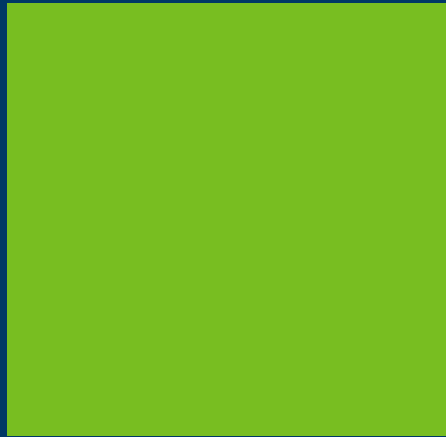


Goodhue County 2024 Hazard Mitigation Plan



Goodhue County Minnesota

2024 Hazard Mitigation Plan

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Section 1 – Introduction

1.1 Hazard Mitigation Planning in Minnesota

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

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

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

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

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

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

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

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

[Goodhue 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 Goodhue County Emergency Management to facilitate an update to the 2016 Goodhue 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 Goodhue 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 Goodhue County, including the cities of Bellechester, Cannon Falls, Dennison, Goodhue, Kenyon, Lake City, Pine Island, Red Wing, Wanamingo, and Zumbrota. The Goodhue County mitigation activities identified in this plan also incorporate the concerns and needs of townships, school districts, and other participating entities.

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

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

- Include more recent data documenting the critical infrastructure and hazards faced by Goodhue 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 Goodhue County.
- Encourage recipients and sub-recipients of hazard mitigation grants to consider climate change adaptation, resiliency, and equity in their planning efforts.

1.1.2 Hazard Mitigation Definition

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

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

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

1.2 State Administration of Mitigation Grants

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

Section 2 – Public Planning Process

2.1 Planning Team Information

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

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

Table 1. Hazard Mitigation Planning (HMP) Team

Name	Agency/Organization	Participant Title
Earl Merchlewitz	Goodhue County Emergency Management	Emergency Management Director
Mallory McCarthy	Goodhue County Emergency Management	Deputy EM
Marty Kelly	Goodhue County Sheriff's Office	Sheriff
Josh Kurtti	Goodhue County Sheriff's Office	SRO
Alan Laumeyer	Goodhue County	GIS Office
Leanne Knott	Goodhue County	GIS Systems Specialist
John Smith	Goodhue County	IT Director
Scott Arneson	Goodhue County	County Administrator
Bryan Byholm	Goodhue County GIS	GIS System Specialist
Tim Redepenning	Goodhue County	Facilities Maintenance Director
Heather Arndt	Goodhue County Health & Human Services	Emergency Preparedness Coordinator
Nina Arneson	Goodhue County Health & Human Services	HHS Director
Jess Greenwood	Goodhue County Public Works	Director / County Engineer
Jessica Seide	Goodhue County Health & Human Services	Community Health Specialist
Todd Greseth	Goodhue County	Commissioner
Brad Anderson	Goodhue County	Commissioner
Briggs Tople	Goodhue County	Outreach & Comms. Specialist (PIO)
Jeff McCormick	City of Cannon Falls	Chief of Police/Emergency Manager
Joseph Berg	City of Cannon Falls	Lieutenant
Jeffrey Flaten	City of Dennison	Mayor
John Yorde	City of Lake City	Emergency Manager
Mark Vahlsing	City of Kenyon	City Administrator
Scott Jensen	City of Lake City	Public Works Director
Elizabeth Howard	City of Pine Island	City Administrator
Mike Wilson	City of Red Wing	Mayor
Peter Hanlin	City of Red Wing	Asst. Fire Chief/EM Director

Name	Agency/Organization	Participant Title
Travis Bray	City of Red Wing PD	Police Captain/Emergency Manager
Wayne Ehrich	City of Kenyon	Public Works Superintendent
Jeff Sjoblom	City of Kenyon PD	Police Chief
Travis Dunn	City of Lake City	Assistant Public Works Director
Laura Blair Johnson	City of Red Wing	Administrative Services Director
Michael Boulton	City of Wanamingo	City Administrator
Brian Grudem	City of Zumbrota	City Administrator
Patrick Callahan	City of Zumbrota PD	CLEO
Michael Peterson	MN HSEM	Region 1 Regional Program Coordinator
Dough Leung	MN HSEM	Hazard Mitigation Planner
Beau Kennedy	Goodhue SWCD	Manager
David Morrison	U.S. EPA	Federal On Scene Coordinator
Sampson Jeff	Cannon Falls Area Schools	Superintendent
John Stapleton	Zumbrota-Mazzepa School District	7-12 Principal
Steven Strauss	Cannon Falls Area Schools	Assistant Principal
Lucas Youngsma	MNDNR	Area Hydrologist
Michele Heaver	The Salvation Army	Divisional Emergency Disaster Services Director
Scott Roepke	Cannon Valley Trail	Trail Manager
Kelly Hovel	Goodhue County Cooperative Electric Assn.	General Manager
Tim Krohn	Goodhue County Cooperative Electric Assn.	Line Superintendent
James Ganz	Pine Island Township	Supervisor
Sue Cushing	Hay Creek Township	Supervisor
Jessica Jacobson	Welch Township	Clerk
Deb Hendrickson	Cannon Falls Township	Chair
Mary Veiseth	Minneola Township	Treasurer
Darla Frandrup	Warsaw Township	Clerk
Pamela Miller	Florence Township	Clerk
Laurie Hoernemann	Zumbrota Township	Clerk
Kim Flanagan	Prairie Island Indian Community	Emergency Management Coordinator
Jonathan Jacobson	Olmsted County	Director of Emergency Management
Brenda Tomlinson	Wabasha County Emergency Management	Emergency Management Director
Kelly Miller	Dakota County Emergency Management	Emergency Management Director
Christine McPherson	Pierce County, WI Emergency Management	Emergency Management Director

2.2 Review of Existing Plans, Capabilities & Vulnerabilities

Goodhue County and its local communities utilized a variety of planning documents to direct plan development. These documents included a Comprehensive/Master Plan, Emergency Operations Plan, Transportation Plan, etc. (see Section 5.1.3 and Appendix D). The planning process also incorporated

the existing natural hazard mitigation elements from previous planning efforts. In addition, the 2019 Minnesota All-Hazard Mitigation Plan was consulted.

In the development of the Goodhue 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 Goodhue County emergency management director and other key county staff and local city officials to collect feedback on local mitigation capabilities and vulnerabilities that either support or hinder the ability to mitigate against natural hazards countywide and at the local level. Following is a summary of the assessment tools used to gather information on local capabilities and vulnerabilities during the planning process:

Capabilities Assessment (hazard-specific): In this assessment, detailed information was collected from Goodhue 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 Goodhue County to support mitigation.

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

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

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

2.3 Planning Process Timeline and Steps

In order to update the 2016 Goodhue County HMP, U-Spatial consultants worked in coordination with Goodhue County Emergency Management and members of the planning team. The updated plan includes new data documenting the types of hazards faced by Goodhue County residents and emergency planning officials as well as new thinking on how to address these hazards.

2.3.1 Goodhue County Stakeholder Coordination

Two planning team meetings took place via Zoom video conference hosted by U-Spatial. Meeting participants included representatives from Goodhue 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, Goodhue County issued two news releases announcing the plan update and inviting public review and feedback on the draft plan. The news release provided information on where to view the plan and submit comments. The County HMP website, hosted by U-Spatial, and the feedback and mitigation action ideas survey will remain available through the five-year planning period to foster public engagement. Table 2 documents dates of Hazard Mitigation update meetings and public outreach. The public feedback period for the draft plan was open from 8/20/24 to 9/3/24, a total of 15 days. Appendix G provides documentation of the public outreach for feedback on the draft plan by Goodhue County and jurisdictions.

At the close of the public outreach period, the U-Spatial consultants worked with the Goodhue County Emergency Manager and planning team members to incorporate public feedback into the HMP. For more information on the planning process, see Sections 5 and 6.

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

Event	Date	Appendix
Kickoff Webinar	4/28/23	Appendix F, Planning Team Meetings
News Release #1	6/5/23	Appendix G, Public Outreach & Engagement Documentation
Planning Team Meeting #1	1/31/24	Appendix F, Planning Team Meetings
Planning Team Meeting #2	7/22/24	Appendix F, Planning Team Meetings
News Release #2	8/20/24	Appendix G, Public Outreach & Engagement Documentation

2.3.2 Overview of Jurisdictional Participation

Throughout the planning process, Goodhue 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 Goodhue 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 Goodhue County, municipal governments, and other stakeholders. Emails were used to distribute news releases for public outreach, to invite participation in meetings and to share meeting summaries, as well as to request local information and final review of the draft plan. Email proved to be an effective tool that resulted in increased jurisdictional participation and

collection of locally specific information. Email was also used by the public to submit feedback to Goodhue County following news releases on the HMP.

- **Phone Calls:** Phone calls were frequently used to conduct direct outreach or follow-up to jurisdictions to ensure participation or to collect information via one-on-one interviews. Phone calls proved to be an effective tool that resulted in increased jurisdictional participation and collection of quality information. Phone calls were especially useful in engaging very small communities that had limited staff or technological capabilities.

Cities participating in Goodhue 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. Goodhue 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 Goodhue County HMP update planning process and a reference to supporting documentation.

Table 3. Jurisdictional participation in planning process

Jurisdiction (2022 Est. Population, Esri)	News Release #1	Planning Team Mtg. #1	Local Mitigation Survey	Mitigation Action Charts	Planning Team Mtg. #2	News Release #2 & Plan Review
Supporting Documentation	App. G	App. F	App. C	Sec. 5.3 App. H	App. F	App. G
Goodhue County (47,725)	X	X	X	X	X	X
City of Bellechester (137)	X		X	X		X
City of Cannon Falls (4,161)	X	X	X	X	X	X
City of Dennison (207)	X	X	X	X	X	X
City of Goodhue (1,239)	X		X	X		X
City of Kenyon (1,871)	X	X	X	X	X	X
City of Lake City (884)	X	X	X	X	X	X
City of Pine Island (3,017)	X	X	X	X	X	X
City of Red Wing (16,571)	X	X	X	X	X	X
City of Wanamingo (1,159)	X	X	X	X	X	X
City of Zumbrota (3,713)	X	X	X	X	X	X
Neighboring Jurisdictions:						
Dakota County					X	
Rice County						
Dodge County						
Olmsted County		X			X	
Wabasha County		X				
Pierce County, WI					X	
Pepin County, WI						
Prairie Island Indian Community		X			X	

Section 3 – Risk Assessment and Vulnerability Analysis

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

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

3.1 Natural Hazards Identification

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

*See a list of all natural hazards covered in the 2024
HMP*

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

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

3.1.1 Hazard Prioritization

As part of the plan update process, the planning team reviewed, updated, and prioritized the hazards faced by residents of Goodhue County, updated the existing mitigation actions published in the 2016 HMP, and proposed new mitigation actions.

The team examined the hazards identified in the 2016 HMP and adjusted them to reflect the definitions of natural hazards used in the 2024 Minnesota State Hazard Mitigation Plan.

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

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

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

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

3.1.2 FEMA- and Minnesota-Declared Disasters and Assistance

Another historical perspective is derived from FEMA-declared disasters. Fifteen major disasters and three emergency declarations in Goodhue County have been made between 1957 and July 2024; details of these can be viewed on the [Goodhue 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). Goodhue County has been included in four State Disaster Declarations.

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

Table 5. Historical hazard mitigation funding awarded in Goodhue County

Project Identifier	Sub-Grantee	Project Type	Project Total	Federal Share
DR-4182-0005-P	Goodhue County	91.1: Local Multi-hazard Mitigation Plan	\$15,769	\$11,827

Project Identifier	Sub-Grantee	Project Type	Project Total	Federal Share
DR-1717-0018-P	Goodhue County	91.1: Local Multi-hazard Mitigation Plan	\$16,118	\$10,289
DR-1175-0031-R	Zumbrota	200.3: Acquisition of Public Real Property (Structures and Land) - Riverine	\$566,357	\$528,707
DR-1175-0026-R	Goodhue County	200.1: Acquisition of Private Real Property (Structures and Land) - Riverine	\$342,355	\$256,766
DR-1175-0027-R	Cannon Falls, City of	200.1: Acquisition of Private Real Property (Structures and Land) - Riverine	\$773,830	\$450,791
DR-0929-0003-R	Goodhue Co Coop Elec	400.1: Utility Protective Measures (Electric, Gas, etc.)	\$562,070	\$255,482
DR-1333-0010-R	Goodhue County Co-Op Electric	400.1: Utility Protective Measures (Electric, Gas, etc.)	\$222,973	\$167,230

SOURCE: (FEMA, 2023c)

3.2 Community Vulnerability

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

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

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

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

3.3 Climate Change

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

Rising global temperatures and the resulting increases in atmospheric moisture from evaporation of ocean waters have allowed Minnesota to become warmer, wetter, and more humid during the past

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

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

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

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

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

The climatic picture is expected to change further beyond the 2020s and especially as Minnesota approaches the middle of the 21st century (Table 7). Dramatic losses in extreme cold and additional increases in heavy and extreme precipitation are expected to remain the state's leading climate change symptoms. Although Minnesota has not yet observed increases in the frequency, severity, or duration of summertime high temperatures or drought (through 2023), climate model projections summarized in NCA5 indicate that heat waves are all but certain to increase by mid-century. A 2018 study conducted by NOAA scientists indicates that by the 2050s, heat waves in Minnesota will be more attributable to climate change than to natural variability (Lopez et al., 2018).

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

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

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

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

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

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

3.3.1 Climate Change Impacts and Resilience Planning

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

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

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

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

3.3.2 Health Impacts of Climate Change in Minnesota

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

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

Heat

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

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

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

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

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

Air Pollution

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

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

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

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

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

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

Those most at risk include:

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

Extreme Precipitation, Floods, Drought

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

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

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

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

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

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

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

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

Zoonotic Diseases

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

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

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

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

Harmful Algal Blooms

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

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

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

Mental Health

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

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

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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 Goodhue County website

3.4 Jurisdictional Change in Risk or Vulnerability Assessment

Jurisdictions in Goodhue 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, Goodhue County Emergency Management and each city jurisdiction were asked to provide a vulnerability assessment that described what structures, systems, populations, or other community assets were susceptible to damage and loss from specific hazard events. Following are examples of common responses related to noted local vulnerabilities (as preserved in Appendix C: Part A) for each jurisdiction. This information was used to help tie local vulnerability back to the exposure of people, buildings, infrastructure, and the environment to the natural hazards listed in Table 4 and to assist local governments in the development of related local mitigation actions to reduce risk.

Goodhue County

Windstorm and Tornadoes: In Goodhue County, we have 14 mobile home parks with limited shelter options. Most of the residences in the area are also served by overhead electrical utilities that can fail during high wind events.

Flooding: Within the county, we have the North Fork of the Zumbro River which has caused flooding in several cities that are vulnerable to flash flooding, including Zumbrota, along with the Shades of Sherwood campground, which has flooded several times over the last 20 years. The campground has a transient population which makes this a unique challenge. The North middle fork of the Zumbro River has caused flash flooding within the city of Pine Island. Pine Island has taken a lot of steps to mitigate but the town is divided in half and limited access when the river floods. The Mississippi River is also vulnerable to seasonal flooding. This flooding directly affects the cities of Red Wing, Frontenac, and Lake City as well as the Prairie Island Indian Community. We also have the Cannon River flowing from the northwest corner of the county through Lake Byllesby and ending at the Mississippi River. There has been a history of flooding within the communities of Cannon Falls and Welch, which have resulted in community impacts, road closures, and washouts.

Ice Storms, Blizzards: Most of the county is serviced by overhead power lines. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches. Over 2/3 of the county is typically flat farm country which makes it very vulnerable to blowing/drifted snow from blizzards. In addition, Hwy 52 cuts through the county, and those passing through the county are vulnerable to winter

weather with limited first responders and tow trucks. Many people do not travel with adequate supplies in their vehicles.

Winter Storms/Extreme Cold: Residents are at high risk during extreme cold weather. If the power goes down during these cold events, large parts of our population would be highly vulnerable to further injuries or death. In addition, Hwy 52 cuts through the county, and those passing through the county are vulnerable to winter weather with limited first responders and tow trucks. Many people do not travel with adequate supplies in their vehicles.

Dam/Levee Failure: We have several dam structures within our county. Most of them are part of the Belle Creek watershed. This watershed has two dams that are debatable on whether they are considered a high risk of failure. The primary concern for dam failure is the Lake Byllesby Dam, which is on the Cannon River. The dam is operated by Dakota County and is on the border of both Goodhue and Dakota County. If this dam was to have a significant failure it would be catastrophic for the city of Cannon Falls. Large portions of public and private property would be in danger of being destroyed. The current projections are a concern for the whole Cannon Valley including the town of Welch. The dam is old and has a large body of water that is contained within Lake Byllesby.

Drought: The county is mostly agriculturally based and with droughts the farms are vulnerable to this due to damage to the crops. This has been evident over the past two summers when farmers have had lower results during harvest and the ripple effects on the livestock portion of the farms. This is a growing concern and a very small number of the farms have any kind of irrigation for their fields.

Extreme Heat: The population in the county is mostly rural and susceptible to extreme swings with stretches of high heat. We have had issues with the utility companies being able to keep up with the demand. The cities in the county do not have areas to establish cooling centers to keep people cool. The elderly are particularly susceptible to stretches of high heat.

City of Bellechester

All Hazards: We have a large population of senior citizens that do not use cell phones to receive emergency notifications.

Flooding: Manhole covers will be raised as part of our sewer lining project in 2024.

City of Cannon Falls

Flooding: Green space around river is prone to scrubbing when flooding out of the river banks. Flooding can impact Hwy 20 if high enough.

Windstorms and Tornadoes: City is located within a valley and has a lot of mature trees that are susceptible to damage during high wind events.

Hail: City assets that are not in a garage like police vehicles and City building are susceptible to damage during hail events.

Dam Failure: There is a dam located about a mile upstream from the city.

City of Dennison

All Hazards: City Hall is used as a Community Center for many activities throughout the year. If people are displaced from a severe storm event or extended power outage, then having a portable generator would be an asset for the community. We don't have a backup generator for our well house either. The city has attempted to get a FEMA grant to do that several years ago but never received funding.

Ice Storms, Blizzards: The older part of town is served by overhead power lines and electrical poles. The overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches. The city has also lost power because of the transmission line, usually an event south of Dennison, Nerstrand or Kenyon, can affect us for periods of time. When we lose 3 phase power for any amount of time, the VFD in our well house will need to be reset. Xcel Energy is planning on replacing transmission lines and power poles.

City of Goodhue

All Hazards: We need to find a new storm shelter in case of a major disaster. Following St. Lukes church moving out of town (our old community shelter), we are vulnerable. We also need to purchase a generator for City Hall and the public works building. We need to upgrade our notification system on all levels. Daily city functions could be affected if there is no power or major damage.

Flooding: Most of the town is high enough to accommodate a high-water event. The wastewater treatment plant has a levee around it but in the event of a 100-year flood event it could be overcome. If this were to happen it would cause sanitary sewer issues. We also could have some flooding concerns at heritage park that could require damage the ball field or one bathroom.

Windstorm, Tornadoes: We have one siren in town located next to the water tower. We do not have a shelter for our mobile home park or anyone without a safe room. We also have many overhead power lines on the Xcel Energy older part of town. If there is major windstorm, we could see large amounts of power outages.

Hail: We would have minimal effects from hail other than property loss.

Extreme Cold: We have a mobile home court that has many older homes and a very diverse culture and language barrier. In the event of very cold weather, we would need to inform them

of procedures to keep pipes thawed. This also includes the public in case it's a prolonged cold event.

Ice Storms: With a lot of overhead lines in the Xcel Energy older part of town the biggest concern would be loss of power. With this being part of our business district it would have a huge impact on the city. This area also has the largest elderly population and the school.

City of Kenyon

All Hazards: We need to obtain a permanent generator for our Fire Hall that serves as our local shelter if people are displaced from a severe storm event or extended power outage. The Fire Hall will be the designated EOC for Goodhue County in the event of an emergency in Red Wing. We also have a large population of senior citizens that do not use cell phones to receive emergency notifications.

Flooding: The only issue we would have would be the bridge on MN Hwy 60, west of the city. The water could flow over the highway at that point.

Ice Storms, Blizzards: Relocating overhead power lines to underground would eliminate damage from storms and downed trees.

Windstorms and Tornadoes: Kenyon Municipal Utilities (KMU) is the most vulnerable to wind damage.

City of Lake City

All Hazards: A generator would be beneficial for City Hall. City Hall houses the IT Server for the Public Safety Building along with other crucial departments. During power outages public safety is without internet service and electronic files needed for response. A generator would be beneficial for local public school. Local School are identified as a shelter in city EOP as in many cities due to size and accessibility.

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

Windstorms and Tornadoes: We have multiple mobile home parks and a campground within the city that have inadequate storm shelters and residents are vulnerable to high wind and tornado events. Our municipal campground and summer housing is active during summer and fall months with campers and storm shelter s are inadequate for population covered along with distance between residents and the Shelters.

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

Concerns towards all OH Elec Dist. system, especially towards: South prairie from Marion to Iowa, Marion from 8th to lakeshore, and Grant ST to 332nd St.

Hok Si LA Campground and Marina Point within the city that does not have a storm shelter and residents are vulnerable to high wind and tornado events.

We have experienced power outages from strong wind events that brought down power lines, Street Trees, loss in Boulevard areas.

Flooding: City lift station and electrical for City and Central point usually needs to be shut off when extreme flooding is involved especially during spring flooding.

HSL-Loss of upland / erosion and restoration needing to be completed.

Lift station occurrences: infiltration occurs at Sprague lift and central point lift (loss of electrical service to central point and marina point) Sanitary infiltration occurrences.

Marina Point: Emergency Move of Trailer homes, sanitary infiltration, and discharges. Electrical Equipment restoration

Ohuta Park: Retaining wall undermined due to flooding and loss of upland from erosion.

Roschen Park: Loss of upland from erosion

City owned shoreland is exposed to loss from erosion.

Erosion/Run Off: Upper Bluff land caused mass amount of sediment runoff from hill top areas into Jewel subdivision (Oakhurst).

City of Pine Island

All Hazards – Power Outages: A generator has been installed at City Hall that serves as an overflow local shelter if people are displaced from a severe storm event or extended power outage. We are also looking into installing a permanent generator at the Lutheran Church which will be our primary shelter. Pine Island Public School and Pine Island Firehall both have permanent generators and can be used as overflow shelters.

Flooding: We have a city lift station that is prone to flooding during high rain events. Two city parks that are vulnerable to flooding and park equipment has been damaged in the past.

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

Windstorms and Tornadoes: We have one mobile home park within the city that does not have a storm shelter and residents are vulnerable to high wind and tornado events. We have experienced power outages from strong wind events that have caused power outages.

Extreme Cold: We have a high population of senior citizens and low-income residents who are more vulnerable during periods of extreme cold with power outages. In the past we have experienced frozen water services and some residential homes experienced burst pipes from extended extreme cold. The city has experienced frozen culverts causing localized flooding.

Drought: Pine Island has experienced moderate drought.

Highway 52 (HazMat): Highway 52 running through the middle of town presents a great hazard to our community. Transporting hazard materials on this highway is common.

City of Red Wing

All Hazards: Red Wing has a large senior population most with mobility needs. If an evacuation in parts of the city had to occur this would create a big problem in evacuating these high numbers. More transportation outlets would be needed to assist with the evacuations and serving this at-risk population.

Extreme Heat/Cold: More sheltering resources are needed. Air condition stations as well as heat stations are lacking for the size of the population that may need to be housed for these weather events.

Flooding: The city of Red Wing is located along the Mississippi River. Seasonal flooding of the river has affected city parks, closed numerous roadways, and included other widespread impacts. However, the levee wall at Levee Park and Levee Road were reconstructed to be able to withstand higher flood levels. This has allowed for less sandbagging operations near the affected areas due to the higher surface which allows for lower flooding impacts.

City of Wanamingo

All Hazards: We need to obtain a stationary generator for our Fire Hall and a portable generator for our City Hall/Community Center Building. The Fire Hall houses the fire department and first responders and also serves as our local shelter if people are displaced from a severe storm event or extended power outage. City Hall/Community Center is the secondary location for a local shelter and emergency management coordination. We also have a large population of senior citizens that do not use cell phones to receive emergency notifications.

Flooding: The North Zumbro river has had changes since the MN TH 57 bridge was constructed in the early 2000's. The last three major floods since 2010 have caused severe damage to the banks along the river close to Riverside Park. The water still backs up but now rushes faster through the new bridge opening. The city would like to remove the concrete dam while restoring the banks to the west of the dam and Shingle Creek.

Windstorms and Tornadoes: Wanamingo has a mobile home park (Hillcrest Manor) within the city that does not have sufficient storm shelters. Residents are vulnerable to high wind and tornado events. The city also has one fully operational outdoor warning siren and one siren that requires constant maintenance to be operational. The city should have another outdoor warning siren installed.

City of Zumbrota

All Hazards: We need to obtain a stationary generator for our City Hall/Police Station Building & replace the Generator at the Fire Hall. The City Hall/Police Building houses City Administration and the Police Department. In the event of a power outage, we cannot conduct city administrative or police operations without the computers and phones. City Hall also serves as one of our shelters if people are displaced from a severe storm event or extended power outage. City Hall/Police Station is projected as a command Center in case of a natural disaster. The Fire Hall is the secondary location for a local shelter and emergency management coordination. Well Head #3 in Zumbrota does not have generator back-up, in the event of a prolonged outage, we would not be able to draw enough water to effectively fight a fire.

Flooding: The North Zumbro river has had changes since the flood buyouts after the 1998 flood & the Highway 58 bridge was replaced allowing for more flow. However, when floods do occur, there is substantial erosion to the banks of the river and amenities within the park.

Windstorms and Tornadoes: Our municipal campground is active during summer and fall months with RVs, campers & tents. The campground does not have a storm shelter. We have experienced power outages from strong wind events that brought down power lines.

3.4.2 Future Development

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

Goodhue County

The cities of Pine Island, Wanamingo, Goodhue, and Zumbrota have experienced significant growth and development which increased the risk of stormwater runoff as fewer surfaces to absorb water naturally become impervious.

City of Bellechester

No increase in vulnerability to report.

City of Cannon Falls

Weather changes have increased the strength of storms that produce hail and strong winds.

City of Dennison

We have had slow, steady growth in housing the last 5 years. City services and infrastructure needs have not changed much.

City of Goodhue

Over the last five years we have added multiple single-family homes and a new assisted living facility. Some of the homes and townhomes are slab on grade. These homes do not have basements and with the senior living facility having vulnerable citizens living inside, we have more risk for those people in the event of a tornado and or windstorm.

St. Luke's church moving out of town has eliminated our only safe storm shelter. Our mobile home court does not have a shelter and now we are left with nowhere for those citizens or citizens without basements to shelter in the event of a tornado or windstorm.

The assisted living also does not have a generator onsite but does have access to a large portable one from the local farm equipment dealership.

City of Kenyon

Trondheim (residential development area) is now full with regards to housing. There is only one way in and one way out. There is concern about access to the development during an emergency.

The city has grown in population in the last ten years. The increase in structures has increased the risk of more damage costs.

City of Lake City

In the past few years, the city population has steadily increased the Jewell addition with new construction which has increased our population and damage to additional structures. With the new construction retention ponds have been mandated in the city planning. More homes have been built slab on grade, so residents do not have a basement/shelter for safety during high wind or tornado events. With the construction of a new affordable/high-density housing, there is a large concentration of residents during a disaster event.

We have seen slow growth in our community, roughly 12 new homes a year and a very small amount of commercial growth. There have been additional homes on the shoreland which does increase flooding concerns on central point road.

There has been a small increase in recreational use at Hok Si La Park (Goodhue County) which could lead to an increase in fire potential. Addition of cabins (9) expose greater risk to property loss.

City of Pine Island

Since 2010, the city's population has grown from 2,462 to 3,924 with many new homes built making more properties vulnerable to damage. Homes have been built slab-on-grade, so residents do not have a basement for safety during high wind or tornado events. With an increase in population and construction of more homes and commercial properties, we have also witnessed more storm water discharging to our stormwater system. We feel this is due to more impermeable surface which has increased stormwater runoff, and the amount of precipitation seems to have increased per rain event.

City of Red Wing

Currently the emergency siren system in Red Wing is being looked at by City Council to either keep the sirens or decommission the sirens. Xcel Energy will no longer be servicing the sirens and they have advised stakeholders that the sirens will be taken down if municipalities do not wish to take over ownership of them.

City of Wanamingo

Between 2016-2023 we have had roughly 65 new homes built, numerous residential improvements, and numerous business expansions constructed in the city. This has increased the population and potential for damage to the structures in town. Many new homes are either slab-on-grade or split-level homes with no basements. Many of these residents lack safe locations during high winds or tornado events. With an increase in population and construction of more homes and commercial properties, we have also witnessed more storm water discharging to our stormwater system. We feel this is due to more impermeable surface which has increased stormwater runoff and the amount of precipitation seems to have increased per rain event.

City of Zumbrota

Zumbrota has experienced steady growth in population over the last 10 years. The 2020 census showed an increase of 474 residents and 154 households. This increase represents more structures with potential for damage due to natural disasters.

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

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

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

4.1 Flooding

Flooding is the most significant and costly natural hazard in Minnesota. Ten of the 15 federal disaster declarations in Goodhue County included flooding.

After several years of drought and exceptionally mild winter, the first half of 2024 was extremely wet with frequent, heavy precipitation causing widespread flooding throughout Minnesota, resulting in a Federal Disaster Declaration affecting 22 counties (FEMA, 2024). Goodhue County was included in the recent Federal Disaster Declaration (DR-4797-MN) that resulted from summer storms June 20–22, 2024. The intense rains occurred within an extremely wet period lasting over a week and followed a wet spring in general, leading to significant and devastating flooding in parts of southern Minnesota. Rochester International Airport received 4.56 inches in 72 hours. The parade of heavy rainfall events from June 15th to the 22nd led to a nine-day total of 6.49 inches in Rochester.

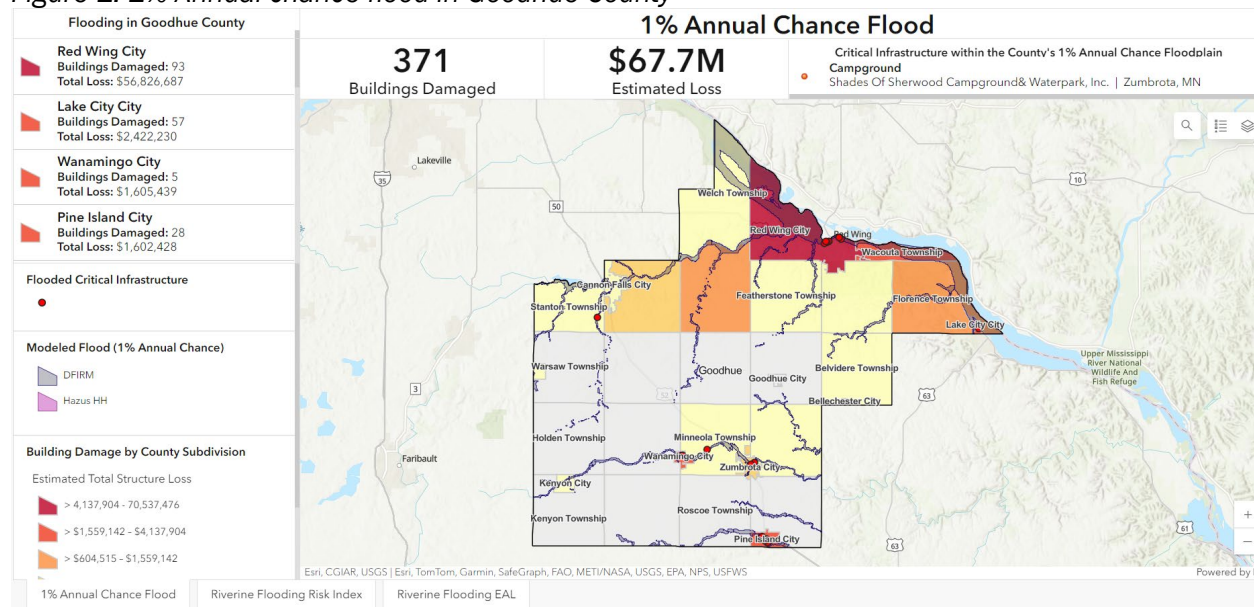
4.1.1 Probability of Occurrence

From 1997 to February 2024 the NCEI Storm Events Database has recorded 53 flood and flash flood events. Goodhue County has experienced one flash flood event every 1.6 years and one riverine flood event every 1.4 years on average during this period.

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

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

Figure 1. 1% Annual chance flood in Goodhue County



4.1.2 Vulnerability

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, 35,465 points were input to Hazus to represent buildings with a total estimated building plus contents value of \$8.8 billion. Approximately 66% of the buildings (and 62% 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	23,301	\$5,443,504,932	350	\$134,796,300	243	\$10,678,288
Commercial	1,332	\$700,679,442	44	\$12,240,200	40	\$1,630,717
Other	10,832	\$2,646,542,494	124	\$217,374,500	88	\$55,400,952
Totals	35,465	\$8,790,726,868	518	\$364,411,000	371	\$67,709,957

SOURCE: (FEMA, 2023A)

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

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 Goodhue County.

Buildings identified as essential facilities for the Hazus flood analysis include hospitals, police and fire stations, and schools (often used as shelters). Loss of essential facilities are vulnerable to structural failure, extensive water damage, and loss of facility functionality during a flood, thereby negatively impacting the communities relying on these facilities' services. Fortunately, no essential emergency service locations were found to fall within 1% annual chance floodplain.

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

It is important to identify any critical infrastructure within the 1% annual chance floodplain, given the higher risk of the facility or infrastructure being incapacitated or destroyed during a flood. In Goodhue County, one electric transmission stations, five wastewater treatment plants, and the Red Wing Power Plant were found to be at risk in the 1% annual chance flood. The locations provided for these facilities are mapped in the [Flood Risk & Vulnerability dashboard](#). Some of these locations could not be verified. No other information is available.

A 1 % annual chance flood boundary also revealed the Shades of Sherwood Campground in Zumbrota, four National Registered Historical Places, and ten other EPA listed treatment storage and disposal facilities may be at risk.

Community Vulnerability

Potential economic losses were estimated by Census Minor Civil Division. The City of Red Wing stands out by far with the highest potential economic loss and 93 buildings in the 1% annual chance flood. Lake City, Wacouta Township, the City of Wanamingo, and the City Pine Island also could potentially suffer significant estimated losses in the 1% annual chance flood. All jurisdictions with buildings identified in the 1% annual chance flood zone can also be viewed on the Goodhue County HMP website.

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

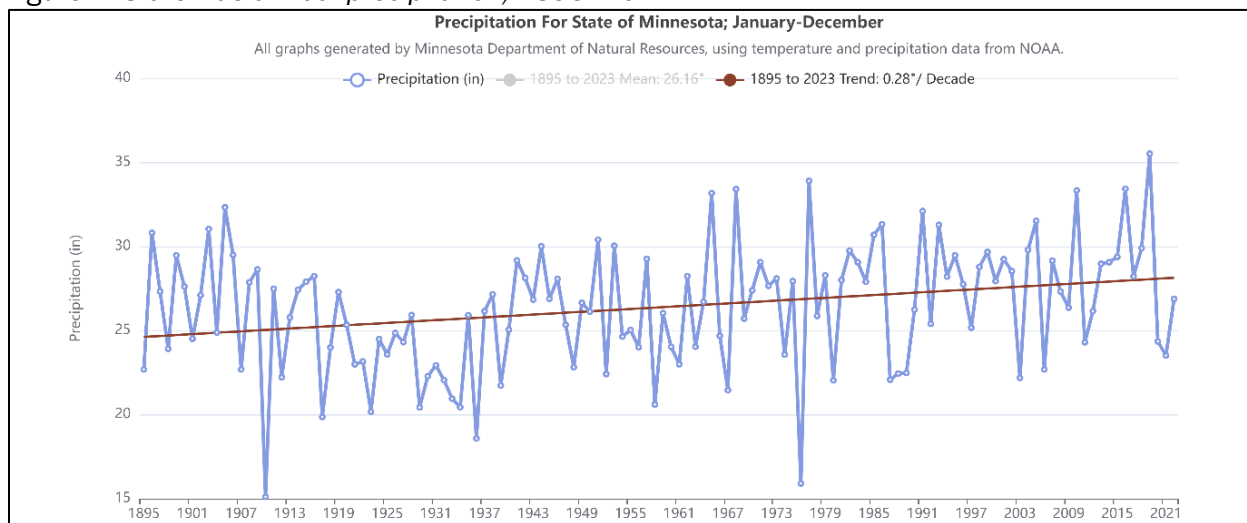
Section 3.4 provides jurisdictional responses of localized vulnerabilities to specific hazards.

4.1.3 Flooding and Climate Change

Increased heat and moisture often make extreme precipitation events larger, more intense, more frequent, and therefore more probable over a given time interval at a given location. While climate change does not necessarily cause individual extreme events to happen, it enhances their size, strength, and likelihood (MN DNR State Climatology Office, 2024).

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

Figure 2. Statewide annual precipitation, 1895–2022



SOURCE:(MN DNR, 2023)

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

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

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

4.1.4 Program Gaps and Deficiencies

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

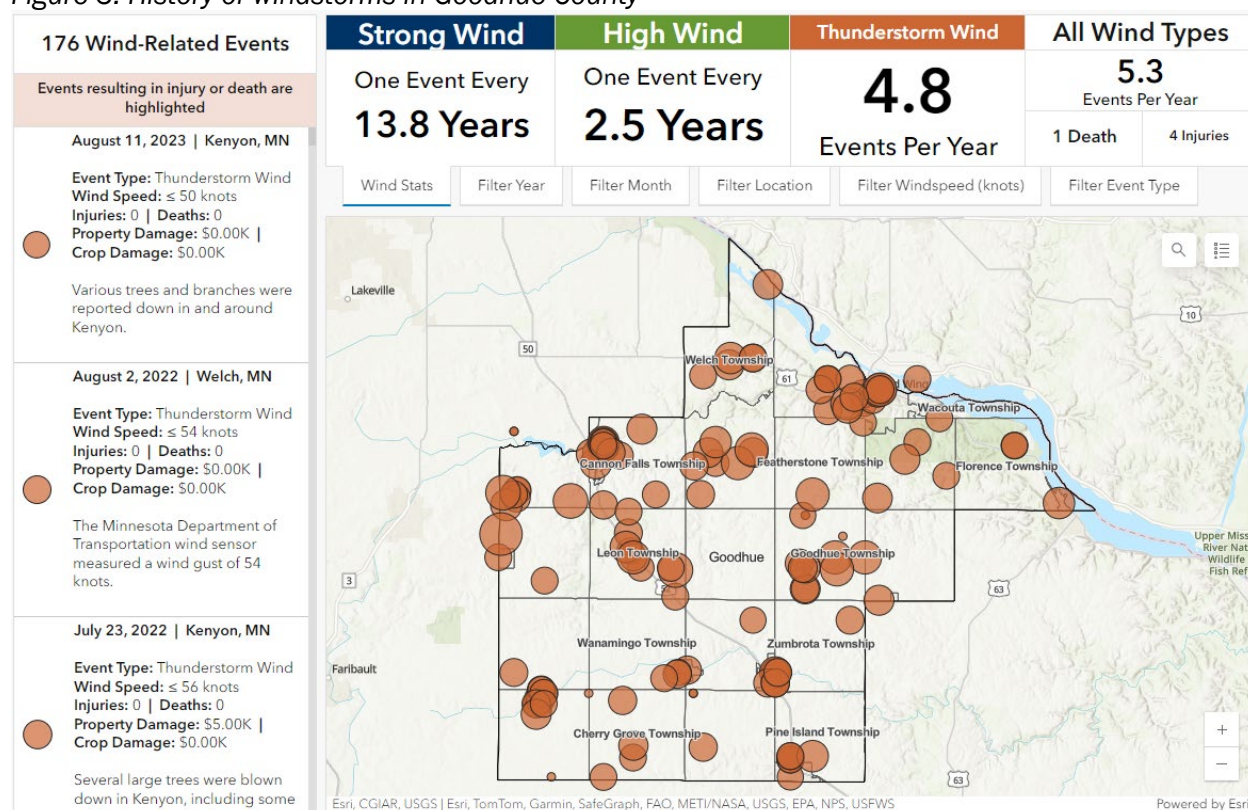
Funding: The county needs funding assistance to improve roads and culverts that experience repetitive flooding. Significant State and Federal funding is needed to construct infrastructure projects to prevent, reduce, and mitigate the impacts of high rain events and flooding.

4.2 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 Goodhue County is shown in Figure 3; an interactive version of this map can be found on the Goodhue County HMP website.

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

Figure 3. History of windstorms in Goodhue County



4.2.1 Probability of Occurrence

To determine the probability of future wind-related events in Goodhue County, records of previous wind-related events (strong wind, high wind, and thunderstorm wind) in Goodhue County were examined since 1996, the period of record all wind events have in common. The relative frequency of all wind-related events since January of 1996 is 4.8 per year. These relative frequencies can be used to infer the probability of these events occurring in the future.

4.2.2 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 of localized vulnerabilities to specific hazards.

4.2.3 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.

4.2.4 Program Gaps and Deficiencies

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

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

Public Education: Ongoing public education is needed during tornado season to inform the public on what is a tornado watch/warning and what to do when outdoor warning sirens are activated. Goodhue 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 Goodhue 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.

4.3 Tornadoes

With wind speeds reaching up to 300 mph, tornadoes are one of nature's most violent storms (Hogeback, 2020). The history of tornadoes in Goodhue County is shown in Figure 4; an interactive version of this map can be found on the Goodhue County HMP website.

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

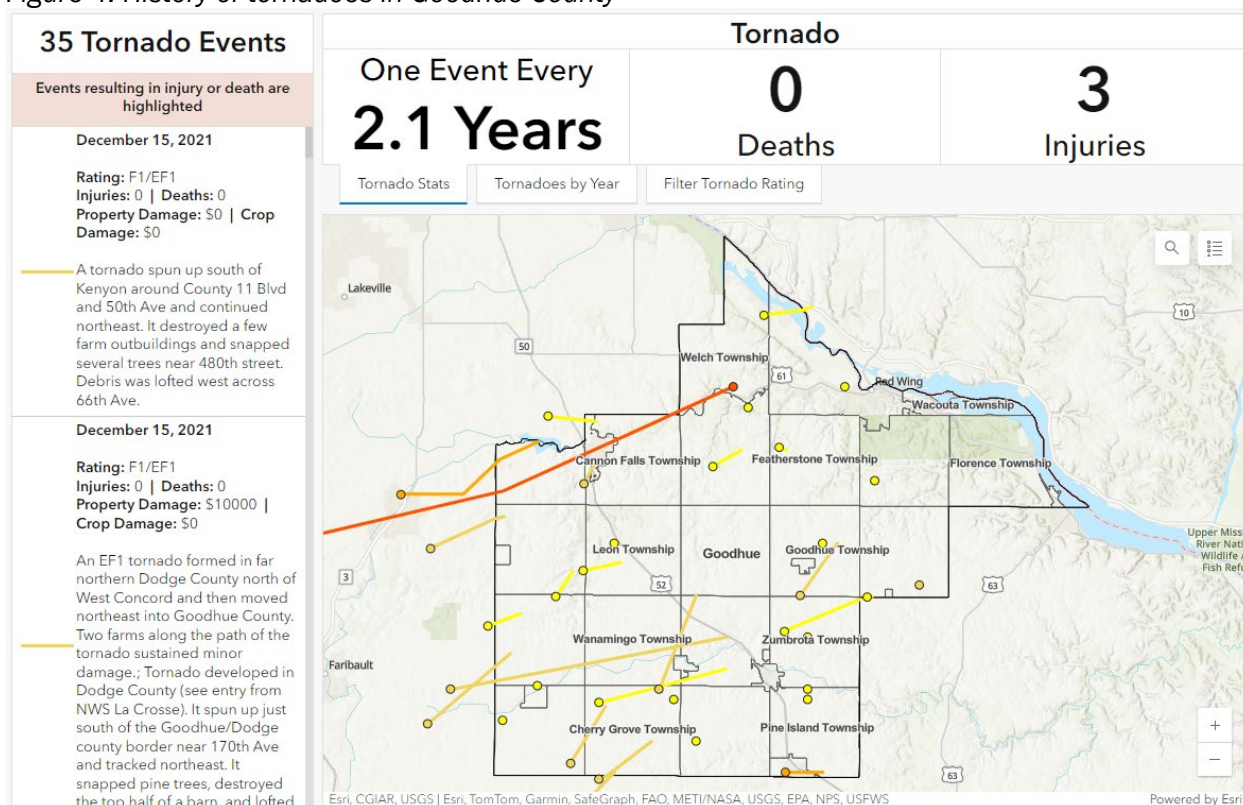
4.3.1 Probability of Occurrence

Estimating the probability of future tornadoes in Goodhue County was done using two methods. The first method summed the total number of tornadoes which 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 February 2024, there has been one tornado every 2.1 years in Goodhue County. These 35 tornadic events occurred in 18 of the 73 years on record.

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

For any location in Goodhue County, there was an annual frequency of 2–6 tornadoes within a 50-mile radius. The historical frequency was higher in the western part of the county, with reduced frequency going east. These relative frequencies can be used to infer the probability of these events occurring in the future.

Figure 4. History of tornadoes in Goodhue County



4.3.2 Vulnerability

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

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

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

4.3.3 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.

4.3.4 Program Gaps and Deficiencies

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

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

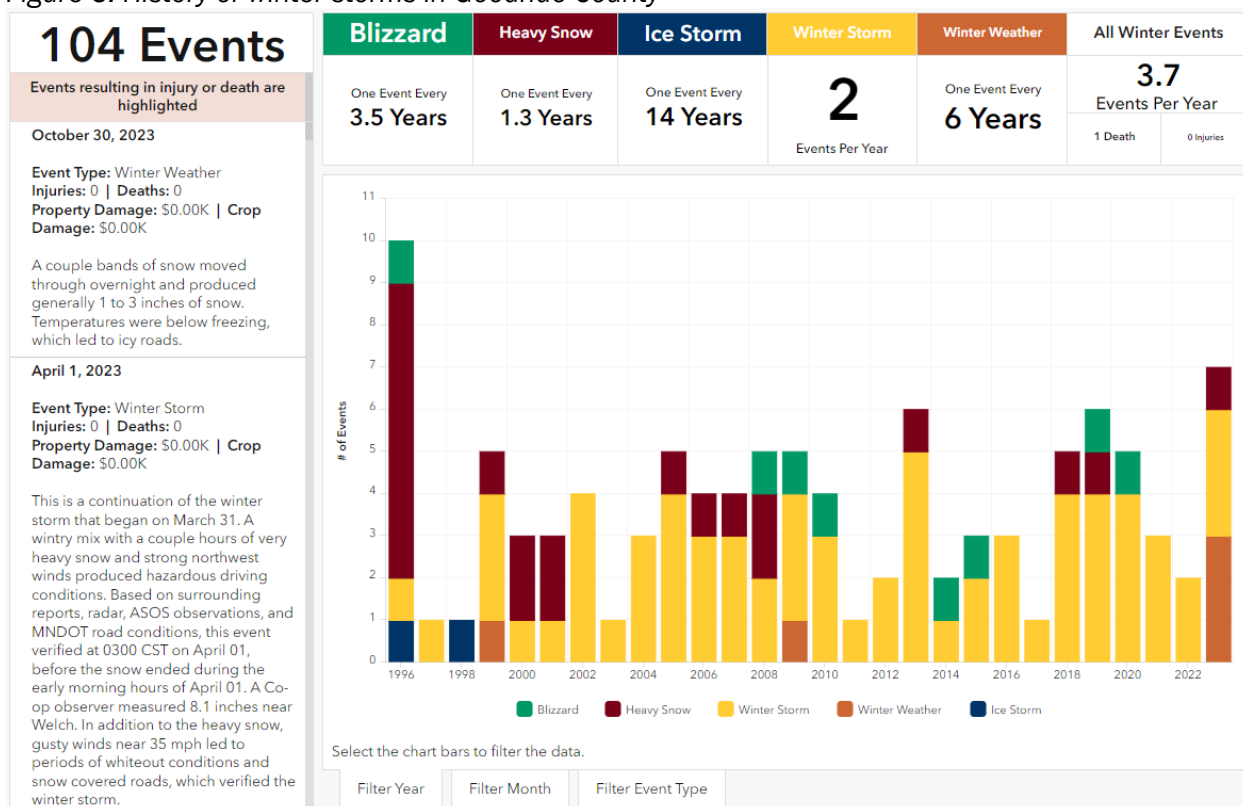
Public Education: Ongoing public education is needed during tornado season to inform the public on what is a tornado watch/warning and what to do when outdoor warning sirens are activated. Goodhue County and local jurisdictions also need to continue to encourage residents to be aware of and ready for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

Storm Shelters and Tornado Safe Rooms: There are areas throughout Goodhue 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 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 Goodhue County is shown in Figure 5; an interactive version of this map can be found on the Goodhue County HMP website.

Figure 5. History of winter storms in Goodhue County



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

4.4.1 Probability of Occurrence

To determine the probability of future winter-related storm events in Goodhue 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 February 2024, the relative frequency of winter-related storm events in Goodhue County is 3.7 per year. This relative frequency can be used to infer the probability of these events occurring in the future.

4.4.2 Vulnerability

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

4.4.3 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.

4.4.4 Program Gaps and Deficiencies

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

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

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

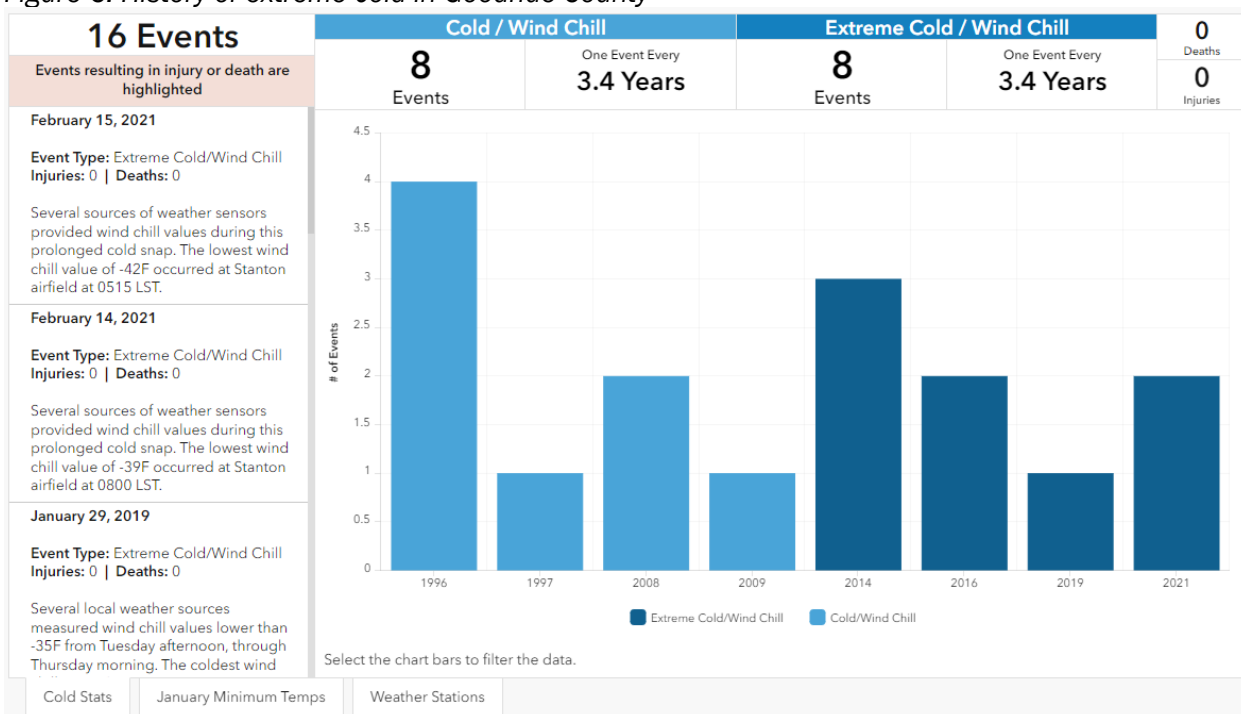
Backup Power: Not all designated shelter facilities have generator back-up power to provide the ability to care for residents if displaced during a severe winter event coupled with an extended power outage.

4.5 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 Goodhue County can be especially dangerous when low temperatures and wind create arctic-like wind chills. The history of extreme cold in Goodhue County is shown in Figure 6; an interactive version of this dashboard can be found on the Goodhue County HMP website.

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

Figure 6. History of extreme cold in Goodhue County



4.5.1 Probability of Occurrence

To determine the probability of future cold-related events in Goodhue 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 February 2024, the relative frequency of extreme cold/wind chill events in Goodhue County is one event every 3.4 years. (NCEI, 2023). This relative frequency can be used to infer the probability of these events occurring in the future.

4.5.2 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 Goodhue County](#)

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

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

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

4.5.3 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.

4.5.4 Program Gaps and Deficiencies

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

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

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

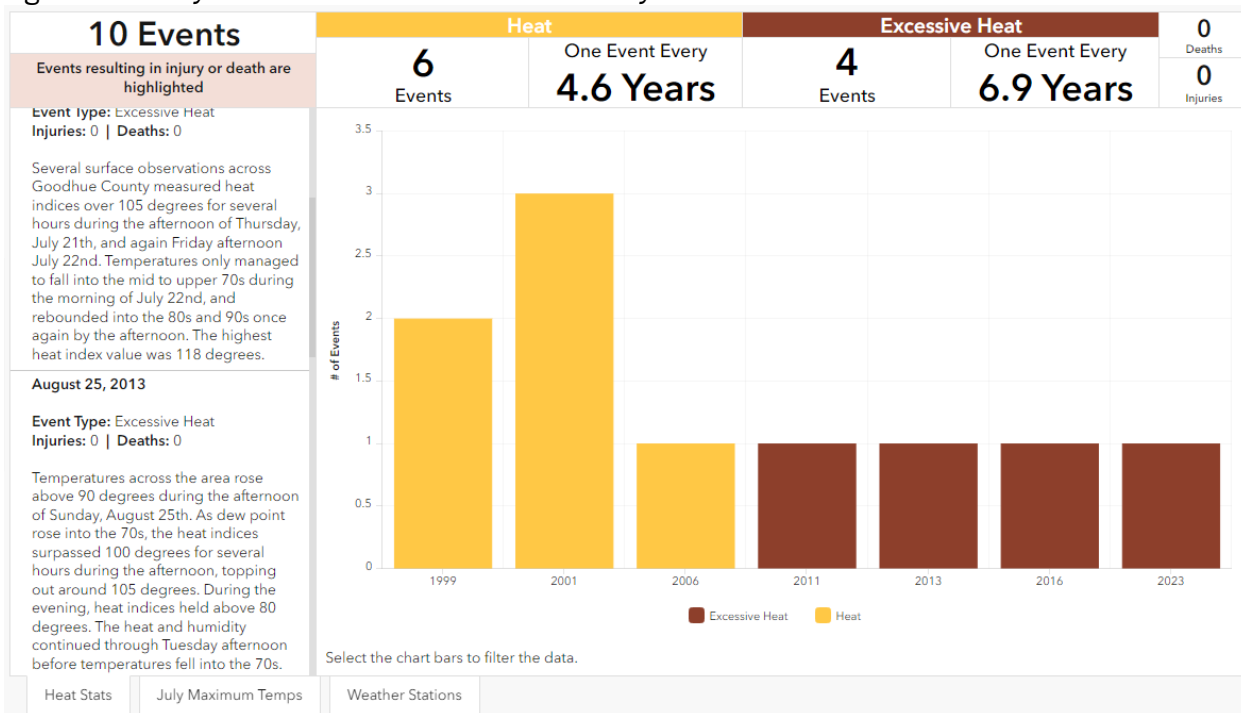
4.6 Extreme Heat

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

When the atmospheric moisture content is high, the rate of perspiration from the body decreases and the human body feels warmer (NWS, 2021). Heat stress can be indexed by combining the effects of temperature and humidity. The history of extreme heat in Goodhue County is shown in Figure 7; an interactive version of this chart can be found on the Goodhue County HMP website.

Data from the Spatial Hazard Events and Losses Database (SHELDUS) for the United States was examined to identify the county's monetary losses due to heat damage to crops. Ranking 11th among Minnesota counties in crop indemnity payments, heat-related losses for Goodhue County totaled over \$4,901,191 (CEMHS, 2023).

Figure 7. History of extreme heat in Goodhue County



4.6.1 Probability of Occurrence

To determine the probability of future heat-related events in Goodhue County records of previous heat and excessive heat events were summed and divided by the dataset's period of record, resulting in the annual relative frequency of heat-related events. Based on records in the NCEI Storm Events Database through July 2024, the relative frequency of extreme heat events in the county is one event every 6.9 years. This relative frequency can be used to infer the probability of these events occurring in the future. The Red Wing Dam 3 Weather Station in Goodhue County reported daily maximum temperatures above 90 F a total of 318 times, which is an average of 13 days per year.

4.6.2 Vulnerability

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

High temperatures can be exacerbated by the urban heat island effect in densely developed areas, an effect that amplifies higher 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 cover 2.56% of Goodhue County (MDH & University of Minnesota, 2019). Impervious surfaces are not spread evenly throughout the county and attention should be given to cities or areas within the county that contain the largest amounts of this type of surface cover. Except for these areas, the risk of extreme heat does not vary geographically.

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

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

- Older adults (≥65 years old). The elderly cannot easily adjust to sudden changes in temperature and are more likely to have a chronic medical condition or take medication affecting their body's ability to control its temperature.
- Infants and children. Young children and infants have limited control with their surroundings and rely on others to keep them cool and hydrated.
- Individuals with chronic health conditions. These individuals are less likely to respond to changes in temperature, may be taking a medication 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).

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

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

4.6.3 Extreme Heat and Climate Change

Minnesota's annual average temperature has increased more than 3 °F since record-keeping began in 1895, and nine of Minnesota's hottest 16 years on record have occurred since the year 2000 (MCAP, 2024).

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

The average number of days per year with temperatures over 95 °F under a moderate carbon emissions (SSP 245), mid-century (2040–2059) scenario is illustrated in the [Climate Dashboard](#) on the HMP website

On average, by mid-century (2040–2059), under a moderate emissions (SSP 245) scenario, Goodhue County may reach 11.06 more days/year of temperature greater than 95 °F compared to the historical (1995–2014) simulations average of 7.27 days/year (Liess, S. et al., 2023).

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

4.6.4 Program Gaps and Deficiencies

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

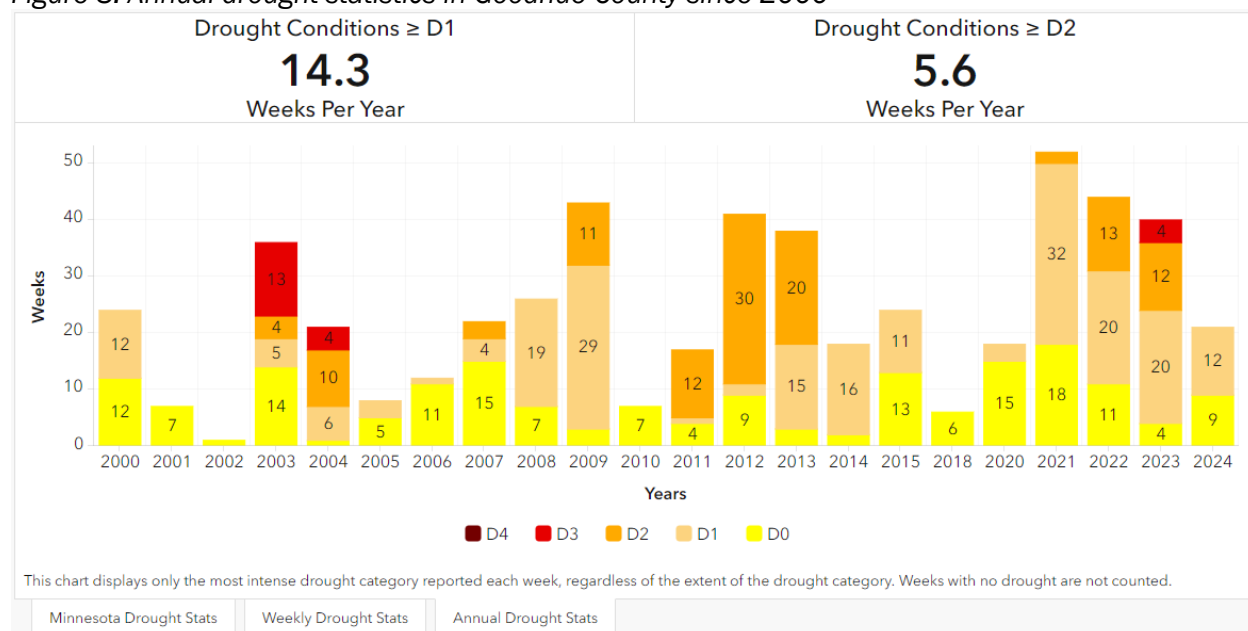
Generators for Backup Power to Critical Facilities & Shelters: Not all healthcare and other critical facilities utilized for the care of residents & visitors, including designated severe weather/emergency shelters (schools, churches, etc.) have backup power to run cooling systems in the event of a power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

4.7 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 8; an interactive version of this dashboard can be found on the Goodhue County HMP website.

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

Figure 8. Annual drought statistics in Goodhue County since 2000



4.7.1 Probability of Occurrence

To determine the probability of future droughts in Goodhue 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–July 9, 2024 for any occurrence of drought \geq D1 in Goodhue 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 14.3 weeks per year, and the relative frequency of drought conditions \geq D2 is 5.6 weeks per year (NDMC, 2024b). The relative frequency of past droughts can be used to infer the probability of similar droughts occurring in the future.

4.7.2 Vulnerability

One way to identify county assets vulnerable to drought is by examining the impacts of previous droughts. Overseen by the National Drought Mitigation Center (NDMC), the Drought Impact Reporter (DIR) is a comprehensive database that gathers drought-related reports from a variety of sources and

identifies the sector(s) impacted by each drought. The NDMC (NDMC, 2024b) defines a drought impact as “[a]n observable loss or change that occurred at a specific place and time because of drought.” A drought meeting this definition is categorized based on the sector(s) the drought impacts; therefore, a single drought affecting multiple sectors will be counted once for each respective sector it impacted.

DIR records show eight reported drought incidents in Goodhue County between 2000 and 2023, impacting seven sectors with greatest impacts to the agriculture sector (NDMC, 2024a). Since droughts are regional in nature, jurisdictions within Goodhue 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, 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, Goodhue County’s agriculture sector has been impacted by drought more than once, and with 57% of Goodhue 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, Goodhue County received \$21,633,976 (2021 ADJ) in crop indemnity payments due to drought, placing it as the 42nd-highest-paid county in Minnesota (CEMHS, 2023).

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

4.7.3 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).

4.7.4 Program Gaps and Deficiencies

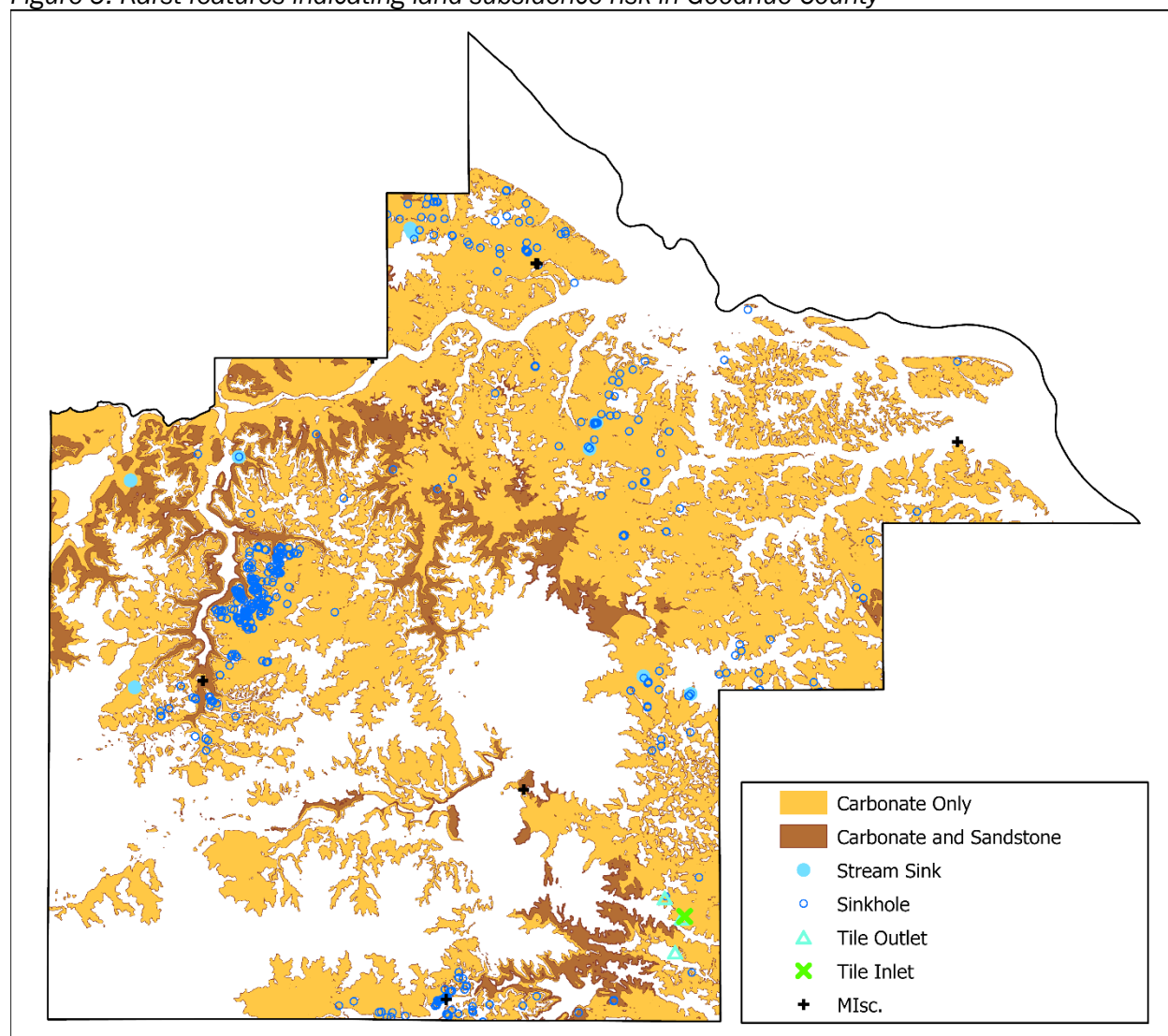
Goodhue County Emergency Management did not identify any program gaps or deficiencies that make its citizens more vulnerable to drought.

4.8 Land Subsidence

Goodhue County planning team has indicated that land subsidence is a hazard of “low” priority related to probability and mitigation action. However, it was desired that the hazard still be profiled.

Subsidence is the gradual settling or sudden sinking of the earth’s surface due to subsurface movement of earth materials. Subsidence commonly involves a gradual sinking, but it also refers to an instantaneous or catastrophic collapse. The level of subsidence ranges from a broad lowering to collapse of land surface. Many causes of subsidence are human induced, such as groundwater pumping, aquifer system compaction, drainage of organic soils, underground mining, and hydrocompaction. Natural compaction and thawing permafrost can also have natural causes of subsidence. Areas located above or adjacent to karst topography have a greater risk of experiencing subsidence. Sudden collapses of surface areas can damage and destroy buildings and infrastructure (FEMA, 2013). Other problems associated with subsidence include the formation of sinkholes, flooding and pollution.

A change in the local environment affecting the soil mass that then causes subsidence and sinkholes is called a triggering mechanism. The main triggering mechanisms for subsidence are water level decline, changes in groundwater flow, and increased loading and deterioration (abandoned coal mines) of the earth. Water level decline can happen naturally or be human-induced. Factors in water decline are pumping water from wells, localized drainage from construction, dewatering, and drought. Changes in the groundwater flow include an increase in the velocity of groundwater movement, increase in the frequency of water table fluctuations, and increased or reduced recharge. Increased loading causes pressure in the soil leading to the failure of underground cavities and spaces. Vibrations caused by an earthquake, heavy machinery, and blasting can cause structural collapse followed by surface settlement.

Figure 9. Karst features indicating land subsidence risk in Goodhue County

4.8.1 Probability of Occurrence

The probability of sinkholes and land subsidence in Minnesota is directly related to local landscape conditions and triggers likely to produce these conditions. The likelihood of land subsidence events causing damage or injury is low.

4.8.2 Vulnerability

In Minnesota, the primary natural causes of land subsidence are karst landforms, which develop on or in limestone, dolomite, or gypsum by dissolution and are identified by the presence of features such as sinkholes, underground (or internal) drainage through solution-enlarged fractures (joints), and caves.

Karst landforms can be hazardous because of the sinkholes that form there and for the ease with which pollutants can infiltrate into the water supply.

Figure 9 shows the vulnerability of Goodhue County to land subsidence. Goodhue County is the county with the fourth highest vulnerability in Minnesota based on the number of significant karst features and area in karst-prone geology. In Goodhue County, there are 514 sinkholes, stream sink/sieves and spring features recorded and 227,403 acres in karst-prone geology. With 12,678 structures and a population of approximately 19,603 in this area, Goodhue is the third most vulnerable county in Minnesota behind Fillmore and Olmsted Counties (MN DNR, 2024b; MN DNR, UMN, 2024; U.S. Census Bureau, 2020).

4.8.3 Land Subsidence and Climate Change

The increased magnitude and frequency of flooding events resulting from climate change may in turn increase the risk of land subsidence in Minnesota if associated geological conditions exist.

4.8.4 Program Gaps and Deficiencies

Goodhue County Emergency Management did not identify any program gaps or deficiencies that make its citizens more vulnerable to land subsidence.

4.9 Dam Failure

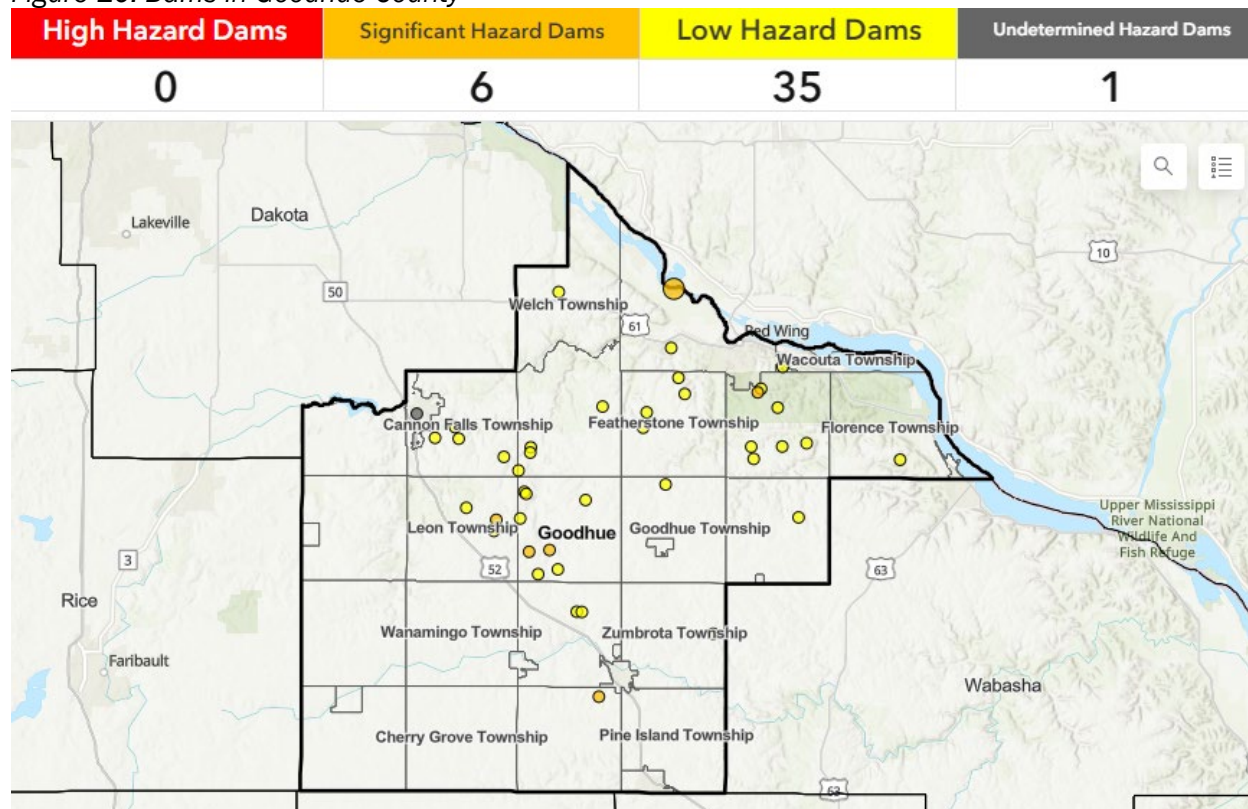
The MN DNR Dam Safety Program has the mission of protecting the life and safety of people by ensuring that dams are safe. Minnesota's Dam Safety Program sets minimum standards for dams and regulates the design, construction, operation, repair, and removal of both privately and publicly (non-federal) 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 42 dams in Goodhue County. Dams are mapped in Figure 10; an interactive version of this map is available on the Goodhue County HMP website.

One dam, the Little Cannon River Dam (Undetermined Hazard Potential), has been removed. In June 1998, due to a very heavy rainfall the non-overflow area of the dam overtopped. Moderate damage occurred to State Highway 19 and the bridge immediately downstream incurred significant damage. The city park was damaged and several private homes flooded. The Little Cannon River dam was subsequently removed.

Figure 10. Dams in Goodhue County



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 is only one noted dam incident in Goodhue County, related to overtopping. Dam failures are extremely unlikely if the dam is maintained in compliance with Minnesota's Dam Safety Program. The likelihood of failure in Goodhue 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 9 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 9. 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 six Significant Hazard Potential dams in Goodhue County are summarized in Table 10.

Table 10. Significant Hazard Dams in Goodhue County

Name	Owner	Nearest City	River or Stream Name	Height (Ft)	Year	Max Storage (Acre-Ft)	Max Discharge (Cubic Ft/Sec)
Belle Creek R-1	Belle Creek WD	5 miles	Belle Creek	47	1979	1,835	8,409
Belle Creek R-2	Belle Creek WD	5 miles	Belle Creek-TR	55	1983	1,800	1,500
Belle Creek R-4	Belle Creek WD	5 miles	Belle Creek-TR	52	1977	1,175	5,585
Bullard Creek No. 2	Private	1 mile	Bullard Creek	38	1977	84	796
Erredge Group Detention	Private	2 miles	Bitter Creek	25	1965	97	340
Mississippi River Lock and Dam 3	USACE - St. Paul District	4 miles	Mississippi River	26	1938	547,000	230,000

Dakota County owns and operates the High Hazard Potential Dam, Lake Byllesby, a hydroelectric dam on the Cannon River which creates part of the border between Dakota and Goodhue Counties. A failure of the Lake Byllesby dam would do catastrophic damage to the city of Cannon Falls. The Byllesby dam was built in 1910. It is located on the Cannon River that creates part of the boundary between Dakota County and Goodhue County. Due to its location on the border of these two counties, the operations and administration is shared. The responsibilities are split 60/40 according to the share of hydropower used with Dakota County coordinating administration of the dam and Goodhue County providing financial support. After fifty-one years of use, the dam was decommissioned in 1966 before Byllesby Dam was recommissioned in the early 1980s for hydroelectric power. It functions according to the DNR's Run of the River operation guides stipulating that the water flowing in flows out.

As a FERC-regulated hydropower facility, the dam undergoes rigorous inspection for structural stability and integrity. The Federal Energy Regulatory Commission requires a comprehensive study to be completed by an independent consultant every five years. Other required actions include development

of an Emergency Action Plan (EAP), periodically tested through exercises. The downstream community of Cannon Falls has participated in the development of warning systems and system tests. A dam evacuation plan is available [on the Dakota County website](#) (Dakota County, 2024).

In 2008, the Federal Energy Regulatory Commission (FERC) required Dakota County to increase spill capacity over the dam, which was completed by adding a new \$7.5 million crest gate spillway in 2014. In 2015, Dakota County allocated \$3.5 million toward major structural repair and rehabilitation, gate inspection and refurbishment, and facility-related enhancements to the dam structure. Dakota County is currently replacing the existing 100+ year old turbines and powerhouse with new, more efficient equipment to continue power production, which assists in offsetting costs associated with dam operations. The Byllesby Dam is ineligible for High Hazard Potential Dam grants through FEMA (Dakota County, 2022).

Lock and Dam #3 on the Mississippi River is part of the US Army Corps of Engineers (USACE) series of thirteen locks and dams on the river that make navigation possible. It is located just outside of Red Wing. The dam was constructed and placed in operation in 1938. Between 1988 and 1991, the dam site underwent major rehabilitation (USACE, 2024b).

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, 2024a). 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

Goodhue County Emergency Management identified existing program gaps and deficiencies that make its residents more vulnerable to dam failure and should be addressed with new mitigation efforts to reduce vulnerability:

Public Information and Warning (BCWD): Three out of five large earthen impoundments within the Belle Creek Watershed District (BCWD) are considered high-risk dams. The BCWD and Goodhue County Emergency Management (GCEM) feel that flood warning systems should be considered for future funding efforts on road crossings immediately downstream from the control structures. GCEM and BCWD can also work to increase public outreach to residents that live downstream of those structures so they are aware of risks and where to obtain information.

Section 5 – Mitigation Strategy

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

5.1 Community Capability Assessments

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

- Appendix D: Lists the plans and programs in place in Goodhue County as related to hazard mitigation.
- Appendix C: As part of the Goodhue 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 Goodhue County.

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

5.1.1 National Flood Insurance Program (NFIP)

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

Table 11 lists and describes jurisdictional participation in the National Flood Insurance Program (NFIP).

Table 11. NFIP participation in Goodhue County

FEMA Plan Requirements Plan Review Tool, Section C2		Description
Name of Community	Goodhue County	
Participation in the NFIP	Participating – Entry date 04/17/1978	
FEMA Map	FEMA-mapped high-risk areas	
Current Effective Map Date	09/25/2009	
Potential Buildings Damaged in Floodplain (including all townships and cities)	371	
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 09/16/2014	
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	1/2/2024	
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	Goodhue County enforces requirements of the NFIP through the county's floodplain ordinance (Goodhue County Zoning Ordinance, Article 32 Floodplain District) amended on 09/16/2014 and effective 1/10/2024 (date of publication). This ordinance establishes the floodplain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts of Name County. The Goodhue County Zoning Office maintains and enforces the floodplain management ordinance for the county.	
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Samantha Pierret, Goodhue County Zoning Administrator	
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the county would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The county would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.	
Name of Community	City of Bellechester	
Participation in the NFIP	Participating – Entry date 04/24/2020	
FEMA Map	FEMA-mapped high-risk areas	
Current Effective Map Date	09/25/2009	

FEMA Plan Requirements Plan Review Tool, Section C2		Description
Potential Buildings Damaged in Floodplain	0	
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 1/13/2020	
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	1/13/2020	
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Bellechester enforces requirements of the NFIP through the city's current floodplain ordinance, effective 2/5/2020 (date of publication). This ordinance regulates development in the flood hazard areas of the city.	
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Lisa Redepinning, City Clerk	
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.	
Name of Community		City of Cannon Falls
Participation in the NFIP	Participating – Entry date 01/02/1981	
FEMA Map	FEMA-mapped high-risk areas	
Current Effective Map Date	09/25/2009	
Potential Buildings Damaged in Floodplain	6	
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 9/17/2009	
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	9/17/2009	
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Cannon Falls enforces requirements of the NFIP through the city's current floodplain ordinance, effective 9/24/2009 (date of publication). This ordinance regulates development in the flood hazard areas of the city.	

FEMA Plan Requirements Plan Review Tool, Section C2		Description
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP		Floodplain Administrator: Diane Howard, Zoning Administrator
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.		Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.
Name of Community		City of Dennison
Participation in the NFIP		Participating – Entry date 09/18/1995
FEMA Map		FEMA-mapped high-risk areas
Current Effective Map Date		09/25/2009
Potential Buildings Damaged in Floodplain		7
1. Adoption of NFIP minimum floodplain management criteria via local regulation		Adoption of current floodplain ordinance: 9/3/2009
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable		9/3/2009
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs		The city of Dennison enforces requirements of the NFIP through the city's current floodplain ordinance, effective 9/24/2009 (date of publication). This ordinance regulates development in the flood hazard areas of the city.
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP		Floodplain Administrator: Jessica Page, City Clerk
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.		Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.
Name of Community		City of Goodhue
Participation in the NFIP		Participating – Entry date 08/30/2010
FEMA Map		FEMA-mapped high-risk areas

FEMA Plan Requirements Plan Review Tool, Section C2	Description
Current Effective Map Date	09/25/2009 (NSFHA – No Special Flood Hazard Area)
Potential Buildings Damaged in Floodplain	0
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 8/26/2009
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	N/A - Community adopted state "No Map" model ordinance (i.e., no FIRM or no mapped SFHA), and in this case didn't adopt any FIRM panels.
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Goodhue enforces requirements of the NFIP through the city's current floodplain ordinance, effective 9/9/2009 (date of publication) This ordinance regulates development in the flood hazard areas of the city.
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Jill Buxengard, City Clerk
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.
Name of Community	City of Kenyon
Participation in the NFIP	Participating – Entry date 08/05/2010
FEMA Map	FEMA-mapped high-risk areas
Current Effective Map Date	09/25/2009
Total # of Buildings within Floodplain	2
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 10/9/2009
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	10/9/2009
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Kenyon enforces requirements of the NFIP through the city's current floodplain ordinance, effective 10/14/2009 (date of publication). This ordinance regulates development in the flood hazard areas of the city.

FEMA Plan Requirements Plan Review Tool, Section C2	Description
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Mark Vahlsing, City Administrator
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.
Name of Community	City of Lake City
Participation in the NFIP	Participating – Entry date 02/18/1981
FEMA Map	FEMA-mapped high-risk areas
Current Effective Map Date	09/25/2009
Potential Buildings Damaged in Floodplain	57
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 7/13/2009
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	7/13/2009
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Lake City enforces requirements of the NFIP through the city's current floodplain ordinance, effective 7/16/2009 (date of publication). This ordinance regulates development in the flood hazard areas of the city.
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Megan Smith, Director of Planning & Community Development
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.
Name of Community	City of Pine Island
Participation in the NFIP	Participating – Entry date 03/02/1981
FEMA Map	FEMA-mapped high-risk areas

FEMA Plan Requirements Plan Review Tool, Section C2		Description
Current Effective Map Date	9/25/2009	
Potential Buildings Damaged in Floodplain	28	
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 7/18/2023	
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	7/18/2023	
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Pine Island enforces requirements of the NFIP through the city's current floodplain ordinance, effective 7/26/2023 (date of publication). This ordinance regulates development in the flood hazard areas of the city.	
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Elizabeth Howard, City Administrator	
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.	
Name of Community		City of Red Wing
Participation in the NFIP	Participating – Entry date 09/29/1978	
FEMA Map	FEMA-mapped high-risk areas	
Current Effective Map Date	09/25/2009	
Potential Buildings Damaged in Floodplain	93	
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 9/14/2009	
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	9/14/2009	
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Red Wing enforces requirements of the NFIP through the city's current floodplain ordinance, effective 9/19/2009 (date of publication). This	

FEMA Plan Requirements Plan Review Tool, Section C2	Description
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	ordinance regulates development in the flood hazard areas of the city. Floodplain Administrator: Dan Simonson, Building/Zoning Supervisor
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.
Name of Community	City of Wanamingo
Participation in the NFIP	Participating – Entry date 06/15/1981
FEMA Map	FEMA-mapped high-risk areas
Current Effective Map Date	09/25/2009
Potential Buildings Damaged in Floodplain	5
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 7/13/2009
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	7/13/2009
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Wanamingo enforces requirements of the NFIP through the city's current floodplain ordinance, effective 7/29/2009 (date of publication). This ordinance regulates development in the flood hazard areas of the city.
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Michael Boulton, City Administrator
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.
Name of Community	City of Zumbrota
Participation in the NFIP	Participating – Entry date 09/03/1980

FEMA Plan Requirements Plan Review Tool, Section C2	Description
FEMA Map	FEMA-mapped high-risk areas
Current Effective Map Date	09/25/2009
Potential Buildings Damaged in Floodplain	16
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 9/3/2009
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	9/3/2009
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Zumbrota enforces requirements of the NFIP through the city's current floodplain ordinance, effective 9/16/2009 (date of publication). This ordinance regulates development in the flood hazard areas of the city.
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Brian Grudem, City Administrator
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.

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

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

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

- a) That has at least four NFIP claim payments (including building and contents) over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or
- b) For which at least two separate claims payments (building payments only) have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building.

- c) For both (a) and (b) above, at least two of the referenced claims must have occurred within any 10-year period and must be greater than 10 days apart.

Goodhue County has 18 RL properties and four SRL properties, 22 in total. Pine Island has seven of these properties: three single-family homes, one multi-family home, and three non-residential buildings. Seven of the properties, all single-family homes, are in the City of Red Wing. The remaining properties are dispersed throughout the communities of Dennison, Frontenac, Lake City, and Welch.

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

5.1.2 Plans and Ordinances

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

5.1.3 Plans and Programs in Place to Address Natural Hazards

Goodhue 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. Following is a description of the plans and programs in place by Goodhue County to support mitigation for the hazards addressed in this plan.

All Hazards

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

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

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

Preparedness Outreach & Public Education: Goodhue County Emergency Management utilizes the EM website page, Goodhue County Health and Human Services website page, Goodhue County Sheriff's Office Facebook page, and local news media to communicate with residents, visitors, schools, and long-term care facilities on emergency preparedness, severe weather, and other hazard conditions throughout the year. Goodhue County Emergency Management and Goodhue County Health and Human Services website pages provide emergency preparedness information and resource links for the public.

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

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

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

Backup Power: Goodhue County works to ensure the continuity of operations of county government services and critical infrastructure in the event of an extended power outage. Backup generators are located in the Law Enforcement Center, Adult Detention Center, Justice, Government Center, Health and Human Services Center, and the Public Works main shop. The Goodhue County Public Works Department and local fire departments also have portable generators for use as necessary.

Schools Support: Goodhue 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 a risk to students and staff.

Regional Collaboration: Goodhue County Emergency Management works closely with the MN HSEM Region 1 regional program coordinator, neighboring county emergency managers, and the Prairie Island Indian Community on a range of planning, training, and exercises to support all-hazards preparedness, mitigation, response, and recovery capabilities.

Severe Winter Storms

Winter Weather Statements (Watch, Advisory, Warning, etc.): Goodhue County Emergency Management works to relay winter weather statements received from the NWS via the Goodhue County Sheriff's Office Facebook page and by CodeRED emergency notifications as necessary to help alert residents and visitors to hazardous conditions.

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

Snow Removal & Ice Control: The Goodhue County Public Works Department - Highway Division completes its snow removal process in accordance with the Goodhue County Public Works Department Snow and Ice Control Policy, adopted June 2004. Other road jurisdictions conduct winter road maintenance on their respective road systems in accordance with each of their established policy and/or practice.

Severe Summer Storms

Severe Weather Statements (Watch, Advisory, Warning, etc.): Goodhue County works to relay severe spring and summer weather statements (such as for thunderstorms, windstorms, or tornadoes) received from the NWS via the Goodhue County Sheriff's Office Facebook page and by CodeRED emergency notifications as necessary to help alert residents and visitors to hazardous conditions.

Outdoor Warning Sirens: There are outdoor warning sirens located throughout the county. Locations include: Cannon Falls-3, Wacouta TWP-2, Red Wing-31, Kenyon- 1, Zumbrota- 2, Lake City-1, Dennison-1, Pine Island-2, Wanamingo-1. All sirens are tested monthly by the Goodhue County Sheriff's Office in coordination with local jurisdictions. Warning sirens are owned and maintained by the cities where they are located.

SkyWarn Program: Goodhue County Emergency Management works with the National Weather Service and Sogn Valley to offer Storm Spotter training on an annual basis to local fire and law enforcement departments and area residents throughout Goodhue County 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: Goodhue 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. Goodhue 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 Goodhue County Public Works Department - Highway Division regularly conducts vegetation management along county roads to reduce the risk of downed trees or branches resulting from severe spring and summer storm events. Local utility providers also work to manage vegetation near power lines to reduce the risk of downed lines and power outages.

Extreme Cold

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

Extreme Heat

Emergency Notifications: Extreme heat temperature warnings are issued by the National Weather Service. Goodhue County Emergency Management assists with sharing this information with the public via the Goodhue County Sheriff's Department Facebook page. The Goodhue County Emergency Management Office also encourages residents to follow local news or NWS weather applications to receive severe weather and extreme temperature notifications.

Public Education and Awareness: Goodhue County Emergency Management and Goodhue County Public Health help to share the message of personal safety and preparedness to stay safe during periods of extreme heat with county residents, utilizing communication platforms such as the county website, Facebook, and local news media.

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

Drought

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

Precipitation Monitoring: The Goodhue 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. The Goodhue SWCD website also provides yearly data graphs on its website for rainfall/snowmelt.

Flooding

National Flood Insurance Program (NFIP): Goodhue County has FEMA Mapped High Risk Areas and participates in the NFIP. Initial entry date into the program was 04/17/78.

Floodplain Administrator: The Goodhue County Zoning Administrator is the county's designated Floodplain Administrator, who is responsible to implement the requirements of the NFIP.

Floodplain Ordinance: Goodhue County Zoning Ordinance, Article 32 Floodplain District (amended September 16, 2014) establishes the flood plain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts. The Goodhue County Zoning Office maintains and enforces the floodplain management ordinance for the county. The ordinance is adopted to comply with the rules and regulations of the National Flood Insurance Program codified as 44 Code of Federal Regulations Parts 59 - 78, as amended, so as to maintain the community's eligibility in the National Flood Insurance Program.

Floodplain Mapping: Goodhue County's current effective FEMA flood map date is 09/25/2009. The county's Zoning Office is the repository for the floodplain maps for the county. The Zoning Office assists county residents in determining whether their property is affected by an officially mapped flood area.

Shoreland Ordinance: Goodhue County Zoning Ordinance, Article 31 establishes allowable uses and development standards in shoreland areas designated within the county. In addition to establishing setback requirements, the ordinance specifies that local shoreland controls must regulate placement of structures in relation to high water elevation for flood protection.

Subdivision Ordinance: Goodhue County Subdivision Controls Ordinance, 02/04/2020 is established to regulate the subdividing of land in Goodhue County, lying outside the incorporated limits of any City, so that new subdivisions will be integrated with the development objectives of Goodhue County, as outlined in the Comprehensive Plan, and contribute to an attractive, stable and wholesome environment, adequate public services and an integrated and safe transportation system.

Transportation Plan: The Goodhue County Public Works Department maintains update of the county's Transportation Plan (2004-2025). The purpose of the Goodhue County Transportation Plan is to help the county and other affected jurisdictions assess anticipated growth over the next twenty years, and to recommend a transportation system that addresses growth issues and current needs. The plan is used as a tool to guide major transportation investments and policy decisions. The planning effort was closely coordinated with the county's Comprehensive Plan Update in an effort to achieve both transportation and land use objectives.

Property Buyout Acquisitions: Goodhue County has not done any past buyouts, but the cities of Cannon Falls, Zumbrota, and Pine Island have conducted property buyouts in the past for flooding.

Minnesota Buffer Law: The Goodhue 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): Goodhue County has adopted the Greater Zumbro Comprehensive Watershed Management Plan (2021-2031) and the Cannon River Comprehensive Watershed Management Plan (2020-2030) which encompass Goodhue County entirely. Both plans address regional watershed planning for water quality improvement as well as measures for flood mitigation.

One-Watershed One Plan (1w1P): Goodhue County has participated in the Greater Zumbro 1W1P (2021-2032) and the Cannon River 1W1P (2020-2030). Both plans address regional watershed planning which include measures for flood mitigation.

Dam/Levee Failure

Belle Creek Watershed Plan: The Belle Creek Watershed Plan has 6 earthen dams structures within the watershed. 3 are considered by the NRCS as high risk and 3 are deemed low hazard dam structures. There is a very basic response plan for these dams. The MN DNR State Dam program is currently working to determine final classification of the 3 earthen dams that were noted as high hazard.

Byllesby Dam: The Byllesby Dam is a concrete gravity dam located in Dakota and Goodhue County. Dakota County is responsible for the dam and shares a joint plan with Goodhue County. The plans address evacuation and there is a monitoring system that alerts the sirens if there was a sudden drop of the water level.

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

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

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

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

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

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

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

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

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

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

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

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

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

5.3 Mitigation Action and Project Strategies

The mitigation actions in this plan are summarized into four main strategy types, as described in the FEMA publications *Local Mitigation Planning Handbook* (2013) and *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards* (2013). A fifth strategy type was determined by Minnesota HSEM for use within the state: Mitigation Preparedness and Response. The strategies and example actions are listed in Table 12.

Table 12. 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	These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards. Many of these types of actions are projects eligible for funding through the FEMA Hazard Mitigation Assistance program.	<ul style="list-style-type: none"> • Acquisitions and elevations of structures in flood prone areas • Utility undergrounding • Structural retrofits • Floodwalls and retaining walls • Detention and retention structures • Culverts • Safe rooms
Natural Systems Protection	These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.	<ul style="list-style-type: none"> • Sediment and erosion control • Stream corridor restoration • Forest management • Conservation easements • Wetland restoration and preservation
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 Goodhue 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 Goodhue 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 Goodhue County risks and mitigation activities identified also incorporate the concerns and needs of townships, school districts, and other entities participating in this plan. Appendix H contains the jurisdictional mitigation action charts for the cities of Bellechester, Cannon Falls, Dennison, Goodhue, Kenyon, Lake City, Pine Island, Red Wing, Wanamingo, and Zumbrota.

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

Number (#)

Each mitigation action is identified by a number.

Hazard

Each mitigation action is identified by the natural hazard it relates to. Actions that fall under "All Hazards" relate to both natural and non-natural hazards. "Severe Winter Storms" includes blizzards, heavy snow, ice storms, winter storms, and winter weather. "Severe Summer Storms" includes windstorms, tornadoes, lightning, and hail.

Mitigation Strategy

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

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

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

Mitigation Action

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

Status

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

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

Mitigation actions that have been completed or deleted from the 2016 Goodhue 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 13 provides criteria that were taken into consideration in the process.

Table 13. Criteria for Mitigation Action Priority Ranking

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

Time frame

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

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

Responsibility

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

Comments on Implementation & Integration

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

Possible Funding

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

5.3.1 Goodhue County Mitigation Action Chart

The Goodhue County Mitigation Action Chart is provided in Table 14. Appendix H provides the mitigation action charts developed for each city participating in the HMP update.

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

Table 14. Goodhue County Mitigation Action Chart (2024–2028)

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All Hazards	Education & Awareness Programs	EMERGENCY NOTIFICATION Encourage all county residents to sign-up for the county's CodeRED Emergency Notification System.	Existing High Ongoing	Goodhue County Emergency Management (GCEM)	Goodhue County maintains the CodeRED Emergency Notification System which allows residents and visitors to sign up ("opt-in") to receive severe weather alerts targeted to their location, along with other local emergency alerts. A link to sign up for the system is located on the Goodhue County Emergency Management website page. The county encourages residents, businesses, childcare providers, care facilities, campgrounds, resorts, and nursing facilities to enroll in the county's emergency notification system so they will be aware of hazard events.	State Grant Funded
2	All Hazards	Education & Awareness Programs	PUBLIC OUTREACH Conduct outreach to the public to increase awareness and preparedness for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High Ongoing	GCEM	GCEM utilizes the EM website page, GC Health & Human Services website page, GC Sheriff's Office Facebook page, and local news media to communicate with residents, visitors, schools, and long-term care facilities on emergency preparedness, and severe weather. The GCEM and Goodhue County Public Health & Human Services website pages provide preparedness information and resource links for the public. GCEM also participates in the NWS annual Severe Weather Awareness Weeks in April and November each year. GCEM has a formal public outreach program to get out into communities to talk about EM issues that are specific to their area.	County Funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
3	All Hazards	Mitigation Preparedness & Response Support	EOP PLANNING Ensure the county's Emergency Operations Plan (EOP) is updated and addresses policies & procedures needed to support EM functions prior to, during, and following a disaster.	Existing High Ongoing	GCEM	Goodhue 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.	County Funding
4	All Hazards	Local Planning & Regulations	FUTURE DEVELOPMENT Incorporate mitigation strategies across county and local government plans and policies that address future growth and new development.	Existing High 2025–2030	GC Admin, GC Building & Permits Division, GC Public Works in coord with local gov'ts	Goodhue County continues to work closely with surrounding communities to address planning for increased growth and development that will affect emergency response services as well as an increase in vulnerable systems and infrastructure. Goodhue County uses its Code of Ordinances, Comprehensive Plan (2016), Shoreland Ordinance, Floodplain Ordinance, Subdivision Ordinance, and Transportation plan to address long-term planning for future development.	County Funding
5	All-Hazards	Mitigation Preparedness & Response Support	VULNERABLE POPULATIONS Work with county departments, partner agencies, facilities, and local jurisdictions to address planning and outreach efforts for those considered to be more vulnerable to severe weather events.	Existing High Ongoing	GCEM, GCHHS, Local Jurisdictions	GCEM, GCHHS, and local jurisdictions provide outreach to and emergency planning assistance as needed to facilities such as schools and long-term care facilities and mobile home parks. Schools throughout the county participate annually in tornado drills annually. We work in coordination with agencies such as the Red Cross and Salvation Army. GCEM works with GCHHS and our GIS department to maintain information on the location of key facilities such as hospitals, nursing homes, and day cares.	County Funding other agencies & organizations

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	All-Hazards	Mitigation Preparedness & Response Support	<p>GENERATOR BACKUP POWER</p> <p>Install generators at key county facilities to ensure continuity of operations and services in the event of loss of power.</p>	Existing High Ongoing	GCEM, GC Public Works	This is an ongoing effort of GCEM and GC Public Works. Not all county, city, and other incident support facilities (e.g., public safety/emergency services stations, designated mass care shelters, etc.) have backup power to provide care for the displaced and the logistical needs of an incident, such as tornadoes, flooding, long-term power outages, and winter storms. GCEM encourages local jurisdictions to evaluate and address where backup power is needed.	County Funding
7	All-Hazards	Mitigation Preparedness & Response Support	<p>MASS CARE SHELTERING</p> <p>Ensure that plans and designated facilities are in place in order to provide temporary sheltering due to a severe weather or other disaster event.</p>	Existing High 2025–2030	GCEM, GCHHS	Goodhue County Emergency Management will work in coordination with GC Health & Human Services, 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. GCEM is available to provide assistance to local governments on their plans for sheltering.	County Funding
8	Extreme Cold/Heat Temps	Education & Awareness Programs	<p>EXTREME TEMPS PUBLIC OUTREACH</p> <p>Provide outreach and education to the public on personal safety measures to take during periods of extreme cold or extreme heat.</p>	In-Progress High 2024	GCEM, GCHHS	GCEM works to share the information received from the Twin Cities/Chanhassen National Weather Service (NWS) Forecast Office when periods of extreme cold and heat are forecast and occurring. Public education regarding extreme temperatures also occurs during the two NWS Severe Weather Awareness weeks that occur in April and Winter Weather Awareness in November each year.	County Funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
9	Extreme Cold/Heat Temps	Mitigation Preparedness & Response Support	WARMING/COOLING CENTERS Work with local communities to develop plans for operating warming or cooling centers for those who are vulnerable during extreme temperature events.	New High 2025–2030	GCHHS	This is an ongoing part of GCEM's program in developing greater capacity within communities to deal with extreme temperature or other severe weather events. Communities are encouraged to have plans in place for a local facility (i.e., school, church, community center, Fire Hall) to be designated to operate for temporary sheltering and prepared with backup power and other supplies. GCEM is available to assist communities in this planning as needed.	County and Local Gov't Funding
10	Severe Winter Storms	Local Planning & Regulations	SNOW & ICE CONTROL Implement snow removal and ice control to ensure the safety of county roads impacted by winter storms.	Existing High 2025–2030	GC Public Works	Goodhue County Public Works completes its snow removal process in accordance with the Goodhue County Public Works Department Snow and Ice Control Policy, adopted June 2004. Other road jurisdictions conduct winter road maintenance on their respective road systems in accordance with each of their established policy and/or practice.	County Funding
11	Severe Summer Storms	Education & Awareness Programs	SKYWARN TRAINING Work with the National Weather Service (NWS) to provide SkyWarn training and develop a network of trained Storm Spotters throughout the county.	Existing High 2025–2030	GCEM in coord with NWS and Sogn Valley	GCEM works with the NWS and Sogn Valley to offer this training on an annual basis to local fire and law enforcement departments and local residents that wish to be trained as spotters.	National Weather Service
12	Severe Summer Storms	Mitigation Preparedness & Response Support	OUTDOOR WARNING SIRENS Ensure outdoor warning sirens are located where needed and functioning properly.	Existing High 2025–2030	GCEM in coord with local jurisdictions	There are outdoor warning sirens located throughout the county. All sirens are tested monthly by the Goodhue County Sheriff's Office in coordination with local jurisdictions. Warning sirens are owned and maintained by the cities where they are located. GCEM is available to provide assistance to local governments who are looking to update their warning sirens.	County Funding & local jurisdictions

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
13	Severe Summer Storms	Structure & Infrastructure Projects	STORM SHELTERS / TORNADO SAFE ROOMS Address the need for the construction of storm shelters or tornado safe rooms in areas where residents or visitors are vulnerable to high wind events, such as mobile home parks and campgrounds.	Existing High 2025–2030	GCEM in coord with local jurisdictions	There are 14 mobile home parks in Goodhue County that have limited shelter options. GCEM will assist any mobile home park or community in their effort to assess and address the need for construction of a storm shelter or tornado safe room. Grant funding may be available for tornado safe rooms from FEMA Hazard Mitigation grant program funding. County zoning requires all campgrounds to have a shelter building. Any new campgrounds or campground expansions must have an adequate shelter. Goodhue County has 3 campgrounds outside city limits, not including places where temporary camping is allowed for special events, campgrounds in city limits (Zumbrota), and Frontenac State Park.	County Funding, Local Gov't, Possible FEMA Grant Funding
14	Severe Summer Storms	Local Planning & Regulations	MHP SAFETY Ensure that licensed manufactured home parks (MHP's) within the county meet the requirements of MN Statute 327.20 for shelters and evacuation plans.	Existing High 2025–2030	Local Jurisdictions	Local jurisdictions work in coordination with the Minnesota Department of Health (MDH) on this effort. Shelter and evacuation plans must be approved by the city or township in which they are located and submitted to MDH. Communities with mobile home parks that do not have an evacuation plan or designated shelter facility are encouraged to develop these plans. Goodhue County Emergency Management is available to help communities on this effort.	Municipal Funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
15	Severe Winter & Summer Storms	Structure & Infrastructure Projects	POWERLINE RETROFITS Encourage municipal and rural electric coops to address burying powerlines or strengthening power poles to avoid power outages from high wind events and storms.	Existing High 2025–2030	GCEM, local jurisdictions in coord with electric utility providers	GCEM 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.	Electric Coops, FEMA HMA
16	Severe Winter & Summer Storms	Local Planning & Regulations	BUILDING SAFETY Ensure that new development projects follow state building codes in order to withstand the impacts of severe weather events, including roof collapse from heavy snow or damages from high wind events.	Existing Moderate 2025–2030	GC Land Use Management	Goodhue County Land Use Dept. – Building Permits Division oversees permits for new development. Goodhue County recommends new development is built to meet the specifications as provided by the State of Minnesota's Department of Labor and Industry in order to minimize financial burdens and potential safety hazards which can arise from poorly constructed buildings. Some local jurisdictions enforce their own building permits while others are overseen by Goodhue County Building Official.	County Funding
17	Severe Winter & Summer Storms	Natural Systems Protection	VEGETATION MANAGEMENT Manage trees and other vegetation along roads from severe storm events to reduce risk to powerlines and passing motorists.	Existing Moderate 2025–2030	GC Public Works, Local Utility Providers	Goodhue County Public Works regularly conducts vegetation management along county roads to reduce the risk of downed trees or branches resulting from severe spring and summer storm events. Local utility providers also work to manage vegetation near power lines to reduce the risk of downed lines and power outages.	County Funding, Utility Coops

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
18	Flooding	Local Planning & Regulations	NATIONAL FLOOD INSURANCE PROGRAM Participate in the National Flood Insurance Program and enforce policies that address development in high-risk flood areas.	Existing High 2025–2030	GC Floodplain Administrator	Goodhue County Zoning Ordinance, Article 32 Floodplain District (amended January 2, 2024) establishes the flood plain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts. The Goodhue County Zoning Office maintains and enforces the floodplain management ordinance for the county. The ordinance is adopted to comply with the rules and regulations of the National Flood Insurance Program codified as 44 Code of Federal Regulations Parts 59 -78, as amended, so as to maintain the community's eligibility in the National Flood Insurance Program.	County Funding
19	Flooding	Local Planning & Regulations	FLOODPLAIN MAPPING & RISK ASSESSMENT Assess current risk of damages to structures in newly mapped floodplain areas.	Existing High 2025–2030	GC Floodplain Administrator	Goodhue County's current effective FEMA flood map date is 09/25/2009. The county's Zoning Office is the repository for the floodplain maps for the county. The Zoning Office assists county residents in determining whether their property is affected by an officially mapped flood area.	County Funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
20	Flooding	Local Planning & Regulations / Structure & Infrastructure Projects	LOCALIZED FLOOD RISK REDUCTION Plan for and implement measures to address localized flood reduction projects for roads, bridges, and culverts throughout the county.	Existing High 2025–2030	GC Public Works	Goodhue County Public Works maintains an update of the county's Transportation Plan (2004-2025). The plan helps the county and other affected jurisdictions assess anticipated growth over the next twenty years, and recommends a transportation system that addresses growth issues and current needs. The plan is used as a tool to guide major transportation investments and policy decisions. The planning effort was closely coordinated with the county's Comprehensive Plan Update in an effort to achieve both transportation and land use objectives. This includes considerations for flood mitigation.	County Funding
21	Flooding	Local Planning & Regulations	WATERSHED PLANNING Work with area watershed organizations to address mitigation plans and projects that address risk reduction for localized flooding and erosion.	Existing Moderate 2025–2030	GC Land Use Dept. in coord with SWCD	Goodhue County has adopted the Greater Zumbro Comprehensive Watershed Management Plan (2021-2031) and the Cannon River Comprehensive Watershed Management Plan (2020-2030) which encompass Goodhue County entirely. Both plans address regional watershed planning for water quality improvement as well as measures for flood mitigation.	SWCD, Watershed District funding
22	Flooding	Local Planning & Regulations	PROPERTY BUYOUTS Conduct property buyouts to acquire homes affected by repetitive flooding and physically relocate or remove those homes to eliminate future flood damages.	Existing Moderate 2025–2030	GCEM	There are currently no potential property buyout projects identified by Goodhue County. Goodhue County has not done any past buyouts, but the cities of Cannon Falls, Zumbrota, and Pine Island have conducted property buyouts independently in the past. The county will continue to evaluate and assist with potential future property acquisition projects and application to FEMA or MN DNR for grant funding to conduct buyouts.	Goodhue County, Possible FEMA Grant Funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
23	Flooding /Drought	Natural Systems Protection	INCREASE SOIL HEALTH Improve organic content of soil in agricultural fields by encouraging no till and cover crops; and in urban green spaces with mitigation of construction impacts, minimum topsoil requirements, compost, and deeper-rooted vegetation for ground cover.	Existing High 2025–2030	GC Planning Dept., Goodhue SWCD, City Councils	Goodhue SWCD has a soil health program which provides assistance to landowners in implementing practices on their fields that improve soil organic matter, increase infiltration, reduce soil runoff and improve groundwater quality and mitigate groundwater pollution. These practices could be expanded across the county for hazard mitigation as they increase infiltration and therefore reduce runoff from extreme precipitation events by some estimates of 15-20%. Less runoff reduces the risk of flooding. This overall strategy of natural storage can also apply to green spaces in urban areas, with separate strategies to increase soil health for city lawns and other pervious areas. Soil health practices also help crops and vegetation survive drought.	SWCD/Federal
24	Drought	Education & Awareness Programs	DROUGHT OUTREACH & EDUCATION Provide outreach and education to residents to be aware of watering restrictions, water conservation tips, and fire safety during periods of severe drought.	Existing High 2025–2030	GCEM	GCEM continues to provide public outreach and education during heightened drought periods using the county website and social media platforms. GCEM encourages city and townships to promote drought awareness to residents at the local level.	Goodhue County
25	Drought	Local Planning & Regulations	WATERING RESTRICTIONS Implement watering restrictions during periods of drought as per MN DNR guidance.	Existing High 2025–2030	GCEM in coord with MN DNR and local jurisdictions	Goodhue County and local jurisdictions will establish and enforce watering restrictions as per MN DNR guidelines during periods of severe drought.	County Funding, Local Gov'ts

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
26	Dam Failure	Structure & Infrastructure Projects	HIGH HAZARD DAM WARNING SYSTEMS Work with the Belle Creek Watershed District to address the need for warning systems for 3 dams considered high hazard.	New High 2025–2030	Goodhue SWCD and Belle Creek Watershed	The Belle Creek Watershed has 6 earthen dams structures within the watershed. 3 are considered by the NRCS as high risk and 3 are deemed low hazard dam structures. Flood warning systems should be considered for future funding efforts on road crossings immediately downstream from the high-risk control structures. Goodhue County would be a planning partner in this effort, with main leadership being under the BCWD and the Goodhue SWCD. It is possible that FEMA HHPD grant funding could be sought if the warning systems project is eligible and funding is available.	Watershed District Funding, SWCD Cost Share, Possible FEMA HHPD grant funding
27	Dam Failure	Local Planning & Regulations	LAKE BYLLESBY DAM EAP Continue to work with Dakota County Emergency Management and the City of Cannon Falls on plans for evacuation & emergency notifications in the event of dam failure.	Existing Moderate 2025–2030	GCEM in coord with Dakota County	Dakota County, in cooperation with Goodhue County and City of Cannon Falls, has finalized an emergency evacuation plan for the City of Cannon Falls. Goodhue County Emergency Management continues to participate in this ongoing effort as the EAP is kept updated. A flood warning system is also in place; Dakota and Goodhue counties and the City of Cannon Falls have improved the siren warning system within the Cannon Falls. The sirens will warn residents within the city limits of a possible high-water event, as required by the Federal Energy Regulatory Commission.	Goodhue County / Dakota County

Section 6 – Plan Maintenance

6.1 Monitoring, Evaluation, and Updating the Plan

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

The Goodhue County emergency management director (EMD) is the individual responsible for leading all efforts to monitor, evaluate, and update the hazard mitigation plan within the five-year window. Throughout the five-year planning cycle, the Goodhue County EMD will work with an emergency managers group to help monitor, review, evaluate, and update the HMP. The group will include township representatives and designated city emergency managers from the cities of Bellechester, Cannon Falls, Dennison, Goodhue, Kenyon, Lake City, Pine Island, Red Wing, Wanamingo, and Zumbrota, 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 Goodhue County EMD will conduct outreach to and communicate with the group on a quarterly basis on emergency management matters regarding severe weather awareness, local preparedness, mitigation, and response & recovery as needed. Additional stakeholders will be added based on need or in response to severe weather events.

If necessary, the Goodhue County EMD will convene the group to meet on a more regular basis to monitor plan implementation progress and reassess needs and opportunities. This could be done in response to funding cycles of programs that provide resources for hazard mitigation activities. If there is a need for a special meeting due to new developments or a declared disaster occurring in the county, the group will meet to update pertinent mitigation strategies. Depending on Goodhue 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 Goodhue County. In addition, state and federal policies will be reviewed to ensure they are addressing current and expected conditions. The group will also review the risk assessment portion of the plan to determine if this information should be updated or modified. The parties responsible for the various implementation actions will report on the status of their projects, and will include which implementation processes worked well, any difficulties encountered, how coordination efforts are proceeding, and which strategies should be revised.

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

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

6.2 Implementation

Goodhue 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 Goodhue County and its jurisdictions (see Appendix H and Section 5.3). The cities of Bellechester, Cannon Falls, Dennison, Goodhue, Kenyon, Lake City, Pine Island, Red Wing, Wanamingo, and Zumbrota participated in the HMP planning process and identified the specific mitigation strategies that they would seek to implement in their communities during the five-year planning cycle. These mitigation actions are provided in Appendix H.

A number of implementation tools are available to address hazards. Many of these tools are below; however, in some cases additional discussion is needed in order to identify what strategies are most appropriate to use. This will be part of an ongoing discussion as Goodhue 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 Goodhue County. Regulation plays a particularly important role for land use, access to structures, and the protection of water resources and public health.

6.3 Continued Public Involvement

Continued public involvement is critical to the successful implementation of the Hazard Mitigation Plan. The Goodhue 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 Goodhue 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, Goodhue County will take the following measures:

- The Goodhue County HMP website link will be posted on the Goodhue 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, Goodhue 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 Goodhue County HMP website). Each respective jurisdiction will be required to report on the status of mitigation actions in their charts to the Goodhue County EMD.
- Goodhue County and its jurisdictions will use numerous means of public outreach to engage new public stakeholders in providing input on mitigation concerns, including those from underserved communities or socially vulnerable populations. Outreach methods may include presentations at city council or township board meetings, sharing information at special events, working with local schools and partner organizations, and posting information in areas that are used to communicate with the public (bulletin boards, websites, social media, and local media sources that communities use to inform and engage the public). As mitigation projects are implemented, jurisdictions will work to keep the public updated and engaged in those local efforts.

Appendices

Appendix A – References

Appendix B – Adopting Resolutions

Appendix C – Local Mitigation Survey Report

Appendix E – Past Mitigation Action Review Status Report

Appendix F – Planning Team Meetings

Appendix G – Public Outreach & Engagement Documentation

Appendix H – Mitigation Actions by Jurisdiction

Appendix A – References

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<https://doi.org/10.7930/NCA5.2023.CH24>

Appendix B – Adopting Resolutions

Appendix C – Local Mitigation Survey Report



Goodhue County

Local Mitigation Survey Report

Overview

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

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

LMS Forms

Goodhue County	Yes
City of Bellechester	Yes
City of Cannon Falls	Yes
City of Dennison	Yes
City of Goodhue	Yes
City of Kenyon	Yes
City of Lake City	Yes
City of Pine Island	Yes
City of Red Wing	Yes
City of Wanamingo	Yes
City of Zumbrota	Yes

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

Goodhue County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: GOODHUE COUNTY

Point of Contact:

Name: Earl Merchlewitz
Job Title: Emergency Management Director
Phone: (651) 267-2639
Email: earl.merchlewitz@co.goodhue.mn.us

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

Over the past several years we have had windstorms that caused damage to powerlines, businesses, and residences. The storms typically have more impact on the townships of Holden, Wanamingo, Minneola Cherry Grove, and Roscoe townships and the towns that include those areas. December 15, 2021 the

county had severe windstorms and according to the NWS had two tornadoes that affected the southeast portion of our county. This did meet the threshold for a disaster declaration. We have a few wind events that have taken place since 2016 but more than five years ago, including a declared tornado in 2018.

In the spring of 2023, our county also had significant costs and damages associated with flooding from the Mississippi River. This affected three main areas within our county, the Prairie Island Indian Community (PIIC), the City of Red Wing, and the City of Lake City. PIIC did meet their threshold for a Federal declaration and the damages from Red Wing and Lake City had the county meet the state disaster threshold.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
Windstorm and Tornadoes	In Goodhue County, we have 14 mobile home parks with limited shelter options. Most of the residences in the area are served by overhead electrical utilities.
Flooding	Within the county, we have the North Fork of the Zumbro River which has caused flooding in several cities that are vulnerable to flash flooding along with the Shades Sherwood campground which has flooded several times over the last 20 years. The campground has a transient population which makes this a unique challenge. The North middle fork of the Zumbro River has caused flash flooding within the city of Pine Island. Pine Island has taken a lot of steps to mitigate but the town is divided in half and limited access when the river floods. The Mississippi River is also vulnerable to seasonal flooding. This flooding directly affects the cities of Red Wing, Frontenac, and Lake City as well as the Prairie Island Indian Community.
Ice Storms, Blizzards	Most of the county is serviced by overhead power lines. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches. Over 2/3 of the county is typically flat farm county which makes it very vulnerable to blowing/drifting snow from blizzards. In addition, Hwy 52 cuts through the county, and those passing through the county and vulnerable to winter weather with limited first responders and tow trucks. Many people don't travel with adequate supplies in their vehicles.
Winter Storms/Extreme Cold	Residents are at high risk during extreme cold weather. If the power goes down during these cold events, large parts of our population would be highly vulnerable to further injuries or death. In addition, Hwy 52 cuts through the county, and those passing through the county are vulnerable to winter weather with limited first responders and tow trucks. Many people don't travel with adequate supplies in their vehicles.
Dam/Levee Failure	We have several dam structures within our county. Most of them are part of the Belle Creek watershed. This watershed has two dams that are debatable on whether they are considered a high risk of failure. The

	primary concern for dam failure is the Lake Byllesby Dam. The dam is operated by Dakota County and is on the border of both Goodhue and Dakota County. If this dam was to have a significant failure it would be catastrophic for the city of Cannon Falls. Large portions of public and private property would be in danger of being destroyed. The current projections are a concern for the whole Cannon Valley including the town of Welch. The dam is old and has a large body of water that is contained within Lake Byllesby.
Drought/	The county is mostly agriculturally based and with droughts the farms are vulnerable to this due to damage to the crops. This has been evident over the past two summers when farmers have had lower results during harvest and the ripple effects on the livestock portion of the farms. This is a growing concern and a very small number of the farms have any kind of irrigation for their fields.
Extreme Heat	The population in the county is mostly rural and susceptible to extreme swings with stretches of high heat. We have had issues with the utility companies being able to keep up with the demand. The cities in the county do not have areas to establish cooling centers to keep people cool. The elderly are particularly susceptible to stretches of high heat.

4. REDUCTION IN VULNERABILITY

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

Goodhue County and the city of Pine Island have taken significant steps to decrease the vulnerability to flooding. This has included seeking buyouts of homes that are susceptible to flooding. The replacement of a bicycle bridge that will support the weight of a fire truck to be able to cross the Zumbro River if the only vehicle traffic bridge is flooded or unusable.

The city of Wanamingo has taken steps with stormwater projects to mitigate the effects from flash flooding.

The city of Red Wing has taken steps to mitigate seasonal flooding but ensuring those areas that are vulnerable do not contain structures/property that are easily damaged by flooding.

The county has increased its use of social media to communicate with residents on emergency preparedness.

The county encourages residents, businesses, childcare providers, care facilities, campgrounds, resorts, and nursing facilities to enroll in the county's emergency notification system. So, they will be aware of events.

5. INCREASE IN VULNERABILITY

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

The towns of Pine Island, Wanamingo, Goodhue, and Zumbrota have experienced significant growth and development which increased the risk of stormwater runoff as fewer surfaces to absorb water naturally become impervious.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

Goodhue County Emergency Management utilizes the EM website page, Goodhue County Health & Human Services website page, Goodhue County Sheriff's Office Facebook page, and local news media to communicate with residents, visitors, schools, and long-term care facilities on emergency preparedness, severe weather, and other hazard conditions throughout the year. Goodhue County Emergency Management and Goodhue County Public Health & Human Services website pages provide emergency preparedness information and resource links for the public.

2. EMERGENCY NOTIFICATION SYSTEM

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

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

3. LOCAL PLANS & POLICIES

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

All Hazards Emergency Operations Plan: Goodhue 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.

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

Snow Removal & Ice Control: The Goodhue County Public Works Department - Highway Division completes its snow removal process in accordance with the Goodhue County Public Works Department Snow and Ice Control Policy, adopted June 2004.

Shoreland Ordinance: Goodhue County Zoning Ordinance, Article 31 establishes allowable uses and development standards in shoreland areas designated within the county. In addition to establishing setback requirements, the ordinance specifies that local shoreland controls must regulate placement of structures in relation to high water elevation for flood protection.

Floodplain Ordinance: Goodhue County Zoning Ordinance, Article 32 Floodplain District (amended September 16, 2014) establishes the flood plain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts. The Goodhue County Zoning Office maintains and enforces the floodplain management ordinance for the county. The ordinance is adopted to comply with the rules and regulations of the National Flood Insurance Program codified as 44 Code of Federal Regulations Parts 59 -78, as amended, so as to maintain the community's eligibility in the National Flood Insurance Program.

Subdivision Ordinance: Goodhue County Subdivision Controls Ordinance, 02/04/2020 is established to regulate the subdividing of land in Goodhue County, lying outside the incorporated limits of any City, so that new subdivisions will be integrated with the development objectives of Goodhue County, as outlined in the Comprehensive Plan, and contribute to an attractive, stable and wholesome environment, adequate public services and an integrated and safe transportation system.

Transportation Plan: The Goodhue County Public Works Department maintains update of the county's Transportation Plan (2004-2025). The purpose of the Goodhue County Transportation Plan is to help the county and other affected jurisdictions assess anticipated growth over the next twenty years, and to recommend a transportation system that addresses growth issues and current needs. The plan is used as a tool to guide major transportation investments and policy decisions. The planning effort was closely coordinated with the county's Comprehensive Plan Update in an effort to achieve both transportation and land use objectives.

Minnesota Buffer Law: The Goodhue 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): Goodhue County has adopted the Greater Zumbro Comprehensive Watershed Management Plan (2021-2031) and the Cannon River Comprehensive Watershed Management Plan (2020-2030) which encompass Goodhue County entirely. Both plans address regional watershed planning for water quality improvement as well as measures for flood mitigation.

One-Watershed One Plan (1w1P): Goodhue County has participated in the Greater Zumbro 1W1P (2021-2032) and the Cannon River 1W1P (2020-2030). Both plans address regional watershed planning which include measures for flood mitigation.

4. STAFF & PARTNERSHIPS

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

Goodhue County departments work together to accomplish mitigation goals through integrated policies and programs. Key departments include Goodhue County Emergency Management, Goodhue County

Sheriff's Office, Goodhue County Public Works, Goodhue County Land Use Management, Goodhue County Planning & Zoning, Goodhue County Health & Human Services, Goodhue County GIS, Goodhue County Administration, and Goodhue Soil and Water Conservation District. Goodhue County also works in partnership when needed with other partners such as area watershed districts, the Cannon Valley Trail organization, and the EPA.

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

Goodhue County Emergency Management works closely with the MN HSEM Region 1 regional program coordinator and neighboring county emergency managers on an annual basis for joint planning, training, and exercises.

Goodhue 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.

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

5. PROGRAMS IN PLACE

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

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

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

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

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

Skywarn Program: Goodhue County Emergency Management works with the National Weather Service to offer Storm Spotter training on an annual basis to local fire and law enforcement departments and

area residents that wish to be trained as spotters. SkyWarn Storm Spotters help to keep their local communities safe by providing timely and accurate reports of severe weather to their local NWS office.

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

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

6. FUNDING & OTHER RESOURCES

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

Historically people have taken advantage of hazard mitigation funds, but due to the plan being expired, that is not an option as of now. Most projects are funded through the general fund with some being set up as a capital expense. Some of the public works projects have received state aid to fund projects related to culverts and roadways.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

Dam Failure – Work with the Belle Creek Watershed District to address the need for flood warning systems for 3 high risk dam structures on road crossings immediately downstream from the control structures.

2. GAPS OR DEFICIENCIES

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

A formal public outreach for Emergency Management gets the department out into the communities to talk about the issues that are specific to their area.

Storm shelters at the trailer parks within the county are lacking and some do not have the facilities they need.

Not all of our residents are signed up for the county's emergency notification system and IPAWS only alerts for severe thunderstorms that include destructive elements such as baseball-sized hail and winds of 80 miles an hour or greater.

Increased generate capacity throughout the county and key facilities identified as shelters or Emergency facilities.

There is inadequate funding for rural electric cooperatives to underground powerlines.

Pumps that would assist with dewatering flooded areas throughout the county.

PART D: SURVEY PARTICIPANTS

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

Earl Merchlewitz, Goodhue County Emergency Management Director
Mallorie McCarthy, Goodhue County Emergency Management Deputy
Jess Greenwood, Public Works Director
Heather Arndt, HHS Emergency Preparedness Coordinator
Alan Laumeyer, Goodhue County GIS
Don Mitchell Goodhue County Land Records
Aly Kloeckner U of M Extension Office/Goodhue County
Beau Kennedy Goodhue SWCD

Goodhue County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF BELLECHESTER (partly in Wabasha County)

Point of Contact:

Name: Lisa Redepenning
Job Title: City Clerk
Phone: 651-923-4093
Email: bellechester@sleepyeyetel.net

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

None.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
All Hazards	We have a large population of senior citizens that do not use cell phones to receive emergency notifications.
Flooding	Manhole covers will be raised as part of our sewer lining project in 2024.

4. REDUCTION IN VULNERABILITY

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

2024 our stormwater system improvements for the city over will be completed. We have worked with our mobile home park to establish evacuation plans to the City Hall for shelter if needed during inclement weather. 2020 a portable generator was purchased by the city.

5. INCREASE IN VULNERABILITY

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

None

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

We post information on our city website and utility bills. We also post information on bulletin boards at our local bank.

2. EMERGENCY NOTIFICATION SYSTEM

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

We have not done this as of yet.

3. LOCAL PLANS & POLICIES

Please describe any local plans, authorities or policies in place that help to reduce risk from natural hazards in your community. Please make note of enforcement of existing building codes and land use

and development ordinances or regulations as they apply to your community. Please also note if your community has any plans or policies in place related to resilience and adaptation for climate change.

We utilize Goodhue County for administering the MN State Building Code and the City Code zoning requirements for all new development and upgrades.

4. STAFF & PARTNERSHIPS

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

We contract out for Ambulance, Fire and Police protection.

5. PROGRAMS IN PLACE

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

None.

6. FUNDING & OTHER RESOURCES

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

None.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

None.

2. GAPS OR DEFICIENCIES

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

None.

PART D: SURVEY PARTICIPANTS

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

Lisa Redepenning/City Clerk

Goodhue County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF CANNON FALLS

Point of Contact:

Name: Jeff McCormick
Job Title: Chief of Police/ Emergency Manager
Phone: 507-263-2278
Email: jmccormick@cannonfallsmn.gov

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

September 2018 – Tornado (State event), 2019 – Flooding March 2019 (FEMA event)

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
Flooding	Green space around river is prone to scrubbing when flooding out of the river banks. Flooding can impact Hwy 20 if high enough.
Windstorms and Tornadoes	City is located within a valley and has a lot of mature trees that are susceptible to damage during high wind events.
Hail	City assets that are not in a garage like police vehicles and City building are susceptible to damage during hail events
Dam Failure	There is a dam located about a mile upstream from the City.

4. REDUCTION IN VULNERABILITY

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

Due to previous flooding the City has acquired a lot of the green space around the river to minimize the need to protect property.

5. INCREASE IN VULNERABILITY

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

Weather changes have increased the strength of storms that produce hail and strong winds.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

Website and social media.

2. EMERGENCY NOTIFICATION SYSTEM

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

Website and social media. The siren warning system uses voice messages and can also use live voice messages if needed.

3. LOCAL PLANS & POLICIES

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

The City enforces building codes and zoning for new development.

4. STAFF & PARTNERSHIPS

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

The Police Chief is the Emergency Manager. Having been through several flooding events the City departments (fire, Ambulance, Police and Public Works) have the process utilized to respond well in hand.

5. PROGRAMS IN PLACE

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

Dam failure and evacuation zones are mailed to residents annually.

6. FUNDING & OTHER RESOURCES

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

The City has used FEMA funding and it's own funds for mitigation efforts around the river.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

None

2. GAPS OR DEFICIENCIES

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

None

PART D: SURVEY PARTICIPANTS

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

Jeff McCormick, Chief of Police/Emergency Manager

Goodhue County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF DENNISON (partly in Rice County)

Point of Contact:

Name: Jeffrey Flaten
Job Title: Mayor
Phone: 507-338-9619
Email: jflaten19@gmail.com

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

When it comes to extreme rainfall events, I can't remember the specific dates, but I believe there has been an increase in torrential down pours in the last five years. We have had flooding that has occurred in the intersection of Goodhue Avenue, 1st Avenue Court and Goodhue County Road 9 as a result of

heavy amounts of rain in a short period of time. There has not been a disaster declaration the last 5 years in this community though. With older canopy of trees on 2nd and 3rd Avenues, the potential for damage to homes and cars exist from windstorms.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
All Hazards	City Hall is used as a Community Center for many activities throughout the year. If people are displaced from a severe storm event or extended power outage, then having a portable generator would be an asset for the community. We don't have a backup generator for our well house either, and I attempted to get a FEMA grant to do that several years ago, but I never received funding.
Ice Storms, Blizzards	The older part of town is served by overhead power lines and electrical poles. The overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches. We have also lost power because of the transmission line, usually an event south of Dennison, Nerstand or Kenyon, can affect us for periods of time. When we lose 3 phase power for any amount of time, the VFD in our well house will need to be reset. Xcel Energy is planning on replacing transmission lines and power poles this spring, supposedly.

4. REDUCTION IN VULNERABILITY

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

Nothing new to mention or add.

5. INCREASE IN VULNERABILITY

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

Slow, steady growth in housing the last 5 years. City services and infrastructure needs have not changed much.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

We post information on our city website and Facebook page. We also post information on the community bulletin board outside of City Hall and the Post Office. We make announcements at City Council meetings and send out a monthly newsletter in the utility bill.

2. EMERGENCY NOTIFICATION SYSTEM

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

No, our city does include information about the county's emergency notification system. We are looking at potentially changing our website provider, which could provide text alerts then. I believe the city council would be amenable to providing a local emergency alert system, but implementation issues would need to be worked through first.

3. LOCAL PLANS & POLICIES

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

The city uses Goodhue County to help enforce the MN State Building Code, conducts inspections and processes permit applications. The city clerk and I answer questions regarding zoning and new construction. Ultimately, any buildings or additions goes through the council for approval. The last Comprehensive Plan adopted by the community was in 1998. We have recently hired an engineering company to help plan for growth and replace our older infrastructure. Part of our needs assessment study done by the engineering company was to help us plan for the future, which includes updating that Comprehensive Plan and zoning maps.

4. STAFF & PARTNERSHIPS

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

We contract with the Nerstrand Fire Department to provide first responder/fire protection services in the Dennison area. Starting in December of 2022, Nerstrand now uses part of our city shop as a second fire station. It is a benefit to the surrounding area that we have this service closer, in case of emergencies. For many years, I have been the designated Emergency Manager. I have participated/represented this community in mitigation planning for Rice County, too. I am a trained severe weather spotter.

5. PROGRAMS IN PLACE

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

The city doesn't have programs in place to help reduce natural hazards. Citizens hear the tornado siren when that is tested. For the most part, people get their information from television broadcasts or radio reports, I believe.

6. FUNDING & OTHER RESOURCES

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

In the past, when Goodhue County worked on preventing flooding in the ditches alongside County Road 9, flood mitigation was part of the overall redesign and maintenance of that road. The last 5 years, no new projects in town are directly related to flood mitigation. The continued maintenance of the current system of catch basins/ponds remains important to flood prevention for the community.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

When it comes to windstorms/tornadoes, designating City Hall as a shelter area for the community would be a good first step. Acquiring a portable or stand-alone generator for City Hall would be helpful if there was a severe/catastrophic event in town.

2. GAPS OR DEFICIENCIES

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

I would say we lack the staff resources/time to pursue mitigation measures. We are limited in our finances, but if the council wants to plan for a project and thinks it is a priority, then it can come to fruition. We are at a point now with our new engineering company that we can do the mitigation-related measures in the future.

PART D: SURVEY PARTICIPANTS

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

Jeffrey Flaten, Mayor

Goodhue County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF GOODHUE

Point of Contact:

Name: Jason Mandelkow
Job Title: Public Works Director
Phone: 651-301-5584
Email: publicworks@ci.goodhue.mn.us

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

I have only been in public works since March of 2022. Since my time we have not had any major storms or events that caused any disruption. I checked with other city leaders and there has been none in the last 5 years.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
All Hazards	We need to find a new storm shelter in case of a major disaster. With St. Lukes church moving out of town (our old community shelter) we are vulnerable. We also need to purchase a generator for City Hall and the public works building. We need to upgrade our notification system on all levels. Daily city functions could be affected if there is no power or major damage.
Flooding	Most of the town is high enough to accommodate a high-water event. The wastewater treatment plant has a levee around it but in the event of a 100-year flood event it could be overcome. If this were to happen it would cause sanitary sewer issues. We also could have some flooding concerns at heritage park that could require damage the ball field or one bathroom.
Windstorm Tornadoes	We have one siren in town located next to the water tower. We do not have a shelter for our mobile home park or anyone without a safe room. We also have many overhead power lines on the Xcel Energy older part of town. If there is major windstorm, we could see large amounts of power outages.
Hail	We would have minimal effects from hail other than property loss.
Extreme Cold	We have a mobile home court that has many older homes and a very diverse culture and language barrier. In the event of very cold weather, we would need to inform them of procedures to keep pipes thawed. This also includes the public in case it's a prolonged cold event.
Ice storms	With a lot of overhead lines in the Xcel Energy older part of town the biggest concern would be loss of power. With this being part of our business district it would have a huge impact on the city. This area also has the largest elderly population and the school.

4. REDUCTION IN VULNERABILITY

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

The city has rebuilt one of the flood prone areas by installing more catch basins and larger pipes to help alleviate the water backups during torrential rains. The city has also relined many sewer lines to prevent the flooding of the sewer plant. There is also a levee built around the sewer plant. They did recently install a generator to power the emergency well and fire hall.

5. INCREASE IN VULNERABILITY

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

Over the last five years we have added multiple single-family homes and a new assisted living facility. Some of the homes and townhomes are slab on grade. These homes do not have basements and with the senior living facility having vulnerable citizens living inside I feel like we have more risk in the event of a tornado and or windstorm.

With St. Lukes church moving out of town that eliminates our only safe storm shelter. Our mobile home court does not have a shelter and now we are left with nowhere for those citizens or citizens without basements to shelter in the event of a tornado or windstorm.

The assisted living also does not have a generator onsite but does have access to a large portable one from the local farm equipment dealership.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

We have a city Facebook page and a city website. We will occasionally post flyers at the school, community center, and businesses around town. We do use the local News Record Newspaper to post information on meetings and other community events. There is also a community cable tv channel where we post announcements and inset fliers into our monthly water bills.

2. EMERGENCY NOTIFICATION SYSTEM

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

We currently do not have a sign up or link on our website for the county's emergency notification system. We would be interested in adding that to our website as we are planning on overhauling the city website page.

3. LOCAL PLANS & POLICIES

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

We work with Goodhue County to perform all the building inspections and building code enforcement. We also contracted with ISG engineering to provide us with engineering services for our infrastructure and land use. We carefully look at zoning with our current staff and is reviewed by the council and our attorney Kennedy and Graveman. We are also currently working to join the North Zumbro Sanitary District. This will eliminate our wastewater treatment plant and pump our wastewater to a regional facility. We are currently upgrading our 5-year capitol plan to prioritize capital improvement. We do not have any plans or policies to address climate change.

4. STAFF & PARTNERSHIPS

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

We are members of Mn WARN. The public works director and city engineer address all road and infrastructure issues. Goodhue County Coop Electric and Excel energy provide power to our community. The Goodhue Gas Commission supplies natural gas to our community. Our former Police Chief was our prior emergency manager. The public works director is filling for this role until a replacement is selected.

5. PROGRAMS IN PLACE

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

We do not participate in any such weather awareness information. Our local school does practice tornado drills.

6. FUNDING & OTHER RESOURCES

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

We have currently been bonding or using funds from the general fund to improve areas. We did work with the soil and water conservation service to widen and improve a major water way east of town.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

Windstorms/ Tornadoes: We need to work on a plan for establishing a shelter for windstorms or tornadoes. We need to talk with Goodhue County, the local fire department, the school and city leaders to develop a shelter that people can assess when there is an emergency at any hour of the day. We especially need to upgrade our warning plan to alert the mobile home park and those who are vulnerable.

Severe Winter and Summer Storms: We need to make people aware of safe places (such as the school or fire hall) to meet in the event of a major storm and someone is unaccounted for or needs shelter. We need to make sure we have portable generators and access to water and bathrooms in the event they need shelter for a long period of time.

Extreme Cold: Make the citizens aware of precautions to take in the event of a power failure and ways to keep pipes thawed. We also provide natural gas to the city so maybe sharing additional information on gas safety and what to do in case of an outage.

2. GAPS OR DEFICIENCIES

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

We need to upgrade our notification system and our website. We also need to sit down with department heads and Goodhue County to update our emergency management plan. Our police department has resigned, and we have now contracted with Goodhue County. We are also in the process of hiring an administrator and new clerk. Once they are hired we can start the process of improving our plan.

PART D: SURVEY PARTICIPANTS

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

Public Works Director Jason Mandelkow
Fire Chief Dereck Weckerling
Mayor Ellen Anderson Buck

Goodhue County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF KENYON

Point of Contact:

Name: Jeffrey Sjoblom
Job Title: Police Chief
Phone: 651-764-3542
Email: jsjoblom@cityofkenyon.com

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

The windstorm damage has increased in severity over the last few years. Most of our power is overhead in Kenyon. More downed trees from Emerald Ash Borer. In 2019, there was flood that did some damage to the river park. The bridge work at MN Hwy 56 resolved that issue.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
All Hazards	We need to obtain a permanent generator for our Fire Hall that serves as our local shelter if people are displaced from a severe storm event or extended power outage. The Fire Hall will be the designated EOC for Goodhue County in the event of an emergency in Red Wing. We also have a large population of senior citizens that do not use cell phones to receive emergency notifications.
Flooding	The only issue we would have would be the bridge on MN HWY 60, west of the city. The water could flow over the highway at that point.
Ice Storms, Blizzards	Relocated power from overhead to underground to eliminate damage from storms and downed trees.
Windstorms and Tornadoes	Kenyon Municipal Utilities (KMU) is the most vulnerable to wind damage.

4. REDUCTION IN VULNERABILITY

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

In 2020, we built a storm water retention pond to decrease flooding. The city has upgraded their storm water sewer systems as they upgrade their roads.

5. INCREASE IN VULNERABILITY

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

Trondheim is now full with regards to housing. There is only one way in and one way out. There is concern about access to the development during an emergency.

The city has grown in population in the last ten years. The increase in structures has increased the risk of more damage costs.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

We post information on our city website and Facebook page. We also post information on bulletin boards at the City Hall and at the Post Office. We also have Kenyon Leader newspaper. We make announcements at City Council meetings and post flyers on our community bulletin board outside of City Hall.

2. EMERGENCY NOTIFICATION SYSTEM

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

The city has the Code Red system. We also post notifications on the city Website and Facebook page. We have 4 sirens in town. We are interested in the IPAWS program through FEMA.

3. LOCAL PLANS & POLICIES

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

The city contracts with Goodhue County building inspectors to enforce Minnesota Building Code. We also have a Comprehensive Capital Improvement Plan.

4. STAFF & PARTNERSHIPS

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

Our Police Chief is city's Emergency Management Director. We have a city engineer and a public works director that address road maintenance issues for flooding (culverts, repetitive flooding). We have our own municipal utility that is responsible for mitigating against power outages. We have worked with FEMA on flood reduction projects. We are a member of MnWARN.

5. PROGRAMS IN PLACE

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

The First Wednesday of the month, the city's sirens are set off for the Civil Defense Test. The school participates in the National Weather Service's Severe Weather Awareness Week.

6. FUNDING & OTHER RESOURCES

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

The city primarily uses its own budget to address mitigation projects. The city has worked with FEMA in the past as well.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

The city is working with Goodhue County on the County 12 Road project. It will help with storm water routing and removal.

The city is working with the Goodhue County Emergency Management to establish an emergency EOC at the Kenyon Fire Department.

2. GAPS OR DEFICIENCIES

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

Not all residents are signed up for emergency notifications. The city is small with limited financial and staff resources to address local mitigation projects.

PART D: SURVEY PARTICIPANTS

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

Mark Vahlsing, City Administrator

Wayne Ehrich, Public Works Director

Jeffrey Sjoblom, City Emergency Management Director/Police Chief

Goodhue County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF LAKE CITY (partly in Wabasha County)

Point of Contact:

Name: John Yorde
Job Title: City of Lake City Emergency Manager
Phone: 651-345-3344
Email: jyorde@lakecitypd.org

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

- Flooding 2019

- September 24, 2019 (Wabasha County)

An EF-0 (verified by National Weather Service La Crosse) was on the ground for 3 minutes, traveled 1.1 miles, 35 yards wide through Lake City in Wabasha County. A number of buildings, and trees were damaged. A number of residents were without power for a number of days before the power was restored. The Marina was also hit hard damaging a number of boats and parts of the Marina Infrastructure. Local EOC Activated. 9-25-2019 Local Emergency was declared by City Council.

- December 2021 (Wabasha County)

Wind / Hail Storm leaving a lot of hail damage and tree and tree limb damage.

- April 17th 2023 (Goodhue County)

Flood Water crested April 25 2023 at 19.5 feet. Central point road having a number of houses which are elevated, were cut off from City services for a period of time (Water, Electric) severely damaging electrical transformers and other minor damage to lower parts of the homes. Road access was closed off. Lake City Marina Point water came close to cresting the rip rap and trailers were moved off the point. Local EOC Activated. April 21 2023 City Council declared a Local Emergency.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
Ice Storms, Blizzards	Much of the city's municipal electrical service consists of overhead power lines and electrical poles. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches. Mitigation from Tree removal in these areas is critical to focus on!
Windstorms and Tornadoes	<p>We have multiple mobile home parks and a campground within the city that have inadequate storm shelters and residents are vulnerable to high wind and tornado events. Our municipal campground and summer housing is active during summer and fall months with campers and storm shelter s are inadequate for population covered along with distance between residents and the Shelters.</p> <p>Much of the city's municipal electrical service consists of overhead power lines and electrical poles. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches.</p> <p>Concerns towards all OH Elec Dist. system, especially towards:</p>

	<p>South prairie from Marion to Iowa Marion from 8th to lakeshore Grant ST to 332nd St.</p> <p>Hok Si LA Campground and Marina Point within the city that does not have a storm shelter and residents are vulnerable to high wind and tornado events.</p> <p>We have experienced power outages from strong wind events that brought down power lines, Street Trees, loss in Boulevard areas.</p>
Flooding	<p>City lift station and electrical for City and Central point usually needs to be shut off when extreme flooding is involved especially during spring flooding.</p> <p>HSL-Loss of upland / erosion and restoration needing to be completed.</p> <p>Lift station occurrences: infiltration occurs at Sprague lift and central point lift (loss of electrical service to central point and marina point) Sanitary infiltration occurrences.</p> <p>Marina Point: Emergency Move of Trailer homes, sanitary infiltration, and discharges. Electrical Equipment restoration</p> <p>Ohuta Park: Retaining wall undermined due to flooding and loss of upland from erosion.</p> <p>Roschen Park: Loss of upland from erosion</p> <p>City owned Shoreland is exposed to loss from erosion.</p>
All Hazards	<p>A Generator would be beneficial for City Hall. City Hall houses the IT Server for the Public Safety Building along with other crucial departments. During power outages public safety is without internet service and electronic files needed for response.</p> <p>A Generator would be beneficial for local public school. Local School are identified as a shelter in city EOP as in many cities due to size and accessibility.</p>
Erosion / Run Off	<p>Upper Bluff land caused mass amount of sediment runoff from hill top areas into Jewel subdivision (Oakhurst)</p>

4. REDUCTION IN VULNERABILITY

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

- Currently our city municipal electric dept has and is ongoing with converting overhead power lines to underground. Always renewing and updating city shelter plans and contacts with shelter agreements.

- After spring flooding in 2019, Mitigated flooding loss along shorelines and reinforced slopes with armoring at sportsman's area in 2021.
- Marina has been armoring inner harbor and looking towards outer harbor.
- Recently gained a stormwater resiliency grant and look forward to mapping and surface water modeling that will help control waters received and how it affects properties. Upgrades to Elec dist. have been occurring- poles, conductor modifications from OH to underground Areas included: So. Oak, Chickadee, Park St.

5. INCREASE IN VULNERABILITY

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

In the past few years, the city population has steadily increased the Jewell addition with new construction which has increased our population and damage to additional structures. With the new construction retention ponds have been mandated in the city planning. More homes have been built slab on grade, so residents do not have a basement/shelter for safety during high wind or tornado events. With the construction of a new affordable / high density housing there is a large concentration of residents during a disaster event.

We have seen slow growth in our community, roughly 12 new homes a year and a very small amount of commercial growth. There have been additional homes on the shoreland which does increase flooding concerns on central point road.

Small increase in use at Hok Si La Park (Goodhue County) which could lead to an increase in fire potential. Addition of cabins (9) expose greater risk to property loss.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

We post information on Our City, Public Works and Police Dept Facebook pages as needed. Our city has access to a Public City informational page on out town TV provider. City webpage is used as needed with a General Information tab. City Hall also has a community Bulletin board for posting of information also.

2. EMERGENCY NOTIFICATION SYSTEM

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

Yes, Lake City does use CodeRED. We have a link from the City of Lake City web page with a link to the County CodeRED signup page. We include information twice annually in the local newspaper. When new

residents move into town a flyer is included with the Welcome wagon packet information. Annually information goes out in city wide utilities and information is available at the front counter of the Police Department. We have also in the past couple of years done a signup event for anyone who needs assistance, especially for seniors, anyone is welcome to come for assistance or ask questions.

3. LOCAL PLANS & POLICIES

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

The city's planning and zoning department enforces the MN State Building Code and the City Code zoning requirements for new development. The current city Comprehensive Plan that is designated to plan for the future physical growth of the city and appropriate land uses. The city works with all mobile home parks and identified other high density housing locations.

4. STAFF & PARTNERSHIPS

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

Lake City has an Emergency Manager who works closely with the Police Chief, Fire Chief, Ambulance Director, Public works and multiple department heads. Emergency Management continuously trains with a volunteer group, outside city volunteers who are eager to work in the City EOC when requested to respond and assist. EM hosts a yearly City tabletop for city employees on how to work with the city EOC and response to Emergency situations, including phone and radio operations along with responsibilities of all city employees. Lake City is an AMEM, and MnWARN member.

5. PROGRAMS IN PLACE

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

Our city works with the county to participate in the National Weather Service's annual Severe Winter/Spring Weather Awareness week by posting severe weather awareness information out on the dept Facebook page. Our local school practices tornado drills on an annual basis. The city does informational yearly as requested by local civic groups.

6. FUNDING & OTHER RESOURCES

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

The city primarily uses its own budget to address mitigation projects such as flood mitigation for identified areas. We are continuously working with our city electric crew, converting overhead powerlines to underground services.

The city is proactive with any disasters, often utilizing its general funds and having exceptionally skilled staff to find conservative solutions. Grant monies have been utilized in the past and we seek reinforcement now and, in the future, to help mitigate these disasters.

FEMA dollars for erosion repairs at sportsman area off of South Oak

Assistance is provided from other Electrical coops, i.e.. Goodhue County Electrical Coop.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

- **Windstorms/Tornadoes**
 - Work with educating local residents to be prepared for sheltering and building safe rooms.
 - Infrastructure inventory needs to be on hand especially with the extreme supply chain shortages we face.
- **Extreme Cold** - Encourage residents to be prepared for periods of extreme cold and potential power outages. Use our city website and utility bills to notify residents to avoid freezing pipes during sub-zero weather.
- **Severe Winter / Summer Storms** - Post information on the city's website and local bulletin boards to encourage residents to sign up for the county's emergency notification system. Participate in the National Weather Service's Severe Weather Awareness Weeks.
- **Flooding**
 - Prepare a comprehensive plan on needed proactive response to mitigate future damage. Increased floodwalls
 - Mccahill Park mitigate Flooding hazard
 - Pole replacement program, (attempt to gain grants towards resiliency projects)
 - HSL Shoreland armoring
 - Sportsmans Shoreland Armoring
- **Winter Storms**- Infrastructure inventory needs to be on hand especially with the extreme supply chain shortages we face.
- **Drought** - Infrastructure inventory needs to be on hand especially with the extreme supply chain shortages we face. Improvements to reservoirs needed
- **Landslide** - Example: Subdivision on west edge of town has had landslides due to improper buffering and storm water runoff. City to purchase affected properties in Oakhurst lots in subdivision to mitigate any future loss and engage with proper response to control bluff land

protection from private owners Mapping of infrastructure to help staff needs towards planning of improvements and be proactive towards stormwater mitigation

2. GAPS OR DEFICIENCIES

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

Post Information out on City social media encouraging residents to sign up for the County Emergency Notification system also how to push out information on mitigation.

Constant communication / reinforcement, i.e. Radio use, Cell phone integration, cross training of Crews for inspection of infrastructure needs, increased safety training, cross training of safety needs with Fire/EMS/PD/County

Capital improvement budgeting: Increased generator capacity, Dewatering Pump upgrades, Bathhouse/storm shelter at HSL,

Reinforcing our city's development needs by cleaning up blight and hazardous structures is a clear priority. Adding Fire code official to fully support MN fire code is needed, along with updating public works standards and specifications to construction needs in an order to increase safeguarding our communities.

PART D: SURVEY PARTICIPANTS

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

John Yorde, City of Lake City Emergency Manager
Tom Brown, City of Lake City Emergency Management
Robert Benson, City of Lake City Ambulance
Scott Jensen, Public Works Director
Travis Dunn, Public Works Assistant Director
Bruce Wallerich, Streets/Parks Superintendent
Travis Wettern, Electrical Foreman
John McCormick, Water Foreman

Goodhue County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF PINE ISLAND (partly in Olmsted County)

Point of Contact:

Name: Brandon Mathison

Job Title: Emergency Manager

Phone: 612-991-7221

Email: brandon.mathison@ci.pineisland.mn.us

Sam Lenz

Emergency Manager

507-884-1821

sam.lenz@ci.pineisland.mn.us

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

Each Spring melting of snow and rain events cause the Zumbro River to rise and cause damage to some of our city parks. Run-off from these events also have the capability of causing damage to our streets and culverts.

Flooding: Within the last five years we have experienced a few Spring flooding events but only one required the deployment of sandbags in SE area of town.

Wind: Pine Island also had numerous high wind events that have damaged trees and powerlines, resulting in power outages and tree damage to vehicles and homes. On December 2021 the city received high winds causing downed trees and residents losing shingles etc.

Hail: Pine Island has experienced 2 significant Hail events causing damage to buildings in the last 5 years. May 11th, 2022 and July 22,2023.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
All Hazards – Power Outages	A generator has been installed at City Hall that serves as an overflow local shelter if people are displaced from a severe storm event or extended power outage. We are also looking into installing a permanent generator at the Lutheran Church which will be our primary shelter. Pine Island Public School and Pine Island Firehall both have permanent generators and can be used as overflow shelters
Flooding	We have a city lift station that is prone to flooding during high rain events. Two city parks that are vulnerable to flooding and park equipment has been damaged in the past.
Ice Storms, Blizzards	Much of the city's municipal electrical service consists of overhead power lines and electrical poles. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches.
Windstorms and Tornadoes	We have one mobile home park within the city that does not have a storm shelter and residents are vulnerable to high wind and tornado events. We have experienced power outages from strong wind events that have caused power outages.
Extreme Cold	We have a high population of senior citizens and low-income residents who are more vulnerable during periods of extreme cold with power outages. In the past we have experienced frozen water services and some residential homes experienced burst pipes from extended extreme cold. The city has experienced frozen culverts causing localized flooding.
Drought	Pine Island has experienced moderate drought
Highway 52	Highway 52 running through the middle of town presents a great hazard to our community. Transporting hazard materials on this highway is common.

4. REDUCTION IN VULNERABILITY

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

Our city completed street reconstruction projects in 2015, 2017, 2020, and 2023. The projects included storm sewer reconstruction. In 2022 we cleared and regraded one of our retention ponds and we have plans to do another in the near future.

5. INCREASE IN VULNERABILITY

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

Since 2010, the city's population has grown from 2,462 to 3,924 with many new homes built making more properties vulnerable to damage. Homes have been built slab-on-grade, so residents do not have a basement for safety during high wind or tornado events. With an increase in population and construction of more homes and commercial properties, we have also witnessed more storm water discharging to our stormwater system. We feel this is due to more impermeable surface which has increased stormwater runoff, and the amount of precipitation seems to have increased per rain event.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

We post informational announcements on our city website, through the Code Red system, through our Community Facebook page, Pine Island Fire Dept Facebook, monthly newsletter and through our cities public access channel (CCTV). We often also make announcements at City Council meetings.

2. EMERGENCY NOTIFICATION SYSTEM

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

Yes. We offer a sign-up link to a City of Rochester/Olmsted County Code Red Alert System offering county and local emergency notifications, on the city website, and monthly newsletter.

3. LOCAL PLANS & POLICIES

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

The city's planning and zoning department enforces the MN State Building Code and the City Code zoning requirements for new development. We have a 20-year Comprehensive Plan that is designed to

plan for future physical growth of the city and appropriate land uses. The city works with our mobile home parks on emergency evacuation and sheltering of residents. The city also participates in the National Flood Insurance Program and has FEMA mapped high risk areas. The city updates and approves the yearly Emergency Operation Plan.

4. STAFF & PARTNERSHIPS

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

We currently have 2 fire Dept members that are designated Emergency Manager(s). One of those firefighters is also a public works employee. Our Public Works Director and our City Engineer work to address road maintenance issues regarding flooding. We work with Olmsted County to control our outdoor warning sirens.

5. PROGRAMS IN PLACE

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

The city shares information with the public that we receive from Olmsted County Emergency Management and continue to address mitigation measures through our public works improvement projects.

6. FUNDING & OTHER RESOURCES

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

The city primarily uses its own budget to address mitigation projects, such as clearing the riverbanks of debris. We have also worked closely with the county highway engineer on local flood mitigation projects for roads and the county zoning department when we updated our local floodplain ordinance. We have worked closely with our power companies to reduce long term power outages.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

Windstorms/Tornadoes – We hardened/hardening the Lutheran church, city hall and fire hall For sheltering.

Flooding – Work to address flood mitigation measures for our city lift station that is prone to flooding during high rain events as well as our two city parks that are vulnerable to flooding and park equipment

Drought – During periods of severe drought, enforce the city’s water Conservation Plan and promote water conservation awareness measures to residents.

Severe Winter/Summer Storms – Evaluate opportunity to build a storm shelter or tornado safe room for the mobile home park in the city. Also work with the Peoples Energy Coop as needed to address future conversion projects from overhead to underground to reduce power outages from a range of severe storm events.

Extreme Cold – Work with Olmsted and Goodhue County Emergency Management to establish a plan for temporary warming facilities for those in the community who are more highly vulnerable during periods of extreme cold or winter storms that result in extended power outages (i.e., homeless, elderly).

Continue to implement city policies that help to address risk reduction including enforcement of building codes, floodplain management ordinance. Continue to work with Olmsted County Emergency Management to share severe weather information with the public such as participating in the Severe Weather Awareness Week and SkyWarn Storm Spotter training. Continue to encourage all residents to sign up for the county’s CodeRED emergency notification system.

2. GAPS OR DEFICIENCIES

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

Not all our residents are signed up for the emergency alert (Code Red) notification system. We are a small city with limited financial and staff resources to address local mitigation projects.

PART D: SURVEY PARTICIPANTS

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

Brandon Mathison, Emergency Manager
Sam Lenz, Emergency Manager
Todd Robertson, Public Works Director

Goodhue County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF RED WING

Point of Contact:

Name: Travis Bray
Job Title: Red Wing Emergency Manager/Police Captain
Phone: 651-267-2611
Email: travis.bray@ci.red-wing.mn.us

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

The city of Red Wing has experienced several spring flooding events in the last five years. Damage estimates have been near or over \$100k dollars. Several high wind storms have occurred causing high damage costs to private property (no real damage costs to public infrastructure).

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
All Hazards	Red Wing has a large senior population most with mobility needs. If an evacuation in parts of the city had to occur this would create a big problem in evacuating these high numbers. More transportation outlets would be needed to assist with the evacuations and serving this at risk population
Extreme Heat/Cold	More sheltering resources are needed. Air condition stations as well as heat stations are lacking for the size of the population that may need to be housed for these weather events.

4. REDUCTION IN VULNERABILITY

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

The levee wall at Levee Park and Levee Road were reconstructed to be able to withstand higher flood levels. This has allowed for less sandbagging operations near the affected areas due to the higher surface which allows for lower flooding impacts.

Improvements to the storm sewer system in the downtown area has been updated and is still being updated to combat road flooding when heavy rains take place in the downtown area.

5. INCREASE IN VULNERABILITY

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

Currently the emergency siren system in Red Wing is being looked at by council to either keep the sirens or decommission the sirens. Xcel Energy will no longer be servicing the sirens and they have advised stake holders that the sirens will be taken down if municipalities do not wish to take over ownership of them.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

The City of Red Wing has several platforms to communicate with the public regarding hazards. The city uses the code red system, IPAWS, local radio station, Tip411 and social media platforms.

2. EMERGENCY NOTIFICATION SYSTEM

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

Yes, we have completed social media posts and provided mailers (pamphlets)

3. LOCAL PLANS & POLICIES

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

The city has an active and updated emergency operations plan. A fully functioning EOC with dedicated members in positions to work and run the EOC. Building code enforcement is completed by several employees for the city. The Red Wing Fire Marshal completes inspections on public and private facilities throughout the community.

4. STAFF & PARTNERSHIPS

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

City Admin, City Engineering, Public Works, Fire/EMS, and Police work together to address mitigation measures as needed. We also work with Goodhue County as needed.

5. PROGRAMS IN PLACE

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

The city routinely posts awareness alerts related to weather and other community impacting incidents. Monthly the severe weather sirens are activated and testes to ensure proper working order.

6. FUNDING & OTHER RESOURCES

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

The City uses its own budget to address mitigation projects. Xcel energy provides some funding for emergency response to an incident at PINGP. HSEM and FEMA also provide resources to assist with the response effort for an incident at the plant.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

Please describe what mitigation actions would help to reduce risk to your community from future hazard events. Please consider mitigation activities that address local vulnerabilities; limit risk to existing

structures or new development; and also any actions that benefit underserved communities or socially vulnerable populations in your community. Please be as specific as possible in your responses.

Flooding-continue to upgrade and replace old systems that are currently in place regarding the storm sewers throughout the city. Improve low lying areas vulnerable to flooding with higher earth banks and walls to combat the flooding in that area.

Extreme heat/cold-improve current shelters adding heat and cold relief stations (equipment needed for these). Add more shelter space to accommodate larger population.

2. GAPS OR DEFICIENCIES

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

None noted.

PART D: SURVEY PARTICIPANTS

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

Travis Bray-City of Red Wing Emergency Manager

Goodhue County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF WANAMINGO

Point of Contact:

Name: Michael Boulton
Job Title: City Administrator
Phone: 507-824-2477
Email: cityadministrator@cityofwanamingo.com

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

There seems to be at least one windstorm each year that has caused damage to homes and businesses, downed trees, damaged powerlines that result in power outages, and damaged city structures. In the past, major rain events have caused flooding on County Road 30 and MN TH 57 including bridges on

both roads being flooded. Riverside Park has sustained damage, two local homes, and damage has occurred further down the Zumbro River to the wastewater treatment plant and nature trail walking bridge.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
All Hazards	<p>We need to obtain a stationary generator for our Fire Hall and a portable generator for our City Hall/Community Center Building. The Fire Hall houses the fire department and first responders and also serves as our local shelter if people are displaced from a severe storm event or extended power outage. City Hall/Community Center is the secondary location for a local shelter and emergency management coordination.</p> <p>We also have a large population of senior citizens that do not use cell phones to receive emergency notifications.</p>
Flooding	<p>The North Zumbro river has had changes since the MN TH 57 bridge was constructed in the early 2000's. The last three major floods since 2010 have caused severe damage to the banks along the river close to Riverside Park. The water still backs up but now rushes faster through the new bridge opening. The city would like to remove the concrete dam while restoring the banks to the west of the dam and Shingle Creek.</p>
Windstorms and Tornadoes	<p>Wanamingo has a mobile home park (Hillcrest Manor) within the city that does not have sufficient storm shelters. Residents are vulnerable to high wind and tornado events.</p> <p>The city also has one fully operational outdoor warning siren and one siren that requires constant maintenance to be operational. The city should have another outdoor warning siren installed.</p>

4. REDUCTION IN VULNERABILITY

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

In 2020 the city completed installation of storm water piping and catch basins that ran through the school and mobile home park. In 2022 the city constructed a new water tower, additional watermain looping, and is in the process of constructing a new wellhouse that includes new controls and a backup generator. These improvements should keep water flowing during a natural disaster emergency. The city is working with the cities of Goodhue, Pine Island, and Zumbrota to construct a regional wastewater treatment facility and collection system. The system will be out of the flood plain and will be better able to handle wet weather events and continued treatment. The four cities received \$10 million from predesign work and land acquisition in 2023. Additional capital requests are at the legislature for 2024

for the wastewater treatment facility and collections system. The city is working toward a 2025/2026 street reconstruction project that will address additional stormwater improvements.

5. INCREASE IN VULNERABILITY

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

Between 2016-2023 we have had roughly 65 new homes, numerous residential improvements, and numerous business expansions constructed in the city. This has increased the population and potential for damage to the structures in town. Many new homes are either slab-on-grade or split-level homes with no basements. Many of these residents lack safe locations during high winds or tornado events. With an increase in population and construction of more homes and commercial properties, we have also witnessed more storm water discharging to our stormwater system. We feel this is due to more impermeable surface which has increased stormwater runoff and the amount of precipitation seems to have increased per rain event.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

We post information on our city website and Facebook page. We also post information on bulletin boards at the Post Office, bank, and numerous other business locations. Notices in the local newspaper can be published.

2. EMERGENCY NOTIFICATION SYSTEM

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

The city has the ability to place information on the city website and Facebook page to link to the County and Skywarn for information on emergency notification sign-ups.

3. LOCAL PLANS & POLICIES

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

The city contracts enforces the MN State Building Code and the City Code zoning requirements for new development with the County Building Permits & Inspections Department. We have a 28-year-old Comprehensive Plan that is designed to plan for the future physical growth of the city and appropriate land uses. It is in need of updates. The city has a 10-year Capital Improvements plan that identifies needs for the city.

4. STAFF & PARTNERSHIPS

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

One of our firemen is designated as our Civil Defense Director. Our City Council includes a Public Safety Committee. The city updates the Emergency Plan on a yearly basis and share the information with the Fire Department, Sheriff's Office, and Goodhue County Emergency Management. The city has a consulting engineer and a public works director that address road maintenance issues for flooding (culverts, repetitive flooding). We are working with Goodhue County SWCD to address bank stabilization issues. We have worked with the county emergency manager on getting an outdoor warning siren. We are a member of MnWARN.

5. PROGRAMS IN PLACE

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

Our fire department works with the county to participate in the National Weather Service's annual Severe Winter/Spring Weather Awareness Week. Our local school practices tornado drills on an annual basis. Each fall we do outreach to homeowners to remind them to clear leafy and woody debris from roadside gutters to prevent clogging and over the road flooding in these areas. Our city maintenance staff works throughout the year to keep the gutters and stormwater catch basins cleared of debris. The city public works staff works throughout the year to trim trees along the streets.

6. FUNDING & OTHER RESOURCES

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

The city primarily uses its own budget to address mitigation projects. We have also worked closely with the county highway engineer and MNDOT on local flood mitigation projects for roads. We worked with the county when we updated our local floodplain ordinance. The city has received grant funding to assist with purchase fire department small tools.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

All Hazards

- Our top priority for a possible FEMA funding application is to purchase a stationary generator for our Fire Hall and a portable generator for our City Hall/Community Center Building. We wish to apply for this in the next year and would appreciate assistance in the process.
- Update the city's Comprehensive Plan to include considerations for hazards such as flooding

- Continue to promote residents to sign up for the county emergency notification system and sign up for the city's FB page to receive information on severe weather.

Flooding

- Continue working with Goodhue County SWCD to address bank stabilization issues. Remove the concrete dam on the North Zumbro while restoring the banks to the west of the dam and Shingle Creek.
- The city is working toward a 2025/2026 street reconstruction project that will address additional stormwater improvements.

Windstorms/Tornadoes

- Work with Hillcrest Manor mobile home park to address the need for construction of a tornado safe room or suitable storm shelter for park residents who are vulnerable to high wind events.
- Work with Goodhue County Emergency Management to address the purchase and installation of a new outdoor warning siren that will be tied in to the county remote activation system.

2. GAPS OR DEFICIENCIES

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

The city has a difficult time reaching residents that do not have Facebook or check the city website. Residents may not be signed up for the county emergency management notification system. The Fire Department radios are at the end of their lifespan and need to be replaced. The cost is beyond the city and local townships ability to afford. The city needs to update its Comprehensive Plan to address considerations for future hazard events such as flooding. Wanamingo is a small city with limited financial and staff resources to address local mitigation projects.

PART D: SURVEY PARTICIPANTS

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

Michael Boulton, City Administrator
 Ryan Holmes, Mayor
 Brad Kennedy, Public Works Director
 Gregg Erickson, City Civil Defense Director

Goodhue County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF ZUMBROTA

Point of Contact:

Name: Brian Grudem
Job Title: City Administrator
Phone: 507-732-7318
Email: bgrudem@ci.zumbrota.mn.us

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

On February 24th, 2019 the Historic Covered Bridge suffered a roof collapse due to heavy snow and high winds. In December of 2021, we had strong winds causing some tree damage.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
All Hazards	We need to obtain a stationary generator for our City Hall/Police Station Building & replace the Generator at the Fire Hall. The City Hall/Police Building houses City Administration and the Police Department. In the event of a power outage, we cannot conduct city administrative or police operations without the computers and phones. City Hall also serves as one of our shelters if people are displaced from a severe storm event or extended power outage. City Hall/Police Station is projected as a command Center in case of a natural disaster. The Fire Hall is the secondary location for a local shelter and emergency management coordination. Well Head #3 in Zumbrota does not have generator back-up, in the event of a prolonged outage, we would not be able to draw enough water to effectively fight a fire.
Flooding	The North Zumbro river has had changes since the flood buyouts after the 1998 flood & the Highway 58 bridge was replaced allowing for more flow. However, when floods do occur, there is substantial erosion to the banks of the river and amenities within the park.
Windstorms and Tornadoes	Our municipal campground is active during summer and fall months with RVs, campers & tents. The campground does not have a storm shelter. We have experienced power outages from strong wind events that brought down power lines.

4. REDUCTION IN VULNERABILITY

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

The city is working with the cities of Goodhue, Pine Island, and Zumbrota to construct a regional wastewater treatment facility and collection system. The system will be out of the flood plain and will be better able to handle wet weather events and continued treatment. The four cities received \$10 million from predesign work and land acquisition in 2023. Additional capital requests are at the legislature for 2024 for the wastewater treatment facility and collections system. Flood buyouts with the Covered Bridge Park along with replacement of the Highway 58 bridge has helped to mitigate the impacts of flooding.

5. INCREASE IN VULNERABILITY

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

Zumbrota has realized steady growth in population over the last 10 years. The 2020 census showed an increase of 474 residents and 154 households. This increase represents more structures with potential for damage due to natural disasters.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

We have a GoZumbrota App which allows us to push out real time updates to citizens via text or email. We also post information on our city website, Facebook page. We also post information on bulletin boards at the Post Office, bank, and numerous other business locations. Notices in the local newspaper can be published.

2. EMERGENCY NOTIFICATION SYSTEM

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

Yes, we encourage our citizens to sign up for the county's emergency notification system through our website and social media app's. We also have the ability to quickly push out emergency notifications through our GoZumbrota app.

3. LOCAL PLANS & POLICIES

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

The city has a contract with MNSPECT to enforce the MN State Building Code, including building, mechanical and plumbing inspections. Our Planning commission oversees the zoning code requirements for new developments, variances, subdivisions, etc.

We have a very generic emergency action plan that was developed many years ago.

We have a flow indicator in Wanamingo that will give us a few hours of notice of an impending flood in our Covered Bridge Park and we have a Park Flooding Procedures document that outlines things we have to do prior to the arrival of high water.

4. STAFF & PARTNERSHIPS

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

Our departmental emergency management team includes our Police Chief, Public Works Director, City Administrator, and the Mayor.

We have a city engineer and a public works director that address road maintenance issues for flooding (culverts, repetitive flooding).

We have worked with the SWCD to address bank stabilization issues.

5. PROGRAMS IN PLACE

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

We have a street sweeper that we use to throughout the year to keep the gutters and stormwater catch basins cleared of debris. Our fire department works with the county to participate in the National Weather Service's annual Severe Winter/Spring Weather Awareness Week. Our school practices tornado drills on an annual basis.

6. FUNDING & OTHER RESOURCES

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

The city primarily uses its own budget to address mitigation projects, such as replacement of culverts. After the floods in 1998, the city received grant funding from the MN DNR Flood Hazard Mitigation Grant Assistance Program to assist with the buyout of several flood prone homes. The city has also worked with the SWCD to address erosion issues.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

All Hazards

- Install a generator for our City Hall/Police building & replace the generator at the Fire Hall.
- Update the generator at the Fire Hall for use as a secondary emergency command center.
- Install a generator for Well #3 to ensure water availability in case of a fire or other emergency.
- Update the city's Comprehensive Plan to include considerations for hazards such as flooding.
- Continue to promote residents to sign up for the county emergency notification system, GoZumbrota app, becomes a member of the MnWARN system.

Flooding

- Continue working with Goodhue County SWCD to address bank stabilization issues.

Severe Winter / Summer Storms

- Post information on our website, social media and the GoZumbrota app. and local bulletin boards to encourage residents to sign up for the county's emergency notification system. Participate in the National Weather Service's – Severe Weather Awareness Weeks.

- Install a generator at our City Hall/Police Building so we can use the facility as a command center and shelter for displaced residents.

Extreme Cold

- Encourage residents to be prepared for periods of extreme cold and potential power outages.
- Use our city website and utility bills to notify residents to avoid freezing pipes during sub-zero weather.
- Identify churches, and other locations to shelter citizens in the event of an extended power outage.

2. GAPS OR DEFICIENCIES

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

Not all our residents are signed up for the county's emergency notification system. We are small city with limited financial and staff resources to address local mitigation projects. We need a generator at our City Hall/Police Building and replacement of the generator at our Fire Hall as well as a generator for well #3.

PART D: SURVEY PARTICIPANTS

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

Brian Grudem, City Administrator

Patrick Callahan, Police Chief

Mike Olson, Public Works Director

Todd Hammel, Mayor

Appendix D – Plans & Programs in Place

Goodhue County

HMP Plans & Programs in Place Form

EMERGENCY PLANNING CAPABILITIES	Yes/No	Comments
Emergency Mass Notification System	Yes	CodeRED, IPAWs
Outdoor Warning Sirens (#'s and location)	Yes	Featherstone TWP-2 Cannon Falls-3 Hay Creek TWP-5 Wacouta TWP-1 Vasa TWP-5 Welch TWP-17 Red Wing-31 Kenyon- 1 Zumbrota- 2 Lake City-1 Dennison-1 Pine Island-2 Wanamingo-1
Emergency Operations Plan (EOP)	Yes	County 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	No	Addressed in coordination with schools & local jurisdictions with local vulnerabilities
NWS Weather Ready Nation / StormReady Certification	Yes	Goodhue County Emergency Management is a designated WRN Ambassador
Coordination with Schools	Yes	Tornado Drills, other trainings
Coordination with Neighboring County/Tribal Jurisdictions	Yes	Annual regional planning and training; statewide AMEM conference
Coordination with Local / Regional Agencies involved in mitigation	Yes	SWCD, MN DNR, MnDOT, Rural and Municipal Electric Cooperatives, Watershed Districts

Coordination with organizations or agencies addressing disaster related issues and vulnerable populations, emergency preparedness, access and functional needs populations	Yes	Public Health, American Red Cross, Salvation Army
Hazard data and information	Yes	Damage information is kept on file from past storm events and disaster declarations
<i>Other (please describe)</i>		PH has preparedness plans in place

PLANNING & REGULATORY CAPABILITIES	Yes/No	Comments
Comprehensive/Land Use Plan	Yes	Goodhue County Comprehensive Plan 06/21/2016
Capital Improvements Plan	No	
Economic Development Plan	Yes	Goodhue County Economic Development Authority (EDA)
Climate Adaptation Plan	No	
Continuity of Operations Plan (COOP)	Yes	Under Goodhue County Emergency Management
Transportation Plan (Roads, Bridges, Culverts, Ditches)	Yes	Goodhue County Public Works Transportation Plan
Stormwater Management Plan / Drainage Plan	Yes	Goodhue County Ditch 1 plan
Burning Permits/Restrictions (Sheriff's Office or MN DNR)	Yes	MN DNR
Comprehensive Local Water Management Plan	Yes	Goodhue County Comprehensive Local Water Management Plan 2010-2020
Watershed Plan (One Watershed, One Plan)	Yes	Goodhue County has participated in several regional 1W1P's including the Greater Zumbro 1W1P (2021-2032) and the Cannon River 1W1P (2020-2030)
Wellhead Protection Plan	Yes	Municipal level plans are done in coordination with MDH
Forest Management Plan	No	
Community Wildfire Protection Plan (CWPP)	No	

Participation in MN DNR Firewise Program	No	
Database of Dry Hydrants/Well Access	No	No Dry Hydrants
Other (please describe)		

LOCAL POLICY / PROGRAM CAPABILITIES	Yes/No	Comments
Land Use, Planning, & Zoning Ordinance	Yes	Goodhue County Zoning Ordinance, Amended 07/18/2023
Subdivision Ordinance	Yes	Goodhue County Subdivision Controls Ordinance, 02/04/2020
Building Codes	Yes	Goodhue County Land Use Management Department – Building Code Administration, Permits, and Inspections
National Flood Insurance Program (NFIP)	Yes	Goodhue County NFIP entry date 04/17/78
Flood insurance rate maps	Yes	Current effective map date 9/25/2009
Floodplain Ordinance	Yes	Goodhue County Zoning Ordinance, Article 32
Shoreland Ordinance	Yes	Goodhue County Zoning Ordinance, Article 31
Minnesota Buffer Law / Soil Erosion Ordinance	Yes	Goodhue SWCD administers the State Buffer Law.
Home Buyouts for flood or erosion mitigation	Yes	Goodhue County has not done any past buyouts, but the cities of Cannon Falls, Zumbrota, and Pine Island have conducted property buyouts in the past for flooding.
Other natural hazard specific ordinance (i.e., stormwater, steep slope, wildfire)	Yes	Goodhue County Zoning Ordinance, Article 11 Performance Standards, Section 11, Soil Erosion and Sediment Control.

		Goodhue County Zoning Ordinance, Article 12 Bluff Land Protection includes setback and other regulations.
Maintenance programs to reduce risk	Yes	Highway Dept. ROW maintenance and drainage systems. Preventative maintenance in high stormwater areas.
<i>Other (please describe)</i>	Yes	Goodhue County Zoning Ordinance includes Article 16, Section 3, Performance Standards for Mobile Home Parks includes Subd. 8 requiring designated structures as tornado/storm shelter.

ADMINISTRATIVE/TECHNICAL CAPABILITIES	Yes/No	Comments
Emergency Management Director	Yes	Goodhue County EMD
Sheriff/Police Department	Yes	Goodhue County Sheriff
Floodplain Administrator	Yes	Goodhue County Zoning Administrator
Chief Building Official	Yes	Goodhue County Zoning Administrator
County Engineer	Yes	Goodhue County Engineer/Public Works Director
Mapping Specialist (GIS)	Yes	Goodhue County Survey/GIS Dept.
Public Health Coordinator/Department	Yes	Goodhue County Emergency Preparedness Coordinator
Planning Commission	Yes	Goodhue County Planning Advisory Commission
Soil and Water Conservation District	Yes	Goodhue SWCD
Minnesota Department of Natural Resources	Yes	

Mitigation Planning Committee	yes	2023 HMP Update Planning Team
Mutual Aid Agreements	Yes	Regional
<i>Other (please describe)</i>		

EDUCATION & OUTREACH CAPABILITIES	<i>Yes/No</i>	<i>Comments</i>
SKYWARN Program Training with NWS	Yes	Annual event
Severe Weather Awareness Week (HSEM/NWS)	Yes	Annual event
Winter Weather Awareness Week (HSEM/NWS)	Yes	Annual event
Promotion of NOAA Weather Radios	Yes	During NWS Severe Weather Weeks and Ongoing
<i>Other (please describe)</i>		

Appendix E – Past Mitigation Action Review Status Report

Goodhue County

Past Mitigation Action Review Status Report

Following is a report on the status of mitigation actions related to natural hazards included in the Goodhue County 2016 Hazard Mitigation Plan. This report identifies those actions that have been completed, are being deleted, or are considered as ongoing efforts. Mitigation actions that are noted as “ongoing” will be reviewed and revised as necessary for inclusion in the plan update. This report covers the mitigation actions that were listed for implementation by Goodhue County and by city jurisdictions, as applicable.

Hazard	Mitigation Action	Jurisdiction	Status	Comments
Blizzard	Purchase payloader with snowblower attachment to facilitate snow removal for the city and surrounding area.	Bellechester	Delete	Not a necessary mitigation action.
Flood	Purchase a generator of adequate size and design to power our pumphouses.	Bellechester	Ongoing	Nice to have but not critical currently.
Drought, Infrastructure Failure	Drill a backup well and build a pumphouse in order to supply water to the entire community.	Bellechester	Delete	Not a necessary mitigation action
Severe Storms, Structural Fire	Fortify the community center (i.e. generator power and shelter supplies)	Bellechester	Delete	No Action taken on this
Tornado, Severe Storms, Structure Fire, Wildfire	Construct a storm shelter equipped to handle temporary sheltering for those in the community.	Bellechester	Delete	Not a mitigation action that will be pursued. Other temporary existing facilities will be utilized.
Wildfire	Purchase a tanker truck for hauling water to suppress fires.	Bellechester	Delete	Not a necessary mitigation action.
Dam Failure, Flood	Bury the sewer and water lines that cross the Cannon River under the river.	Cannon Falls	Delete	Not completed and not slated for implementation.
Dam Failure, Flood	Cty 24 and Hwy. 19 going across the river and connecting with Cty 17	Cannon Falls	Delete	Not completed and not slated for implementation.
Dam Failure, Flood	Relocate City Hall / Police Department to area outside the flood and dam inundation area.	Cannon Falls	Delete	Building is not that old, not really something they plan to take action on in the next 5 years.
Tornado, Hail, Windstorm, Thunderstorm	Install safe room shelters at both the High/Middle School and Elementary School.	Cannon Falls	Delete	They want this but have no intention to move forward on this.

Hazard	Mitigation Action	Jurisdiction	Status	Comments
Dam Failure	Turn all property along River Road into green space to prevent loss of life and property in flooding if dam failed.	City of Cannon Falls	Ongoing	Some property has been purchased but most likely not a reality to get all property done.
Tornado	Cooperative wishes to replace current storm shelter.	City of Cannon Falls, Sunrise Villa Cooperative	Ongoing	They want a grant to pay for this.
Flood, Erosion, Infrastructure Failure	Remove sewer bridge that crosses the Cannon River and buy new sewer line under river.	City of Cannon Falls	Ongoing	This work is being done this year, still a work in progress.
Infrastructure Failure, Sabotage, Solar Storm	Purchase a generator to power our pumphouses.	City of Dennison	Ongoing	They haven't done anything with this.
Flooding, Erosion, Landslide	Rip rapping along Highway 61 and reinforcement of rail grade along 61.	Lake City	Complete	Project completed by Lake City.
Flood	Purchase/buy out properties within the floodplain. Add river gauges to monitor river levels.	Pine Island	Ongoing	Most of the properties previously identified have been purchased. River monitors have been added, monitoring them is an ongoing issue.
Tornado, Severe Storms	Build storm shelter for 500 people at Baypoint and Colvill Parks.	Red Wing	Ongoing	This is nice to have but not a reality
Tornado, Severe Storms	Build port terminal building/emergency shelter at Levee Park.	Red Wing	Ongoing	This needs to be priority in the next few years.
Flood, Landslide, Erosion	Secure funding for bridging equipment, specifically for the causeway between County Road 18 and NSP Road.	Red Wing	Ongoing	Project remains under directive of the city of Red Wing.
Tornado, Thunderstorm	New sirens to increase the area of the community that can hear the emergency sirens.	Wanamingo	Complete	Project completed by Wanamingo.
Flood	Replace/maintain the road and culverts on 357 th St.	Leon Township	Delete	This is ongoing Maintenance issues
Flood	Repair road and replace/maintain the culverts on Shady Lane Trail.	Leon Township	Delete	This is ongoing Maintenance issues

Hazard	Mitigation Action	Jurisdiction	Status	Comments
Flood	Repair/replace culverts and bridges on Skunk Hollow Trail with Bather Creek floods.	Leon Township	Delete	This is an ongoing maintenance issue.
Flood	Repair/replace culverts on 360 th St.	Leon Township	Delete	This is an ongoing maintenance issue.
Flood	Bridge removal.	Roscoe Township	Complete	Project completed.
Flood	Raise grade of 310 th St., 325 th St. 330 th St. 23 rd Ave. and Oxford Mill Road at creek crossing bridges and culverts.	Stanton Township	Delete	No action on this. Township roads projects are determined as needed on an annual basis by the Goodhue County Hwy. Dept.
Flood	Elevate road and provide for additional culverts as necessary.	Wacouta Township	Delete	No action on this. Township roads projects are determined as needed on an annual basis by the Goodhue County Hwy. Dept.
Flood	Install new culverts, raise height of the roads, reinforce river/stream banks, etc.	Wanamingo Township	Delete	This is an ongoing maintenance issue.
Flood	Raise 1.5 miles of Welch Trail to stop flooding and add 2 culverts to Welch Short Cut.	Welch Township	Delete	No action on this. Township roads projects are determined as needed on an annual basis by the Goodhue County Hwy. Dept.
Flood	Install a new culvert.	Zumbrota Township	Delete	This is ongoing Maintenance issues
Blizzard	Plant a “living fence” along roadways.	Zumbrota Township	Delete	Not a project that will be pursued.
Tornado, Hail, Windstorms	Hire an engineer to assess the buildings for safe area to shelter during a tornado or storm. / Build safe rooms at the middle/high school and elementary school.	Kenyon-Wanamingo Schools	Ongoing	Nothing has been done
Flood	Raise the trail elevation and add culverts to mile 9 washout area as well as two additional washout areas nearby.	Cannon Valley Trail	Delete	No Action taken. The CVT organization works independently on trail improvements.
Flood	Construct a new maintenance facility above flood elevation to help protect the building and equipment from flooding.	Cannon Valley Trail	Delete	No Action taken. The CVT organization works independently on trail improvements.

Hazard	Mitigation Action	Jurisdiction	Status	Comments
Flood	Use best management practices to control Cannon River erosion near mile 9.	Cannon Valley Trail	Delete	No Action taken. The CVT organization works independently on trail improvements.
Flood	Add additional and/or a large culvert to mile 15.9 washout area.	Cannon Valley Trail	Complete	However, the exact shelter/vault toilet locations are located at Mile 3.8 and 15.4
Tornado, Hail, Lightning, Windstorm, Severe Storm	Construct two storm shelters. One at mile 4 and the other at mile 14. These storm shelters would also be used as vault toilets.	Cannon Valley Trail	Ongoing	No Action taken.
Flood	Add additional culverts from mile 14 through mile 15.	Cannon Valley Trail	Delete	No Action taken. The CVT organization works independently on trail improvements.
Flood	Purchase a sandbag machine.	Goodhue County	Delete	Not a necessary mitigation action. Goodhue County Public Works equipment needed for flood fight measures.
Dam Failure / Flood	Develop an evacuation plan for Goodhue County's Cannon Falls residents that reside in the Byllesby Dam inundation area.	Goodhue County	Ongoing	Emergency planning for the Byllesby Dam is shared between Dakota County and Goodhue County.
Severe Storms	Identify emergency shelters in the area of the county fairgrounds.	Goodhue County	Delete	In the event of severe storm event visitors would not be directed to take shelter in outlying locations.
Flood	Purchase or obtain easements over empty lots location in Special Flood Hazard Areas.	Goodhue County	Ongoing	Property acquisition remains an option the county may pursue for flood prone properties.
Flood	Purchase/mitigate repetitive loss properties.	Goodhue County	Ongoing	Ongoing as needed.
Flood	Evaluate the location and numbers of stream monitoring stations throughout the county and coordinate and/or purchase additional monitoring equipment if necessary	Goodhue County	Ongoing	This is a program effort of the USGS and SWCD.
Severe Storms	Purchase NOAA weather radios citizens in areas without siren coverage.	Goodhue County	Delete	The county does not purchase NOAA weather radios for residents, but they are encouraged to buy their own.

Hazard	Mitigation Action	Jurisdiction	Status	Comments
Severe Storms	Replacing or rebuilding the electric lines to ensure power will be delivered during severe weather events.	Goodhue County Cooperative Electric Association	Ongoing	The rural and municipal electric coops that serve the county continue to address risk reduction for power outages. This may include converting overhead powerlines to underground.
Flood	Armor streambanks along township roads.	Goodhue County SWCD	Ongoing	Goodhue County Public Works and the SWCD continue to address a range of flood mitigation measures along township roads as needed.
Flood	Design and install water retention basins on the landscape to reduce peak flow of runoff discharge	Goodhue County SWCD	Ongoing	Same as above.

Appendix F – Planning Team Meetings

Goodhue County HMP Update

Appendix F – Kickoff Meeting Documentation

Overview:

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

Attached Documentation:

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

Minnesota 2023-2024 Hazard Mitigation Plan Update Project Overview

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

Participating Jurisdictions

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

Overview of Update Process

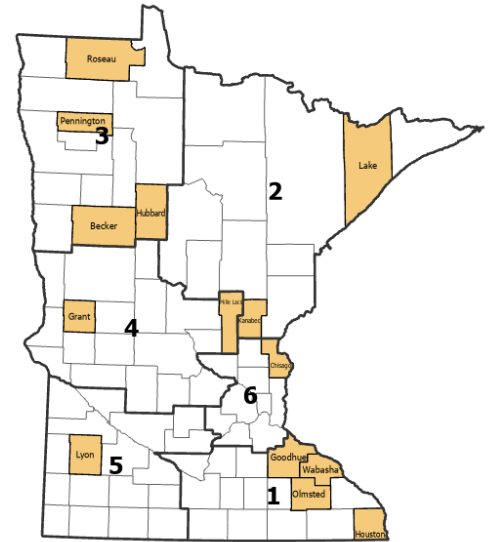
The U-Spatial@UMD team will coordinate with each Emergency Manager throughout the plan update process to engage participating jurisdictions and other stakeholders in the planning process. Following is an overview of key tasks that the U-Spatial@UMD team will facilitate to meet FEMA requirements in the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

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

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

Contact

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



Overview of the HMP Update Process

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

Stage 1 Tasks (4-5 months)

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

Stage 2 Tasks (5-7 months)

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

Stage 3 Tasks (2-3 months)

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

Stage 4 Tasks (2-3 months)

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

Ongoing - Quarterly 25% Local Match Tracking Quarterly to HSEM

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

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

U-SPATIAL
UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover

Webinar Purpose & Goals

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

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

Stacey Stark

Introductions

U-Spatial@UMD Project Team



Stacey Stark
Project Manager
U-Spatial@UMD



Bonnie Hundrieser
Emergency Management Planning Consultant
Hundrieser Consulting LLC



Zach Vavra
GIS Specialist and Researcher
U-Spatial@UMD



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



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

Emergency Managers:

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

Minnesota HSEM:

Jennifer Davis, MN HSEM
State Hazard Mitigation Officer

Project Overview

14 Counties:

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



Why U-Spatial@UMD?

➤ Proven experience

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

➤ Advanced Capabilities

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

➤ Ability to Expedite

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

➤ Planning Team

Our project team includes advanced GIS students and Hundrieser Consulting.

Purpose

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

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

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

MHMP's must be updated every 5 years.

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

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

Overview of MHMP Update Process

Bonnie Hundrieser

U-Spatial@UMD Team Roles & Responsibilities

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

EM Roles & Responsibilities

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

Local 25% Match

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

Notes:

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

MHMP Planning Team

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

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

Key Tasks

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

Public Outreach

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

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

Key Tasks

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

Hazard Risk Assessment and Vulnerability Analysis

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

Key Tasks

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

Key Task Assignments

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

Key Tasks

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

Mitigation Action Charts

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

Key Tasks

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

Draft Plan Review

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

Key Tasks

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

Plan Submission

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

Key Steps

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

Plan Adoption

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

Notes

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

Plan format and delivery

“Next Gen” – MN Hazard Mitigation Plans

PDF document

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

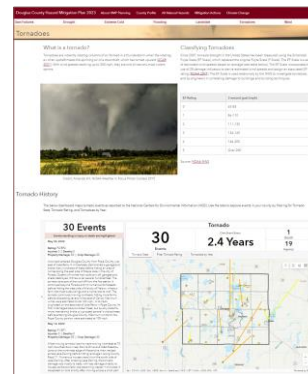
ArcGIS Hub (website) companion

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

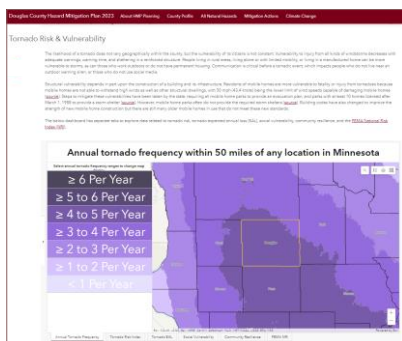
Stacey Stark



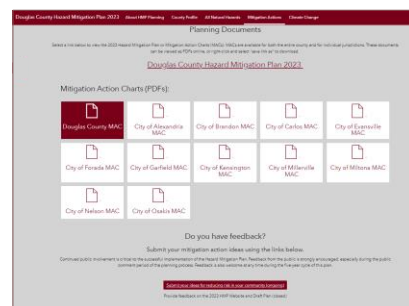
Example Web Site



Example Web Site



Example Web Site



Example Web Site

Timeline Overview

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

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

Next Steps

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

Notes:

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

Questions?

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

Contact Information

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

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

Goodhue County HMP Update

JURISDICTIONAL CONTACT LIST

COUNTY CONTACTS

Name	Title	Phone	Email
Earl Merchlewitz	Emergency Management Director	651-267-2639	earl.merchlewitz@goodhuecountymn.gov
Malloree McCarthy	Deputy Emergency Management Director	651-267-2641	Malloree.mccarthy@goodhuecountymn.gov
Scott Arneson	County Administrator	651-385-3001	scott.arneson@goodhuecountymn.gov
Briggs Tople	Outreach & Communications Specialist	651-385-3249	Briggs.Tople@goodhuecountymn.gov
Marty Kelly	Sheriff	651-267-2600	Marty.Kelly@goodhuecountymn.gov
Jess Greenwood	County Engineer/Public Works Director	651-385-3049	Jess.greenwood@goodhuecountymn.gov
Jake Rezak	Public Works Deputy Director	651-385-3032	Jake.rezac@goodhuecountymn.gov
Tim Redepenning	Facilities/Maintenance Director	651-385-3207	timothy.Redepenning@goodhuecountymn.gov
Nina Arneson	Health & Human Services Director	651-385-3200	Nina.Arneseon@goodhuecountymn.gov
Heather Arndt	Emergency Preparedness Coordinator	651-385-6157	Heather.arndt@goodhuecountymn.gov
John Smith	Information Technology Director	651-385-3122	John.Smith@goodhuecountymn.gov
Lisa Hanni	Land Use Management Director	651-385-3197	Lisa.Hanni@goodhuecountymn.gov
Alan Laumeyer	GIS Specialist	651-385-3094	Alan.laumeyer@goodhuecountymn.gov
Bryan Byholm	GIS System Specialist	651-385-3193	Bryan.byholm@goodhuecountymn.gov
Leanne Knott	GIS System Specialist	651-385-3187	Leanne.knott@goodhuecountymn.gov
Samantha Pierret	Planner/Zoning Administrator	651-385-3103	samantha.pierret@goodhuecountymn.gov
Pam Holst	Environmental Health Technician	651-385-6132	Pam.Holst@goodhuecountymn.gov
Linda Flanders	District 1 Commissioner	651-212-6084	linda.flanders@goodhuecountymn.gov
Brad Anderson	District 2 Commissioner	651-308-7809	brad.anderson@goodhuecountymn.gov
Todd Greseth	District 3 Commissioner	507-319-9550	todd.greseth@goodhuecountymn.gov
Jason Majerus	District 4 Commissioner	651-923-5185	jason.majerus@goodhuecountymn.gov
Susan Betcher	District 5 Commissioner	651-380-2517	susan.betcher@goodhuecountymn.gov

CITY CONTACTS

CITY OF BELLECHESTER (137)

Name	Title	Phone	Email
Lisa Redepenning	Clerk	651-923-4093	bellechester@sleepyeyetel.net
Jody Gordon	Mayor	651-380-5176	bellechester@sleepyeyetel.net

CITY OF CANNON FALLS (4,161)

Name	Title	Phone	Email
Neil Jensen	City Administrator	507-263-9304	njensen@cannonfallsmn.gov
Jeff McCormick	CLEO & EM Director	507-263-2278	jmccormick@ci.cannon-falls.mn.us
Matt Montgomery	Mayor	651-263-0296	mmontgomery@cannonfallsmn.gov
Laura Kronenberger	Council Member; Mayor Pro-Term	612-850-7447	lkronenberger@cannonfallsmn.gov

CITY OF DENNISON (207)

Name	Title	Phone	Email
Jeff Flaten	Mayor	Cell 507-338-9619	jflaten19@gmail.com
Jessica Page	City Clerk / Treasurer	507-645-7732	clerk@cityofdennisonmn.com

CITY OF GOODHUE (1,239)

Name	Title	Phone	Email
Ellen Anderson Buck	Mayor		mayor@ci.goodhue.mn.us
Jill Buxengard	City Clerk	651-923-4310	cityclerk@ci.goodhue.mn.us

CITY OF KENYON (1,871)

Name	Title	Phone	Email
Mark Vahlsing	City Administrator	Office -507-789-6415 Cell - 507-951-2884	mvahlsing@cityofkenyon.com
Holli Gudknecht	Assistant & Deputy Clerk	507-789-6415	hgudknecht@cityofkenyon.com
Doug Henke	Mayor	952-992-0735	Harleyhenke42@gmail.com
Jeff Sjoblom	Emergency Manager	651-764-3542	jsjoblom@cityofkenyon.com

CITY OF LAKE CITY (884)

Name	Title	Phone	Email
John Yorde	Emergency Manager	651-345-3344	jyorde@ci.lake-city.mn.us
Rob Keehn	City Administrator	651-345-6813	rkeehn@ci.lake-city.mn.us
Kari Schreck	City Clerk	651-345-6812	kschreck@ci.lake-city.mn.us
Mark Nichols	Mayor	612-804-6098	mnichols@ci.lake-city.mn.us

CITY OF PINE ISLAND (3,017)

Name	Title	Phone	Email
Elizabeth Howard	City Administrator	507-356-4591	Elizabeth.howard@ci.pineisland.mn.us
Stephanie Pocklington	City Clerk	507-356-4591	info@ci.pineisland.mn.us
David Frieze	Mayor	612-532-2009	

CITY OF RED WING (16,571)

Name	Title	Phone	Email
Travis Bray	Emergency Manager	651-267-2611	Travis.bray@ci.red-wing.mn.us
Kay Kuhlmann	City Administrator	651-385-3612	Kay.kuhlmann@ci.red-wing.mn.us
Mike Wilson	Mayor	651-448-2259	Mike.wilson@ci.red-wing.mn.us

CITY OF WANAMINGO (1,159)

Name	Title	Phone	Email
Greg Erickson	Emergency Manager	507-259-9860	gerickson@gmail.com
Ryan Holmes	Mayor	507-824-2598 Home	
Michael Boulton	City Administrator	507-824-2477	cityadministrator@cityofwanamingo.com

CITY OF ZUMBROTA (3,713)

Name	Title	Phone	Email
Todd Hammel	Mayor	507-259-7298	
Brian Grudem	City Administrator	507-732-7318	bgrudem@ci.zumbrota.mn.us
Patrick Callahan	City Law Enforcement/EM	507-732-5219	pcallahan@ci.zumbrota.mn.us

TOWNSHIP CONTACTS

Name of Township	Name & Title	Phone	Email
Belle Creek Township	Steve McNamara - Clerk	651-380-1643	clerk@bellecreektownship.com
Belle Creek Township	Chad Ryan - Chairperson	651-764-2426	chad@ryanmfginc.com
Belvidere Township	Michelle Benrud - Clerk	651-301-1050	belvideretownshipmn@gmail.com
Belvidere Township	Henry Thomforde - Chairperson	651-380-1897	hkthomforde@gmail.com
Cannon Falls Township	Sue Safe - Clerk	651-258-4619	rsafe@sleepyeyetel.net
Cannon Falls Township	Deb Hendrickson - Chairperson	952-292-8443	debbylh@nwasphalt.net
Cherry Grove Township	Peggy Burow - Clerk	507-271-3472	cherrygrovetwp@gmail.com
Cherry Grove Township	Mike Alme – Seat A Sup.	507-824-3316	Mike.alme90@gmail.com
Featherstone Township	Chuck Schwartau – Clerk	651-258-4490	cschwart@sleepyeyetel.net Featherstone.twp@gmail.com
Featherstone Township	Todd Kuyath – Chairperson	651-380-5707	tkuyath@gmail.com
Florence Township	Susan Eisenmenger - Clerk	651-388-0097	Florencetwp1@yahoo.com
Florence Township	Mike Blair – Chairperson	507-251-2922	mblair@kreofsky.net
Goodhue Township	Brenda Hinsch – Clerk	651-923-4830 651-380-4070	goodhuetownship@gmail.com
Goodhue Township	Dale Dicke – Chairperson	651-923-4878	gaild8357@gmail.com

Hay Creek Township	Marilyn Schilling – Clerk	651-764-4860	Mkschill6@gmail.com
Hay Creek Township	Susan Cushing – Chairperson	651-388-8444	mrcushing@live.com
Holden Township	Barbara St. John – Clerk	507-789-5553 507-210-3994	holdentwp@gmail.com
Holden Township	Matt Voxland – Chairperson	507-789-2963 507-259-9385	Mavox61@yahoo.com
Kenyon Township	Michelle Stanke – Clerk		Kenyon.township.mn@gmail.com
Kenyon Township	Bernie Overby – Chairperson	507-649-1318	bernieoverby@gmail.com
Leon Township	Sandy Hanson – Clerk	612-309-2856	leontwpclerk@gmail.com
Leon Township	Ron Shaw – Chairperson	507-298-5708	Ron.leon.twp@txshaw.com
Minneola Township	Sarah Pettit – Clerk	507-319-1296	minneolatownship@gmail.com
Pine Island Township	David Arndt – Clerk	507-969-4408	dandharndt@gmail.com
Pine Island Township	Glen Betcher – Chairperson	507-732-7208	
Roscoe Township	Susan Ecker – Clerk	612-987-3123	secker@zumbrotacpa.com
Roscoe Township	Scott Berg – Chairperson	507-259-7498	Sdberg66@gmail.com
Stanton Township	Cheryle Peters – Clerk	507-263-0579	stantonclerk@gmail.com
Stanton Township	Robert Benson – Chairperson	507-210-9498	blbenson17@gmail.com
Vasa Township	James Hedeem – Clerk	651-380-6054	jshedeem@sleepyeyetel.net
Vasa Township	Steve Hyllengren – Chairperson	651-380-4365	hyllengren@sleepyeyetel.net
Wacouta Township	Laan Dommer – Clerk	651-764-2594	Wacoutatownship1853@gmail.com
Wacouta Township	John Plehal – Chairperson	703-508-8738	Johnplehal.wacoutatownboard@gmail.com
Wanamingo Township	Tamra Berg – Clerk	507-789-6758	Tamraberg1@gmail.com
Wanamingo Township	Tom Shane	507-824-2191	tomshane@frontiernet.net
Warsaw Township	Darla Frandrup – Clerk	507-301-8193	Warsaw.township.clerk@gmail.com
Warsaw Township	Emery Maher – Chairperson	507-271-4200	wooddoc@frontier.com
Welch Township	Jessica Jacobson – Clerk	651-380-0050	clerkwelchtownship@gmail.com
Welch Township	Andrew Jenson – Chairperson	651-764-4527	Circlej5@yahoo.com
Zumbrota Township	Laurie Hoernemann – Clerk	507-951-3680	Zbtatownship@hotmail.com
Zumbrota Township	Roger Ballstadt – Chairperson	651-380-4074	rogerballstadt@gmail.com

OTHER STAKEHOLDER CONTACTS

LOCAL & REGIONAL AGENCIES INVOLVED IN HAZARD MITIGATION

Name of Agency / Organization	Name & Title	Phone	Email
MN Homeland Security & Emergency Management	Mike Peterson, HSEM Region 1 Regional Program Coordinator	612-505-1819	Michael.R.Peterson@state.mn.us

Goodhue Soil & Water Conservation District (SWCD)	Beau Kennedy, District Manager	651-923-5286	bkennedy@goodhueswcd.org
Natural Resources Conservation Service (NRCS)	Catherine Thorn, Soil Conservationist	651-923-5286	catherine.thorn@usda.gov
USDA Rural Development Community Programs	Laurie Balata, Area Specialist	(507) 332-7418 x113	laurie.balata@usda.gov
MnDOT District 6	Chad Hanson, Principal Project Manager, District 6 Emergency Management Coordinator	507-286-7637	Chad.hanson@state.mn.us
MN DNR Ecological and Water Resources Division	Lucas Youngsma, Local Area Hydrologist	651-299-4020	Lucas.Youngsma@state.mn.us
MN State Fire Marshal Division	Tate Mills, Regional Point of Contact	(651) 201-7200 Cell (320) 333-2817	Tate.mills@state.mn.us
MN DNR Forestry	Mike Wachholz, Regional Point of Contact	(651)345-3365 Cell (651) 299-4037	Michael.wachholz@state.mn.us
EPA	David Morrison, Federal On Scene Coordinator	(651) 706-4116	Morrison.david@epa.gov
U.S. Fish and Wildlife Services	Midwest Region Headquarters	612-713-5360	
US Coast Guard	Alex Kwolek, MSP Supervisor	612-670-5094	Alex.g.kwolek@uscg.mil
Cannon Valley Trail	Office Contact	507-263-0508	info@cannonvalleytrail.com

REPRESENTATIVES OF BUSINESSES, ACADEMIA, AND OTHER PRIVATE ORGANIZATIONS

Name of Agency / Organization	Name & Title	Phone	Email
Cannon Falls Schools	Jeff Sampson, Superintendent	507-263-6800 Ext. 1405	Sampson.jeff@cf.k12.mn.us
Cannon Falls Schools	Steven Strauss Asst. Principal	507-263-6800 Ext. 1423	strauss.steven@cf.k12.mn.us
Goodhue Schools	Dr. Evan Gough, Superintendent	651-923-4447	egough@goodhue.k12.mn.us
Pine Island Schools	Tonya Constantine, Superintendent	507-356-4849	tonya.constantine@pineisland.k12.mn.us
Red Wing Schools	Frank Norton, Superintendent	651-385-4502	fgnorton@rwps.org
Zumbrota Schools	Ryan Barnick, Superintendent	507-732-1400	ryanb@zmsch.k12.mn.us
Goodhue County Cooperative Electric	Kelly Hovel, General Manager	507-732-5117	kh@gccea.com
Dakota Electric Association	Ryan Hentges, CEO	651-463-6327	rhentges@dakotaelectric.com

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

Name of Agency /	Name & Title	Phone	Email
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Organization			
Salvation Army Northern Division (MN/ND)	Major Michele Heaver	651-238-7783	Michele.heaver@usc.salvationarmy.org
American Red Cross	Eli Szydlo, Disaster Program Manager SE MN	Cell (651) 600-0470	Eli.szydlo@redcross.org
Southern Minnesota Initiative Foundation	Tim Penny, President	507-214-7026	timp@smifoundation.org
Red Wing Food Shelf		651-388-9302	rwfoodshelf@gmail.com
Pine Island Food Shelf		507-722-1331	pisharingshelves@gmail.com
Hope Coalition		651-388-9360	info@hope-coalition.org
Pier 55 Red Wing Area Seniors	Kim Wojcik	651-327-2255	RWASdirector@gmail.com
River Bluff Humane Society	Shelter Manager	651-388-5286	info@rbhspets.org

NEIGHBORING JURISDICTIONS

Name of Jurisdiction	Name & Title	Phone	Email
Dakota County	Kelly Miller, EMD	(651) 438-4703	Kelly.Miller@CO.DAKOTA.MN.US
Rice County	Joe Johnson, EMD	(507) 332-6119	joseph.johnson@RiceCountyMN.gov
Dodge County	Matt Maas, EMD	(507) 635-6132	matt.maas@dodgecountymn.gov
Olmsted County	Jonathan Jacobson, EMD	(507) 328-6102	jacobson.jonathan@co.olmsted.mn.us
Wabasha County	Brenda Tomlinson	651-565-3069	btomlinson@co.wabasha.mn.us
Pierce County, WI	Christine McPherson, EMD	715.273.6751, Ex. 6751	christine.mcpherson@co.pierce.wi.us
Pepin County, WI	Maria Nelson, EMD	715-672-8897	pepza@co.pepin.wi.us
Prairie Island Indian Community	Kim Flanagan, EMC	(651) 385-4178	Kim.Flanaghan@piic.org

LOCAL MEDIA CONTACTS

Name of Local Media	Media Contact	Phone	Email
Q Media Group	Greg Taylor, News Director	651-388-7151	news@q-mediagroup.com
Republican Eagle/Cannon Falls Beacon	Business Announcements	866-910-9009	info@modulist.news
News Record	News Editor	507-732-7617	news@zumbrota.com
The Kenyon Leader	Mindi Hawks, Business Manager	507-444-2365	Mindi.hawks@apgsomn.com publicnotices@apgsomn.com
Mainstreet Messenger	News Editor	507-645-9877	hometownmessenger@gmail.com
Rochester Post Bulletin	News Editor For Pine Island News	507-285-7600	info@modulist.news
Lake City Graphic	News Editor	651-345-3316	graphic@lakecitygraphic.com

Goodhue County HMP Planning Team

Meeting #1 Presentation and Discussion

1/31/24 Meeting Summary & Documentation

Summary: On January 31, 2024 Goodhue 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 Goodhue County Hazard Mitigation Plan (HMP). The purpose of the meeting was to formally present information about the Goodhue County HMP update and to discuss key items that would inform plan development. The meeting was held via Zoom webinar video conference and was facilitated by Stacey Stark and Bonnie Hundrieser of the U-Spatial@UMD project team.

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

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

Meeting Participants: A total of **45** people attended the meeting. Representation included elected officials and departmental staff from Goodhue County and the cities of Cannon Falls, Dennison, Kenyon, Lake City, Pine Island, Red Wing, Wanamingo, and Zumbrota. Representatives from the cities of Bellechester and Goodhue were not available to attend. Other stakeholders, including neighboring jurisdictions, participated in the meeting. A participant list is provided below:

	Name	Organization	Job Title
1	Earl Merchlewitz	Goodhue County Emergency Management	Emergency Management Director
2	Mallory McCarthy	Goodhue County Emergency Management	Deputy EM
3	Marty Kelly	Goodhue County Sheriff's Office	Sheriff
4	Josh Kurtti	Goodhue County Sheriff's Office	SRO
5	Alan Laumeyer	Goodhue County	GIS Office
6	Leanne Knott	Goodhue County	GIS Systems Specialist
7	John Smith	Goodhue County	IT Director
8	Scott Arneson	Goodhue County	County Administrator
9	Bryan Byholm	Goodhue County GIS	GIS System Specialist

10	Tim Redepenning	Goodhue County	Facilities Maintenance Director
11	Heather Arndt	Goodhue County Health & Human Services	Emergency Preparedness Coordinator
12	Jess Greenwood	Goodhue County Public Works	Director / County Engineer
13	Jessica Seide	Goodhue County Health & Human Services	Community Health Specialist
14	Todd Greseth	Goodhue County	Commissioner
15	Briggs Tople	Goodhue County	Outreach & Comms. Specialist (PIO)
16	Jeff McCormick	City of Cannon Falls	Chief of Police/Emergency Manager
17	Jeffrey Flaten	City of Dennison	Mayor
18	John Yorde	City of Lake City	Emergency Manager
19	Mark Vahlsing	City of Kenyon	City Administrator
20	Scott Jensen	City of Lake City	Public Works Director
21	Elizabeth Howard	City of Pine Island	City Administrator
22	Mike Wilson	City of Red Wing	Mayor
23	Travis Bray	City of Red Wing PD	Police Captain/Emergency Manager
24	Wayne Ehrich	City of Kenyon	Public Works Superintendent
25	Jeff Sjoblom	City of Kenyon PD	Police Chief
26	Travis Dunn	City of Lake City	Assistant Public Works Director
27	Laura Blair Johnson	City of Red Wing	Administrative Services Director
28	Michael Boulton	City of Wanamingo	City Administrator
29	Brian Grudem	City of Zumbrota	City Administrator
30	Patrick Callahan	City of Zumbrota PD	CLEO
31	Beau Kennedy	Goodhue SWCD	Manager
32	David Morrison	U.S. EPA	Federal On Scene Coordinator
33	Sampson Jeff	Cannon Falls Area Schools	Superintendent
34	John Stapleton	Zumbrota-Mazzepa School District	7-12 Principal
35	Steven Strauss	Cannon Falls Area Schools	Assistant Principal
36	Lucas Youngsma	MNDNR	Area Hydrologist
37	Michele Heaver	The Salvation Army	Divisional Emergency Disaster Services Director
38	Scott Roepke	Cannon Valley Trail	Trail Manager
39	Kelly Hovel	Goodhue County Cooperative Electric Assn.	General Manager
40	James Ganz	Pine Island Township	Supervisor
41	Sue Cushing	Hay Creek Township	Supervisor
42	Jessica Jacobson	Welch Township	Clerk
43	Kim Flanagan	Prairie Island Indian Community	Emergency Management Coordinator
44	Jonathan Jacobson	Olmsted County	Director of Emergency Management

45	Brenda Tomlinson	Wabasha County Emergency Management	Emergency Management Director
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Presentation Overview: The Power Point presentation covered the following items. A PDF of the presentation slides is included with this meeting summary.

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

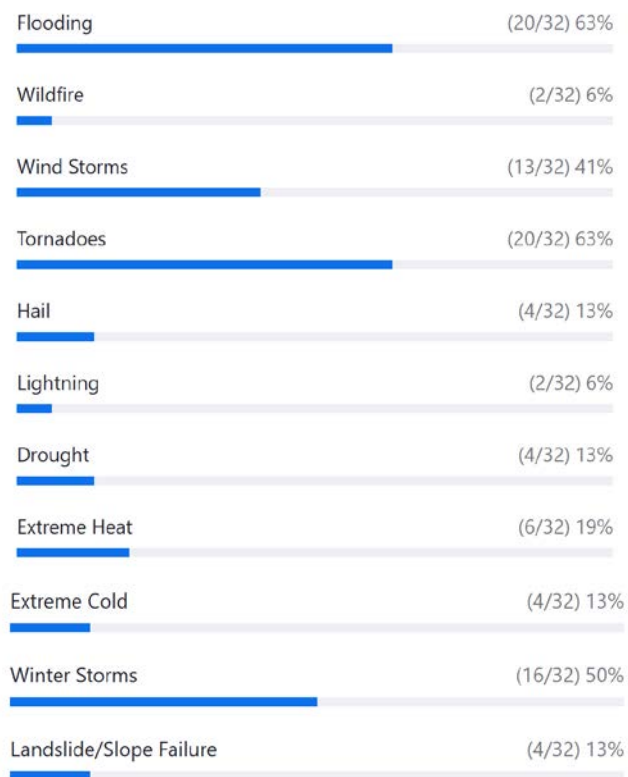
GOODHUE COUNTY HMP PLANNING TEAM MEETING #1 DISCUSSION NOTES

PARTICIPANT POLLS

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

POLL #1: TOP HAZARDS

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

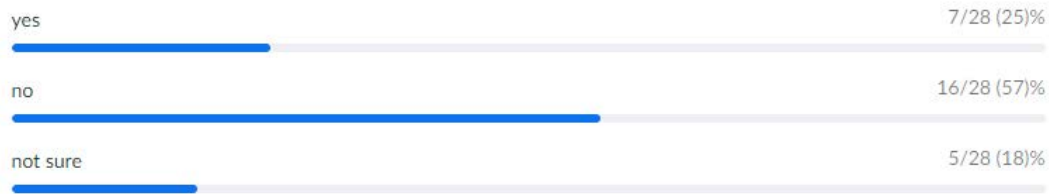


You did not answer this question

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

POLL #2: CHANGE IN PERCEIVED RISK

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



What hazard has changed, and in what jurisdiction?

Heather Arndt – Weather related events are becoming more extreme.

Lucas Youngsma – Drought (hydrologic variability).

Scott Jenson – Frequency of flooding.

Briggs Tople – Extreme temperatures are a high threat with climate change.

Alan Laumeyer – Lake Byllesby dam reinforcement project from Dakota County.

Leanne Knott – Extreme heat events in Goodhue County.

FOCUSED DISCUSSION QUESTIONS

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

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

Heather Arndt – Goodhue County Public Health serves vulnerable populations and understand where they are in the county. How do you intend to get these groups or individuals to participate? / Bonnie Hundrieser response: At the start of the plan update we sent out a news release. We asked that the county and individual jurisdictions help to do outreach in ways that make most sense to reach these groups/individuals, such as posting the news release on social media, in local papers, and in locations at facilities or sharing the information directly to ask if these community members have any feedback on natural hazard events and mitigation ideas to share.

Jessica Seide - Low income, non-English speaking, elderly, those with lack of transportation- especially more rural

Briggs Tople - Non-English speaking, non-housed, elderly, and those with a lack of reliable internet service. Outreach to them respectively by partnering with agencies specialized with non-speaking individuals, attend homeless shelter events to offer participation, connect with services and programs specializing in connecting with elder populations such as nursing homes, meals on wheels, veteran

programs, etc. Connect with township officers to aid in spreading word to rural residents with lack of reliable internet access on ways to participate

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

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

Comments:

Heather Arndt

- I'm guessing that "impact" includes the people of the communities and not just infrastructures? / Stacey Stark - Absolutely people and structures are of equal concern.
- Depending on which entity one talks to, there tend to be different definitions of 'at risk'. Can you please provide us your definition? / Stacey Stark – We want the county and communities to consider the probability (likelihood) of a natural hazard event occurring (for example, flooding) as well as the impacts that can occur to local vulnerability.

Beau Kennedy

- A detailed flood mitigation study was completed on 3 of the 5 Belle Creek Watershed flood retention dams a few years ago. The 3 dams are listed as high hazard dams due to the potential loss of property if these dams breach. I supplied these reports for inclusion in this plan update back in 2021 for future funding potential from FEMA for installing flood warning systems if the dams were to fail.

David Morrison

- It would be helpful if the plan differentiated between regional flooding along the Mississippi and flash flooding risks.
- 2010 SE MN flooding affected 104 WWTPs, including Goodhue County facilities. Hypothetical question, is every WWTP in the county at risk of damage from a 6-10 inch rainfall? / Stacey Stark response: Good question, the WWTP operators might be able to offer what their design standards are, Many wwtps will be in the 1% annual chance flood area because they are near

the river - we don't actually have the first floor height or other specifications of the plans to know what the real risk is.

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

Heather Arndt - Would generators for facilities that house vulnerable people fall under BRIC if that was properly noted in the Hazard assessment? / Bonnie Hundrieser response: Generators may be eligible for FEMA HMA grant funding, depending on the application that is submitted. We do encourage all communities to consider where backup generator power is needed as a mitigation action, regardless if it might be eligible for grant funding or not.

ADDITIONAL QUESTIONS/COMMENTS

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

Heather Arndt - How are people being actively engaged in this process? If there are only 2 meetings, and the next is the final product, how are partners actively engaged in reviewing the proposed plan? / Stacey Stark response – the 2nd planning team meeting will be to review information in the draft plan. We also hold a public review period where the planning team and the larger public has an opportunity to provide feedback.

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

MEETING DOCUMENTATION

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

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

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

From: [Merchlewitz, Earl](#)
To: [Merchlewitz, Earl](#); [McCarthy, Mallore](#); [Arneson, Scott](#); [Tople, Briggs](#); [Kelly, Marty](#); [Greenwood, Jess](#); [Rezac, Jake](#); [Redepenning, Timothy](#); [Arneson, Nina](#); [Arndt, Heather](#); [Smith, John](#); [Hanni, Lisa](#); [Laumeyer, Alan](#); [Byholm, Bryan](#); [Knott, Leanne](#); [Pierret, Samantha](#); [Holst, Pam](#); [Flanders, Linda](#); [Anderson, Brad](#); [Greseth, Todd](#); [Majerus, Jason](#); [Betcher, Susan](#); [City of Bellechester](#); [Jensen, Neil](#); [jmccormick@ci.cannon-falls.mn.us](#); [mmontgomery@cannonfallsmn.gov](#); [lkronenberger@cannonfallsmn.gov](#); [jflaten19@gmail.com](#); [City of Dennison](#); [Anderson Buck, Ellen](#); [City of Goodhue](#); [City of Kenyon \(Administrator\)](#); [City of Kenyon \(Clerk\)](#); [Harleyhenke42@gmail.com](#); [Sjoblom, Jeff](#) [Kenyon](#); [jyorde@ci.lake-city.mn.us](#); [rkeehn@ci.lake-city.mn.us](#); [City of Lake City \(Clerk\)](#); [mnichols@ci.lake-city.mn.us](#); [City of Pine Island \(Administrator\)](#); [info@ci.pineisland.mn.us](#); [Bray, Travis](#); [Kuhlmann, Kay](#); [Mike.wilson@ci.red-wing.mn.us](#); [gderickson@gmail.com](#); [City of Wanamingo](#); [Grudem, Brian](#); [Callahan, Pat \(Zumbrotapd\)](#); [Township - Belle Creek Clerk](#); [Township - Belle Creek](#); [Township - Belvidere](#); [hkthomforde@gmail.com](#); [Township - Cannon Falls](#); [debbylh@nwasphalt.net](#); [Township - Cherry Grove](#); [Mike.alme90@gmail.com](#); [Township - Featherstone \(Clerk\)](#); [Featherstone.twp@gmail.com](#); [tkuyath@gmail.com](#); [Township - Florence](#); [mblair@kreofsky.net](#); [Township - Goodhue Twp](#); [gaild8357@gmail.com](#); [Schilling, Marilyn \(Election\)](#); [mrcushing@live.com](#); [Township - Holden](#); [Mavox61@yahoo.com](#); [Township - Kenyon](#); [bernioverby@gmail.com](#); [leontwpclerk@gmail.com](#); [Ron.leon.twp@txshaw.com](#); [Township - Minneola](#); [Township - Pine Island - David Arndt](#); [Township - Roscoe \(clerk\)](#); [Sdberg66@gmail.com](#); [Township - Stanton](#); [blbenson17@gmail.com](#); [Township - Vasa](#); [hyllengren@sleepyeyetel.net](#); [Township - Wacouta \(clerk\)](#); [Johnplehal.wacoutatownboard@gmail.com](#); [Township - Wanamingo](#); [tomshane@frontiernet.net](#); [Township - Warsaw](#); [wooddoc@frontier.com](#); [Township - Welch](#); [Circlej5@yahoo.com](#); [Township - Zumbrota](#); [rogerballstadt@gmail.com](#); [Michael.R.Peterson@state.mn.us](#); [Kennedy, Beau](#); [catherine.thom@usda.gov](#); [laurie.balata@usda.gov](#); [Chad.hanson@state.mn.us](#); [Lucas.Youngsma@state.mn.us](#); [Mills, Tate](#); [Wachholz, Michael](#); [Morrison.david@epa.gov](#); [Alex.g.kwolek@uscg.mil](#); [info@cannonvalleytrail.com](#); [Michele.heaver@usc.salvationarmy.org](#); [Eli.szydlo@redcross.org](#); [Sampson.jeff@cf.k12.mn.us](#); [strauss.steven@cf.k12.mn.us](#); [egough@goodhue.k12.mn.us](#); [fgnorton@rwps.org](#); [tonya.constantine@pineisland.k12.mn.us](#); [johns@zmsch.k12.mn.us](#); [Ryan Barnick](#); [kh@gccea.com](#); [rhentges@dakotaelectric.com](#); [timp@smifoundation.org](#); [rwfoodshelf@gmail.com](#); [pisharingshelves@gmail.com](#); [info@hope-coalition.org](#); [RWASdirector@gmail.com](#); [info@rbhspets.org](#); [Iliff, James](#); [jennifer.hauer@ricecountymn.gov](#); [matt.maas@dodgecountymn.gov](#); [jacobson.jonathan@co.olmsted.mn.us](#); [btomlinson@co.wabasha.mn.us](#); [christine.mcperson@co.pierce.wi.us](#); [pepza@co.pepin.wi.us](#); [Kim.Flanaghan@piic.org](#)
Cc: [hundrieserconsulting@outlook.com](#); [slstark@d.umn.edu](#)
Subject: Goodhue County Hazard Mitigation Plan Update - Meeting Invitation
Date: Tuesday, January 2, 2024 1:30:13 PM
Attachments: [image003.png](#)

Greetings,

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

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

Date: Wednesday, January 31, 2024

Time: 1:00 – 2:30 p.m.

Zoom Link: https://umn-private.zoom.us/webinar/register/WN__nIH1jGOQOSdDa99GjDidA

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

About the Plan

The update of the Goodhue County Hazard Mitigation Plan (HMP) is a requirement by the State of Minnesota Department of Homeland Security & Emergency Management (HSEM) as well as the Federal Emergency Management Agency (FEMA) every 5 years. Our last plan is due for an update

and our planning is currently underway. The plan addresses the natural hazards that face Goodhue County and will result in the identification of mitigation actions and projects that will help to reduce or eliminate the impact of future hazard events, such as flooding and severe winter or summer storms.

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

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

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

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

Thank you,



Earl Merchlewitz | EM Director

Goodhue County Sheriff's Office

430 West 6th Street | Red Wing, MN 55066

Direct: 651.267.2639 | Dispatch: 651.385.3155

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Cc: ["Stacey Stark"](#)
Subject: Goodhue County HMP Planning Team Meeting Materials – Please Review
Date: Tuesday, January 23, 2024 12:26:00 PM
Attachments: [Goodhue County 2023-2024 HMP Overview handout.pdf](#)
[Goodhue County HMP Mtg. #1 Discussion Questions.docx](#)
[HSEM HMA Grants Program Overview.pdf](#)
Importance: High

Greetings,

The Goodhue County Hazard Mitigation Plan (HMP) Update – Planning Team Meeting #1 will be held via Zoom on **Wednesday, January 31 from 1-2:30 p.m.** This meeting is a critical step in the plan update process where we meet with county and local government officials, departmental staff, and other agency stakeholders to provide an overview of the plan update and gather important feedback.

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

1. **Goodhue County 2023-2024 Hazard Mitigation Plan Update Overview**
2. **Goodhue County HMP Planning Team Meeting #1 - Discussion Questions.** If you are registered for the meeting, you are encouraged to review and fill out the form in advance. If

you are not able to join us, we welcome your feedback by returning the Discussion Questions form via email.

3. **HSEM Hazard Mitigation Assistance (HMA) Grants Program Overview**

If you have not registered yet, please click on the following registration link: https://umn-private.zoom.us/webinar/register/WN__nIH1jGOQOSdDa99GjDidA (control+click)

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

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

Thank you,
Bonnie Hundrieser

Bonnie K. Hundrieser, CEM

Hazard Mitigation Planning Specialist

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

Hundrieser Consulting LLC

Phone: 218-343-3468



Goodhue County 2023-2024 Hazard Mitigation Plan Update Overview

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

Overview

Following are key points regarding the Goodhue County HMP Update:

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

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

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

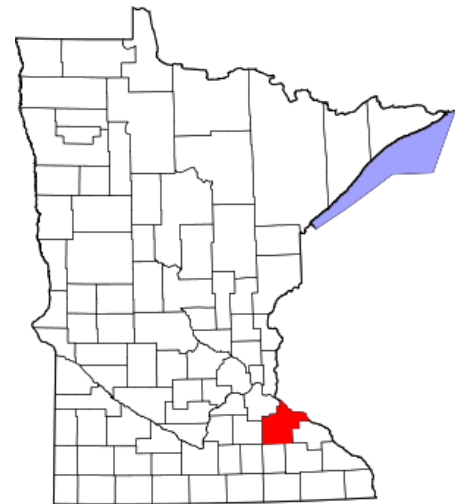
Plan Content: The HMP addresses the natural hazards that pose risk to Goodhue County, such as flooding, severe winter storms, windstorms, tornadoes, extreme temperatures, and drought. A hazard profile is developed for each hazard prioritized as moderate to high. Each profile includes a description, incident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

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

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

Contact:

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



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Goodhue County Hazard Mitigation Plan Update

Planning Team Meeting #1 Discussion Questions

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

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

Please provide your contact information:

Name:

Jurisdiction/Agency:

Job Title:

Phone:

Email:

1. Outreach to Vulnerable Populations / Underserved Communities

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

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

Type any comments

2. Review of Hazard Risk Prioritization

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

GOODHUE COUNTY 2016 HAZARD MITIGATION PLAN

Hazards	Risk Priority
Flood	Moderate
Tornado	Moderate
Ice & Sleet	Moderate
Hail	Low
Lightning	Low
Windstorm	Low

Thunderstorm (Severe Storm)	Low
Blizzard	Low
Sinkholes & Land Subsidence (Karst)	Low
Erosion	Low
Landslide	Low
Earthquake	Low
Extreme Temperatures	Low
Drought	Low
Wildfire	Low

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

GOODHUE COUNTY 2023 HMP UPDATE - HAZARD RISK PRIORITIZATIONS

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

Type any additional comments

3. Identification of Mitigation Actions

The end-result of the Goodhue County HMP will be a set of jurisdictional mitigation action charts which will provide a course of action for the county and each city jurisdiction to reduce risk against future hazard events. The development of mitigation actions will be drawn from local-level hazard priorities, known vulnerabilities, and local capabilities to implement actions. The development of mitigation actions is guided by different types of strategies, including: Local Planning & Regulations, Structure & Infrastructure Projects, Natural Systems Protection, Education & Awareness Programs, and Mitigation Preparedness & Response Support. We are interested to know what ideas you may have for mitigation activities that can be incorporated into our planning as we move forward.

Please be as specific as possible. For example, "Construct a tornado safe room for the City of X mobile home park." "Increase the size of culverts on township roads to reduce over the road flooding and erosion from high rain events."

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

Type any comments



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

HAZARD MITIGATION ASSISTANCE

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

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

Who is eligible for grant funding?

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

What types of projects can be funded?

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

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

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

How do I apply?

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

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

Where can I obtain further information?

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

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

Goodhue County HMP Planning Team Meeting #2

7/22/24 Meeting Summary & Documentation

Summary: On Monday, July 22, 2024, Goodhue 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 Goodhue County Hazard Mitigation Plan (HMP). The purpose of the meeting was to formally convene the Goodhue County HMP Planning Team for a presentation on the draft plan and discussion of key items prior to public review and submission of the plan to HSEM and FEMA. The meeting was held via Zoom webinar video conference and was facilitated by Stacey Stark and Bonnie Hundrieser of the U-Spatial@UMD project team.

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

Meeting Participants: A total of **37** people attended the meeting. Representation included elected officials and departmental staff from Goodhue County and the cities of Cannon Falls, Dennison, Lake City, Pine Island, Red Wing, Wanamingo, and Zumbrota. The cities of Bellechester, Goodhue, and Kenyon were not available to participate and were not in attendance. Other stakeholders, including neighboring jurisdictions, participated in the meeting. A participant list is provided below:

	Name	Organization	Job Title
1	Earl Merchlewitz	Goodhue County Emergency Management	Emergency Management Director
2	Malloree McCarthy	Goodhue County Emergency Management	Deputy EM Director
3	Leanne Knott	Goodhue County	GIS Systems Specialist
4	Briggs Tople	Goodhue County	Outreach & Communications Specialist
5	Jess Greenwood	Goodhue County Public Works	Director / County Engineer
6	Nina Arneson	Goodhue County Health and Human Services	Goodhue County HHS Director
7	Alan Laumeyer	Goodhue County	GIS
8	Todd Greseth	Goodhue County	Commissioner
9	Brad Anderson	County Commissioner	Commissioner
10	Joseph Berg	City of Cannon Falls	Lieutenant
11	Sampson Jeff	City of Cannon Falls	Superintendent
12	Jeffrey Flaten	City of Dennison	Mayor
13	John Yorde	City of Lake City	Emergency Manager
14	Elizabeth Howard	City of Pine Island	City Administrator
15	Mike Wilson	City of Red Wing	Mayor

16	Peter Hanlin	City of Red Wing	Assistant Fire Chief & EM Director
17	Michael Boulton	City of Wanamingo	City Administrator
18	Patrick Callahan	City of Zumbrota Police Dept.	CLEO
19	Brian Grudem	City of Zumbrota	City Administrator
20	Debby Hendrickson	Cannon Falls Township	Township board chairman
21	Jessica Jacobson	Welch Township	Township Clerk
22	Mary Veiseth	Minneola Township	Township Treasurer
23	Sue Cushing	Hay Creek township	Township Supervisor
24	Darla Frandrup	Warsaw Township	Township Clerk
25	Pamela Miller	Florence Township	Township Clerk
26	Laurie Hoernemann	Zumbrota Township	Township Clerk
27	James Ganz	Pine Island township	Township Supervisor
28	Michael Peterson	MN HSEM	Regional Program Coordinator
29	Doug Leung	MN HSEM	Hazard Mitigation Planner
30	Tim Krohn	Goodhue County Co-op Electric Assn	Line Superintendent
31	Beau Kennedy	Goodhue SWCD	Manager
32	Scott Roepke	Cannon Valley Trail	Trail Manager
33	Jonathan Jacobson	Olmsted County	Director of Emergency Management
34	Brenda Tomlinson	Wabasha County	Emergency Management Director
35	Christine McPherson	Pierce County WI	Emergency Management Director
36	Kim Flanagan	Prairie Island Indian Community	Emergency Manager
37	Kelly Miller	Dakota County EM	Emergency Manager

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.

GOODHUE COUNTY HMP PLANNING TEAM MEETING #2 DISCUSSION NOTES

- **Prioritization of Hazards**

- Land Subsidence - In the review of the prioritization of natural hazards for Goodhue County, Stacey Stark asked the group for their feedback on if Land Subsidence should be included in the plan. Earl Merchlewitz responded that he felt it would be important to profile it in the plan since there are areas of karst within the county, however, it should be presented as a low-risk hazard.
- Dam Failure - Stacey Stark also asked for feedback on Dam Failure being ranked as moderate, as there are no high-hazard potential dams noted within the county. Earl Merchlewitz responded that the ranking should remain as moderate due to the Lake Byllesby Dam. The dam is located in Dakota County, however, the inundation area is all within Goodhue County. An EAP is in place and it is drilled on every 5 years, that is why it is a higher priority. There are also several earthen dams of concern within the Belle Creek Watershed. The City of Wanamingo also noted they have a dam structure that was constructed in the 1930's on the North Zumbro River that they wish to have removed.

- **Mitigation Actions** – During the discussion of jurisdictional mitigation actions, Bonnie Hundrieser encouraged meeting participants to consider any additional mitigation actions that should be included in the county or local mitigation action charts, particularly any that may be eligible for future FEMA hazard mitigation assistance grant funding. Some direct email follow-up occurred after the meeting for Bonnie to address for mitigation action additions.

Meeting Conclusion: The meeting concluded with an overview and timeline of the upcoming next steps for public review and submission of the draft plan to HSEM and FEMA for final review and approval.

Attached are the following documentation items for the Goodhue County HMP Meeting #2:

- Meeting Invitation to Stakeholders
- PowerPoint Presentation Slides
- Information Handouts

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

From: [Merchlewitz, Earl](#)
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Cc: [hundrieserconsulting@outlook.com](#); [slstark@d.umn.edu](#)
Subject: Hazard Mitigation Planning Team Meeting #2 Invitation
Date: Monday, June 10, 2024 3:12:16 PM
Attachments: [image001.png](#)

GOODHUE COUNTY

HAZARD MITIGATION PLAN UPDATE – MEETING INVITATION

Greetings,

Your presence is requested at the **2nd Planning Team Meeting** for the update of the **Goodhue 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: Monday, July 22, 2024
Time: 10:00 a.m. – 11:30 a.m.
Zoom Link: [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 Goodhue 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 Goodhue 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,



Earl Merchlewitz | EM Director

Goodhue County Sheriff's Office

430 West 6th Street | Red Wing, MN 55066

Direct: 651.267.2639 | Dispatch: 651.385.3155

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Web: www.goodhuesheriff.com

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Goodhue County Hazard Mitigation Plan Update 2024 Planning Team Meeting #2

July 22, 2024



U-SPATIAL
UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover

Welcome & Introductions

U-Spatial@UMD Project Leads



Stacey Stark
Project Manager
U-Spatial@UMD



Bonnie Hundrieser
HMP Planning Specialist
Hundrieser Consulting LLC

Goodhue County Project Lead

- Earl Merchlewitz, Goodhue County Emergency Management Director



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

PRESENTER: STACEY STARK

Zoom Logistics

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

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

USE CHAT:

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



ASK TO SPEAK:



PRESENTER: STACEY STARK

Meeting Purpose & Agenda

This meeting formally convenes the **Goodhue County HMP Planning Team** for a presentation on the draft plan and discussion of key items prior to public review and submission of the plan to HSEM and FEMA.

Agenda

- Welcome & Introductions
- Recap of Key HMP Points
- Preview of Deliverables
- Review of Risk Assessment & Vulnerability Analysis in Website
- Overview of FEMA HMA Funding and Mitigation Action Charts
- Review & Feedback
- Next Steps



PRESENTER: STACEY STARK

Overview of Plan Update

Goodhue County is updating its **Hazard Mitigation Plan (HMP)** to fulfill a state & federal requirement. The plan must be updated every 5 years. The last plan was adopted in 2016.

The purpose of the plan is to identify & assess natural hazards that pose risk to the county and its jurisdictions and **develop long-term strategies and mitigation actions** that will help to reduce or eliminate the impact of future hazard or disaster events.



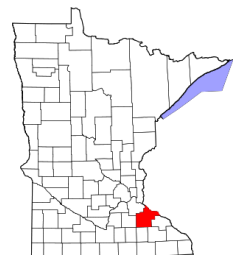
Hazard Mitigation is any action taken to reduce or eliminate long term risk to people and property from natural disasters.

PRESENTER: BONNIE HUNDRIESER

Who the Plan Covers

This is a **multi-jurisdictional plan** that covers Goodhue 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

- Participation in planning team meetings, public outreach, local mitigation survey, provision of spatial or other data, and review of draft plan.

The Public

- Opportunity to learn about the plan and provide feedback on local-level concerns, mitigation ideas, and review of draft plan.

PRESENTER: BONNIE HUNDRIESER

HMP Deliverables

PDF document:

- Contains FEMA required elements
- Limited figures & Images
- Links to Website integrated
- Summary of Hazard Identification
- Local Mitigation Summary Report
- Plans & Programs in Place
- Past Mitigation Action Review
- Planning Team Meetings
- Public Outreach & Engagement Documentation
- Mitigation Actions by Jurisdiction



Website companion:

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

PRESENTER: STACEY STARK

Prioritization of Hazards for Goodhue County

NATURAL HAZARDS

Prioritization of hazards by the Goodhue County planning team included consideration of:

➤ Probability and Severity of natural hazard events (risk)

➤ Observed increase or decrease in risk since last plan

➤ Jurisdictional variations in risk (i.e., local vulnerabilities, changes in development)

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

PRESENTER: STACEY STARK

Hazards Risk Assessment

- Validates the prioritization of hazards
- Provides probability and severity of future events as possible
- Identifies vulnerable populations and structures at risk as possible
- Considers variable jurisdictional vulnerability
- Informs Mitigation Actions in the HMP



PRESENTER: STACEY STARK

Website Demo

z.umn.edu/GoodhueHMP

Comments and Questions?

Overview of Mitigation Action Charts



Mitigation Action Charts are the end product of the HMP.

- MA's identify activities to reduce future risk to natural hazard events.
- MA's address known vulnerabilities.
- MA's utilize capabilities to reduce risk.
- ★ Eligible FEMA Section 404 grant activities must be identified in the plan of action.

PRESENTER: BONNIE HUNDRIESER

FEMA Mitigation Grant Funding



Section 406

Available after a disaster occurs. Focuses on mitigation measures for facilities that have actually been damaged in a particular disaster.

Section 404

Requires an approved & adopted HMP. Funds mitigation projects for both damaged and non-damaged facilities. Several different grant programs.

Example Section 404 activities:

- Property Acquisition
- Tornado Safe Rooms
- Infrastructure Retrofits
- Wildfire Mitigation
- Soil Stabilization
- Flood Risk Reduction
- Green Infrastructure
- Other projects difficult to conduct a standard BCA

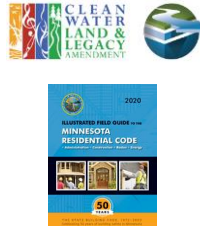
PRESENTER: BONNIE HUNDRIESER

Local Planning & Regulations



Goodhue County Examples:

- Enrollment in the NFIP and enforcement of county and local floodplain ordinances.
- Participation in regional One Watershed, One Plan (1W1P) and partnership projects
- Implementation of watering restrictions during periods of extreme drought.
- Permitting for new development and adhering to MN state building codes to reduce impacts of severe weather to structures.



PRESENTER: BONNIE HUNDRIESER

Structure & Infrastructure Projects

Goodhue County Examples:

- Installation of new outdoor warning sirens
- Construction of safe rooms / storm shelters
- Burying powerlines to reduce power failure
- Conducting property buyouts for flooding
- Addressing road, bridge, culvert, and drainage ditch improvements to reduce localized flood risks
- High Hazard Dam Warning Systems (Belle Creek Watershed)



PRESENTER: BONNIE HUNDRIESER

Natural Systems Protection



Goodhue County Examples:

- Conduct vegetation management along roads to reduce the risk of downed trees and branches resulting from severe storms. (County, Local, Electric Coop)
- Other examples:
 - Planting Living Snow Fences to reduce snow drifting
 - Installing Rain Gardens to reduce impacts of high rain events



PRESENTER: BONNIE HUNDRIESER

Education & Awareness Programs

Goodhue County Examples:

- Promoting sign-up for the county's emergency notification system and EM Facebook page.
- Providing presentations and information on preparedness at schools, special facilities, and public events.
- Participation in the NWS Severe Weather Awareness Weeks and SKYWARN Storm Spotter Training
- Outreach to vulnerable populations (i.e. extreme cold/heat periods)



PRESENTER: BONNIE HUNDRIESER

Mitigation Preparedness & Response Support

Goodhue County Examples:

- Acquire generators for backup power of critical infrastructure and key facilities
- Update of county EOP
- Conduct local and regional shelter planning
- Preparation for extended power outages and evacuation of vulnerable populations.
- Testing of outdoor warning sirens.
- Participate in regional EM planning, training, and exercising



PRESENTER: BONNIE HUNDRIESER

Comments and Questions?



Summer 2024

EM + Local Gov't Review of Draft Plan and Public Review & Comment Period



Following Planning Team Mtg. #2

- EM + Local government review of draft plan
- Public review & comment period (News Release #2)
- Document public outreach
- Incorporate public feedback as appropriate.

PRESENTER: BONNIE HUNDRIESER



Fall 2024

Draft Plan Submission to HSEM & FEMA, Plan Approval, and Collection of Adopting Resolutions

- Draft plan will be submitted first to HSEM and then to FEMA for approval for meeting all Federal requirements.
- Typically requires 1-2 months.
- APA letter
- EM coordination of adopting resolutions from each city.
- Final approval letter

PRESENTER: BONNIE HUNDRIESER

Questions?

What questions do you have for
U-Spatial@UMD about the draft MHMP or
next steps ?

PRESENTER: STACEY STARK

Contact Information

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**HUNDRIESER
CONSULTING LLC**

PRESENTER: STACEY STARK



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

HAZARD MITIGATION ASSISTANCE

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

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

Who is eligible for grant funding?

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

What types of projects can be funded?

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

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

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

How do I apply?

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

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

Where can I obtain further information?

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

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

Mitigation Strategies & Action Types

Following are the five types of mitigation strategies that will be used in the update of the Multi-Hazard Mitigation Plan with examples of related mitigation actions. Minnesota HSEM recommends the use of these mitigation strategies to be in alignment with the State plan and those recommended by FEMA. The first four strategies listed are taken from the FEMA publications *Local Mitigation Planning Handbook* (2013) and *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards* (2013). The fifth strategy type was determined by Minnesota HSEM for use within the state.

These strategies will provide the framework for identification of new jurisdictional-level mitigation actions for implementation over the next 5-year planning cycle.

Mitigation Strategy	Description	Example Mitigation Actions
Local Planning and Regulations	These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.	<ul style="list-style-type: none"> • Comprehensive plans • Land use ordinances • Planning and zoning • Building codes and enforcement • Floodplain ordinances • NFIP Community Rating System • Capital improvement programs • Open space preservation • Shoreline codes • Stormwater management regulations and master plans • Mobile home park compliance for storm shelters
Structure and Infrastructure Projects	<p>These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure.</p> <p>This type of action also involves projects to construct manmade structures to reduce the impact of hazards.</p>	<ul style="list-style-type: none"> • Property Acquisitions and elevations of structures in flood prone areas • Utility undergrounding • Structural retrofits (i.e., metal roofs) • Floodwalls and retaining walls • Detention and retention structures • Culvert Installation/Modification • Roads & Bridge risk reduction • Safe Room (New construction or facility retrofit) • Green Infrastructure Methods <p><i>Many of these types of actions are projects eligible for funding through FEMA HMA grant programs.</i></p>

Mitigation Strategy	Description	Example Mitigation Actions
Natural Systems Protection	<p>These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.</p>	<ul style="list-style-type: none"> • Soil stabilization for sediment and erosion control • Floodplain and Stream corridor restoration • Slope management • Forest management (defensible space, fuels reduction, sprinkler systems) • Conservation easements • Wetland restoration and preservation • Aquifer Storage & Recovery • Flood Diversion and Storage <p><i>Many of these types of actions are projects eligible for funding through FEMA HMA grant programs.</i></p>
Education and Awareness Programs	<p>These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady or Firewise Communities. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions that support life safety and lessen property damage.</p>	<ul style="list-style-type: none"> • Radio or television spots • Websites with maps and information • Social media outreach • Promotion of sign-up for emergency warnings • Real estate disclosure • Promotion of NFIP insurance to property owners • Presentations to school groups or neighborhood organizations • Mailings to residents in hazard-prone areas. • NWS StormReady Program • Firewise Communities <p><i>Some of these types of actions may be projects eligible for funding through the FEMA HMA "5 Percent Initiative Program".</i></p>
Mitigation Preparedness and Response Support	<p>This is a State of Minnesota mitigation strategy with the intent of covering emergency preparedness actions that protect life and property prior to, during, and immediately after a disaster or hazard event. These activities are typically not considered mitigation, but support reduction of the effects of damaging events.</p>	<ul style="list-style-type: none"> • Emergency Operations Plan • Flood fight plans and preparedness measures • Dam emergency action plans • Emergency Warning Systems (i.e., CodeRed, warning sirens) • Generator backup power • NWS Storm Spotter Training • Training and education for local elected officials and key partners.

Appendix G – Public Outreach & Engagement Documentation

Goodhue County MHMP News Release #1

Record of Public Input & Incorporation

Overview: On **June 5, 2023**, Goodhue County Emergency Management put out a news release titled **“Public Input Wanted as County Updates Multi-Hazard Mitigation Plan”** to announce the start of the county’s Hazard Mitigation Plan. The news release provided information on the purpose and content of the plan, who the plan covers, stakeholders involved in the plan update and examples of hazard mitigation activities. Goodhue County used the news release to gather feedback from residents and businesses from across the county to incorporate into the plan, inviting feedback to the following:

- What are the natural hazards you feel pose the greatest risk to your community?
- What concerns do you have, and what sorts of mitigation actions or projects do you feel would help to reduce the damages of potential future events for your personal property, your community, or the County as a whole?

The public was strongly encouraged contact Goodhue 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 Goodhue County, participating jurisdictions, local media, and other stakeholders. Cities and townships were encouraged to help share the news release locally by posting it on their websites, social media, or community bulletin boards.

Public Input & Incorporation:

Following is a record of public responses to the news release and how their input will be incorporated into the plan update, and if not relevant to be addressed, why.

No Public Input: Goodhue County Emergency Management and local jurisdictions did not receive any public input following News Release #1.

From: [Merchlewitz, Earl](#)
To: [Merchlewitz, Earl](#); [Arneson, Scott](#); [Tople, Briggs](#); [Kelly, Marty](#); [Greenwood, Jess](#); [Rezac, Jake](#); [Redepenning, Timothy](#); [Arneson, Nina](#); [Arndt, Heather](#); [Smith, John](#); [Hanni, Lisa](#); [Laumeyer, Alan](#); [Byholm, Bryan](#); [Knott, Leanne](#); [Pierret, Samantha](#); [Holst, Pam](#); [Flanders, Linda](#); [Anderson, Brad](#); [Greseth, Todd](#); [Majerus, Jason](#); [Betcher, Susan](#); [City of Bellechester](#); [Jensen, Neil](#); [jmccormick@ci.cannon-falls.mn.us](#); [mmontgomery@cannonfallsmn.gov](#); [lkronenberger@cannonfallsmn.gov](#); [jflaten19@gmail.com](#); [City of Dennison](#); [mayor@ci.goodhue.mn.us](#); [City of Goodhue](#); [City of Kenyon \(Administrator\)](#); [City of Kenyon \(Clerk\)](#); [Harleyhenke42@gmail.com](#); [Sjoblom, Jeff](#) [Kenyon](#); [jyorde@ci.lake-city.mn.us](#); [rkeehn@ci.lake-city.mn.us](#); [City of Lake City \(Clerk\)](#); [mnichols@ci.lake-city.mn.us](#); [City of Pine Island \(Administrator\)](#); [info@ci.pineisland.mn.us](#); [Bray, Travis](#); [Kuhlmann, Kay](#); [Mike.wilson@ci.red-wing.mn.us](#); [gderickson@gmail.com](#); [City of Wanamingo](#); [Grudem, Brian](#); [Callahan, Pat \(Zumbrotapd\)](#); [Township - Belle Creek Clerk](#); [Township - Belle Creek](#); [Township - Belvidere](#); [hkthomforde@gmail.com](#); [Township - Cannon Falls](#); [debbylh@nwasphalt.net](#); [Township - Cherry Grove](#); [Mike.alme90@gmail.com](#); [Township - Featherstone \(Clerk\)](#); [Featherstone.twp@gmail.com](#); [tkuyath@gmail.com](#); [Township - Florence](#); [mblair@kreofsky.net](#); [Township - Goodhue Twp](#); [gaild8357@gmail.com](#); [Schilling, Marilyn \(Election\)](#); [mrcushing@live.com](#); [Township - Holden](#); [Mavox61@yahoo.com](#); [Township - Kenyon](#); [bernioverby@gmail.com](#); [leontwpclerk@gmail.com](#); [Ron.leon.twp@txshaw.com](#); [Township - Minneola](#); [Township - Pine Island - David Arndt](#); [Township - Roscoe \(clerk\)](#); [Sdberg66@gmail.com](#); [Township - Stanton](#); [blbenenson17@gmail.com](#); [Township - Vasa](#); [hyllengren@sleepyeyetel.net](#); [Township - Wacouta \(clerk\)](#); [Johnplehal.wacoutatownboard@gmail.com](#); [Township - Wanamingo](#); [tomshane@frontiernet.net](#); [Township - Warsaw](#); [wooddoc@frontier.com](#); [Township - Welch](#); [Circlej5@yahoo.com](#); [Township - Zumbrota](#); [rogerballstadt@gmail.com](#); [Michael.R.Peterson@state.mn.us](#); [Kennedy, Beau](#); [catherine.thom@usda.gov](#); [laurie.balata@usda.gov](#); [Chad.hanson@state.mn.us](#); [Lucas.Youngsma@state.mn.us](#); [Mills, Tate](#); [Wachholz, Michael](#); [Morrison.david@epa.gov](#); [Alex.g.kwolk@uscg.mil](#); [info@cannonvalleytrail.com](#); [Michele.heaver@usc.salvationarmy.org](#); [Eli.szydlo@redcross.org](#); [Sampson.jeff@cf.k12.mn.us](#); [strauss.steven@cf.k12.mn.us](#); [egough@goodhue.k12.mn.us](#); [Tammy.champa@pineisland.k12.mn.us](#); [fgnorton@rwps.org](#); [mikeh@zmsch.k12.mn.us](#); [kh@gccea.com](#); [rhentges@dakotaelectric.com](#); [timp@smifoundation.org](#); [rwfoodshelf@gmail.com](#); [pisharingshelves@gmail.com](#); [info@hope-coalition.org](#); [RWASdirector@gmail.com](#); [info@rbhspets.org](#); [bj.battig@co.dakota.mn.us](#); [jennifer.hauer@ricecountymn.gov](#); [matt.maas@dodgecountymn.gov](#); [jacobson.jonathan@co.olmsted.mn.us](#); [btomlinson@co.wabasha.mn.us](#); [christine.mcperson@co.pierce.wi.us](#); [pepza@co.pepin.wi.us](#); [Kim.Flanaghan@piic.org](#)
Cc: [Bonnie K Hundrieser](#)
Subject: Goodhue County Hazard Mitigation News Release
Date: Monday, June 5, 2023 4:19:59 PM
Attachments: [image003.png](#)
[Goohue County Hazard Mitigation Plan Press Release.pdf](#)

Greetings,

Goodhue County Emergency Management is commencing work on the update of the Goodhue County Hazard Mitigation Plan (HMP). Attached is a news release for your information.

Your assistance is requested to post this news release to help notify the public about the plan update and to have an opportunity to provide feedback. If you have a website and/or Facebook page we encourage you to post the news release electronically to those places. You may also post a hardcopy of the news release in locations such as City Hall, the Post Office, or other common area. We welcome as many of ways of posting that you can cover. As part of the plan update we must document the public outreach that was conducted. Please send me an email with information on your posting as follows:

- **Websites/Facebook Postings:** Please send me an email detailing the date, location, and link of the posting. We will need to get a screenshot of the posting online.
- **Hardcopy Postings:** Please send me an email detailing the date and location of where the news release was posted (i.e., City Hall bulletin board).

-
All city governments within the county are requested to participate in order to meet FEMA requirements. Townships, businesses, and other agencies or organizations are also strongly

encouraged to participate.

If you receive any return public feedback, please notify me so we may document this and incorporate this feedback into the plan update.

The timely return of your posting documentation is appreciated. We will be working to wrap this up before the end of June.

I look forward to your participation in the Goodhue County HMP update.

If you have any questions, please let me know.

Thank you



Earl Merchlewitz | EM Director

Goodhue County Sheriff's Office

430 West 6th Street | Red Wing, MN 55066

Direct: 651.267.2639 | Dispatch: 651.385.3155

Email: earl.merchlewitz@co.goodhue.mn.us

Web: www.goodhuesheriff.com

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From: [Tople, Briggs](#)
To: info@modulis.news; mindy.hawks@apgsomn.com; publicnotices@apgsomn.com; hometownmessenger@gmail.com; info@modulist.news; jjohnson@orourkemediagroup.com; [Melissa Thorud](#); news@Q-mediagroup.com; [ORourke Group](#); [Media - Kay Gysbers](#); [Media - Kenyon Leader](#); [Media - Lake City Graphic](#); [Media - Zumbrota](#)
Cc: [Merchlewitz, Earl](#); hundrieserconsulting@outlook.com
Subject: All Hazards Mitigation Plan - Press Release
Date: Monday, June 5, 2023 4:20:02 PM
Attachments: [AHMP Press Release.pdf](#)

Good afternoon,

Please see attached a press release from the new Goodhue County Emergency Management Director Earl Merchlewitz (cc'd). Please send any inquiries to him.

Best,

Briggs Tople, *He/Him/His* | Outreach and Communications Specialist

Goodhue County Administration | 509 W. 5th Street Red Wing, MN 55066

P: 651-385-3249 | **E:** briggs.tople@co.goodhue.mn.us

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Marty Kelly
Goodhue County Sheriff

430 West 6th Street
Red Wing, MN 55066
Office (651) 267.2600
Dispatch (651) 385.3155

GOODHUE COUNTY NEWS RELEASE

June 5, 2023

Public Input Wanted as County Updates Hazard Mitigation Plan

Goodhue 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 Goodhue County Sheriff's Office – Division 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 Goodhue County HMP is a multi-jurisdictional plan that incorporates the concerns and needs of cities, townships, school districts, and area agencies or organizations participating in the plan. Representatives from county departments, local municipalities, school districts and other key stakeholders will aid in planning. 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.

Public input is an essential part of the plan update. As part of the planning process, Goodhue County is seeking feedback from residents and businesses from across the county to incorporate into the plan:

- What are the natural hazards you feel pose the greatest risk to your community?
- What concerns do you have, and what sorts of actions do you feel would help to reduce damages of future hazard events in your community or the county as a whole?

Comments, concerns, or questions regarding natural disasters and potential mitigation actions to be included into the plan update should be submitted to the Emergency Management Division by phone, email, or by posting a comment via a social media posting of this article.

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

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

Contact

Earl Merchlewitz

Goodhue County Emergency Management Director

Phone: 651-267-2639

Email: earl.merchlewitz@co.goodhue.mn.us

Goodhue County HMP News Release #1 – June 5, 2023
Chart Documentation of News Release Postings

Jurisdiction or Agency	Posting Representative	Date & Location of News Release Posting
Goodhue County	Earl Merchlewitz, Goodhue County EMD, Briggs Tople, Outreach and Communications Specialist	6/5/23, Goodhue Health & Human Services Facebook page and Sheriff's Office Facebook page
City of Bellechester	Lisa Redepenning, City Clerk	6/5/23, Public notice board at the Bellechester Bank.
City of Cannon Falls	Laura Qualey, Community & Business Development Specialist	6/5/23, City Facebook page, City emergency preparedness website page, Police Dept. Facebook page, and Ambulance Facebook page
City of Dennison	Jessica Page, City Clerk	6/5/23, City Hall bulletin board
City of Goodhue	Jill Buxengard, City Clerk	6/5/23, City Hall bulletin board and City Facebook page
City of Kenyon	Holli Gudknecht, Deputy Clerk	6/5/23, City Hall public notice board
City of Lake City	Kari Schreck, City Clerk	6/5/23, Public Works Facebook page
City of Pine Island	Elizabeth R. Howard, City Administrator	6/9/23, City Facebook page, City website
City of Red Wing	Kay Kuhlmann, City Administrator	6/5/23, City website, City Facebook page
City of Wanamingo	City Administrator Michael Boulton	6/5/23, City Hall public notice board
City of Zumbrota	Miranda Raasch, Communications Specialist	6/13/23, City Facebook page
Wanamingo Township	Tamra Berg, Township Clerk	6/5/23, Township Town Hall bulletin board
Cannon Falls Township	Sue Safe, Township Clerk	6/6/23, Cannon Falls Town Hall bulletin board
Goodhue Soil & Water Conservation District	Beau Kennedy, District Manager	6/6/23, SWCD Facebook page
MN DNR Office, Lake City	Mike Wachholz, Forester	6/6/23, MN DNR Office service counter
Cannon Falls School District	Jeff Sampson, Superintendent	6/7/23, District Office bulletin board
Republican Eagle News	News Editor	6/9/23, Republican Eagle online news
Lake City Graphic	News Editor	6/14/23, Lake City Graphic online news

Goodhue County HMP News Release #2

Record of Public Input & Incorporation

Overview: On August 20, 2024 Goodhue County Emergency Management put out a news release titled **“Public Comment Sought for County’s Hazard Mitigation Plan”** to announce the completion of the draft Goodhue County Hazard Mitigation Plan and invitation for public review and comment. The news release informed jurisdictional stakeholders and the public that a copy of the draft plan, interactive website, and comment form for public feedback was available online with a website link. The public review period for the draft plan was open from 8/20/24 to 9/3/24 for a total of 15 days.

Distribution: The news release was sent via email to the county’s HMP Jurisdictional Contact List, which includes the names, titles, phone numbers, and email addresses of key stakeholders to be engaged in the HMP update, including County Contacts, City Contacts, Township Contacts, Other Stakeholder Contacts, and Neighboring Jurisdiction Contacts. (A copy of the Jurisdictional Contact List can be found in Appendix F). The news release was additionally sent to local media contacts such as area newspapers, radio and television channels with a request to carry the news release.

Postings: Attached is documentation of the news release postings by Goodhue County, participating jurisdictions, and local media. Cities and townships were encouraged to help share the news release locally by posting it on their websites, social media, or community bulletin boards.

Public Input & Incorporation:

Following is a record of public responses to the Goodhue County news release and how the input will be incorporated into the plan update, and if not relevant to be addressed, why.

- **No public input was received via the online feedback form, directly by Goodhue County or local jurisdictions.**

From: [Merchlewitz, Earl](#)
To: [McCarthy, Mallore](#); [Arneson, Scott](#); [Tople, Briggs](#); [Kelly, Marty](#); [Greenwood, Jess](#); [Rezac, Jake](#); [Redepenning, Tim](#); [Arneson, Nina](#); [Arndt, Heather](#); [Smith, John](#); [Lisa.Hanni@goodhuecountymn.gov](#); [Laumeyer, Alan](#); [Byholm, Bryan](#); [Knott, Leanne](#); [Pierret, Samantha](#); [Holst, Pam](#); [Flanders, Linda](#); [Anderson, Brad](#); [Greseth, Todd](#); [Majerus, Jason](#); [Betcher, Susan](#); [City of Bellechester](#); [Jensen, Neil](#); [jmccormick@ci.cannon-falls.mn.us](#); [mmontgomery@cannonfallsmn.gov](#); [lkronenberger@cannonfallsmn.gov](#); [Jflaten19@gmail.com](#); [City of Dennison](#); [Anderson Buck, Ellen](#); [City of Goodhue](#); [City of Kenyon \(Administrator\)](#); [City of Kenyon \(Clerk\)](#); [Harleyhenke42@gmail.com](#); [Sjoblom, Jeff](#) [Kenyon](#); [jyorde@ci.lake-city.mn.us](#); [rkeehn@ci.lake-city.mn.us](#); [City of Lake City \(Clerk\)](#); [mnichols@ci.lake-city.mn.us](#); [City of Pine Island \(Administrator\)](#); [info@ci.pineisland.mn.us](#); [Bray, Travis](#); [Kuhlmann, Kay](#); [Mike.wilson@ci.red-wing.mn.us](#); [City of Wanamingo](#); [gerickson@gmail.com](#); [Grudem, Brian](#); [Callahan, Pat \(Zumbrotapd\)](#); [Township - Belle Creek Clerk](#); [Township - Belle Creek](#); [Township - Belvidere](#); [hkthomforde@gmail.com](#); [Township - Cannon Falls](#); [debbylh@nwasphalt.net](#); [Township - Cherry Grove](#); [Mike.alme90@gmail.com](#); [cschwart@sleepyeyetel.net](#); [Township - Featherstone](#); [tkuyath@gmail.com](#); [Florenctwp1@yahoo.com](#); [mblair@kreofsky.net](#); [Township - Goodhue Twp](#); [gaild8357@gmail.com](#); [Mkschill6@gmail.com](#); [mrcushing@live.com](#); [Township - Holden](#); [Mavox61@yahoo.com](#); [Township - Kenyon](#); [bernioverby@gmail.com](#); [leontwpclerk@gmail.com](#); [Ron.leon.twp@txshaw.com](#); [Township - Minneola](#); [Township - Pine Island - David Arndt](#); [jganz@bevcomm.net](#); [Township - Roscoe \(clerk\)](#); [Sdberg66@gmail.com](#); [Township - Stanton](#); [blbenenson17@gmail.com](#); [Township - Vasa](#); [hyllengren@sleepyeyetel.net](#); [Township - Wacouta \(clerk\)](#); [Johnplehal.wacoutatownboard@gmail.com](#); [Township - Wanamingo](#); [tomshane@frontiernet.net](#); [Township - Warsaw](#); [wooddoc@frontier.com](#); [Township - Welch](#); [Circlej5@yahoo.com](#); [Township - Zumbrot](#); [rogerballstadt@gmail.com](#); [Michael.R.Peterson@state.mn.us](#); [Kennedy, Beau](#); [catherine.thom@usda.gov](#); [laurie.balata@usda.gov](#); [Chad.hanson@state.mn.us](#); [Lucas.Youngsma@state.mn.us](#); [Mills, Tate](#); [Wachholz, Michael](#); [Morrison.david@epa.gov](#); [Alex.g.kwolek@uscg.mil](#); [info@cannonvalleytrail.com](#); [Michele.heaver@usc.salvationarmy.org](#); [Eli.szydlo@redcross.org](#); [sampsom.jeff](#); [strauss.steven@cf.k12.mn.us](#); [Evan Gough](#); [tonya.constantine@pineisland.k12.mn.us](#); [fgnorton@rwps.org](#); [ryanb@zmsch.k12.mn.us](#); [kh@gccea.com](#); [rhentges@dakotaelectric.com](#); [timp@smifoundation.org](#); [rwfoodshelf@gmail.com](#); [pisharingshelves@gmail.com](#); [info@hope-coalition.org](#); [RWASdirector@gmail.com](#); [info@rbhspets.org](#); [Kelly.Miller@CO.DAKOTA.MN.US](#); [joseph.johnson@RiceCountyMN.gov](#); [matt.maas@dodgecountymn.gov](#); [jacobson.jonathan@co.olmsted.mn.us](#); [btomlinson@co.wabasha.mn.us](#); [christine.mcpherson@co.pierce.wi.us](#); [pepza@co.pepin.wi.us](#); [Kim.Flanaghan@piic.org](#)
Cc: [hundrieserconsulting@outlook.com](#); [Stacey Stark](#)
Subject: Goodhue County News Release - Hazard Mitigation Plan Public Review
Date: Tuesday, August 20, 2024 4:07:47 PM
Attachments: [image001.png](#)
[Goodhue County Hazard News Release HMP Public Review.pdf](#)

Good Afternoon,

Attached please find a news release announcing that the **public review and comment period** is now open for the Goodhue County Hazard Mitigation Plan from **August 20 to September 3** prior to submission of the plan to FEMA.

As a jurisdiction, related agency, or neighboring jurisdiction involved in the Goodhue County plan update, your assistance is requested to help post the news release and also to review the draft plan.

Please email me to let me know the date and location(s) of where the news release was posted. Please post the news release promptly to the areas where you share information with the public, such as your website, Facebook page, bulletin boards, or other locations.

- Goodhue County and each city within the county are requested to fulfill this request.
- Townships and other agency stakeholders are also encouraged to participate in posting the news release.

In addition, if you have not already reviewed the plan during the government review period, you are strongly encouraged to do so. There are website links as well as a QR code in the news release that will take you to PDF of the plan, interactive website, mitigation action charts. There is also an online feedback form where you are encouraged to provide any comments, questions, or other feedback. **If you review the plan, please let me know.**

PLEASE RESPOND NO LATER THAN SEPTEMBER 3RD.

If you have any questions or comments, please let me know.



Earl Merchlewitz | EM Director

Goodhue County Sheriff's Office

430 West 6th Street | Red Wing, MN 55066

Direct: 651.267.2639 | Dispatch: 651.385.3155

Email: earl.merchlewitz@goodhuecountymn.gov

Web: www.goodhuesheriff.com

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Goodhue County Sheriff

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Red Wing, MN 55066
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Dispatch (651) 385.3155

GOODHUE COUNTY NEWS RELEASE

August 20, 2024

Public Comment Sought for County's Hazard Mitigation Plan

Goodhue County has completed an updated draft of its Hazard Mitigation Plan (HMP) and is now seeking public feedback. Like all Minnesota counties, Goodhue County is vulnerable to a variety of natural hazards such as tornadoes, windstorms, severe winter storms, flooding, drought, and extreme temperatures, which can threaten the loss of life and property in the county. Planning for natural disasters minimizes the impact of events that can cause vast economic loss and personal hardship.

All county residents, as well as other interested agency or organizational stakeholders, are strongly encouraged to review and offer feedback on the interactive website, PDF of the draft plan, and proposed local mitigation actions. The review and comment period is open for a period of 15 days through September 3, 2024. The public can access the plan using the following links:

[Goodhue County HMP website](https://goodhue-county-hmp-umn.hub.arcgis.com/)

(<https://goodhue-county-hmp-umn.hub.arcgis.com/>)

[Mitigation Action Charts](https://goodhue-county-hmp-umn.hub.arcgis.com/pages/mitigation-actions)

(<https://goodhue-county-hmp-umn.hub.arcgis.com/pages/mitigation-actions>)

[Public Comment Feedback Form](https://survey123.arcgis.com/share/92f82cf5334b4ea687dc510a1c21d7df)

(<https://survey123.arcgis.com/share/92f82cf5334b4ea687dc510a1c21d7df>)

The Goodhue County HMP is a multi-jurisdictional plan that covers Goodhue County, including the cities of Bellechester, Cannon Falls, Dennison, Goodhue, Kenyon, Lake City, Pine Island, Red Wing, Wanamingo, and Zumbrota.

Update of the plan has been under the direction of Goodhue County Emergency Management in cooperation with U-Spatial at the University of Minnesota Duluth and representatives from county departments, city and township governments, school districts, and other key stakeholders. Together, the planning team worked to identify cost-effective and sustainable actions to reduce or eliminate the long-term risk to human life or property

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from natural hazards. Examples include infrastructure projects for areas that experience repetitive flooding; construction of safe rooms in areas where residents and visitors are vulnerable to tornadoes and severe storm events; burying powerlines that may fail due to heavy snow, ice, or wind storms; ensuring timely emergency communication to the public through warning sirens and mass notification systems; and conducting outreach to increase public awareness of severe weather and personal preparedness.

Hazard mitigation planning helps Goodhue County and other jurisdictions protect their residents. Working with local communities through the process helps identify vulnerabilities and develop strategies to reduce or eliminate the effects of a potential hazard. In addition, increasing public awareness of natural disasters and encouraging personal preparedness helps to create a community that is resilient to disaster, and breaks the cycle of response and recovery. Updating the plan further allows Goodhue County and its jurisdictions to be eligible to apply for future FEMA Hazard Mitigation Assistance grant program funding for projects that help to reduce or eliminate the impacts of future natural hazard events.

Community feedback is vital to the success of the plan. Goodhue County invites public review and feedback of the draft plan prior to submitting it to the State of Minnesota and the Federal Emergency Management Agency (FEMA) for review. Feedback may be provided via the online comment forms or directly to Goodhue County Emergency Management.

Contact

Earl Merchlewitz

Goodhue County Deputy Emergency Management Director

Phone: 651-267-2639

Email: earl.merchlewitz@goodhuecountymn.gov

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



Goodhue County HMP News Release #2 (8/20/24)
Chart Documentation of Postings for Public Outreach

Jurisdiction or Agency	Posting Representative	Date/Location of News Release Posting
Goodhue County	Briggs Topple, Outreach & Communications Specialist	8/21/24 Posted to County Website
Goodhue County	Earl Merchlewitz, Emergency Management Director	8/20/24 Facebook post, also sent to Red Wing Republican Eagle, Cannon Falls Beacon, and the Lake City Graphic
City of Bellechester	Lisa Redepenning, City Clerk	8/21/24 Posted at City Hall
City of Cannon Falls	Jeff McCormick, EM Director	8/21/24 Posted at City Hall
City of Dennison	Jeff Flaten, Mayor	8/20/24 Posted on Bulletin board and city website.
City of Goodhue	Lisa Redepenning, City Clerk	8/20/24 Public Bulletin Board
City of Kenyon	Holli Gudknecht, Deputy Clerk	8/21/24 Posted on Bulleting Board and City Website
City of Lake City	Jon Yorde, EM Director	8/22/24 Posted at City Hall and Facebook
City of Pine Island	Elizabeth Howard, City Administrator	8/20/24 Posted on Bulletin Board and City Website
City of Red Wing	Peter Hanlin, Asst. Fire Chief	8/21/24 Posted at City Hall
City of Wanamingo	Michael Boulton, City Administrator	8/23/24 Posted at City Hall and Social Media
City of Zumbrota	Brian Grudem, City Administrator	8/21/24 Posted on Bulletin Board and Facebook
Zumbrota Township	Laurie Hoernemann, Clerk	8/22/24 Posted at Township Hall
Goodhue County Cooperative Electric	Kelly Hovel, General Manager	8/21/24 Posted on website www.gccea.com
Nerstand Fire Department	Joe Johnson, Fire Chief	8/21/24 Posted to Nerstand FD Facebook
MN DNR	Mike Wachholz, Regional Office contact	8/22/24 Posted at Lake DNR Office
Goodhue County HHS	Jessica Seide, Community Health Specialist	8/22/24 Shared on Goodhue HHS and County TZD Facebook
Stanton Township	Cheryle Peters, Clerk	8/23/24 Posted at Town Hall and Website
Wanamingo Township	Tamra Berg, Clerk	8/22/24 Posted at Town Hall
Goodhue Township	Brenda Hinsch, Clerk	8/22/24 Posted at Goodhue Post Office
Bellechester Township	Lisa Redepenning, Clerk	8/21/24 Posted on Bulleting Board
Hay Creek Township	Brandy Christensen, Clerk	8/24/24 Posted at Hay Creek Town Hall
Welch Township	Jessica Jacobson, Clerk	8/24/24 Posted at Welch Town Hall
Cannon Falls School District	Jeff Sampson, Superintendent	8/24/24 Posted on bulletin Board at school
Red Wing School District	Bob Jaszczak, Superintendent	8/22/24 Posted on bulletin Board at school

Zumbrota School District	John Stapleton, Middle/HS Principal	8/24/24 Posted on bulletin Board at school
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Appendix H – Mitigation Actions by Jurisdiction

CITY OF BELLECHESTER

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	We post information on our city website and utility bills. We also post information on bulletin boards at our local bank.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	We will work with Goodhue County Emergency Management to help us get a link to sign up for CodeRED on our city website. We can also post on our public area bulletin boards for residents that do not access our website.	City Funding
3	Severe Winter & Summer Storms	Local Planning & Regulations	Ensure new development is built to guidelines to reduce risk of damage or failure from extreme storm events.	Existing High 2025-2030	City Admin, City Public Works	We utilize Goodhue County for administering the MN State Building Code and the City Code zoning requirements for all new development and upgrades.	City Funding
4	Flooding	Structure & Infrastructure Projects	Continue to address stormwater management improvements as needed to handle future high rain events.	In-Progress Moderate 2024-2025	City Admin, City Public Works	In 2025 our stormwater system improvements for the city over will be completed. Our Public Works Dept. will continue to address future improvements as necessary.	City Funding
5	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will establish and enforce a water conservation ordinance as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage.	City Funding

CITY OF CANNON FALLS

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	We use our city website and social media (Facebook, Twitter) to share information with our residents. The city will also work with Goodhue County Emergency Management to share information with the public during Severe Weather Awareness Weeks.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	We will work with Goodhue County Emergency Management to help us get a link to sign up for CodeRED on our city website. We can also post on our public area bulletin boards for residents that do not access our website.	City Funding
3	Severe Winter & Summer Storms	Local Planning & Regulations	Ensure new development is built to guidelines to reduce risk of damage or failure from extreme storm events.	Existing Moderate 2025-2030	City Admin, City Public Works	The city continues to enforce building codes and zoning for new development.	City Funding
4	Flooding	Local Planning & Regulations	Continue to address how to minimize impacts of flood events along the river and impacts to Highway 20.	Existing High 2025-2030	City Admin, City Public Works, MnDOT	Due to previous flooding the city has acquired a lot of the green space around the river to minimize the need to protect property. Green space around river is prone to scrubbing when flooding out of the river banks. Flooding can impact Hwy 20 if high enough. Our Public Works department continues to evaluate and address solutions for these issues that can arise after high rain events. Hwy 20 is controlled by MN DOT and any issues connected to that would fall to the State	City Funding, State Funding (MnDOT)

CITY OF CANNON FALLS**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will establish and enforce a water conservation ordinance as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage.	City Funding
6	Dam Failure	Education & Awareness Programs	Continue to participate in dam failure planning and provide safety information to residents who live in the risk zone below the dam	Existing High 2025-2030	Dakota County in coord with the City of Cannon Falls	There is a dam located in Dakota County that is about a mile upstream from the city. There is a Joint Powers Agreement in place for warning sirens for dam failure. Dakota County handles the annual mailing to residents regarding dam failure information and evacuation zones.	Dakota County

CITY OF DENNISON

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	Mayor/Clerk	We post information on our city website and Facebook page. We also post information on the community bulletin board outside of City Hall and the Post Office. We also make announcements at City Council meetings as needed.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	Mayor/Clerk	We will work with Goodhue County Emergency Management to help us get a link to sign up for CodeRED on our city website. We can also post on our public area bulletin boards for residents that do not access our website.	City Funding
3	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and development.	Existing High 2025-2030	City Admin	The city has recently hired an engineering company to help plan for growth and replace our older infrastructure. Part of our needs assessment study done by the engineering company was to help us plan for the future, which includes updating that Comprehensive Plan and zoning maps. The city's last Comprehensive Plan adopted was in 1998.	City Funding
4	Severe Winter & Summer Storms	Local Planning & Regulations	Ensure new development is built to guidelines to reduce risk of damage or failure from extreme storm events.	Existing High 2025-2030	City Admin, City Staff	The city uses Goodhue County to help enforce the MN State Building Code, conducts inspections and processes permit applications.	City Funding
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Obtain generator backup power for City Hall and the Wellhouse.	New High 2025-2030	City Admin, City Staff	The city will purchase generators as funding is available. The City will work with our engineering company to explore if City Hall can be used as a temporary shelter.	City Funding

CITY OF DENNISON

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Severe Winter & Summer Storms	Natural Systems Protection	Manage older canopy of trees on 2nd and 3rd Avenues to reduce potential damage to homes and cars from windstorms.	Existing Moderate 2025-2030	City Staff	Our city staff trims dead or dying tree limbs on our older trees located on city property. When we have to take down big trees, we usually hire a tree removing company to do that. We do set aside money every year for tree removal in our budget, but some years there's not significant storm damage.	City Funding
7	Severe Summer Storms	Mitigation Preparedness & Response Support	Continue to participate in annual Storm Spotter Training.	Existing High 2025-2030	City Admin/ Mayor	Our Mayor is a trained severe weather spotter.	National Weather Service
8	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	When Goodhue County Emergency Management and the MN DNR advise that we are in a state of severe drought, the city will work to establish watering restrictions and do local outreach to help make residents aware of limitations on non-essential water usage.	City Funding
9	Flooding	Structure & Infrastructure Projects	Maintain the city's stormwater management system and address improvements as needed.	Existing Moderate 2025-2030	City Staff	The city continues to maintain our current system of catch basins/ponds for flood prevention for the community.	City Funding

CITY OF GOODHUE

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	We have a city Facebook page and a city website. We will occasionally post flyers at the school, community center, and businesses around town. We do use the local News Record Newspaper to post information on meetings and other community events. There is also a community cable tv channel where we post announcements and inset fliers into our monthly water bills. The city wishes to upgrade our website and we can make improvement to public outreach when we do.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	The city is going to be updating our city website. We will work with Goodhue County Emergency Management to help us get a link to sign up for CodeRED on our city website. We can also post on our public area bulletin boards for residents that do not access our website.	City Funding
3	All-Hazards	Mitigation Preparedness & Response Support	Update the city's Emergency Operations Plan to support all-hazards plans and procedures are in place.	Existing High 2025-2030	City Admin	The city will plan to work in coordination city department heads and Goodhue County Emergency Management to update our local Emergency Operations Plan. We will also work with the new assisted living facility to ensure they have emergency plans and equipment such as generators in place.	City

CITY OF GOODHUE

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
4	Severe Winter & Summer Storms	Local Planning & Regulations	Ensure new development is built to guidelines to reduce risk of damage or failure from extreme storm events.	Existing High 2025-2030	City Admin, City Public Works	We work with Goodhue County to perform all the building inspections and building code enforcement. We also contracted with ISG engineering to provide us with engineering services for our infrastructure and land use. We carefully look at zoning with our current staff and is reviewed by the council and our attorney Kennedy and Graveman.	City Funding
5	Severe Summer Storms	Mitigation Preparedness & Response Support	Designate a new shelter facility for use if needed due to severe windstorms or tornadoes that take out power or damage homes.	In-Progress High 2025-2030	City Admin / EM in coord with GCEM	The mobile home park is currently in the final design phase of installing a storm shelter for their residents and we hope to get it installed this summer (2024). We will still have to work with the city to find a possible solution for a community shelter, but we have been talking through different ideas and locations. We will work with Goodhue County Emergency Management and the American Red Cross for assistance on this effort.	City Funding
6	Severe Summer Storms	Mitigation Preparedness & Response Support	Upgrade our warning plan to alert the mobile home park and those who are vulnerable.	New High 2025-2030	City Admin / EM in coord with GCEM	The city will work with Goodhue County Emergency Management and the owner of the mobile home park on an evacuation and sheltering plan. Many residents of the MHP are non-English speaking, which makes them more vulnerable if they cannot receive emergency notifications in their language.	City Funding
7	Severe Summer Storms	Structure & Infrastructure Projects	Work with Xcel Energy to address mitigation measures for overhead power lines in vulnerable areas of the city (i.e., business district, elderly population, and school).	New High 2025-2030	City Public Works in Coord with Xcel Energy	The city will encourage Xcel Energy to address risk reduction to power lines in these areas as they deem appropriate (i.e., conversion of overhead powerlines to underground). The city has no authority over these projects.	Xcel Energy

CITY OF GOODHUE

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
8	Extreme Cold	Education & Awareness Programs	Conduct public outreach to residents to avoid frozen pipes during periods of extreme cold and information on gas safety and what to do in case of an outage.	New High 2025-2030	City Admin / City EM in coord with GCEM	We have a mobile home court that has many older homes and a very diverse culture and language barrier. In the event of very cold weather, we would need to inform them of procedures to keep pipes thawed. This also includes the public in case it's a prolonged cold event. The city will work with Goodhue County Emergency Management on how we can improve our public outreach in order to reach all residents, including those who do not speak English.	City Funding
9	Severe Summer Storms	Mitigation Preparedness & Response Support	Purchase and install a new outdoor warning siren.	New Moderate 2025-2030		We have one siren in town located next to the water tower. The cost of a warning siren is very high and outside grant funding, if available would be applied for. We will work with Goodhue County Emergency Management for assistance on this effort.	City Funding, Other grant funding (TBD)
10	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Purchase a generator for City Hall and the public works building.	New Moderate 2025-2030		The city will purchase generators as funding is available. We did recently install a generator to power the emergency well and fire hall.	City Funding
11	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will establish and enforce a water conservation ordinance as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage.	City Funding

CITY OF GOODHUE**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
	Flooding	Local Planning & Regulations / Structure & Infrastructure Projects	Plan for flood mitigation projects for areas at risk in the community.	New High 2025-2030	City Admin / EM, Public Works	The city has rebuilt one of the flood prone areas by installing more catch basins and larger pipes to help alleviate the water backups during torrential rains. The city has also relined many sewer lines to prevent the flooding of the sewer plant. There is also a levee built around the sewer plant. Our public works department continues to monitor and address any areas of potential concern. Most of the town is high enough to accommodate a high-water event. We also could have some flooding concerns at heritage park that could require damage the ball field or one bathroom. The city may consider looking into FEMA grant funding to assist with this planning and future project implementation.	City Funding, FEMA grant funding

CITY OF KENYON

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	We post information on our city website and Facebook page. We also post information on bulletin boards at the City Hall and at the Post Office. We also have Kenyon Leader newspaper. We make announcements at City Council meetings and post flyers on our community bulletin board outside of City Hall.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	The city of Kenyon website includes a link to sign up for CodeRed under the "About" link. We can also post information on our public area bulletin boards for residents that do not access our website.	City Funding
3	All-Hazards	Mitigation Preparedness & Response Support	Establish a new Emergency Operations Center for the city.	In-Progress High 2025-2030	City Admin / City EM in coord with GCEM	The city is working with the Goodhue County Emergency Management to establish an emergency EOC at the Kenyon Fire Department.	City Funding
4	Severe Winter & Summer Storms	Local Planning & Regulations	Ensure new development is built to guidelines to reduce risk of damage or failure from extreme storm events.	Existing High 2025-2030	City Admin, City Public Works	The city contracts with Goodhue County building inspectors to enforce Minnesota Building Code. We also have a Comprehensive Capital Improvement Plan.	City Funding
5	Severe Winter & Summer Storms	Structure & Infrastructure Projects	Implement measures to reduce the risk of power outages due to severe summer or winter storms.	Existing Moderate 2025-2030	City Municipal Utility / Public Works Dept.	We have our own municipal utility that is responsible for mitigating against power outages. The city's Public Works Dept. also works to trim trees that may fall on overhead power lines.	City Funding
6	Flooding	Structure & Infrastructure Projects	Continue to address stormwater management improvement projects to reduce impacts of future high rain events.	In-Progress High 2025-2030	City Public Works	We have a city engineer and a public works director that address road maintenance issues for flooding (culverts, repetitive flooding). The city is also currently working with Goodhue County on the County 12 Road project. It will help with storm water routing and removal.	City Funding

CITY OF KENYON**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
7	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will establish and enforce a water conservation ordinance as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage.	City Funding

CITY OF LAKE CITY

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	We post information on Our City, Public Works, and Police Dept Facebook pages as needed. Our city has access to a Public City informational page on out town TV provider. City webpage is used as needed with a General Information tab. City Hall also has a community Bulletin board for posting of information also.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	Lake City has a link on the city website to the Wabasha County CodeRED signup page. We include information twice annually in the local newspaper. When new residents move into town; a flyer is included with the Welcome Wagon packet information. Annually information goes out in city wide utilities and information in available at the front counter of the Police Department. In the past couple of years, we have also done a signup event for anyone who needs assistance, especially for seniors. Anyone is welcome to come for assistance or ask questions.	City Funding
3	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and development.	Existing High 2025-2030	City Admin	The city maintains an updated Comprehensive Plan that is designated to plan for the future physical growth of the city and appropriate land uses.	City
4	Severe Winter & Summer Storms	Local Planning & Regulations	Ensure new development is built to guidelines to reduce risk of damage or failure from extreme storm events.	Existing High 2025-2030	City Admin, City Public Works	The city's planning and zoning department enforces the MN State Building Code and the City Code zoning requirements for new development.	City Funding

CITY OF LAKE CITY

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	Obtain generators to install at City Hall and the local school that are in need of emergency backup power.	Existing High 2025-2030	City Admin / City EM, City Public Works	The city has identified that a generator would be beneficial for City Hall. City Hall houses the IT Server for the Public Safety Building along with other crucial departments. During power outages public safety is without internet service and electronic files needed for response. A generator would also be beneficial for our local public school. The school is identified as a shelter in city EOP. The city will work to purchase generators as funding is available.	City Funding, Possible FEMA grant funding
6	Severe Winter & Summer Storms	Structure & Infrastructure Projects	Reduce the risk of downed power lines and extended power outages from the impacts of heavy snow, ice, or high wind events.	Existing Moderate 2025-2030	City Municipal Utility	Currently our city municipal electric dept has and is ongoing with converting overhead power lines to underground. In the future the city may seek FEMA grant funding to assist with implementation of retrofit projects to reduce areas of vulnerability (such as pole replacement program).	City Funding, Possible FEMA Grant Funding
7	Extreme Cold	Education & Awareness Programs	Conduct public outreach to residents to avoid frozen pipes during periods of extreme cold and to be prepared for potential power outages.	Existing High 2025-2030	City Admin / City EM	We will use our city website and utility bills to notify residents to avoid freezing pipes during sub-zero weather. During periods of severe weather winter or extreme cold we post reminders for public preparedness.	City Funding
8	Flooding	Structure & Infrastructure Projects	Address flood mitigation projects planned for areas within the city identified with flood risk issues.	In-Progress High 2025-2030	City Public Works	Lake City is currently working on planning and project implementation for flood risk mitigation at the following areas: - McCahill Park - Hok Si La Shoreland armoring - Sportsman's shoreland armoring	City Funding

CITY OF LAKE CITY

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
9	Landslide	Structure & Infrastructure Projects	Repair the retaining wall at Ohuta Park which has been undermined due to flooding and loss of upland from erosion.	In-Progress High 2025-2030	City Public Works	This project is within the current scope of work for Lake City Public Works. The city coordinates with Goodhue SWCD as needed on this project.	City Funding
10	Landslide	Natural Systems Protection / Structure & Infrastructure Projects	Implement buffering and stormwater runoff measures to reduce risk of landslides in the Oakhurst subdivision area.	In-Progress High 2025-2030	City Admin, City Public Works	The loss of tree cover along the top of the bluff along the city's western municipal boundary has created an issue where the infrastructure in these neighborhoods located at the toe of the bluff was not designed to handle the increased velocity and quantity of stormwater runoff coming down the bluff into the city limits. The city may seek to apply for future FEMA grant funding to support property buyouts if funding is available.	City Funding, Possible FEMA HMA grant funding
11	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will establish and enforce a water conservation ordinance as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage.	City

CITY OF PINE ISLAND

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	We post informational announcements on our city website, through our Community Facebook page, Pine Island Fire Dept Facebook, monthly newsletter and through our cities public access channel (CCTV). We often also make announcements at City Council meetings. The city will continue to work with Olmsted County Emergency Management to share severe weather information with the public such as participating in the Severe Weather Awareness Week and SkyWarn Storm Spotter training.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	We offer a sign-up link to a City of Rochester/Olmsted County/Goodhue County CodeRED Alert System offering county and local emergency notifications, on the city website, and monthly newsletter.	City Funding
3	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and development.	Existing High 2025-2030	City Admin in coord with Public Works	The city's planning and zoning department enforces the MN State Building Code and the City Code zoning requirements for new development. We have a 20-year Comprehensive Plan that is designed to plan for future physical growth of the city and appropriate land uses.	City Budget

CITY OF PINE ISLAND

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
4	Extreme Cold / Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Be prepared to provide emergency sheltering to vulnerable residents during extreme cold events with a power outage or other severe weather events.	Existing High 2025-2030	City Admin / City EM	A generator has been installed at City Hall that serves as an overflow local shelter if people are displaced from a severe storm event or extended power outage. We are also looking into installing a permanent generator at the Lutheran Church which will be our primary shelter. Pine Island Public School and Pine Island Firehall both have permanent generators and can be used as overflow shelters. The city also works with our mobile home parks owners on emergency evacuation and sheltering of residents.	City Funding
5	Severe Winter & Summer Storms	Structure & Infrastructure Projects	Work with the People's Energy Coop as needed to address future conversion projects from overhead to underground to reduce power outages from a range of severe storm events.	Existing Moderate 2025-2030	Public Works in coord Utility	We continue to work closely with People's Energy Coop to reduce long term power outages through conversion projects when possible. Vegetation is also trimmed near powerlines to reduce the chances of downed branches.	Electric Coops
6	Severe Summer Storms	Structure & Infrastructure Projects	Evaluate opportunity to build a storm shelter or tornado safe room for the mobile home park in the city.	Existing Moderate 2025-2030	City Admin / City EM in coord with OCEM	The city will work to evaluate options for construction of a suitable shelter facility. Outside grant funding would be needed to implement construction of a tornado safe room. The city would consider developing an application for FEMA HMA grant funds.	City Funding, FEMA HMA grant
7	Flooding	Structure & Infrastructure Projects	Plan for and implement flood mitigation projects to improve our stormwater management system.	Existing High 2025-2030	Public Works, City Engineer	This is an ongoing effort by our city engineer and public works department. Our city completed street reconstruction projects in 2015, 2017, 2020, and 2023. The projects included storm sewer reconstruction. In 2022 we cleared and regraded one of our retention ponds and we have plans to do another in the near future.	City Funding

CITY OF PINE ISLAND

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
8	Flooding	Structure & Infrastructure Projects	Address flood mitigation measures for our city lift station that is prone to flooding during high rain events as well as our two city parks that are vulnerable to flooding and park equipment.	Existing High 2025-2030	Public Works, City Engineer	This is a current effort by our city engineer and public works department. They are working to evaluate and address solutions for these areas that are impacted by rain events.	City Funding
9	Flooding	Structure & Infrastructure Projects	Address necessary infrastructure improvements to the Waste Water Treatment Plant (WWTP) that is located within the floodplain.	New High 2025-2030	City Admin in coord with City Public Works	The city wishes to address infrastructure improvements to the WWTP as flooding has pushed the city to bypass treatment and send untreated waste water into the Zumbro River. The city is working on a regional WWTP and collection system with neighboring communities. The city may wish to apply for future FEMA grant funding to support the WWTP after necessary improvements have been identified.	City, FEMA BRIC or HMGP grant funding
10	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	Existing High 2025-2030	City Admin	During periods of severe drought, the city will enforce our water Conservation Plan and promote water conservation awareness measures to residents.	City Funding

CITY OF RED WING

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	The city uses our city website and social media to share information with residents and visitors. Our website offers a language translation option for those who do not speak English.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	The city website includes a link for the Goodhue County CodeRED system under the "How Do I?" tab. We can also post information on public bulletin boards for those that do not use computer devices.	City Funding
3	Severe Winter & Summer Storms	Local Planning & Regulations	Ensure new development is built to guidelines to reduce risk of damage or failure from extreme storm events.	Existing High 2025-2030	City Admin, City Community Development Department	Building code enforcement is completed by several employees for the city.	City Funding
4	Extreme Heat/Cold Temps	Mitigation Preparedness & Response Support	Improve the city's current sheltering capacity, adding heat and cold relief stations.	New High 2025-2030	City Admin / City EM	The city will assess our options for facilities that can be utilized for temporary public sheltering in the event of extreme heat or cold conditions that pose risk to people vulnerable within the community. Our EM staff will work with Goodhue County Emergency Management as needed to develop a plan for activation and necessary equipment (i.e., generators).	City Funding

CITY OF RED WING

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	Severe Summer Storms	Mitigation Preparedness & Response Support	Determine if the city's outdoor warning siren system will be maintained or decommissioned.	New High 2025-2030	City Admin / City EM	Currently the emergency siren system in Red Wing is being looked at by our city council to either keep the sirens or decommission the sirens. Xcel Energy will no longer be servicing the sirens and they have advised stake holders that the sirens will be taken down if municipalities do not wish to take over ownership of them. / If we decommission our warning siren system, we will do a public outreach push for residents to sign up for Goodhue County's CodeRed system and to sign up for other severe weather notifications (i.e. cell phone apps).	City Funding
7	Severe Summer Storms	Structure & Infrastructure Projects	Construct community severe weather shelters in areas deemed eligible for state and/or federal assistance.	New High 2025-2030	City Admin / City EM	Currently there are areas within the community that may qualify for state and/or federal assistance through the HMPG or state SCDP (CDBG).	City funding, MN HSEM and MN DEED
8	Flooding	Local Planning & Regulations	Continue to address stormwater management planning to handle future high-rain events that impact the city.	Existing High 2025-2030	City Public Works	Continue to upgrade and replace old, deteriorated, and undersized systems that are currently in place regarding the storm sewers throughout the city. Improve low lying areas vulnerable to flooding with larger diameter/capacity collection and drainage piping, higher earth banks and walls to combat the flooding in that area.	City Funding, MN MPCA Legacy Storm Water Funding, MN HSEM, DHS-FEMA
9	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will establish and enforce a water conservation ordinance as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage.	City Funding

CITY OF WANAMINGO

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	We post information on our city website and Facebook page. We also post information on bulletin boards at the Post Office, bank, and numerous other business locations. Notices in the local newspaper can be published.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	We will work with Goodhue County Emergency Management to help us get a link to sign up for CodeRED on our city website. We can also post on our public area bulletin boards for residents that do not access our website.	City Funding
3	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and development.	Existing High 2025-2030	City Admin	We have a 28-year-old Comprehensive Plan that is designed to plan for the future physical growth of the city and appropriate land uses. When the it is updated we will work to incorporate considerations for mitigation for hazards such as flooding. The city also has a 10-year Capital Improvements plan that identifies needs for the city.	City
4	Severe Winter & Summer Storms	Local Planning & Regulations	Ensure new development is built to guidelines to reduce risk of damage or failure from extreme storm events.	Existing High 2025-2030	City Admin, City Public Works	The city contracts enforces the MN State Building Code and the City Code zoning requirements for new development with the County Building Permits & Inspections Department.	City Funding
5	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Purchase a stationary generator for our Fire Hall and a portable generator for our City Hall/Community Center Building.	New High 2025-2030	City Admin / City EM	This is top priority for a possible FEMA funding application. We wish to apply for this in the next year. We will work with Goodhue County Emergency Management for guidance in this process.	City Funding, Possible FEMA Grant Funding

CITY OF WANAMINGO

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Severe Summer Storms	Structure & Infrastructure Projects	Work with Hillcrest Manor mobile home park to address the need for construction of a tornado safe room or suitable storm shelter for park residents who are vulnerable to high wind events.	New High 2025-2030	City Admin / City EM in coord with MHP Operator	The city will work with the mobile park operator to evaluate options for how to best provide emergency sheltering for park residents. If the city decides to pursue construction of a tornado safe room, we will work with Goodhue County Emergency Management to look into applying for FEMA HMA grant funding. In the interim, we will work with the MHP to make sure an evacuation plan and other shelter location is established.	City Funding, Possible FEMA Grant Funding
7	Severe Summer Storms	Mitigation Preparedness & Response Support	Work with Goodhue County Emergency Management to address the purchase and installation of a new outdoor warning siren that will be tied in to the county remote activation system.	New Moderate 2025-2030	City Admin / City EM	We have worked with the county emergency manager on getting an outdoor warning siren and will continue to do so on this effort. The cost for purchase and installation of a siren must be approved by our city budget. The city may also seek to look for outside supportive grant funding.	City Funding, Other grant funding (TBD)
8	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will establish and enforce a water conservation ordinance as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage.	City Funding
9	Flooding	Structure & Infrastructure Projects	Continue to address stormwater management planning to handle future high-rain events that impact the city.	In-Progress High 2025-2026	City Public Works	The city has a consulting engineer and a public works director that address road maintenance issues for flooding (culverts, repetitive flooding). The city is currently working toward a 2025/2026 street reconstruction project that will address additional stormwater improvements.	City Funding

CITY OF WANAMINGO

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
10	Flooding	Structure & Infrastructure Projects	Address necessary infrastructure improvements to the Waste Water Treatment Plant (WWTP) that is located within the floodplain.	New High 2025-2030	City Admin in coord with City Public Works	The city wishes to address infrastructure improvements to the WWTP as flooding has pushed the city to bypass treatment and send untreated waste water into the Zumbro River. The city is working on a regional WWTP and collection system with neighboring communities. The city may wish to apply for future FEMA grant funding to support the WWTP after necessary improvements have been identified.	City, FEMA BRIC or HMGP grant funding
11	Landslides	Structure & Infrastructure Projects	Continue working with Goodhue County SWCD to address bank stabilization issues.	In-Progress High 2025-2030	City Public Works in coord with Goodhue SWCD	We are working with Goodhue County SWCD to address bank stabilization issues. Plans are to remove the concrete dam on the North Zumbro while restoring the banks to the west of the dam and Shingle Creek.	SWCD Cost Chare Funding

CITY OF ZUMBROTA

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	We have a GoZumbrota App which allows us to push out real time updates to citizens via text or email. We also post information on our city website, Facebook page. We also post information on bulletin boards at the Post Office, bank, and numerous other business locations. Notices in the local newspaper can be published.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	We encourage our citizens to sign up for the county's CodeRED emergency notification system through our website and social media app's. We also have the ability to quickly push out emergency notifications through our GoZumbrota app. We can also post on our public area bulletin boards for residents that do not access our website.	City Funding
3	All-Hazards	Local Planning & Regulations	Incorporate mitigation strategies across the city's long-term plans and policies for future growth and development.	Existing Moderate 2025-2030	City Admin	When we update the City of Zumbrota Comprehensive Plan we will work to include considerations for hazards such as flooding.	City
4	Severe Winter & Summer Storms	Local Planning & Regulations	Ensure new development is built to guidelines to reduce risk of damage or failure from extreme storm events.	Existing Moderate 2025-2030	City Admin, City Public Works	The city has a contract with MNSPECT to enforce the MN State Building Code, including building, mechanical and plumbing inspections. Our Planning commission oversees the zoning code requirements for new developments, variances, subdivisions, etc.	City Funding

CITY OF ZUMBROTA

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	Install backup generators for key city facilities and critical infrastructure.	Existing High 2025-2030	City Admin, City Public Works	The city plans to install a generator for our City Hall/Police building & replace the generator at the Fire Hall. We also plan to update the generator at the Fire Hall for use as a secondary emergency command center. We additionally plan to purchase a generator for Well #3 to ensure water availability in case of a fire or other emergency. Purchase of generators will be made as city funding allows. If FEMA grant funding is available for generators, this is something the city would consider applying for.	City Funding, Possible FEMA Grant Funding
6	Extreme Cold	Mitigation Preparedness & Response Support	Identify churches, and other locations to shelter residents in the event of an extended power outage.	New Moderate 2025-2030	City EM	City Hall serves as one of our shelters if people are displaced from a severe storm event or extended power outage. The Fire Hall is the secondary location for a local shelter and emergency management coordination. The city will continue to identify other locations for sheltering as backups.	City Funding
7	Extreme Cold	Education & Awareness Programs	Encourage residents to be prepared for periods of extreme cold, potential power outages, and how to avoid frozen pipes.	Existing High 2025-2030	City Admin / City EM	We will use our city website and utility bills to notify residents to be aware of the dangers of extreme cold and to run a warm stream of water to avoid freezing pipes during sub-zero weather.	City Funding
8	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will establish and enforce a water conservation ordinance as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage.	City

CITY OF ZUMBROTA

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
9	Flooding	Natural Systems Protection / Structure & Infrastructure Projects	Continue working with Goodhue County SWCD to address bank stabilization issues along the North Zumbro River.	New Moderate 2025-2030	City Public Works in coord with Goodhue SWCD	The North Zumbro River has had changes since the flood buyouts after the 1998 flood & the Highway 58 bridge was replaced allowing for more flow. However, when floods do occur, there is substantial erosion to the banks of the river and amenities within the park. We will continue to work with the Goodhue SWCD to mitigate against these issues.	SWCD Cost Share funding
10	Flooding	Local Planning & Regulations	Ensure that personnel, plans, and equipment are in place to handle flood mitigation and response.	Existing Moderate 2025-2030	City Admin / City EM, City Public Works	We have a city engineer and a public works director that address road maintenance issues for flooding (culverts, repetitive flooding). We have a flow indicator in Wanamingo that will give us a few hours of notice of an impending flood in our Covered Bridge Park and we have a Park Flooding Procedures document that outlines things we have to do prior to the arrival of high water.	City Funding
11	Flooding	Structure & Infrastructure Projects	Address necessary infrastructure improvements to the Waste Water Treatment Plant (WWTP) that is located within the floodplain.	New High 2025-2030	City Admin in coord with City Public Works	The city wishes to address infrastructure improvements to the WWTP as flooding has pushed the city to bypass treatment and send untreated waste water into the Zumbro River. The city is working on a regional WWTP and collection system with neighboring communities. The city may wish to apply for future FEMA grant funding to support the WWTP after necessary improvements have been identified.	City, FEMA BRIC or HMGP grant funding