING COUNTY HMP PLANNING TEAM MEETING #2 DISCUSSION NOTES

- There were no questions or discussion items from participants during the presentation.

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.

Included with this meeting summary are the following:

- Crow Wing County HMP Jurisdictional Contact List
- Meeting Invitation to Stakeholders
- PowerPoint Presentation Slides

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

CROW WING COUNTY HMP JURISDICTIONAL CONTACT LIST

Following is a list of the stakeholders that received an invitation to participate in Planning Team Mtg. #2 and will receive the meeting summary.

REPRESENTATION	NAME	TITLE
Crow Wing County Emergency Management	Clayton Barg	Emergency Management Director
Crow Wing County Emergency Management	Liz Gleason	EM Coordinator
Crow Wing Sheriff's Office	Eric Klang	County Sheriff
Crow Wing County Administration	Deborah Erickson	County Administrator
Crow Wing County Highway Department	Timothy Bray	County Engineer
Crow Wing County Highway Department	Robert Hall	Assistant County Engineer
Crow Wing County Land Services	Gary Griffin	Land Services Director
Crow Wing County Land Services	Maggie Young	GIS Specialist
Crow Wing County Community Services	Kara Terry	Community Services Director
Crow Wing County Community Services	Jacklin Steege	PHEP Coordinator
Crow Wing County Environmental Services Supervisor	Tom Strack	Environmental Services Supervisor
Crow Wing County IT Manager	Jason Walkowiak	IT Manager
Crow Wing County Information Technology	Nate Rose	GIS Coordinator
Crow Wing County Public Information Officer	Darcy Dwyer	Public Information Officer
Crow Wing County Board of Commissioners	Paul Koering	District 1 Commissioner
Crow Wing County Board of Commissioners	Jon Lubke	District 2 Commissioner/Chair
Crow Wing County Board of Commissioners	Steve Barrows	District 3 Commissiner/Vice Chair
Crow Wing County Board of Commissioners	Rosemary Franzen	District 4 Commissioner
Crow Wing County Board of Commissioners	Jamie Lee	District 5 Commissioner
City of Baxter	Bradley Chapulis	City Clerk
City of Baxter	Darrel Olson	Mayor
City of Baxter	Matt Maier	Police Chief
City of Brainerd	Patrick Wussow	City Clerk
City of Brainerd	Dave Bedeaux	Mayor
City of Brainerd	Nick Broyles	City Administrator
City of Brainerd	Michael Habighorst	Public Works Director
City of Brainerd	jessie Dehn	City Engineer
City of Brainerd	John Davis	Police Chief
City of Brainerd	Tim Holmes	Fire Chief
City of Breezy Point	David Chanski	City Clerk
City of Breezy Point	Todd Roggenkamp	Mayor

City of Breezy Point	Brian Sandell	Police Chief
Crooked Lake Fire Department	Nick Usherwood	Fire Chief
City of Crosby	Trish Herren	City Administrator
City of Crosby	Diane Cash	Mayor
City of Crosby	Mike VanHorn	Police Chief
City of Crosby	Shayne Jacobs	Fire Chief
City of Crosslake	Lori A. Conway	City Administrator
City of Crosslake	Char Nelson	City Clerk
City of Crosslake	Jackson Purfeerst	Mayor
City of Crosslake	Jake Maier	Police Chief
City of Crosslake	Chip Lohmiller	Fire Chief
City of Cuyuna	Bill Bedard	City Clerk
City of Cuyuna	Lloyd Brix	Mayor
City of Cuyuna	Jesse Smith	Police Chief
City of Cuyuna	Karl Hasskamp	Fire Chief
City of Deerwood	Lee Russell	City Clerk
City of Deerwood	John V Taylor	Mayor
City of Deerwood	Michael Bondle	Fire Chief
City of Emily	Cari Johnson	City Clerk
City of Emily	Tracy Jones	Mayor
City of Emily	Mark Taylor	Police Chief
City of Emily	Blair Milesky	Fire Chief
City of Fifty Lakes	Ann M. Raph	City Clerk
City of Fifty Lakes	Gary Staples	Mayor
City of Fifty Lakes	Jesse Anderson	Fire Chief
City of Fort Ripley	Sherry Chisholm	City Clerk
City of Fort Ripley		Mayor
City of Garrison	Jeff Turk	City Clerk
City of Garrison	Loren Larson	Mayor
City of Garrison	Cori Erickson	Fire Chief
City of Ironton	Emma Pratt	City Clerk
City of Ironton	Joshua Jacobson	Mayor
City of Ironton	Jeff Thompson	Fire Chief
Ideal Fire Department	J. Craig Wallace	Fire Chief
City of Jenkins	Cassandra Delougherty	Deputy City Clerk
City of Jenkins	Krista A. Okerman	City Clerk
City of Jenkins	Andrew Rudlang	Mayor
City of Manhatten Beach	Marlene Yurek	City Clerk
City of Manhatten Beach	Barb Hanson	Mayor
Mission Fire Department	Chad Allord	Fire Chief
City of Nisswa	(vacant)	City Clerk
City of Nisswa	Jennifer Carnahan	Mayor
City of Nisswa	Maggie Wentler	Interim City Administrator

City of Nisswa	Todd Szymanski	Police Chief
City of Nisswa	Shawn Bailey	Fire Chief
City of Pequot Lakes	Angie Duus	City Clerk
City of Pequot Lakes	Tyler Garnder	Mayor
City of Pequot Lakes	Mike Davis	Police Chief
City of Pequot Lakes	Mike Schwankl	Fire Chief
City of Riverton	Alexandra Booth	City Clerk
City of Riverton		Mayor
City of Trommald	Mona R. Geske	City Clerk
City of Trommald	Jim Hiller	Mayor
Bay Lake Township	Carol Pundt	Clerk
Center Township	Coralea Borden	Clerk
Crow Wing Township	Sue Kern	Clerk
Daggett Brook Township	Gretchen Nelson,	Clerk
Deerwood Township	Carol Pundt	Clerk
Fairfield Township	Marianne Auge	Clerk
Fort Ripley Township	Megan Lieser	Clerk
Gail Lake Township	Cathy Erickson	Clerk
Garrison Township	Amy Mickelson	Clerk
Ideal Township	Craig Wallace	Clerk
Ideal Fire	Luke Hanson	Fire Chief
Irondale Township	Angela Fort	Clerk
Jenkins Township	Jim Olsen	Clerk
Lake Edward Township	Loni Burnard	Clerk
Little Pine Township	Abra Hawley	Clerk
Long Lake Township	Patsy Olson	Clerk
Maple Grove Township	Norene Warta	Clerk
Mission Township	Anna Anderson	Clerk
Nokay Lake Township	Alan Cunningham	Clerk
Oak Lawn Township	Deb Borg	Clerk
Pelican Township	Jody Wallin	Clerk
Pelican Township	Michael McDaid	Supervisor
Perry Lake Township	Sherry Habighorst	Clerk
Platte Lake Township	Robert Dambowy	Clerk
Rabbit Lake Township	Linda Danielson	Clerk
Roosevelt Township	Breanna Cielinski,	Clerk
Ross Lake Township	Casey Tscheu	Clerk
Saint Mathias Township	Cassey Veith	Clerk
Timothy Township	Avalon (Loni) Porta	Clerk
Timothy Township	Dave Peterson	Supervisor
Timothy Township	Dawn Rubner	
Wolford Township	Kimberly Marquart	Clerk
LOCAL & REGIONAL AGENCIES INVOLVED IN HAZARD MITIGATION		

MN HSEM	Kelvin McCuskey	Region 2 Regional Program Coordinator
Crow Wing Soil & Water Conservation District	Melissa Barrick	District Manager
MN DNR Ecological and Water Resources Division	Jacob Frie	Area Hydrologist
MnDOT District 3A	Mike Ginnaty	District Engineer
MN DNR Firewise	Laura Murphy	NE MN Firewise Specialist
MN DNR Fire Division of Forestry	Craig Schultz	Backus Area Fire Program
MN DNR Wildland Aviation, Division of Forestry	Sandra Youngblom	Airtanker Base Manager, Brainerd Tanker Base
MN DNR Crow Wing State Park		Park Manager
National Weather Service - Duluth Office	Joseph Moore	Meteorologist
Minnesota Pollution Control Agency (MPCA)	Mark Smith	Environmental Specialist
National Weather Service - Duluth Office	Joseph Moore	Meteorologist
Brainerd Airport	Kassandra Loftus	Deputy Director
Brainerd Airport	Steve Wright	Director
BUSINESSES, ACADEMIA, AND OTHER PRIVATE ORGS.		
Brainerd Public School District	Peter Grant	Superintendent (interim)
Pequot Lakes Public Schools	Kurt Stumpf	Superintendent
Crosby-Ironton Public School District	Jamie Skjleveland	Superintendent
Essentia Health-St. Joseph's Medical Center (Brainerd)	Ashley Auge	Trauma Program Coordinator
Essentia Health-St. Joseph's Medical Center (Brainerd)	Michael Mittelstaed	Emergency management partner
Cuyuna Regional Medical Center	Tyler Ostman	CRMC
Crow Wing Power	Eric Quale	Crow Wing Power
Mille Lacs Energy Cooperative	Ann Espeseth	Mille Lacs Energy
Mille Lacs Energy Cooperative		Mille Lacs Energy
NONPROFIT ORGS/COMMUNITY-BASED ORGS THAT WORK WITH UNDERSERVED COMMUNITIES AND SOCIALLY VULNERABLE POPULATIONS		
MN Dept of Human Services - Direct Care & Treatment	Gina Wieler	Emergency Manager
MN Dept of Human Services - Direct Care & Treatment	Joel Nelson's	Direct Care and Treatment
American Red Cross	Owen Fifield	Disaster Program Manager
Salvation Army	Capt. Jeff Curran	Regional Contact
Brainerd Community Action		Executive Director
NEIGHBORING JURISDICTIONS		
Cass County Emergency Management	Chad Emery	Emergency Management Deputy Director

Aitkin County Emergency Management	Dan Guida	Sheriff / EM Director
Aitkin County Emergency Management Deputy	Patice Erickson	Deputy EM
Mille Lacs County Emergency Management	Andy Beckstrom	Emergency Management Director
Morrison County Emergency Management	Victoria MacKissock	EMI Deputy Director
Mille Lacs Band of Ojibwe	Monte Fronk	Emergency Management Director

From: [Liz Gleason](#)
To: [coadmin](#); [coadmin](#); [Tim Bray](#); [Rob Hall](#); [Gary Griffin](#); [Maggie Young](#); [Kara Terry](#); [Jacklin Steege](#); [Tom Strack](#); [Jason Walkowiak](#); [Nate Rose](#); [Darcy Dwyer](#); [Paul Koering](#); [Jon Lubke](#); [Steve Barrows](#); [Rosemary Franzen](#); [Jamie Lee](#); [Bradley Chapulis](#); [dolson@baxtermn.gov](#); [Matt Maier](#); [admin@ci.brainerd.mn.us](#); [dbedeaux@ci.brainerd.mn.us](#); [nbroyles@ci.brainerd.mn.us](#); [mhabighorst@ci.brainerd.mn.us](#); [jdehn@ci.brainerd.mn.us](#); [John Davis](#); [Tim Holmes](#); [cityadmin@cityofbreezypointmn.us](#); [troddenkamp@cityofbreezypointmn.us](#); [Brian Sandell](#); [Crookedlakefire@gmail.com](#); [cityadmin@cityofcrosby.com](#); [diane.cash@cityofcrosby.com](#); [Mike Vanhorn](#); [Shayne Jacobs](#); [Char Nelson](#); [jpurfeerst@cityofcrosslake.org](#); [jake.maier@crosslake.net](#); [Chip Lohmiller](#); [Bill Bedard](#); [Jesse Smith](#); [Karl Hasskamp](#); [Lee Russell](#); [john.taylor@cityofdeerwood.com](#); [Michael Bodle](#); [clerk@emily.net](#); [mayor.tracyjones@cityofemily.com](#); [Mark Taylor](#); [Emily Fire Chief](#); [clerk@fiftylakesmn.com](#); [staplescontract@msn.com](#); [Fifty Lakes Fire Chief](#); [chisholm126@gmail.com](#); [cityclerk@cityofgarrison.com](#); [jal348@frontier.com](#); [Garrison Fire](#); [Amanda Meyer](#); [joshjacobson@cityofironton.org](#); [Jeff Thompson](#); [Craig Wallace](#); [cassandra.delougherty@cityofjenkins.com](#); [Krista Okerman](#); [andrew.rudlang@cityofjenkins.com](#); [Marlene Yurek](#); [barbara.hanson3422@icloud.com](#); [chad.allord@gmail.com](#); [kiki@ci.nisswa.mn.us](#); [jcarnahan@cityofnisswa.gov](#); [jmax@cityofnisswa.gov](#); [craig@nisswapolice.com](#); [shawna@gulllakemgmt.com](#); [aduus@pequotlakes-mn.gov](#); [mayor@pequotlakes-mn.gov](#); [Mike Davis](#); [Pequot Lakes Fire District](#); [Alexandra Booth](#); [Mona Geske](#); [JRH19976@hotmail.com](#); [Carol Pundt](#); [Coralea Borden](#); [Duane Ruona](#); [GretchenNelson](#); [Carol Pundt Deerwood](#); [Marianne Auge](#); [Megan Lieser](#); [Carol Johnson](#); [Amy Mickelson](#); [Craig Wallace](#); [hansonproperty218](#); [Gayle Hanson](#); [cheffo@gmail.com](#); [Loni Burnard](#); [Abra Hawley](#); [Patsy Olson](#); [norene50@outlook.com](#); [Anna Anderson](#); [Alan Cunningham](#); [Deb Borg](#); [Jody Wallin](#); [michaelfmcdaid@gmail.com](#); [Sherry Habighorst](#); [plattelaketownship@yahoo.com](#); [Linda Danielson](#); [Breanna Cielinski](#); [rosslaketwp@gmail.com](#); [Cassey Veith](#); [lonip@timothytownship.com](#); [halibutts150@gmail.com](#); [wfm11572@tds.net](#); [wolfordclerk@castle-web.com](#); [Mccuskey, Kelvin \(DPS\)](#); [Melissa Barrick](#); [Jacob.Frie@state.mn.us](#); [mike.ginnaty@state.mn.us](#); [Laura.murphy@state.mn.us](#); [craig.schultz@state.mn.us](#); [sandra.youngblom@state.mn.us](#); [joseph.moore@noaa.gov](#); [mark.smith@state.mn.us](#); [joseph.moore@noaa.gov](#); [klotfus@brainerdairport.com](#); [swright@brainerdairport.com](#); [peter.grant@isd181.org](#); [kstumpf@sd186.org](#); [jskjeveland@ci.k12.mn.us](#); [ashley.auge@essentiahealth.org](#); [michael.mittelstaedt@essentiahealth.org](#); [tyler.ostman@cuyunamed.org](#); [quale@cwpower.com](#); [ANNE@mlecmn.com](#); [mlec@mlecmn.net](#); [gina.wieler@state.mn.us](#); [joel.p.nelson@state.mn.us](#); [Owen.fifield@predcross.org](#); [Jeff.Curran@usc.salvationarmy.org](#); [info@brainerdcommunityaction.org](#); [Chad Emery](#); [dan.guida@co.aikin.mn.us](#); [Patrice Erickson](#); [andy.beckstrom@millelacs.mn.gov](#); [victoriam@co.morrison.mn.us](#); [Monte.Fronk@millelacsband.com](#)
Cc: [Bonnie K Hundrieser](#); [Stacey Stark](#); [Clayton Barg](#)
Subject: CROW WING COUNTY HAZARD MITIGATION PLAN UPDATE – MEETING INVITATION
Date: Tuesday, August 12, 2025 3:37:15 PM
Attachments: [image001.png](#)

Greetings,

Your presence is requested at the **2nd Planning Team Meeting** for the update of the **Crow Wing 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: Tuesday, September 23, 2025
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 Crow Wing 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 Crow Wing 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,

Liz Gleason

Emergency Management Coordinator
Crow Wing County Sheriff's Office
304 Laurel St
Brainerd, MN 56401
(218) 829-4749
Liz.Gleason@crowwing.gov
crowwing.us/sheriff



Leadership • Visibility • Preparation

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Crow Wing County Hazard Mitigation Plan Update 2025 Planning Team Meeting #2

September 23, 2025



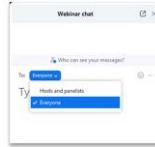
U-SPATIAL
UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover

Zoom Logistics

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
- 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:

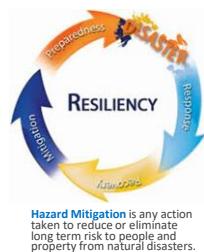


PRESENTER: STACEY STARK

Overview of Plan Update

Crow Wing 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.



PRESENTER: BONNIE HUNDRIESER

Welcome & Introductions

U-Spatial@UMD Project Leads



Stacey Stark
Project Manager
U-Spatial



Jane Lindelof
Project Coordinator, U-Spatial



Bonnie Hundrieser
HM Planning Specialist
Hundrieser Consulting LLC

Crow Wing County Project Leads

- Clayton Barg, Crow Wing County Emergency Management Director
- Liz Gleason, EM Coordinator



Please type your name and representation in the CHAT so others know who is here

PRESENTER: JANE LINDELOF

Meeting Purpose & Agenda



This meeting formally convenes the **Crow Wing 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

- 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: JANE LINDELOF

Who the Plan Covers

This is a **multi-jurisdictional plan** that covers Crow Wing 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, neighboring jurisdictions, and related agencies or 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

PDF document:

- All FEMA required elements
- Limited figures & images
- Integrated links to website
- Local mitigation surveys
- Plans & programs in place
- Past mitigation action review
- Planning team meetings
- Outreach & engagement documentation



Deliverables



Website companion:

- Links to PDF components
- Interactive maps and context
- Critical infrastructure and assets
- Simple, concise explanations
- Public input form on site

PRESENTER: JANE LINDELOF

Prioritization of Hazards for Crow Wing County

NATURAL HAZARDS

- 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
Wildfire	High
Winter Storms	High
Windstorms	High
Tornadoes	High
Flooding	Moderate
Hail	Moderate
Extreme Cold	Moderate
Drought	Moderate
Extreme Heat	Low
Lightning	Low
Landslides	Low
Dam/Levee Failure	Low

PRESENTER: JANE LINDELOF

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 geographic vulnerability
- Informs Mitigation Actions in the HMP



PRESENTER: JANE LINDELOF

Website Demo

z.umn.edu/CrowWingHMP

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

Mitigation Action Chart					
#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority & Timeframe	Responsibility
25	Extreme Cold	Education & Awareness Programs	EXTREME TEMPS PUBLIC OUTREACH Work with local media to provide education to the public on what actions to take during periods of extreme cold.	In-Progress High 2024	CWCEM / Public Health
26	Extreme Cold	Mitigation Preparedness & Response & Support	WARMING CENTERS Work with local jurisdictions to establish warming facilities and provide information to those that are vulnerable to extreme cold temperatures (i.e. homeless, elderly).	Existing High 2025-2030	CWCEM in cood with PH and local govt's
27	Drought	Local Planning & Regulations	PRECIPITATION MONITORING Encourage citizens to participate in the MesGAGE precipitation monitoring network to help track and report data related to periods of drought.	Existing Moderate 2026-2031	CWC SWC
28	Drought	Local Planning & Regulations	WATER CONSERVATION Encourage citizens to establish and enforce watering restrictions during periods of severe drought conditions and raise public awareness measures.	Existing High Ongoing	CWCEM in cood with MN DNR and local jurisdictions

PRESENTER: BONNIE HUNDRIESER

“Previous Integration of HMP”



In addition to jurisdictional review of local mitigation action charts:

What are “Planning Mechanisms”?

- Plans, Policies, Ordinances
- Public Education & Outreach
- Implementation of projects (i.e., warning sirens, flood mitigation, installation of generators)
- Other EM related programs or projects (i.e., shelter planning)
- County and partner coordination

Mitigation Action Chart					
#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority & Timeframe	Responsibility
7	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe thunderstorms, including tornadic weather, to understand what actions to take, and to be prepared with a personal evacuation or shelter plan.	Existing High 2026-2031	City Admin / City EM
8	Severe Summer Storms	Local Planning & Regulation / Infrastructure Projects	Work to improve storm sheltering at city campgrounds.	Existing High 2026-2031	City EM
9	Extreme Cold	Mitigation Preparedness & Support	Be prepared to provide emergency sheltering for vulnerable residents during periods of extreme cold events.	Existing High 2026-2031	City Admin, City EM

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

Strategy #1 - Local Planning & Regulations

Crow Wing County Examples:

- Enforcement of ordinances that reduce impacts of high rain events (Floodplain, Shoreland)
- 2024 Crow Wing County Community Wildfire Protection Plan
- CWC Long-Range Transportation Plan 2025-2040
- Implementation of watering restrictions during periods of extreme drought.
- Enforcement of state or local regulations for new development.



PRESENTER: BONNIE HUNDRIESER

Strategy #2 - Structure & Infrastructure Projects

Crow Wing County Examples:

- Installation of new outdoor warning sirens
- Construction of tornado safe rooms
- Burying powerlines to reduce power failure
- Conducting property buyouts for flooding
- Stormwater management improvements (culvert replacements), Road & Bridge projects

OTHER

Wildfire Mitigation: Metal Roofing, External Wildfire Sprinkler Systems to protect structures at risk



PRESENTER: BONNIE HUNDRIESER

Strategy #3 - Natural Systems Protection

Crow Wing County Examples:

- Conduct vegetation management along roads to reduce the risk of downed trees and branches resulting from heavy snow, ice, or high winds.
- Wildland Fuels Reduction
- Wildfire Mitigation for Dead-End Roads (2024 CWPP – 3 major projects)
- Planting Living Snow Fences to reduce snow drifting (CSAH 1, 12, 16 & CR 131) - CWC Hwy. Dept.
- Installing Rain Gardens to reduce impacts of high rain events



PRESENTER: BONNIE HUNDRIESER

Strategy #4 - Education & Awareness Programs

Crow Wing County Examples:

- Promoting sign-up for the county's emergency notification system.
- Encouraging residents to be aware of and prepared for severe weather events, extreme temperatures, wildfire risk, and extended power outages.
- Sharing information across platforms – county and city websites & social media, community bulletin boards, local newspapers, public meetings, or other in-person events.



PRESENTER: BONNIE HUNDRIESER

Strategy #5 - Mitigation Preparedness & Response Support

Crow Wing County Examples:

- Obtaining generators for backup power
- Update of county EOP
- Shelter planning / Warming Centers
- Planning assistance to schools and LTC Facilities for vulnerable populations
- Improve Doppler Radar coverage for CWC (Climavision + City of Brainerd)
- Participation in regional EM planning, training, and exercising



PRESENTER: BONNIE HUNDRIESER

Comments and Questions?



October, 2025

Following Planning Team Mtg. #2

Review of Draft Plan and Public Review & Comment Period



- Completion of City MAC reviews + description of "Previous Integration of Past HMP"
- County review of draft plan
- Public review & comment period (News Release #2) – documentation of local postings

PRESENTER: BONNIE HUNDRIESER



Nov-Dec, 2025

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 HMP or next steps ?

PRESENTER: JANE LINDELOF

Contact Information

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Bonnie Hundrieser, HM Planner

Hundrieser Consulting LLC

hundrieserconsulting@outlook.com

218-343-3468



PRESENTER: JANE LINDELOF

Appendix G – Public Outreach & Engagement Documentation

Crow Wing County HMP News Release #1 Record of Public Input & Incorporation

Overview: On October 22, 2024, Crow Wing County Emergency Management put out a news release titled **“Public Input Wanted as Crow Wing County Updates 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. Crow Wing 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?**
- **Are there specific populations or assets in your community that you feel are more vulnerable to future storm events?**
- **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?**

The public was strongly encouraged to contact Crow Wing 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 Crow Wing 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 comments were received by Crow Wing County Emergency Management or individual jurisdictions in response to the news release.

From: [Bonnie K Hundrieser](mailto:Bonnie.K.Hundrieser@outlook.com) on behalf of hundrieserconsulting@outlook.com
To: ["coadmin@crowwing.gov"](mailto:coadmin@crowwing.gov); ["CoAdmin@crowwing.gov"](mailto:CoAdmin@crowwing.gov); ["tim.bray@crowwing.gov"](mailto:tim.bray@crowwing.gov); ["rob.hall@crowwing.gov"](mailto:rob.hall@crowwing.gov); ["gary.griffin@crowwing.gov"](mailto:gary.griffin@crowwing.gov); ["maggie.young@crowwing.us"](mailto:maggie.young@crowwing.us); ["kara.terry@crowwing.gov"](mailto:kara.terry@crowwing.gov); ["jacklin.steege@crowwing.gov"](mailto:jacklin.steege@crowwing.gov); ["Tom.Strack@crowwing.gov"](mailto:Tom.Strack@crowwing.gov); ["Jason.Walkowiak@crowwing.gov"](mailto:Jason.Walkowiak@crowwing.gov); ["nate.rose@crowwing.us"](mailto:nate.rose@crowwing.us); ["darcy.dwyer@crowwing.gov"](mailto:darcy.dwyer@crowwing.gov); ["Paul.Koerling@crowwing.gov"](mailto:Paul.Koerling@crowwing.gov); ["Jon.Lubke@crowwing.gov"](mailto:Jon.Lubke@crowwing.gov); ["Steve.Barrows@crowwing.gov"](mailto:Steve.Barrows@crowwing.gov); ["Rosemary.Franzen@crowwing.gov"](mailto:Rosemary.Franzen@crowwing.gov); ["Doug.Houge@crowwing.gov"](mailto:Doug.Houge@crowwing.gov); ["cityhall@baxtermn.gov"](mailto:cityhall@baxtermn.gov); ["MMAier@baxtermn.gov"](mailto:MMAier@baxtermn.gov); ["admin@ci.brainerd.mn.us"](mailto:admin@ci.brainerd.mn.us); ["nbroyles@ci.brainerd.mn.us"](mailto:nbroyles@ci.brainerd.mn.us); ["john.davis@ci.brainerd.mn.us"](mailto:john.davis@ci.brainerd.mn.us); ["tholmes@ci.brainerd.mn.us"](mailto:tholmes@ci.brainerd.mn.us); ["cityadmin@cityofbreezypointmn.us"](mailto:cityadmin@cityofbreezypointmn.us); ["brian@cityofbreezypointmn.us"](mailto:brian@cityofbreezypointmn.us); ["crookedlakefire@gmail.com"](mailto:crookedlakefire@gmail.com); ["matthew.hill@cityofcrosby.com"](mailto:matthew.hill@cityofcrosby.com); ["mike.vanhorn@cityofcrosby.com"](mailto:mike.vanhorn@cityofcrosby.com); ["jdecent@cityofcrosby.com"](mailto:jdecent@cityofcrosby.com); ["cityclerk@crosslake.net"](mailto:cityclerk@crosslake.net); ["jake.maier@crosslake.net"](mailto:jake.maier@crosslake.net); ["chief1@crosslake.net"](mailto:chief1@crosslake.net); ["info@ci.cuyuna.mn.us"](mailto:info@ci.cuyuna.mn.us); ["jesse.smith@cuyunapd.org"](mailto:jesse.smith@cuyunapd.org); ["hasskamp5@yahoo.com"](mailto:hasskamp5@yahoo.com); ["leerussell@cityofdeerwood.com"](mailto:leerussell@cityofdeerwood.com); ["mbodle@graphicpkg.com"](mailto:mbodle@graphicpkg.com); ["clerk@emily.net"](mailto:clerk@emily.net); ["pddeerwood@yahoo.com"](mailto:pddeerwood@yahoo.com); ["emilyfire0911@gmail.com"](mailto:emilyfire0911@gmail.com); ["clerk@fiftylakesmn.com"](mailto:clerk@fiftylakesmn.com); ["andyhemphill@hotmail.com"](mailto:andyhemphill@hotmail.com); ["chisholm1269@gmail.com"](mailto:chisholm1269@gmail.com); ["cityclerk@cityofgarrison.com"](mailto:cityclerk@cityofgarrison.com); ["garrisonchief@aol.com"](mailto:garrisonchief@aol.com); ["clerk@cityofironton.org"](mailto:clerk@cityofironton.org); ["jthompson@lakesstatelumber.com"](mailto:jthompson@lakesstatelumber.com); ["info@idealtownship.com"](mailto:info@idealtownship.com); ["krista.okerman@jenkins-mn.com"](mailto:krista.okerman@jenkins-mn.com); ["clerk@manhattanbeachmn.org"](mailto:clerk@manhattanbeachmn.org); ["chief1@missiontownship.org"](mailto:chief1@missiontownship.org); ["kiki@ci.nisswa.mn.us"](mailto:kiki@ci.nisswa.mn.us); ["jmax@cityofnisswa.gov"](mailto:jmax@cityofnisswa.gov); ["craig@nisswapolice.com"](mailto:craig@nisswapolice.com); ["shaw@gullinemgmt.com"](mailto:shaw@gullinemgmt.com); ["aduus@pequotlakes-mn.gov"](mailto:aduus@pequotlakes-mn.gov); ["mdavis@pequotlakes-mn.gov"](mailto:mdavis@pequotlakes-mn.gov); ["pequotfd@pequotlakes-mn.gov"](mailto:pequotfd@pequotlakes-mn.gov); ["riverton@centurylink.net"](mailto:riverton@centurylink.net); ["lost50s@mlecwb.net"](mailto:lost50s@mlecwb.net); ["baylaketown@gmail.com"](mailto:baylaketown@gmail.com); ["mcborden@brainerd.net"](mailto:mcborden@brainerd.net); ["crowwingtownship@gmail.com"](mailto:crowwingtownship@gmail.com); ["Daggett.clerk1@outlook.com"](mailto:Daggett.clerk1@outlook.com); ["deerwoodtownshipclerk@gmail.com"](mailto:deerwoodtownshipclerk@gmail.com); ["fairfieldmn@gmail.com"](mailto:fairfieldmn@gmail.com); 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["rsvlt@brainerd.net"](mailto:rsvlt@brainerd.net); ["rosslaketwp@gmail.com"](mailto:rosslaketwp@gmail.com); ["stmathiasclerk@gmail.com"](mailto:stmathiasclerk@gmail.com); ["lonip@timothytownship.com"](mailto:lonip@timothytownship.com); ["wolfordclerk@castle-web.com"](mailto:wolfordclerk@castle-web.com); ["Kelvin.McCuskey@state.mn.us"](mailto:Kelvin.McCuskey@state.mn.us); ["melissa@cwsbcd.org"](mailto:melissa@cwsbcd.org); ["Jacob.Frie@state.mn.us"](mailto:Jacob.Frie@state.mn.us); ["mike.ginnaty@state.mn.us"](mailto:mike.ginnaty@state.mn.us); ["Laura.murphy@state.mn.us"](mailto:Laura.murphy@state.mn.us); ["craig.schultz@state.mn.us"](mailto:craig.schultz@state.mn.us); ["sandra.youngblom@state.mn.us"](mailto:sandra.youngblom@state.mn.us); ["joey.moore@noaa.gov"](mailto:joey.moore@noaa.gov); ["mark.smith@state.mn.us"](mailto:mark.smith@state.mn.us); ["peter.grant@isd181.org"](mailto:peter.grant@isd181.org); ["kstumpf@isd186.org"](mailto:kstumpf@isd186.org); ["jskeveland@ci.k12.mn.us"](mailto:jskeveland@ci.k12.mn.us); ["ashley.auge@essentialhealth.org"](mailto:ashley.auge@essentialhealth.org); ["daniel.hoffard@cuyunamed.org"](mailto:daniel.hoffard@cuyunamed.org); ["quale@cwpower.com"](mailto:quale@cwpower.com); ["ANNE@mlecmn.com"](mailto:ANNE@mlecmn.com); ["mle@mlecmn.net"](mailto:mle@mlecmn.net); ["gina.wieler@state.mn.us"](mailto:gina.wieler@state.mn.us); ["joel.p.nelson@state.mn.us"](mailto:joel.p.nelson@state.mn.us); ["Owen.fifield@redcross.org"](mailto:Owen.fifield@redcross.org); ["Jeff.Currant@usc.salvationarmy.org"](mailto:Jeff.Currant@usc.salvationarmy.org); ["info@brainerdcommunityaction.org"](mailto:info@brainerdcommunityaction.org); ["chad.emery@casscountymn.gov"](mailto:chad.emery@casscountymn.gov); ["dan.guida@co.aitkin.mn.us"](mailto:dan.guida@co.aitkin.mn.us); ["patrice.erickson@co.aitkin.mn.us"](mailto:patrice.erickson@co.aitkin.mn.us); ["andy.beckstrom@millelacs.mn.gov"](mailto:andy.beckstrom@millelacs.mn.gov); ["victoriam@co.morrison.mn.us"](mailto:victoriam@co.morrison.mn.us); ["Monte.Fronk@millelacsband.com"](mailto:Monte.Fronk@millelacsband.com); ["clayton.barg@crowwing.gov"](mailto:clayton.barg@crowwing.gov); ["Liz.Gleason"](mailto:Liz.Gleason)

Cc:
Subject: Please Post: Crow Wing County Hazard Mitigation Plan Update News Release
Date: Tuesday, October 22, 2024 2:35:00 PM
Attachments: [Crow Wing County News Release - Hazard Mitigation Plan Update \(10-22-24\).pdf](#)
[Crow Wing County News Release - Hazard Mitigation Plan Update \(10-22-24\).docx](#)
Importance: High

Greetings,

Crow Wing County Emergency Management is commencing work on the update of the Crow Wing County Hazard Mitigation Plan (HMP). Attached is a news release for your information (PDF and Word copies)

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 to those places. You may also post a hardcopy of the news release in locations that are common to the public, such as a bulletin board at City Hall. We encourage as many of ways of posting that you can cover. **Crow Wing County and all 18 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. As part of the plan update, we must document the public outreach that was conducted.

Note: Please respond directly to Liz Gleason, Crow Wing County Emergency Management Coordinator (Liz.Gleason@crowwing.gov) to provide information on the date and location of

your posting.

(i.e., 10/22/24, City of X website and Facebook page, also posted to City Hall Bulletin board)

Posting of the news release should only take a moment to complete. **Please seek to respond to Liz Gleason no later than Monday, October 28th.**

Thank you for your assistance.

Bonnie Hundrieser

Bonnie K. Hundrieser

Hazard Mitigation Planning Specialist

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

Hundrieser Consulting LLC

Phone: 218-343-3468

From: [Darcy Dwyer](#)
To: [PressRelease](#)
Cc: [Clayton Barg](#); hundrieserconsulting@outlook.com
Subject: Public Input Wanted as CWC Updates Hazard Mitigation Plan
Date: Monday, September 9, 2024 12:33:11 PM
Attachments: [CWC Hazard Mitigation Plan 2024.docx](#)
[CWC Hazard Mitigation Plan 2024.pdf](#)

Good afternoon, Crow Wing 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. Press release is attached. Let me know if you have any questions.

Darcy Dwyer
Public Information Officer

Historic Courthouse
326 Laurel Street, Suite 12
Brainerd, MN 56401

Office: (218) 822-7024

Toll Free: (888) 829-6680

www.crowwing.gov



Our Vision: Being Minnesota's favorite place.

Our Mission: Serve well. Deliver value. Drive results.

Our Values: Be responsible. Treat people right. Build a better future.



PRESS RELEASE

FOR IMMEDIATE RELEASE
DATE: October 22, 2024

CONTACT
Clayton Barg
CWC Emergency
Management Director
218-825-3445
Clayton.Barg@crowwing.gov

Public Input Wanted as Crow Wing County Updates Hazard Mitigation Plan

Crow Wing 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 Crow Wing 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 Crow Wing County HMP is a multi-jurisdictional plan that covers Crow Wing County, including all cities and townships within the county. The Crow Wing County HMP also incorporates the concerns and needs of school districts, watershed districts, and other related agencies, organizations, or businesses participating in the planning process. The plan will be updated by a planning team made up of representatives from county departments, local municipalities, 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 Clayton Barg, Crow Wing 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 reduce, or at times eliminate, the likelihood of damage caused by things like flooding, ice storms, and severe wind events that can damage property, stress economies, and threaten life safety in our county."

Our Vision: Being Minnesota's favorite place.

Our Mission: Serve well. Deliver value. Drive results.

Our Values: Be responsible. Treat people right. Build a better future.

Examples of hazard mitigation include:

- Conducting public outreach on severe weather awareness and preparedness
- Improving stormwater management systems to better handle high-rain events
- Removing existing buildings from flood or erosion prone hazard areas
- Increasing defensible space around homes in high-risk wildfire areas
- 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, Crow Wing County is seeking feedback from residents and businesses to incorporate into the plan. Your input will be recorded and incorporated into the planning process:

- **What are the natural hazards you feel pose the greatest risk to your community?**
- **Are there specific populations or assets in your community that you feel are more vulnerable to future storm events?**
- **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?**

Your feedback is wanted. Comments, concerns, or questions regarding natural disasters and your ideas for mitigation projects should be submitted to Crow Wing County Emergency Management by phone at 218-829-4749, email Damage@crowwing.gov or by posting a comment via a social media posting of this article.

There will be additional opportunities for public feedback throughout the planning process. A draft of the plan will be made available for public review prior to submission of the plan to the State of Minnesota. Future news releases will be shared with the media to notify the public of these opportunities.

The Federal Disaster Mitigation Act of 2000 (DMA 2000) requires counties to update their plan every 5 years to maintain eligibility for FEMA's Hazard Mitigation Assistance (HMA) grant programs.

###

Crow Wing County HMP News Release #1 (10-22-24)
Chart Documentation of News Release Postings

Jurisdiction or Agency	Posting Representative (name and title)	Date & Location of News Release Posting
Crow Wing County	Darcy Dwyer, Public information officer	9/9/24 CWC Website, Facebook, and X. Also sent to local press 9/11/24 Brainerd Dispatch
City of Baxter	Matt Maier, Chief of Police	10/27/24 Facebook
City of Brainerd	John Davis, Chief of police Tim Holmes, Fire Chief	10/29/24 Facebook 10/25/24 Facebook
City of Breezy Point	Daniel Sathre, Police Officer	10/22/24 Board in public safety building, Facebook
City of Crosby	Michael Van Horn, Police Chief	10/30/24 City Hall
City of Crosslake	Char Nelson, Clerk	10/22/24 posted in City Hall
City of Cuyuna	Jesse Smith, Chief of Police	10/22/24 PD lobby, PD Facebook
City of Deerwood	Mike Bodle, Fire Chief	10/23/24, City Hall
City of Emily	Cari Johnson, Clerk	10/25/24, Facebook, website, official posting location
City of Fifty Lakes	Ann Raph, Clerk	10/23/24 bulletin board, website, Facebook
City of Fort Ripley	Sherry Chisolm, Clerk	10/29/24 Fort Steakhouse, gas station
City of Garrison	Jeff Turk, Clerk	10/30/24 City Hall
City of Ironton	Emma Pratt, Clerk	10/30/24 City Hall, website
City of Jenkins	Cassandra Delougherty, Clerk	10/31/24, City Hall
City of Manhattan Beach	Marlene Yurek, Clerk	10/30/24, City Hall
City of Nisswa	Jenny Max, City Administrator	10/23/24 City Hall, city website
City of Pequot Lakes	Emily Johnson, Clerk	10/30/24 Facebook, City Hall
City of Riverton		
City of Trommald	Rob Geske, Clerk	10/30/24 City Hall
Pequot Lakes School District	Kurt Stumpf, Superintendent	10/22/24 Pequot Lakes School District website
Wolford Township	Kim Marquart, Clerk	10/23/24 Town Hall
Gail Lake Township	Cathy Erickson, Clerk	10/20/24 Town Hall
Ideal Township	Craig Wallace, Clerk	10/23/24 Town Hall, township website
Aitkin County	Patrice Erickson, Dispatch Supervisor	10/23/24 Bulletin board, Facebook
Long Lake Township	Patsy Olson, Clerk	10/24/24 Long Lake Town Hall
Soil and Water Conservation District	Heidi Lake, Administrative Assistant	10/22/24 Website, Facebook

Mission township	Anna Anderson, Clerk	10/24/24 Website
Rabbit Lake Township	Linda Danielson, Clerk	10/26/24 Town Hall

Appendix H – Mitigation Actions by Jurisdiction

City of Baxter

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin / City EM	The city shares information with the public by posting information on our city website and social media. We also use our storm sirens to alert residents for high wind and tornado events. We will work with Crow Wing County Emergency Management to help us participate locally in sharing information during the NWS Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November.	Internal: City Gen. Operating Budget
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	Existing High 2026-2031	City Admin / City EM	The city will work with Crow Wing County Emergency Management to help provide us with information on Everbridge and a link to sign up on the county's website. We will work to encourage residents to sign up by posting information on our city website and social media.	Internal: City Gen. Operating Budget
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Admin	The City of Baxter adopts the MN State Building Code. It is enforced through our Community Development Dept. with oversight of our Building Official.	Internal: City Gen. Operating Budget
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Admin	The city uses the following to incorporate mitigation: Wellhead protection plan, comprehensive plan, 100-year stormwater plan, floodplain Ordinance, shoreland ordinance, and long-range transportation plan to reduce single entry points in neighborhoods.	Internal: City Gen. Operating Budget
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city has emergency generator backup power for city services and buildings.	New High 2026-2031	City PW / City EM	The city has completed installation of generators at lift stations. We continue to keep them maintained and functioning.	Internal: City Gen. Operating Budget

City of Baxter

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Trim trees near power lines and work with our local utility providers to convert overhead power lines to underground to reduce the risk of power outages from severe storms.	Existing Moderate 2026-2031	City Public Works Dept.	The city's electrical service is provided and maintained by Brainerd Public Utilities and Crow Wing Co-op Power & Light. They trim branches near powerlines and work on projects to convert overhead power lines to underground as they deem necessary.	External: Brainerd Public Utilities, CWCPL
7	Severe Summer Storms	Mitigation Preparedness & Response Support	Repair/ upgrade the city's outdoor warning sirens as they approach end of life.	Existing High 2026-2031	City EM in coord with City Public Works Dept.	A new emergency warning siren was added to the Forestview neighborhood in 2024, and we added a siren to Timberwood Dr (West Industrial Park) in September 2025. We test warning sirens monthly in coordination with the Crow Wing County Sheriff's Office and keep them maintained as needed.	Internal: City Gen. Operating Budget
8	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe windstorms and tornadic weather, to understand warning siren alerts, and to be prepared with personal evacuation or shelter plans.	Existing High 2026-2031	City Admin / City EM	The city will seek to work with Crow Wing County to promote tornado awareness and safety during the NWS Severe Weather Awareness week each April. We will work to target information to residents of the mobile home park, assisted living facilities, and apartment complex owners where these residents are more highly vulnerable.	Internal: City Gen. Operating Budget

City of Baxter

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
9	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme cold temperatures.	Existing High 2026-2031	City Admin, City EM	In the event of an extreme cold event coupled with an extended power outage, the city will work with our fire department and Crow Wing County Emergency Management to address assistance such as evacuation or temporary sheltering for the elderly or other vulnerable residents. We do have a day center for the homeless population in the city.	Internal: City Gen. Operating Budget
10	Flooding	Structure & Infrastructure Projects	Work to address flood mitigation measures that help the city to handle future high rain events.	Existing High 2026-2031	City Public Works Dept.	Over the last 5 years the city of Baxter's Public Works Dept. has continued to implement improvements to our stormwater system. We continue to invest city funds to reduce vulnerability to sanitary conveyance system.	Internal: PW Dept. Budget
11	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin	During periods of severe drought, the city will establish watering restrictions as per MN DNR guidance. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget
12	Drought / Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New Moderate 2026-2031	City EM, City FD	The city will share information regarding drought conditions and wildfire risk with the public by posting information on our city website and social media.	Internal: City Gen. Operating Budget
13	Wildfire	Natural Systems Protection	Conduct forest management techniques to reduce wildland fuel load.	Existing Moderate 2026-2031	City Public Works Dept.	The city's public works department continues to work to remove deadfall in forested areas to decrease fuel load for a wildfire.	Internal: City PW Dept. Budget

City of Brainerd

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin / City EM	The city shares information with the public by posting information on our city website, social media, and use of outdoor warning sirens. We will work with Crow Wing County Emergency Management to help us participate locally in sharing information during the NWS Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November.	Internal: City Gen. Operating Budget
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	Existing High 2026-2031	City Admin / City EM	The city shares information on the Crow Wing County Everbridge Emergency Notification System on our city website, social media, and by making announcements at City Council meetings.	Internal: City Gen. Operating Budget
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Admin	Yes, It is enforced through our Community Development Dept. with Building Official	Internal: City Gen. Operating Budget
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Admin	City has a Comprehensive Plan, Wellhead protection measures and acquired more land to protect wellheads. The city also participates in the NFIP and has a floodplain ordinance in place that is enforced.	Internal: City Gen. Operating Budget

City of Brainerd

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city has emergency generator backup power for city services and buildings.	New High 2026-2031	City PW / City EM	<p>The city of Brainerd wishes to upgrade an aging generator for the city's Emergency Operations Center. This may be a project for which the city would seek to apply for FEMA HMGP grant funding.</p> <p>Over the last 5 years the city has implemented several generator backup projects for multiple lift stations. We continue to keep these lift stations maintained. The city will purchase additional generators as deemed needed and as city funding is available.</p>	Internal: City Gen. Operating Budget External: FEMA HMGP grant for generator
6	Severe Summer Storms	Mitigation Preparedness & Response Support	Upgrade outdoor warning sirens within the city to warn residents of high wind or tornado events.	Existing High 2026-2031	City EM	The city wishes to upgrade 2-3 outdoor warning sirens within the city. We will work to purchase and install new warning sirens as city funding is available. We may also seek to apply for FEMA HMGP grant funding to support this effort.	Internal: City Gen. Operating Budget External: FEMA HMGP grant
7	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe windstorms and tornadic weather, to understand warning siren alerts, and to be prepared with personal evacuation or shelter plans.	Existing High 2026-2031	City Admin / City EM	The city will seek to work with Crow Wing County to promote tornado awareness and safety during the NWS Severe Weather Awareness week each April.	Internal: City Gen. Operating Budget
8	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme cold temperatures.	Existing High 2026-2031	City Admin, City EM	In the event of an extreme temperature event coupled with an extended power outage, the city will work with our fire department and Crow Wing County Emergency Management to address assistance such as evacuation or temporary sheltering for the elderly or other vulnerable residents.	Internal: City Gen. Operating Budget

City of Brainerd

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
9	Flooding	Structure & Infrastructure Projects	Work to address flood mitigation measures that help the city to handle future high rain events.	Existing High 2026-2031	Brainerd Public Utilities	The city of Brainerd's Public Utilities continues to identify and address flood mitigation measures and stormwater management improvements. The 2025 budget included installation of on-site generators for Tyrol and Walnut and pine Lift stations. In 2020 Brainerd Public Utilities upgraded the Evergreen lift station including covering overhead power to underground, Installation of an on-site generator 1 foot over 100-year floodplain elevation, installation of new control building raised 1 foot over 100-year floodplain elevation, added 10-inch side wall on the wet well cover. Installed on-site generation to Southwest 6th street lift station. Tyrol and Buffalo Hills lift stations upgrades include controls, piping, and pumps to operate while submerged.	Internal: PW Dept. Budget
10	Flooding	Structure & Infrastructure Projects	Work with MnDOT to improve stormwater management on the Highway 210 reconstruction project.	New High 2026-2031	Brainerd Public Utilities in coord with MnDOT	The city is working with MnDOT to include multiple stormwater retention features to assist with reducing flood risk and increased flows to the Mississippi River as part of their upcoming Highway 210 reconstruction project.	Internal: PW Dept. Budget External: MnDOT Funding
11	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin	During periods of severe drought, the city will establish watering restrictions as per MN DNR guidance. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget

City of Brainerd

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
12	Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New Moderate 2026-2031	City EM, City FD	The city continues to use our city website and social media to raise public awareness of drought conditions and associated wildfire risk.	Internal: City Gen. Operating Budget External: CDWG grant
13	Wildfire	Education & Awareness Programs	Promote Firewise assessments and creating defensible space to homeowners located in areas at higher risk of wildfire.	New Moderate 2026-2031	City EM, City FD	Our city Fire Department continues to promote resident awareness of the benefits of creating defensible space. The FD will assist property owners with information on conducting a Firewise Assessment and assisting with on-site assessments.	Internal: City Gen. Operating Budget External: MN DNR Firewise grant, CDWG grant
14	Wildfire	Local Planning & Regulations	Create new building regulations and permitting requirements for new construction in Wildland Urban Interface (WUI) areas.	New High 2026-2031	City Admin, City FD	The city will work to develop new permitting requirements for any new construction that is planned to be located within our mapped WUI areas. City Admin will work in coordination with our Fire Department on this effort.	Internal: City Gen. Operating Budget
15	Landslides	Structure & Infrastructure Projects	Continue to monitor and address any areas of erosion that pose risk to home and structures.	New Moderate 2026-2031	Brainerd Public Utilities in coord with CWC SWCD	The city recently partnered with the Crow Wing SWCD to obtain CWA grant funding to address erosion issues in the Buffalo Hills Gully that were endangering homes and structures. We continue to monitor the success of this project and will take action on any further issue areas for dangerous erosion.	External: Crow Wing SWCD funding

City of Breezy Point

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin / City EM	<p>The city shares information with the public by posting information on our city website and Facebook page. We also have a city newsletter, the Breezy Brief where we can share information.</p> <p>The city continues to participate in the National Weather Service's Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November. We post information on our social media for the public during these events.</p>	Internal: City Gen. Operating Budget External: EMPG (outreach); Crow Wing County EM (in-kind); private/utility partners
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	New High 2026-2031	City Admin / City EM	<p>We will work with Crow Wing County Emergency Management to help us with information and a link to sign up for Everbridge that we can put on our city website and social media.</p>	Internal: City Gen. Operating Budget, Permit/inspection fees External: EMPG (training/planning if eligible)
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Admin	<p>The city enforces the MN State building code through our city Building Official. The State of Minnesota Building Code is included on the city's website under Planning & Zoning. Building permit application forms are also available on the website.</p>	Internal: City General Fund (planning) External: FEMA BRIC (Capability & Capacity Building – planning); FEMA HMGP (Planning); EMPG; MN DNR Floodplain Management grants

City of Breezy Point

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Admin	The city's planning and zoning department administers shoreland and floodplain ordinances.	Internal: City Gen. Operating Budget External: FEMA HMGP; FEMA BRIC; USDA RD – Community Facilities; local utility rebates
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city has emergency generator backup power for city services and buildings.	New High 2026-2031	City PW / City EM	The city will purchase portable generators as deemed necessary to support city operations and critical infrastructure such as lift stations.	Internal: City Gen. Operating Budget External: FEMA HMGP; FEMA BRIC, vendor maintenance contract (existing)
6	Severe Summer Storms	Mitigation Preparedness & Response Support	Repair/ replace outdoor warning sirens as they approach end of life.	Existing High 2026-2031	City EM	We test our existing warning sirens monthly in coordination with the Crow Wing County Sheriff's Office. We will work to purchase new outdoor warning sirens as city funding is available to do so. The city may also seek to apply for outside grant funding from FEMA HMGP grant funding. The City repaired existing warning sirens in 2025, and signed a maintenance contract to continue services and ensure the siren is operational at all times.	Internal: City Gen. Operating Budget External: FEMA HMGP; FEMA BRIC, vendor maintenance contract (existing)

City of Breezy Point

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
7	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe windstorms and tornadic weather, to understand warning siren alerts, and to be prepared with personal evacuation or shelter plans.	Existing High 2026-2031	City Admin / City EM	The city will seek to work with Crow Wing County to promote tornado awareness and safety during the NWS Severe Weather Awareness week each April.	Internal: City Gen. Operating Budget External: EMPG; Crow Wing County EM (in-kind); local media
8	Severe Summer Storms	Mitigation Preparedness & Response Support / Education & Awareness Programs	Work to increase options for residents to take safe shelter during high wind or tornado events, and actively promote this information to the public during our severe spring/summer storm season.	New High 2026-2031	City Admin / City EM	In the event of severe wind or tornado events, the City of Breezy Point has made City Hall and the bathrooms outside of City Hall available to the public within business hours. The city will explore options to feasibly construct one or more new tornado safe rooms in key locations, which would be dependent upon a successful grant application to FEMA. In the absence of any new construction projects, we will seek to do an information campaign in spring for residents to be aware of existing locations where they can take emergency shelter during a severe wind or tornado event.	Internal: City Gen. Operating Budget External: FEMA HMGP safe room grant
9	Severe Summer Storms	Local Planning & Regulations / Structure & Infrastructure Projects	Work to improve storm sheltering at city campgrounds.	Existing High 2026-2031	City EM	We have 3 campgrounds where visitors are more vulnerable to storm events. The city will work to include construction of new storm shelter facilities as future park upgrades are planned.	Internal: City Gen. Operating Budget External: FEMA HMGP/BRIC (Safe Rooms); MN HSEM pass-through; campground/user fee cost-share

City of Breezy Point

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
10	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme cold events.	Existing High 2026-2031	City Admin, City EM	In the event of an extreme temperature event coupled with an extended power outage, the city will work with our fire department and Crow Wing County Emergency Management to address assistance such as evacuation or temporary sheltering for the elderly or other vulnerable residents.	Internal: City Gen. Operating Budget External: EMPG (planning/equipment); NGOs/faith-based partners; utility resilience funds
11	Flooding	Structure & Infrastructure Projects	Work to address flood mitigation measures that help the city to handle future high rain events.	Existing High 2026-2031	City Public Works Dept.	The city has updated lift stations and continues to keep them maintained. As a result, we have had small increase/improvements in storm water collection.	Internal: PW Dept. Budget External: FEMA BRIC/HMGP; MN DNR Flood Hazard Mitigation; BWSR Clean Water Fund; MPCA Stormwater grants; City PW budget; USACE small-projects programs
12	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin	During periods of severe drought, the city will establish watering restrictions as per MN DNR guidance. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget External: MN DNR conservation support; EMPG (outreach)

City of Breezy Point

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
13	Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New Moderate 2026-2031	City EM, City FD	The city will use our website and social media to help raise awareness of wildfire risk during periods of drought. We can also post signs at the city campgrounds if burn bans are in place for recreational fires.	Internal: City Gen. Operating Budget External: MN DNR wildfire prevention/Firewise; campground/resort partners (signage cost-share); EMPG (outreach, optional)

City of Crosby

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin / City EM	The city shares information with the public by posting information on our city website and social media. We will work with Crow Wing County Emergency Management to help us participate locally in sharing information during the NWS Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November.	Internal: City Gen. Operating Budget
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	Existing High 2026-2031	City Admin / City EM	We will work with Crow Wing County Emergency Management to help us with information and a link to sign up for Everbridge that we can put on our city website and social media.	Internal: City Gen. Operating Budget
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Admin	The city has adopted and enforces the MN State Building Code. The city contracts for code enforcement violations.	Internal: City Gen. Operating Budget
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Admin	We have a wellhead protection plan and enforce our land and zoning ordinances.	Internal: City Gen. Operating Budget
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city has emergency generator backup power for our Fire Hall.	New High 2026-2031	City PW / City EM	The city needs to obtain a backup generator for our Fire Hall. This is a project in which the city may seek to apply for future FEMA HMGP grant funding as this is a critical facility for us that needs to function in the event of extended power outages from storms.	Internal: City Gen. Operating Budget External: FEMA HMGP Grant Funding

City of Crosby

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure that the city's outdoor warning sirens are maintained and functioning.	Existing High 2026-2031	City EM	The city has 2 outdoor warning siren which we test monthly in coordination with the Crow Wing County Sheriff's Office and are maintained as needed.	Internal: City Gen. Operating Budget
7	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe windstorms and tornadic weather, to understand warning siren alerts, and to be prepared with personal evacuation or shelter plans.	Existing High 2026-2031	City Admin / City EM	The city will seek to work with Crow Wing County to promote tornado awareness and safety during the NWS Severe Weather Awareness week each April.	Internal: City Gen. Operating Budget
8	Severe Summer Storms	Local Planning & Regulations / Structure & Infrastructure Projects	Work to address sheltering and evacuation plans for the city's campgrounds and mobile home park.	New High 2026-2031	City EM	We have 2 campgrounds and 1 mobile home park that are vulnerable to the impacts of severe storm events and flooding. We unlock City Hall to offer protection/shelter when needed. The city will work to assess potential construction of an onsite shelter at the campgrounds and mobile home park in the future as facility upgrades are planned.	Internal: City Gen. Operating Budget External: MHP Owner
9	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme cold temperatures.	Existing High 2026-2031	City Admin, City EM	In the event of an extreme temperature event coupled with an extended power outage, the city will work with our fire department and Crow Wing County Emergency Management to address assistance such as evacuation or temporary sheltering for the elderly or other vulnerable residents.	Internal: City Gen. Operating Budget
10	Flooding	Structure & Infrastructure Projects	Work to address flood mitigation measures that help the city to handle future high rain events.	Existing High 2026-2031	City Public Works Dept.	The city has a comprehensive plan to update roads/storm drains. Our Public Works department continues to implement stormwater infrastructure improvement projects as they are planned and budgeted for.	Internal: PW Dept. Budget

City of Crosby

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
11	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin	During periods of severe drought, the city will establish watering restrictions as per MN DNR guidance. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget
12	Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New Moderate 2026-2031	City EM, City FD	The city will use our city website and social media to help raise awareness of wildfire danger during periods of drought. We can also enforce burning restrictions at our campground if a burn ban is in effect.	Internal: City Gen. Operating Budget

City of Crosslake

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin / City EM	The city shares information with the public by posting information on our city website and Facebook. The local school practices tornado drills on an annual basis. We will work with Crow Wing County Emergency Management to help us participate locally in sharing information during the NWS Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November.	Internal: City Gen. Operating Budget
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	Existing High 2026-2031	City Admin / City EM	The Crow Wing County Everbridge QR code is printed and put at City Hall, Corp and Chamber. The fire department also places it on their webpage. We post information on our city website and Facebook.	Internal: City Gen. Operating Budget
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Admin	The city has a Land Use Permit Application (for residents) and a Commercial & Industrial Land Use Permit Application that must be submitted to and approved by our Planning and Zoning Department. All applicants must sign a form acknowledging they understand that according to Minnesota State Statute 326B.85, the State of Minnesota requires that all residential building contractors, remodelers and roofers obtain a state license unless they qualify for a specific exemption from the licensing requirements.	Internal: City Gen. Operating Budget

City of Crosslake

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Admin	We enforce the City of Crosslake Planning and Zoning Land Use Ordinance. We also use the City of Crosslake Comprehensive Plan Update 2035, which address emergency services and coordination with Crow Wing County on hazard mitigation planning. The City of Crosslake has adopted the DNR's Floodplain Management Regulations. The purpose of this program is to minimize the threat to life and property that can result from flooding.	Internal: City Gen. Operating Budget
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city has emergency generator backup power for city services and buildings.	New High 2026-2031	City PW / City EM	The city's Emergency Manager and Public Works department will continue to evaluate if and where generator backup power is needed for city facilities or infrastructure. The city would purchase generators as funding is available and approved by City Council.	Internal: City Gen. Operating Budget
6	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Trim trees near power lines and work with our local utility to convert overhead power lines to underground to reduce the risk of power outages from severe storms.	Existing Moderate 2026-2031	City Public Works Dept.	The city and Crow Wing Co-op Power & Light both work to manage vegetation in the city ROW near power lines to reduce the risk of downed lines from overhead branches coming down. The electric co-op works to reduce risk to overhead power lines and will implement conversion projects as they see necessary.	Internal: City Gen. Operating Budget External: Crow Wing Co-op Power & Light funding

City of Crosslake

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
7	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure that the city's outdoor warning sirens are maintained and functioning.	Existing High 2026-2031	City EM	The city has 10 outdoor warning sirens. We replaced 3 sirens in 2024 and 3 sirens in 2025 after an inspection. We inspect the sirens monthly in coordination with the Crow Wing County Sheriff's Office and maintain them as needed.	Internal: City Gen. Operating Budget
8	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe windstorms and tornadic weather, to understand warning siren alerts, and to be prepared with personal evacuation or shelter plans.	Existing High 2026-2031	City Admin / City EM	The city will seek to work with Crow Wing County to promote tornado awareness and safety during the NWS Severe Weather Awareness week each April.	Internal: City Gen. Operating Budget
9	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme cold temperatures.	Existing High 2026-2031	City Admin, City EM	In the event of an extreme temperature event coupled with an extended power outage, the city will work with our fire department and Crow Wing County Emergency Management to address assistance such as evacuation or temporary sheltering for the elderly or other vulnerable residents.	Internal: City Gen. Operating Budget

City of Crosslake

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
10	Flooding	Structure & Infrastructure Projects	Implement projects and city plans that address that address stormwater management and help the city to handle future high rain events.	Existing High 2026-2031	City Public Works Dept.	In the past five years we have updated catch basins and storm sewer up the CSAH 66 corridor. Our city Public Works department continues to monitor and address projects to improve the city's stormwater management abilities. The city also monitors and maintains 2 dams within the city to ensure they are not compromised by high rain events. The City of Crosslake Comprehensive Plan 2035 incorporates recommendations for applying Green Infrastructure in new development as an approach for managing stormwater	Internal: PW Dept. Budget
11	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin	During periods of severe drought, the city will establish watering restrictions as per MN DNR guidance. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget
12	Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New High 2026-2031	City EM, City FD	We hold an annual Wildfire Prevention Event. The city will use our city website and social media to help raise awareness of wildfire danger during periods of drought. We can also enforce burning restrictions at our campgrounds when a burn ban is in effect.	Internal: FD Budget, City Gen. Operating Budget

City of Crosslake

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
13	Wildfire	Education & Awareness Programs	Conduct public outreach and education on the risk of wildfire, and assist homeowners on conducting Firewise assessments and creation of defensible space.	New High 2026-2031	City EM, City FD	We partner with MN DNR - along with Firewise and community outreach for fire education implementation and wildfire mitigation activities to reduce wildland fuel loads. Community outreach and education is being conducted by the Fire Department and to work with homeowners on defensible spaces.	Internal: FD Budget, City Gen. Operating Budget
14	Wildfire	Natural Systems Protection	Work with Crow Wing County and Fairfield Township on the Bonnie Lakes Road wildfire mitigation project.	New High 2026-2031	City of Crosslake Public Works / Fairfield Township Public Works along with Homeowners	This project is included as Priority Project #1 in the Crow Wing County 2024 Community Wildfire Protection Plan. This area was selected for a priority project because of the number of structures located on a dead-end road. Removing much of the right of way fuels will help with tactical fire suppression and assist in wildland firefighters' response. It will also help with evacuation situations. The city will work with Crow Wing County Emergency Management to apply for external grant funding for this project. FEMA HMGP and the federal Community Wildfire Defense Grant are sources we may pursue.	Internal: PW Dept. Budget External: Crow Wing County, FEMA HMGP grant, CDWG grant

City of Cuyuna

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin / City EM	The city shares information with the public by posting information on our city website and city Facebook page. We will work with Crow Wing County Emergency Management to help us participate locally in sharing information during the NWS Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November.	Internal: City Gen. Operating Budget
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	Existing High 2026-2031	City Admin / City EM	We plan to add information and a link to the county's Everbridge system on our city webpage.	Internal: City Gen. Operating Budget
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Admin	The city enforces our Planning and Zoning Ordinances. Property owners and authorized agents applying for Land Use Permits are required to acknowledge that as a homeowner/business owner they are aware of the requirements in Minnesota State Statute 326B.85. This state statute requires that all residential building contractors, remodelers and roofers obtain a state license unless they qualify for a specific exemption from the licensing requirements.	Internal: City Gen. Operating Budget
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Admin	We have a Wellhead Protection Plan and enforce our land and zoning ordinances.	Internal: City Gen. Operating Budget

City of Cuyuna

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city has emergency generator backup power for city services and buildings.	New High 2026-2031	City PW / City EM	The city's Emergency Manager and Public Works department will continue to evaluate if and where generator backup power is needed for city facilities or infrastructure. The city would purchase generators as funding is available and approved by City Council.	Internal: City Gen. Operating Budget
6	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure that the city's outdoor warning sirens are maintained and functioning.	Existing High 2026-2031	City EM	The city has 1 outdoor warning siren. We test the sirens monthly in coordination with the Crow Wing County Sheriff's Office and maintained it as needed. If we seek to purchase an additional outdoor warning siren, we would look to apply for FEMA HMGP grant funding to do so.	Internal: City Gen. Operating Budget External: FEMA HMGP grant funding
7	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe windstorms and tornadic weather, to understand warning siren alerts, and to be prepared with personal evacuation or shelter plans.	Existing High 2026-2031	City Admin / City EM	The city will seek to work with Crow Wing County to promote tornado awareness and safety during the NWS Severe Weather Awareness week each April.	Internal: City Gen. Operating Budget
8	Severe Summer Storms	Local Planning & Regulations / Structure & Infrastructure Projects	Work to construct storm shelter facilities at the city campground and mountain trail bike heads.	Existing High 2026-2031	City EM	We have 1 campground, 2 Mountain Bike Trail Heads that are vulnerable to the impacts of severe storm events and flooding. We will work on potential projects to construct storm shelter facilities that would be appropriate for those locations, and as city funding is available.	Internal: City Gen. Operating Budget

City of Cuyuna

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
9	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme cold temperatures.	Existing High 2026-2031	City Admin, City EM	In the event of an extreme temperature event coupled with an extended power outage, the city will work with our fire department and Crow Wing County Emergency Management to address assistance such as evacuation or temporary sheltering for the elderly or other vulnerable residents.	Internal: City Gen. Operating Budget
10	Flooding	Structure & Infrastructure Projects	Work to address flood mitigation measures that help the city to handle future high rain events.	Existing High 2026-2031	City Engineer	The city subcontracts all its road maintenance requirements and yearly reviews with its engineer, who helps the city to assess and plan for possible upcoming needs.	Internal: PW Dept. Budget
11	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin	During periods of severe drought, the city will establish watering restrictions as per MN DNR guidance. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget
12	Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New Moderate 2026-2031	City EM, City FD	The city will use our city website and social media to help raise awareness of wildfire danger during periods of drought. We can also enforce burning restrictions at our campground if a burn ban is in effect.	Internal: City Gen. Operating Budget

City of Deerwood

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin / City EM	The city shares information with the public by posting information on our city website. We also use our emergency storm sirens for dangerous weather warnings. We will work with Crow Wing County Emergency Management to help us participate locally in sharing information during the NWS Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November.	Internal: City Gen. Operating Budget
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	Existing High 2026-2031	City Admin / City EM	We plan to add information and a link for the county's Everbridge emergency notification system on the city bulletin boards and website directing residents to the county website to sign up.	Internal: City Gen. Operating Budget
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Admin	The city of Deerwood has adopted the universal building code and building permits are required. We contract out for code enforcement/inspections.	Internal: City Gen. Operating Budget
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Admin	The city has a Code of Ordinances that we enforce. It addresses stormwater drainage utility.	Internal: City Gen. Operating Budget
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city has emergency generator backup power for city services and buildings.	New High 2026-2031	City PW / City EM	The city's Emergency Manager and Public Works department will continue to evaluate if and where generator backup power is needed for city facilities or infrastructure. The city would purchase generators as funding is available and approved by City Council.	Internal: City Gen. Operating Budget

City of Deerwood

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure that the city's outdoor warning sirens are maintained and functioning.	Existing High 2026-2031	City EM	The city has 2 outdoor warning siren which we test monthly in coordination with the Crow Wing County Sheriff's Office and are maintained as needed. We would like to upgrade our warning sirens since they are aging. The city may seek outside grant funding to do this.	Internal: City Gen. Operating Budget External: FEMA HMGP grant funding
7	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe windstorms and tornadic weather, to understand warning siren alerts, and to be prepared with personal evacuation or shelter plans.	Existing High 2026-2031	City Admin / City EM	The city will seek to work with Crow Wing County to promote tornado awareness and safety during the NWS Severe Weather Awareness week each April.	Internal: City Gen. Operating Budget
8	Severe Summer Storms	Local Planning & Regulations / Structure & Infrastructure Projects	Seek outside grant funding to support construction of storm shelters for the mobile home park and HUD housing facility.	Existing High 2026-2031	City EM	The mobile home park and HUD housing facility do not have storm shelters in place. The city wishes to seek outside grant funding to support construction of storm shelters or tornado safe rooms for these locations. FEMA HMGP grant funding for tornado safe rooms is a grant opportunity we may decide to pursue with help from Crow Wing County Emergency Management.	Internal: City Gen. Operating Budget External: FEMA HMGP grant funding
9	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme cold temperatures.	Existing High 2026-2031	City Admin, City EM	We open City Hall in the event we need to use it for public protection / sheltering.	Internal: City Gen. Operating Budget

City of Deerwood

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
10	Flooding	Structure & Infrastructure Projects	Work to address flood mitigation measures that help the city to handle future high rain events.	Existing High 2026-2031	City Public Works Dept.	The city Public Works Department maintains all of the city's water and sewer infrastructure. We have done some storm and sewer reconstruction as funding was available and feasible. The department is working to address lift stations that are exposed to flooding and a couple of older intersections that flood during heavy rains and snow melting.	Internal: PW Dept. Budget External: MN PFA funding
11	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin	During periods of severe drought, the city will establish watering restrictions as per MN DNR guidance. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget
12	Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New Moderate 2026-2031	City EM, City FD	The city will use our city website to help raise awareness of wildfire danger during periods of drought.	Internal: City Gen. Operating Budget

City of Emily

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin / City EM	The city shares information with the public by posting information on our city website and city Facebook Page. We also use our storm sirens for dangerous weather warnings. We will work with Crow Wing County Emergency Management to help us participate locally in sharing information during the NWS Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November.	Internal: City Gen. Operating Budget
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	Existing High 2026-2031	City Admin / City EM	There is a link to CWC's Everbridge Emergency Alert System on the city's website.	Internal: City Gen. Operating Budget
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Admin	The city's Planning & Zoning Department requires Land Use Permits to be submitted and approved prior to beginning any construction or improvement projects.	Internal: City Gen. Operating Budget
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Admin	The city's planning and zoning department enforces our floodplain requirements, shoreland overlay, bluff land impact, and the City Code zoning requirements for new development. We have a 15-year Comprehensive Plan that is designed to plan physical growth of the city and appropriate land uses.	Internal: City Gen. Operating Budget

City of Emily

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city has emergency generator backup power for city services and buildings.	New High 2026-2031	City PW / City EM	Funding is needed to purchase a generator for the City's Emergency Storm Shelter (Emily City Hall). The City plans to apply for FEMA grant funds.	Internal: City Gen. Operating Budget External: FEMA HMGP grant funding
6	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Trim trees near power lines and work with our local utility to convert overhead power lines to underground to reduce the risk of power outages from severe storms.	Existing Moderate 2026-2031	City Maintenance Dept.	The city's Maintenance Dept. works to trim trees as needed within the ROW of city roads. Crow Wing Co-op Power & Light trims trees and branches near overhead power lines as needed. The Co-Op has the authority on measures to take to identify and address any vulnerable power lines, including covering overhead lines to underground.	Internal: City Gen. Operating Budget External: Crow Wing Co-op Power & Light
7	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure that the city's outdoor warning sirens are maintained and functioning.	Existing High 2026-2031	City EM	The city has 1 outdoor warning siren which we test monthly in coordination with the Crow Wing County Sheriff's Office and maintain as needed. The City of Fifty Lakes purchased a tornado siren and installed it in a location that covers the northwest portion of Emily with financial assistance from the Emily Fire Relief Association.	Internal: City Gen. Operating Budget
8	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe windstorms and tornadic weather, to understand warning siren alerts, and to be prepared with personal evacuation or shelter plans.	Existing High 2026-2031	City Admin / City EM	The city will seek to work with Crow Wing County to promote tornado awareness and safety during the NWS Severe Weather Awareness week each April.	Internal: City Gen. Operating Budget

City of Emily

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
9	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme cold temperatures.	Existing High 2026-2031	City Admin, City EM	In the event of an extreme temperature event coupled with an extended power outage, the city will work with our fire department and Crow Wing County Emergency Management to address assistance such as evacuation or temporary sheltering for the elderly or other vulnerable residents.	Internal: City Gen. Operating Budget
10	Flooding	Structure & Infrastructure Projects	Work to address flood mitigation measures that help the city to handle future high rain events.	Existing High 2026-2031	City Maintenance Dept. / MnDOT	Our city Maintenance Dept. continues to maintain our city stormwater system. In 2018 MnDOT installed a storm sewer system with the reconstruction of State Highway 6.	Internal: PW Dept. Budget
11	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin	During periods of severe drought, the city will establish watering restrictions as per MN DNR guidance. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget
12	Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New Moderate 2026-2031	City EM, City FD	The city will use our city website and social media to help raise awareness of wildfire danger during periods of drought. We can also work to promote awareness of burning restrictions if a burn ban is in effect.	Internal: City Gen. Operating Budget

City of Fifty Lakes

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin / City EM	The city shares information with the public by posting information on our city website, city Facebook page, and by posting flyers on the information boards near City Hall. We will work with Crow Wing County Emergency Management to help us participate locally in sharing information during the NWS Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November.	Internal: City Gen. Operating Budget
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	Existing High 2026-2031	City Admin / City EM	There is a link to CWC's Everbridge Emergency Alert System on the city's website and has been shared on the city's Facebook page.	Internal: City Gen. Operating Budget
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Admin	The city's Planning & Zoning Department requires Land Use Permits to be submitted and approved prior to beginning any construction or The City of Fifty Lakes does not enforce the Minnesota State Building Code, however, all State Licensed Contractors and property owners are responsible for complying with the State Building Code. For your protection, it is recommended that all property owners have new construction inspected and approved by a State Licensed Building Official. Improvement projects.	Internal: City Gen. Operating Budget
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Admin	The city incorporates mitigation into our planning and policies through our Planning and Zoning Department enforcement of city ordinances and land use permits.	Internal: City Gen. Operating Budget

City of Fifty Lakes

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city has emergency generator backup power for city services and buildings.	New High 2026-2031	City Maintenance Dept.	The city's Maintenance Department will continue to evaluate if and where generator backup power is needed for city facilities or infrastructure. The city would purchase generators as funding is available and approved by City Council.	Internal: City Gen. Operating Budget
6	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Trim trees near power lines and work with our local utility to convert overhead power lines to underground to reduce the risk of power outages from severe storms.	Existing Moderate 2026-2031	City Maintenance Dept.	The city's Maintenance Dept. works to trim trees as needed within the ROW of city roads. Crow Wing Co-op Power & Light trims trees and branches near overhead power lines as needed. The Co-Op has the authority on measures to take to identify and address any vulnerable power lines, including covering overhead lines to underground.	Internal: City Gen. Operating Budget External: Crow Wing Co-op Power & Light
7	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure that the city's outdoor warning sirens are maintained and functioning.	Existing High 2026-2031	City EM	In 2024 we installed two new warning sirens in strategic locations to alert residences of severe weather. We test monthly in coordination with the Crow Wing County Sheriff's Office and maintain the sirens as needed.	Internal: City Gen. Operating Budget
8	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe windstorms and tornadic weather and measures for personal preparedness.	Existing High 2026-2031	City Admin / City EM	The city will seek to work with Crow Wing County to promote tornado awareness and safety during the NWS Severe Weather Awareness week each April. During our local event Fifty Lakes Day we will conduct public education and will inform residents of the current storm shelters in the area.	Internal: City Gen. Operating Budget

City of Fifty Lakes

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
9	Severe Summer Storms	Local Planning & Regulations / Education & Awareness Programs	Ensure that the city has sheltering facilities and plans in place, and ensure the public is informed about shelter use and locations.	Existing High 2026-2031	City Admin / City EM	We have one campground and one trailer park association whose residents may look for shelter in severe weather. We make sure if there is severe weather coming to unlock the public storm shelter. The park has a new pavilion with some small areas that can hold some people as well during a severe storm. We will use our city website, Facebook page, and posted flyers and public events to inform the public about the shelters and what to do during a storm.	Internal: City Gen. Operating Budget
10	Severe Summer Storms	Local Planning & Regulations / Structure & Infrastructure Projects	Work to improve the city's storm shelter facilities to protect those who are vulnerable to severe wind storm and tornado events.	New High 2026-2031	City Admin / City EM	The city will assess how we can improve our storm sheltering capabilities for the campground and mobile home park. Outside grant funding will be necessary for any new construction projects for storm shelter or a tornado safe room.	Internal: City Gen. Operating Budget External: FEMA HMGP grant funding
11	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme heat or cold temperatures.	Existing High 2026-2031	City Admin, City EM	In the event of an extreme temperature event coupled with an extended power outage, the city will work with our fire department and Crow Wing County Emergency Management to address assistance such as evacuation or temporary sheltering for the elderly or other vulnerable residents.	Internal: City Gen. Operating Budget
12	Flooding	Structure & Infrastructure Projects	Work to address flood mitigation measures that help the city to handle future high rain events.	Existing High 2026-2031	City Maintenance Dept.	Our city Maintenance Department continues to maintain and improve our city's stormwater system as needed to avoid any issues with high rain events.	Internal: PW Dept. Budget

City of Fifty Lakes

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
13	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin	During periods of severe drought, the city will establish watering restrictions as per MN DNR guidance. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget
14	Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New Moderate 2026-2031	City EM, City FD	The city will use our city website and social media to help raise awareness of wildfire danger during periods of drought. We can also work to promote awareness of burning restrictions if a burn ban is in effect.	Internal: City Gen. Operating Budget

City of Garrison

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin / City EM	The city shares information with the public by posting information on our city website and city Facebook page. We also use our warning siren to be notified of severe wind or tornado events. We will work with Crow Wing County Emergency Management to help us participate locally in sharing information during the NWS Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November.	Internal: City Gen. Operating Budget
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	Existing High 2026-2031	City Admin / City EM	We will work with Crow Wing County Emergency Management to provide us with information and a link to the county website for residents to sign up for the Everbridge emergency notification system. We can post information on our city website and promote it occasionally on our city Facebook page.	Internal: City Gen. Operating Budget
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Admin	The city has a Land Use Permit Application that must be submitted to and approved by the city's Zoning Administrator.	Internal: City Gen. Operating Budget
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Admin	We have a floodplain ordinance that is enforced.	Internal: City Gen. Operating Budget

City of Garrison

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city has emergency generator backup power for city services and buildings.	New High 2026-2031	City PW / City EM	The city's Emergency Manager and Public Works department will continue to evaluate if and where generator backup power is needed for city facilities or infrastructure. The city would purchase generators as funding is available and approved by City Council.	Internal: City Gen. Operating Budget
6	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure that the city's outdoor warning sirens are maintained and functioning.	Existing High 2026-2031	City EM	The city has 1 outdoor warning siren which we test monthly in coordination with the Crow Wing County Sheriff's Office and maintain as needed.	Internal: City Gen. Operating Budget
7	Severe Summer Storms	Education & Awareness Programs	Encourage residents and visitors at our campgrounds to be aware of severe windstorms and tornadic weather, to understand warning siren alerts, and to be prepared with personal evacuation or shelter plans.	Existing High 2026-2031	City Admin / City EM	The city will seek to work with Crow Wing County to promote tornado awareness and safety during the NWS Severe Weather Awareness week each April.	Internal: City Gen. Operating Budget
8	Severe Summer Storms	Local Planning & Regulations / Structure & Infrastructure Projects	Address construction of new storm shelters or tornado safe rooms at campgrounds and mobile home parks within the city.	Existing High 2026-2031	City EM	The city has multiple campgrounds and mobile home parks. One mobile home park has 800+ sites, located on the Aitkin County border. Our emergency shelter is located at City Hall, but is limited to the key holder's ability to get there to open it. The city will continue to work with mobile home park operators to address evacuation and shelter planning. We will also assess improvements at campgrounds as part of budgeted facility upgrades. The city may seek to apply for FEMA HMGP grant funding to support any future construction of tornado safe rooms.	Internal: City Gen. Operating Budget External: MHP Operator, FEMA HMGP Safe Room grant

City of Garrison

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
9	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme cold temperatures.	Existing High 2026-2031	City Admin, City EM	In the event of an extreme temperature event coupled with an extended power outage, the city will work with our fire department and Crow Wing County Emergency Management to address assistance such as evacuation or temporary sheltering for the elderly or other vulnerable residents.	Internal: City Gen. Operating Budget
10	Flooding	Structure & Infrastructure Projects	Work to address flood mitigation measures that help the city to handle future high rain events.	Existing High 2026-2031	City Public Works Dept.	Our city Public Works Dept. continues to maintain and improve our city stormwater system to handle high rain events.	Internal: PW Dept. Budget
11	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin	During periods of severe drought, the city will establish watering restrictions as per MN DNR guidance. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget
12	Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New Moderate 2026-2031	City EM, City FD	The city will use our city website and social media to help raise awareness of wildfire danger during periods of drought. We will also work to promote awareness of burning restrictions if a burn ban is in effect.	Internal: City Gen. Operating Budget

City of Ironton

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin / City EM	The city shares information with the public by posting information on our city website and city Facebook page. We also use our warning siren to warn residents of severe wind or tornado events. We will work with Crow Wing County Emergency Management to help us participate locally in sharing information during the NWS Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November.	Internal: City Gen. Operating Budget
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	Existing High 2026-2031	City Admin / City EM	The city will work with Crow Wing County Emergency Management to help us to put information and a link to the county's Everbridge emergency notification system so that residents can sign up.	Internal: City Gen. Operating Budget
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Admin	The city has adopted the MN State Building Code. It is enforced by our city building inspector.	Internal: City Gen. Operating Budget
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Admin	We have a Comprehensive plan and City code for Planning & Zoning.	Internal: City Gen. Operating Budget
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city has emergency generator backup power for city services and buildings.	New High 2026-2031	City PW / City EM	The city will evaluate if and where generator backup power is needed for city facilities or infrastructure. The city would purchase generators as funding is available and approved by City Council.	Internal: City Gen. Operating Budget

City of Ironton

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure that the city's outdoor warning sirens are maintained and functioning.	Existing High 2026-2031	City EM	The city has 2 outdoor warning sirens which we test monthly in coordination with the Crow Wing County Sheriff's Office and are maintained as needed. The city will work to repair/ upgrade sirens as they approach end of life.	Internal: City Gen. Operating Budget
7	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe windstorms and tornadic weather, to understand warning siren alerts, and to be prepared with personal evacuation or shelter plans.	Existing High 2026-2031	City Admin / City EM	The city will seek to work with Crow Wing County to promote tornado awareness and safety during the NWS Severe Weather Awareness week each April.	Internal: City Gen. Operating Budget
8	Severe Summer Storms	Mitigation Preparedness & Response Support	Work to address evacuation and shelter planning for the city campgrounds and with apartment owners within the city.	Existing High 2026-2031	City EM	We have multiple campgrounds and a couple larger apartments for the elderly/mobility impaired that are vulnerable to the impacts of severe storm events and flooding. Our city EM and Fire Department continue to work on evacuation and sheltering planning for vulnerable residents if they are seeking shelter.	Internal: City Gen. Operating Budget
9	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme heat or cold temperatures.	Existing High 2026-2031	City Admin, City EM	In the event of an extreme temperature event coupled with an extended power outage, the city will work with our fire department and Crow Wing County Emergency Management to address assistance such as evacuation or temporary sheltering for the elderly or other vulnerable residents.	Internal: City Gen. Operating Budget
10	Flooding	Structure & Infrastructure Projects	Work to address flood mitigation measures that help the city to handle future high rain events.	Existing High 2026-2031	City Public Works Dept.	The city continues to maintain and improve our city stormwater system as needed to handle high rain events.	Internal: PW Dept. Budget

City of Ironton

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
11	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin	During periods of severe drought, the city will establish watering restrictions as per MN DNR guidance. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget
12	Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New Moderate 2026-2031	City EM, City FD	The city will use our city website and social media to help raise awareness of wildfire danger during periods of drought. We will also work to promote awareness of burning restrictions if a burn ban is in effect.	Internal: City Gen. Operating Budget

CITY OF JENKINS

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin / City EM	The city shares information with the public by posting information on our city website, through our city text alert system, and through use of our warning siren. We will work with Crow Wing County Emergency Management to help us participate locally in sharing information during the NWS Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November.	Internal: City Gen. Operating Budget
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	Existing High 2026-2031	City Admin / City EM	We will work with CWC Emergency Management to help us put information on our city website about the Everbridge emergency notification system and a link to sign up on the county website.	Internal: City Gen. Operating Budget
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Admin	The city has a Planning and Zoning Ordinances that we enforce. We require a Land Use Permit Application and review process for projects such as new construction and additions.	Internal: City Gen. Operating Budget
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Admin	We have a Comprehensive plan and City code for Planning & Zoning.	Internal: City Gen. Operating Budget
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Obtain an emergency backup generator for City Hall.	New High 2026-2031	City PW / City EM	Our City Hall is considered an emergency shelter but has very limited space and no backup power supply or generator. The city will work to purchase a generator as funding is available under our city budget and approved by City Council.	Internal: City Gen. Operating Budget

CITY OF JENKINS

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure that the city's outdoor warning sirens are maintained and functioning.	Existing High 2026-2031	City EM	The city has 1 outdoor warning siren which we test monthly in coordination with the Crow Wing County Sheriff's Office and keep maintained as needed.	Internal: City Gen. Operating Budget
7	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe windstorms and tornadic weather, to understand warning siren alerts, and to be prepared with personal evacuation or shelter plans.	Existing High 2026-2031	City Admin / City EM	The city will seek to work with Crow Wing County to promote tornado awareness and safety during the NWS Severe Weather Awareness week each April.	Internal: City Gen. Operating Budget
8	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme cold temperatures.	Existing High 2026-2031	City Admin, City EM	In the event of an extreme temperature event coupled with an extended power outage, the city will work with our fire department and Crow Wing County Emergency Management to address assistance such as evacuation or temporary sheltering for the elderly or other vulnerable residents.	Internal: City Gen. Operating Budget
9	Flooding	Structure & Infrastructure Projects	Work to address flood mitigation measures that help the city to handle future high rain events.	Existing High 2026-2031	City Public Works Dept.	The city continues to maintain and improve our city stormwater system as needed to handle high rain events.	Internal: PW Dept. Budget
10	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin	During periods of severe drought, the city will establish watering restrictions as per MN DNR guidance. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget
11	Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New Moderate 2026-2031	City EM, City FD	The city will use our city website and city text alert system to help raise awareness of wildfire danger during periods of drought. We will also work to promote awareness of burning restrictions if a burn ban is in effect.	Internal: City Gen. Operating Budget

City of Manhattan Beach

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin, City Council	The city shares information with the public by posting information on our city website or by making announcements as needed at City Council meetings. We will work with Crow Wing County Emergency Management to help us participate locally in sharing information during the NWS Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November.	Internal: City Gen. Operating Budget
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	Existing High 2026-2031	City Admin, City Council	We will work with CWC Emergency Management to help us put information on our city website about the Everbridge emergency notification system and a link to sign up on the county website.	Internal: City Gen. Operating Budget
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Planning & Zoning	The city has Planning and Zoning Ordinances that we enforce.	Internal: City Gen. Operating Budget
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Planning & Zoning	We have a Comprehensive plan as well as our city code for Planning & Zoning.	Internal: City Gen. Operating Budget
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city has emergency generator backup power for city services and buildings.	New High 2026-2031	City Admin, City Council	The city will evaluate if and where generator backup power is needed for city facilities or infrastructure. The city would purchase generators as funding is available and approved by City Council.	Internal: City Gen. Operating Budget
6	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe windstorms and tornadic weather, to understand warning siren alerts, and to be prepared with personal evacuation or shelter plans.	Existing High 2026-2031	City Admin, City Council	The city will seek to work with Crow Wing County to help us promote tornado awareness and safety during the NWS Severe Weather Awareness week each April.	Internal: City Gen. Operating Budget

City of Manhattan Beach

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
7	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme heat or cold temperatures.	Existing High 2026-2031	City Admin, City Council	In the event of an extreme temperature event coupled with an extended power outage, the city will work with our fire department and Crow Wing County Emergency Management to address assistance such as evacuation or temporary sheltering for the elderly or other vulnerable residents.	Internal: City Gen. Operating Budget
8	Flooding	Structure & Infrastructure Projects	Work to address flood mitigation measures that help the city to handle future high rain events.	Existing High 2026-2031	City Admin, City Council	The city continues to maintain and improve our city stormwater system as needed to handle high rain events.	Internal: City Gen. Operating Budget
9	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin, City Council	During periods of severe drought, the city will establish watering restrictions as per MN DNR guidance. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget
10	Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New Moderate 2026-2031	City Admin, City Council	The city will use our city website to help raise awareness of wildfire danger during periods of drought. We will also work to promote awareness of burning restrictions if a burn ban is in effect.	Internal: City Gen. Operating Budget

City of Nisswa

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin / City EM	The city shares information with the public by posting information on our city website and city Facebook page. We will work with Crow Wing County Emergency Management to help us participate locally in sharing information during the NWS Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November.	Internal: City Gen. Operating Budget
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	Existing High 2026-2031	City Admin / City EM	We will work with CWC Emergency Management to help us put information on our city website and FB page about the Everbridge emergency notification system and a link to sign up on the county website.	Internal: City Gen. Operating Budget
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Admin	The city has local ordinances for land use regulation that we enforce.	Internal: City Gen. Operating Budget
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Admin	The city's planning and zoning department administers shoreland and floodplain ordinances.	Internal: City Gen. Operating Budget
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city has emergency generator backup power for city services and buildings.	New High 2026-2031	City PW / City EM	The city will evaluate if and where generator backup power is needed for city facilities or infrastructure. The city would purchase generators as funding is available and approved by City Council.	Internal: City Gen. Operating Budget

City of Nisswa

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Work to address old trees that can come down from storms and result in major damages.	Existing Moderate 2026-2031	City Public Works Dept.	Our city has several areas with old, large trees in residential areas making them a concern causing damage or injury during storms. Our city public works department continues to trim trees in the ROW that may have dead or dying branches.	Internal: City Gen. Operating Budget
7	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure that the city's outdoor warning sirens are maintained and functioning.	Existing High 2026-2031	City EM	The city has 3 outdoor warning siren which we test monthly in coordination with the Crow Wing County Sheriff's Office and are maintained as needed.	Internal: City Gen. Operating Budget
8	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe windstorms and tornadic weather, to understand warning siren alerts, and to be prepared with personal evacuation or shelter plans.	Existing High 2026-2031	City Admin / City EM	The city will seek to work with Crow Wing County to help us promote tornado awareness and safety during the NWS Severe Weather Awareness week each April.	Internal: City Gen. Operating Budget
9	Severe Summer Storms	Local Planning & Regulations / Structure & Infrastructure Projects	Address areas in the city where there should be storm shelters	Existing High 2026-2031	City EM	Our city has multiple resorts/ campgrounds along with an elementary school. We will seek to work with these areas to improve storm shelters as needed. Future construction projects may be coordinated with future facility upgrades. If any tornado safe room projects are of interest, the city would work with CWC Emergency Management to look into applying for FEMA HMGP grant funding.	Internal: City Gen. Operating Budget External: FEMA HMGP safe room grant
10	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme heat or cold temperatures.	Existing High 2026-2031	City Admin, City EM	The city has our community center available as a storm shelter with limited space. We would work with CWC emergency management if needed under a major event that displaced more people that we can include in our community center.	Internal: City Gen. Operating Budget

City of Nisswa

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
11	Flooding	Structure & Infrastructure Projects	Work to address flood mitigation measures that help the city to handle future high rain events.	Existing High 2026-2031	City Public Works Dept.	The city continues to maintain and improve our city stormwater system as needed to handle high rain events.	Internal: PW Dept. Budget
12	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin	During periods of severe drought, the city will establish watering restrictions as per MN DNR guidance. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget
13	Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New Moderate 2026-2031	City EM, City FD	The city will use our city website and social media to help raise awareness of wildfire danger during periods of drought. We will also work to promote awareness of burning restrictions if a burn ban is in effect.	Internal: City Gen. Operating Budget

City of Pequot Lakes

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin / City EM	The city shares information with the public by posting information on our city website, social media, and city hall bulletin board. We also do a yearly tornado and evacuation training. We will work with Crow Wing County Emergency Management to help us participate locally in sharing information during the NWS Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November.	Internal: City Gen. Operating Budget
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	Existing High 2026-2031	City Admin / City EM	We will work with CWC Emergency Management to help provide us with information and a link to put on our city website, Facebook and our bulletin boards to encourage residents to sign up.	Internal: City Gen. Operating Budget
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Admin	The city has Planning and Zoning Ordinances that we enforce.	Internal: City Gen. Operating Budget
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Admin	We have a Comprehensive Plan as well as our city code for Planning and Zoning. We also have a wellhead protection plan.	Internal: City Gen. Operating Budget
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city has emergency generator backup power for city services and buildings.	New High 2026-2031	City PW / City EM	The city had a generator installed at City Hall in case we would need to provide emergency shelter. We continue to ensure it is maintained.	Internal: City Gen. Operating Budget
6	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure that the city's outdoor warning sirens are maintained and functioning.	Existing High 2026-2031	City EM	The city has 3 outdoor warning sirens which we test monthly in coordination with the Crow Wing County Sheriff's Office and keep maintained as needed.	Internal: City Gen. Operating Budget

City of Pequot Lakes

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
7	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe windstorms and tornadic weather, to understand warning siren alerts, and to be prepared with personal evacuation or shelter plans.	Existing High 2026-2031	City Admin / City EM	The city will seek to work with Crow Wing County to help us promote tornado awareness and safety during the NWS Severe Weather Awareness week each April.	Internal: City Gen. Operating Budget
8	Severe Summer Storms	Local Planning & Regulations / Structure & Infrastructure Projects	Work with the city's mobile home park to address evacuation and shelter planning. Plan for construction of a new tornado shelter or alternate site evacuation facility.	Existing High 2026-2031	City EM	We have limited sheltering at City Hall. We will work with the mobile home park to assess potential for future construction of a new storm shelter or tornado safe room. FEMA HMGP grant funding would be necessary for a safe room project.	Internal: City Gen. Operating Budget External: FEMA HMGP safe room grant
9	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme heat or cold temperatures.	Existing High 2026-2031	City Admin, City EM	In the event of an extreme temperature event coupled with an extended power outage, the city will work with our fire department and Crow Wing County Emergency Management to address assistance such as evacuation or temporary sheltering for the elderly or other vulnerable residents.	Internal: City Gen. Operating Budget
10	Extreme Cold	Education & Awareness Programs	Continue to notify residents about the danger of freezing water lines pipes during periods of extreme cold.	Existing High 2026-2031	City Admin	We use our city utility billing to notify residents of potential freezes. We have a list of contact information for residents that are highly susceptible to freezes during cold weather.	Internal: City Gen. Operating Budget
11	Flooding	Structure & Infrastructure Projects	Work to address flood mitigation measures that help the city to handle future high rain events.	Existing High 2026-2031	City Public Works Dept.	Our city Public Works department continues to maintain and improve our city stormwater system as needed to handle high rain events.	Internal: PW Dept. Budget

City of Pequot Lakes

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
12	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin	We enforce water restrictions if there is a drought. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget
13	Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New Moderate 2026-2031	City EM, City FD	We will use our city website and social media to help raise awareness of wildfire danger during periods of drought. We will also work to promote awareness of burning restrictions if a burn ban is in effect.	Internal: City Gen. Operating Budget

City of Trommald

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2026-2031	City Admin / City EM	The city shares information with the public by posting information on our community Facebook page and by making announcements at City Council meetings. We do not have a city website. We utilize our outdoor warning siren and a call system if needed. We will work with Crow Wing County Emergency Management to help us participate locally in sharing information during the NWS Severe Weather Awareness Week each April and Winter Hazards Awareness Week each November.	Internal: City Gen. Operating Budget
2	All-Hazards	Education & Awareness Programs	Encourage residents to sign up for the county's emergency notification system to receive alerts on severe weather events.	Existing High 2026-2031	City Admin / City EM	We will provide occasional reminders at council meetings to encourage all residents to sign up for the CWC Everbridge system.	Internal: City Gen. Operating Budget
3	All-Hazards	Local Planning & Regulations	Enforce city regulations that help to reduce the risk of storm damages to new development.	Existing High 2026-2031	City Admin	We have our own Planning & Zoning Ordinances and it is noted in them that standard building codes for Minnesota shall be followed.	Internal: City Gen. Operating Budget
4	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and new development.	Existing Moderate 2026-2031	City Admin	We have a comprehensive plan that coordinates with our Ordinances.	Internal: City Gen. Operating Budget
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Ensure the city has emergency generator backup power for city services and buildings.	New High 2026-2031	City PW / City EM	The city will evaluate if and where generator backup power is needed for city facilities or infrastructure. The city would purchase generators as funding is available and approved by City Council.	Internal: City Gen. Operating Budget
6	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure that the city's outdoor warning sirens are maintained and functioning.	Existing High 2026-2031	City EM	The city has 1 outdoor warning siren which we test monthly in coordination with the Crow Wing County Sheriff's Office and keep maintained as needed.	Internal: City Gen. Operating Budget

City of Trommald

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
7	Severe Summer Storms	Education & Awareness Programs	Encourage residents to be aware of severe windstorms and tornadic weather, to understand warning siren alerts, and to be prepared with personal evacuation or shelter plans.	Existing High 2026-2031	City Admin / City EM	The city will seek to work with Crow Wing County to help us promote tornado awareness and safety during the NWS Severe Weather Awareness week each April.	Internal: City Gen. Operating Budget
8	Extreme Cold	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during periods of extreme cold temperatures.	Existing High 2026-2031	City Admin, City EM	In the event of an extreme temperature event coupled with an extended power outage, the city will work with our fire department and Crow Wing County Emergency Management to address assistance such as evacuation or temporary sheltering for the elderly or other vulnerable residents.	Internal: City Gen. Operating Budget
9	Flooding	Structure & Infrastructure Projects	Work to address flood mitigation measures that help the city to handle future high rain events.	Existing High 2026-2031	City Public Works Dept.	The city continues to maintain and improve our city stormwater system as needed to handle high rain events.	Internal: PW Dept. Budget
10	Drought	Local Planning & Regulations / Education & Awareness Programs	During periods of drought establish water use restrictions and conduct public outreach on water conservation measures.	New Moderate 2026-2031	City Admin	During periods of severe drought, the city will establish watering restrictions as per MN DNR guidance. We will also work to promote awareness to residents of the restrictions and water conservation measures.	Internal: City Gen. Operating Budget
11	Wildfire	Education & Awareness Programs	Promote public awareness of dangerous wildfire conditions during periods of drought and burning restrictions.	New Moderate 2026-2031	City EM, City FD	We will help raise awareness of wildfire danger during periods of drought by making announcements at city council meetings when needed. We will also work to promote awareness of burning restrictions if a burn ban is in effect.	Internal: City Gen. Operating Budget

City of Trommald

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
12	Wildfire	Natural Systems Protection	Work to implement woodland fuel reduction projects in coordination with our Fire Dept, local residents, and Crow Wing County.	New High 2026-2031	City Admin, City FD in coord with CWCEM	Efforts we may work on include encouraging residents to clean up deadfall and conducting prescribed burns. We would seek to work in coordination with CWC Emergency Management and to obtain funding for wildfire mitigation activities.	Internal: City Gen. Operating Budget External: MN DNR Firewise, Community Wildfire Defense Grant

Appendix I – Plan Maintenance & Monitoring Worksheets

During the five-year plan period, the Emergency Management Director (EMD) will require all relevant departments and jurisdictions to report on the status of their mitigation actions. This information will be used to track progress for the next plan update. Participating jurisdictions will use these worksheets to report on the mitigation activities listed in Appendix H.

Mitigation Action Tracking	
Name of Jurisdiction	
Reporting Period	
Describe the action or project.	
Who is responsible for the action?	
Project status:	<input type="checkbox"/> Complete <input type="checkbox"/> In progress, anticipated completion date: _____ <input type="checkbox"/> Not started <input type="checkbox"/> Canceled
Progress Report	
Has there been any progress with this project so far?	
Are there any obstacles or challenges with this action so far?	
What steps do you need to take to complete this project?	
Other comments:	

Hazard Mitigation Plan Maintenance Schedule			
Plan Maintenance Step	When	How	Who
Monitoring	Twice per year.	Get status updates on jurisdictional mitigation actions, compile progress reports and identify any opportunities for improvement.	Emergency Management Director
Evaluating	Once a year or after a disaster event.	Use a standard form to review how the plan has been carried out so far and record lessons learned.	Emergency Management Director, Lead Jurisdiction Planning Department Manager
Updating	Every 5 years, or after a disaster event.	Review the plan and document necessary updates as necessary for the next plan update.	Emergency Management Director, Lead Jurisdiction Planning Department Manager

The EMD will also seek feedback from the Emergency Managers group on the following:

- Are there any new representatives from jurisdictions, agencies, or organizations that you feel should be included in our stakeholder outreach?
- Do you feel your community has any new vulnerabilities that may be impacted by hazard events? (critical infrastructure, systems, or populations)
- Has your community identified any new mitigation activities that would help reduce risk to future hazard events?
- Are there any funding opportunities or other resources that may be available to help implement local mitigation activities?
- How is your community integrating information from the mitigation plan into other planning mechanisms (such as plans, policies, or partnerships)?