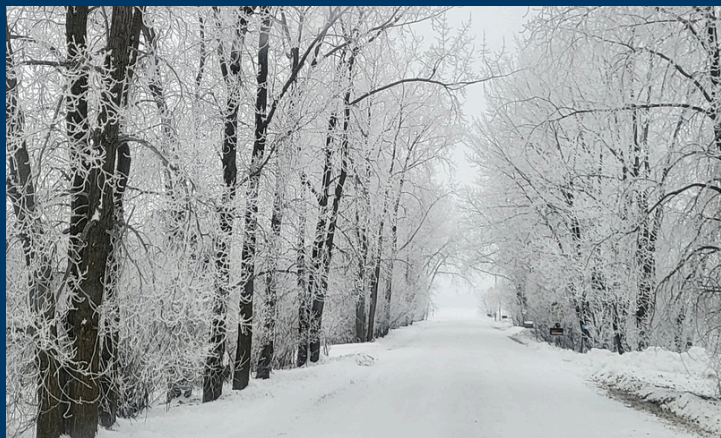
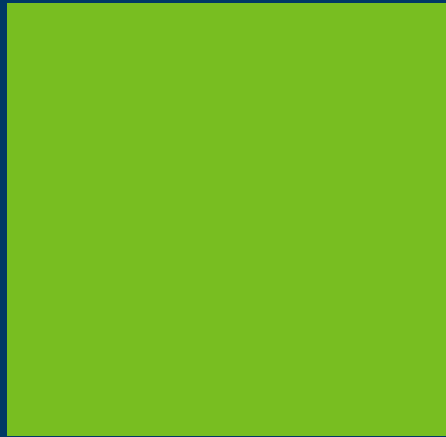


Pennington County 2024 Hazard Mitigation Plan



Pennington 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).

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

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

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

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

Pennington 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 Pennington County Emergency Management to facilitate an update to the 2016 Pennington 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 Pennington 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 Pennington County, including the cities of St. Hilaire and Thief River Falls. The City of Goodridge (population 116) was included in the planning process, but ultimately did not contribute as a plan participant and is not seeking to adopt the plan. The Pennington 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 Pennington County after final approval by FEMA (see Appendix B).

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

- Include more recent data documenting the critical infrastructure and hazards faced by Pennington 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 Pennington 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 Pennington County HMP planning team is headed by the Pennington County emergency manager, who is the primary point of contact. Members of the Pennington 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 Pennington County HMP website](#)

Table 1. Hazard Mitigation Planning (HMP) Team

| Name | Agency/Organization | Participant Title |
|--------------------|--|---------------------------------------|
| Erik Beitel | Pennington County Emergency Management | Emergency Management Director |
| Mike Flaagan | Pennington County Highway Dept. | County Engineer |
| Kevin Erickson | Pennington County | County Coordinator |
| Carl Bruzek | Pennington County | County Assessor |
| Dave Sorenson | Pennington County | County Commissioner |
| Seth Nelson | County government | County Commissioner |
| Neil Peterson | Pennington County | County Commissioner |
| Bruce Lawrence | Pennington County | County Commissioner |
| Ashley Benson | Pennington County | Assessor/Appraiser |
| Seth Vettleson | Pennington County Sheriff's Office | County Sheriff |
| Kayla Jore | Pennington & Red Lake County Public Health | Director |
| Allison Matter | Pennington & Red Lake County Public Health | PHEP Coordinator |
| Brian Steenerson | City of St. Hilaire | Council Member |
| Bradley Naplin | City of St. Hilaire Fire & Rescue | Fire Chief |
| Angela Philipp | City of Thief River Falls | City Administrator |
| Brian Holmer | City of Thief River Falls | Mayor |
| Travis Giffen | City of Thief River Falls | Public Works Director |
| Rick Beier | Thief River Falls Fire Department | Fire Chief |
| Debra Dietz | North Township | Clerk |
| John Kimball | Deer Park Township | Clerk |
| Peter Nelson | Pennington SWCD | District Manager |
| Christopher Schenk | American Red Cross | Disaster Program Manager |
| Mark Borseth | Digi-Key Electronics | Director, Corporate Facilities |
| Stephanie Klamm | MN DNR | Area Hydrologist |
| Jennifer Olson | MN HSEM | Region 3 Regional Program Coordinator |
| Tomas Loberg | Goodridge School District | Superintendent |
| Josh Johnson | Marshall County | Emergency Management Director |
| Christopher Muller | Beltrami County | Emergency Management Director |

2.2 Review of Existing Plans, Capabilities & Vulnerabilities

Pennington County and its local communities utilize a variety of planning documents. These documents may include a Comprehensive/Master Plan, Emergency Operations Plan, Transportation Plan, etc. (see Section 5.1.3 and Appendix D). U-Spatial consulted planning documents that direct community development and influence land use decisions for the county and its jurisdictions to inform the HMP. The planning process also incorporated the existing natural hazard mitigation elements from previous planning efforts. In addition, the 2024 Minnesota All-Hazard Mitigation Plan was consulted.

All possible types of mitigation actions (land use regulations, building codes, nature-based solutions, etc.) are considered to address current and future risks. U-Spatial consultants worked closely with the Pennington County emergency management director and other key county staff and local city officials to collect feedback on local mitigation capabilities and vulnerabilities that either support or hinder the ability to mitigate against natural hazards countywide and at the local level. Building codes offer a way to incorporate geographically relevant and best available building science with policies and programs. The Cities of Thief River Falls and St. Hilaire have adopted the Minnesota Building Code. Townships including North, Rocksbury, Sanders, Norden, and Numedal have building permitting processes in place.

The following is a summary of the assessment tools used to gather information on local capabilities and vulnerabilities during the planning process:

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

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

2.3 Planning Process Timeline and Steps

To update the 2016 Pennington County HMP, U-Spatial consultants worked in coordination with Pennington County Emergency Management and members of the planning team. The updated plan

includes new data documenting the types of hazards faced by Pennington County residents and emergency planning officials as well as new thinking on how to address these hazards.

2.3.1 Pennington County Stakeholder Coordination

Two planning team meetings took place via Zoom video conference hosted by U-Spatial. Meeting participants included representatives from Pennington 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 opportunity for public input, Pennington County issued two news releases announcing the plan update and inviting public review and feedback on the draft plan. The news release provided information on where to view the plan and submit comments. The County HMP website, hosted by U-Spatial, and the feedback and mitigation action ideas survey will remain available through the five-year planning period to foster public engagement. Table 2 documents dates of Hazard Mitigation update meetings and public outreach. The public feedback period for the draft plan was open from 10/21/24 to 11/4/24, for a period of 15 days. Appendix G provides documentation of the public outreach for feedback on the draft plan by Pennington County and jurisdictions.

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

| Event | Date | Appendix |
|--------------------------|----------|--|
| Kickoff Webinar | 4/28/23 | Appendix F, Planning Team Meetings |
| News Release #1 | 6/7/23 | Appendix G, Public Outreach & Engagement Documentation |
| Planning Team Meeting #1 | 2/7/24 | Appendix F, Planning Team Meetings |
| Planning Team Meeting #2 | 9/25/24 | Appendix F, Planning Team Meetings |
| News Release #2 | 10/21/24 | Appendix G, Public Outreach & Engagement Documentation |

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

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

2.3.2 Overview of Jurisdictional Participation

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

U-Spatial and Pennington 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 Pennington 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 Pennington 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 Pennington 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. Pennington 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 Pennington 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 |
| Pennington County (14,003) | X | X | X | X | X | X |
| City of Goodridge (116)* | X | | | X | | X |
| City of St. Hilaire (271) | X | X | X | X | | X |
| City of Thief River Falls (8,815) | X | X | X | X | X | X |
| Neighboring Jurisdictions: | | | | | | |
| Marshall County | | | | | X | |
| Beltrami County | | | | | X | |

| 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 |
| Clearwater County | | | | | | |
| Red Lake County | | | | | | |
| Red Lake Reservation | | | | | | |

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

Section 3 – Risk Assessment and Vulnerability Analysis

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

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

3.1 Natural Hazard Identification

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

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

The cornerstone of 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 Pennington 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 Pennington 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 Pennington County HMP Update

| Natural Hazards | Current Priority |
|-----------------|----------------------------|
| Flooding | High |
| Tornadoes | High |
| Winter Storms | High |
| Windstorms | Moderate |
| Landslides | Moderate |
| Extreme Cold | Moderate |
| Drought | Moderate |
| Lightning | Low |
| Hailstorms | Low |
| Extreme Heat | Low (but included in plan) |
| Wildfire | Low |
| Dam Failure | Low (but included in plan) |

3.1.2 FEMA- and Minnesota-Declared Disasters and Assistance

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

The Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC), and Flood Mitigation Assistance (FMA) Program are FEMA-administered hazard mitigation assistance programs that provide funding for eligible mitigation planning and projects which reduce disaster losses and protect life and property from future disaster damages (FEMA, 2021). Pennington County has received funding from a hazard mitigation assistance program once: \$15,260 for the project 91.1: Local Multihazard Mitigation Plan (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 Pennington County HMP Website](#)

3.3 Climate Change

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

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

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

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

To help the public understand how the changing climate has affected and is expected to affect the behavior of common weather hazards in 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 5 and Table 6). 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 6). 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 5. 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 |

| Confidence | Hazard | Recent & Current Observations |
|------------|----------------------------------|---|
| 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 6. 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.

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 Pennington County website

3.4 Jurisdictional Change in Risk or Vulnerability Assessment

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

Pennington County

All Hazards: We need to obtain generator/ power backup for the Pennington County Government Center.

Flooding: We have four homes in the city of Thief River Falls along the Red Lake River that have experienced landslide/riverbank erosion issues. The county would like to work with the city to buy out these homes.

Windstorms, Tornadoes: Pennington County is 1 of the 72 counties in the state that have some level of weather radar gap. This is alarming when considering how volunteer weather spotters are used. Many counties are sending weather spotters out into weather, that may not be captured on radar. In addition, when considering how weather alerts are issued, and that at times weather systems are developing and happening below radar coverage, there is also cause for more concern for public safety.

Extreme Cold: We have a high population of senior citizens and also low-income residents who are more vulnerable during periods of extreme cold with power outages. County roads have experienced damages from spring frost heaves or frozen culverts that cause localized flooding.

City of Goodridge

No local vulnerabilities reported.

City of St. Hilaire

All Hazards: We need to obtain a portable generator for our City Hall and Community Center that serves as our local shelter if people are displaced from a severe storm event or extended power outage. We also have a large population of senior citizens that do not use cell phones to receive emergency notifications.

Flooding: Spring flooding has been an issue on the northwest end of town along the coulee and a culvert on Minnesota Street.

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

Windstorms, Tornadoes: We have 1 mobile home park within the city that does not have a storm shelter and residents are vulnerable to high wind and tornado events. Our municipal campground is also active during summer and fall months with RVs and campers and does not have a storm shelter.

Extreme Cold: Residents are susceptible to dangers from extreme cold, especially if the power goes out during winter storm events. We have a high population of senior citizens and also low-income residents who are more vulnerable during these events. In the past we have experienced frozen water services and damage to roads from spring frost heaves.

City of Thief River Falls

Extreme Cold: The community consists of many lower income residents and senior citizens who would be vulnerable during extreme cold and power outages.

Landslides: There are 4 homes along Riverside Ave (Near Hartz Park along the Red Lake River) in Thief River Falls that have been identified as at risk for slope failure.

Windstorms, Tornadoes: Five trailer parks are in the city, placing many people in a vulnerable situation with windstorms. One park has an onsite storm shelter, the other parks do not. The evacuation plan for the parks that do not have an on-site shelter are directed to utilize one of the two designated shelters within the city. The Ralph Englestad Arena is located on the Northwest side of town. The National Guard Armory is centrally located.

3.4.2 Future Development

Because Pennington 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. Pennington 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 Pennington 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.

Pennington County

No changes in vulnerability to report.

City of Goodridge

No changes in vulnerability to report.

City of St. Hilaire

When the campground is full, the biggest concern is evacuating them quickly to the storm shelter in the case of a tornado or high windstorms.

City of Thief River Falls

Many of the stormwater infrastructure in our community is aged, and it was sized at maximum capacity. Additional impervious surface and more acute weather events have resulted in some current under-sizing of stormwater transfer facilities. Non-budgeted end-of-life facilities put us at risk financially.

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 Pennington 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 Pennington County will address the maintenance of this plan, including monitoring, evaluation, and update of the plan, as well as implementation and continued public involvement.

Section 4 – Hazards

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

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

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

4.1 Flooding

Flooding is the most significant and costly natural hazard in Minnesota. Eleven of the 20 federal disaster declarations in Pennington County included flooding. Flooding is considered a high priority hazard in Pennington County. The city of Thief River Falls, the county seat, deals with flooding issues from both the Red Lake River and the Thief River.

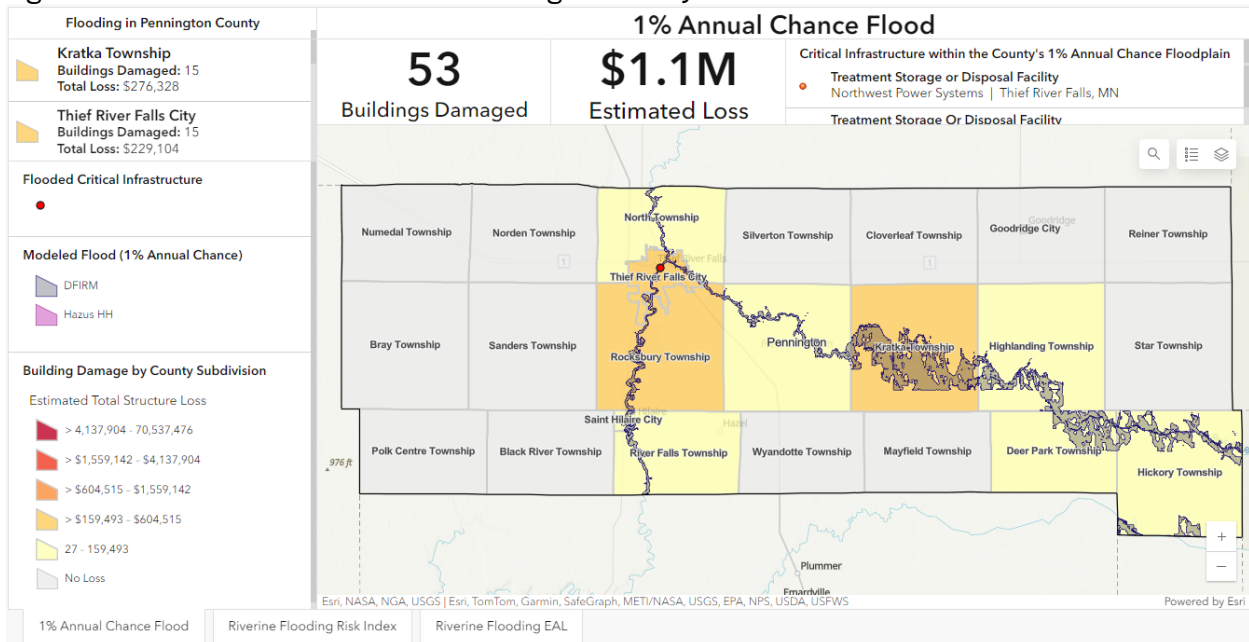
4.1.1 Probability of Occurrence

From 1997 through 2023, the NCEI Storm Events Database has recorded five flood and ten flash flood events. Pennington County has experienced one flash flood event every 2.5 years and one riverine flood event every 4.9 years on average during this period.

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

Minnesota HSEM has encouraged a potential risk and economic loss analysis for a 1% annual chance flood using the FEMA tool, Hazus for ArcGIS. A Digital Flood Insurance Rate Map (DFIRM) defined the 1% annual chance flood boundary. 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 Pennington County HMP website (Figure 1), where it is available in an interactive form.

Figure 1. 1% Annual chance flood in Pennington County



4.1.2 Vulnerability

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

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

Hazus reports the percent damage of each building in the floodplain, defined by the centroid of each building footprint. After formatting the tax and spatial data, 11,555 points were input to Hazus to represent buildings with a total estimated building plus contents value of \$1.9 billion. Approximately 65% of the buildings (and 53% of the building value) are associated with residential housing.

The estimated loss by occupancy class for the entire county is shown in Table 7.

Table 7. Summary of 1% annual chance flood loss estimation by occupancy class

| General Occupancy | County Total Buildings | County Building and Contents Value | Floodplain Total Buildings | Floodplain Building + Contents Value | Buildings with damage | Building + Contents Loss |
|-------------------|------------------------|------------------------------------|----------------------------|--------------------------------------|-----------------------|--------------------------|
| Residential | 7,518 | \$1,027,469,070 | 38 | \$6,485,400 | 35 | \$900,058 |
| Commercial | 462 | \$265,379,356 | 1 | \$98,200 | 1 | \$52,511 |
| Other | 3,575 | \$628,524,270 | 18 | \$1,651,600 | 17 | \$127,410 |
| Totals | 11,555 | \$1,921,372,696 | 57 | \$8,235,200 | 53 | \$1,079,979 |

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 Pennington County.

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

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

It is important to identify any critical infrastructure within the 1% annual chance floodplain, given the higher risk of the facility or infrastructure being incapacitated or destroyed during a flood. In Thief River Falls, Northwest Power Systems was found to be at risk in the 1% annual chance flood. This facility handles hazardous substances according to the EPA Resource Conservation and Recovery Act information system. No other information is available.

Community Vulnerability

Potential economic losses were estimated by Census Minor Civil Division. The City of Thief River Falls and Kratka Township would 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 Pennington County HMP website.

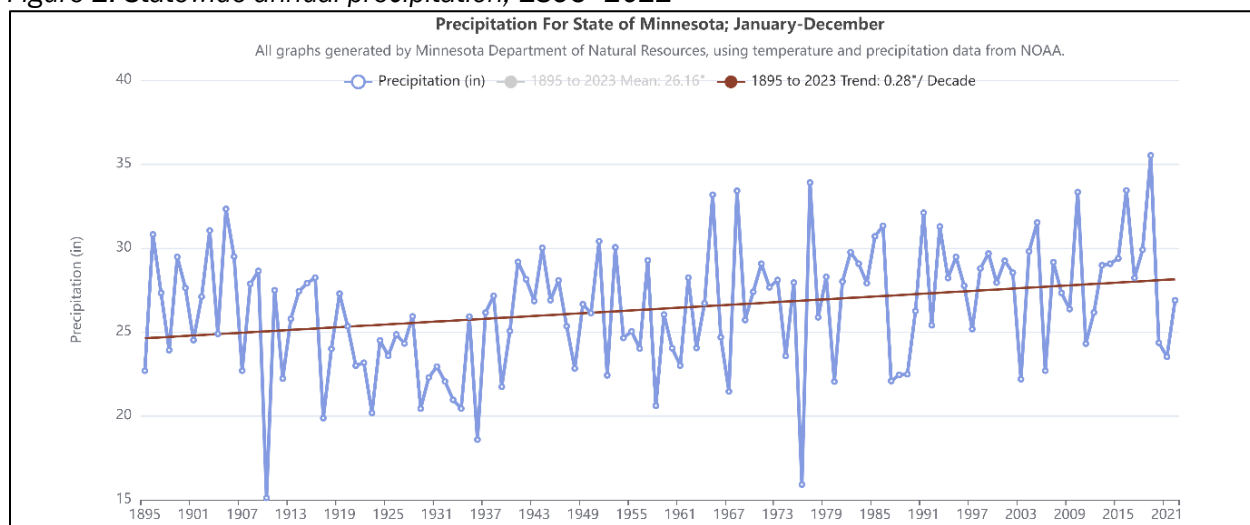
The status of jurisdictional participation in the National Flood Insurance Program and any repetitive loss properties are detailed in Section 5.1.1. National Flood Insurance Program (NFIP).

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

4.1.3 Flooding and Climate Change

Higher temperatures globally have evaporated more surface and ocean water into the atmosphere, which, in turn, has provided more potential moisture for precipitating weather systems. In 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, 2024).

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

4.1.4 Program Gaps and Deficiencies

Pennington 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. Pennington County continues to assist with road infrastructure mitigation projects to reduce the impacts of localized flooding.

Streambank Failures: Flooding and streambanks failures have been a recent issue threatening homes on Riverside Ave near Hartz Park along the Red Lake River. Significant outside grant funding is necessary in order to conduct property buyouts of 4 homes that are at risk of slope failure in Thief River Falls.

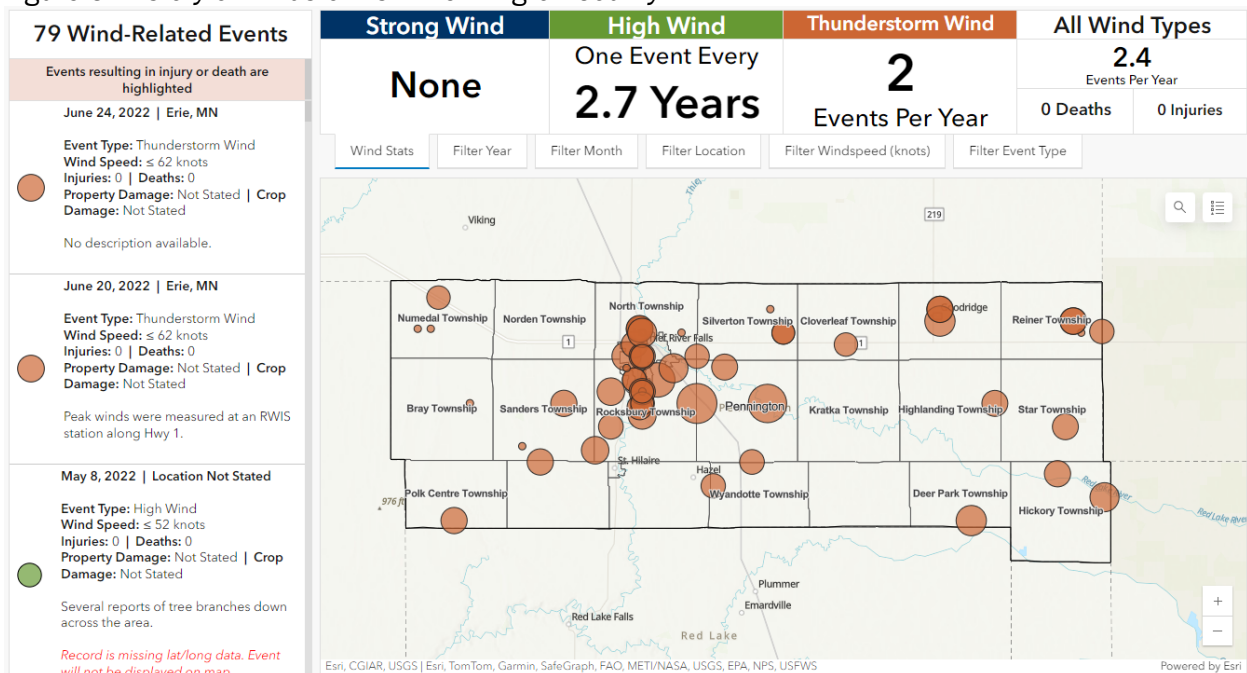
Funding: The county needs funding assistance to improve roads and culverts that experience repetitive flooding. Significant State and Federal funding is needed to construct infrastructure projects to prevent, reduce, and mitigate the impacts of high rain events and flooding.

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

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

Figure 3. History of windstorms in Pennington County



4.2.1 Probability of Occurrence

To determine the probability of future wind-related events in Pennington County, records of previous wind-related events (strong wind, high wind, and thunderstorm wind) in Pennington County were examined since 1996, the period of record all wind events have in common. The relative frequency of all wind-related events from January 1996 to February 2024 is 2.4 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

Pennington 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 Pennington 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.

Pennington 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.

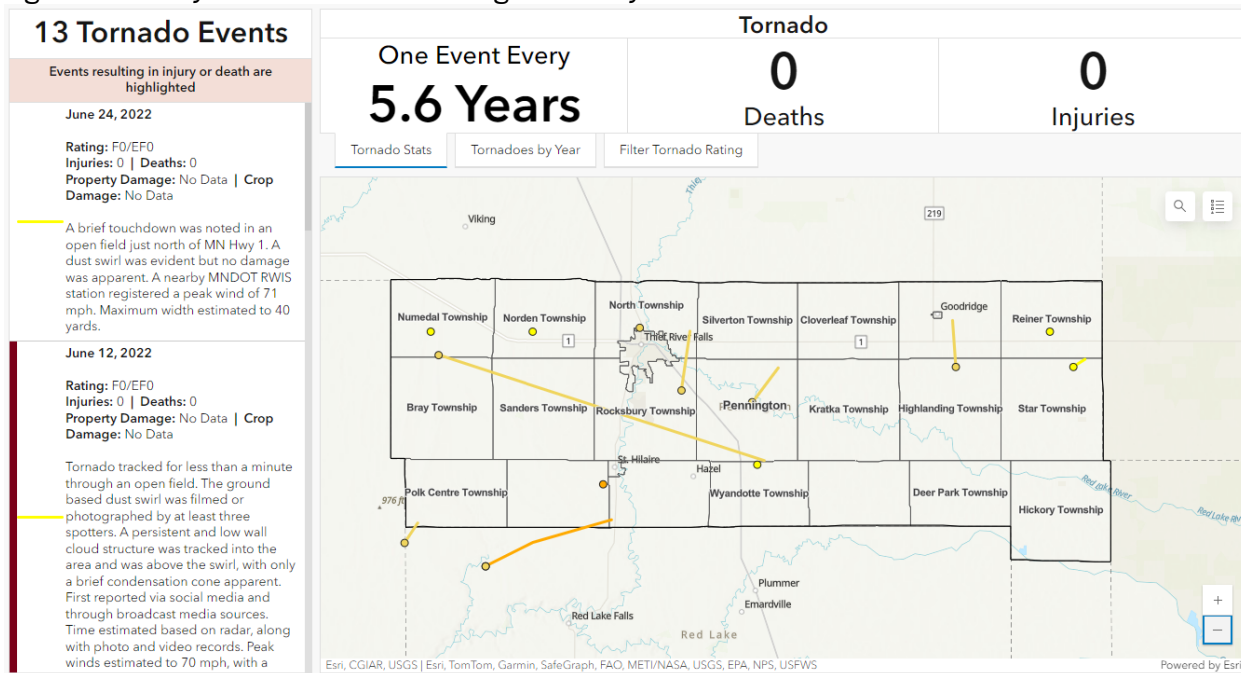
Storm Shelters and Tornado Safe Rooms: There are areas throughout Pennington County without viable storm shelters or tornado safe rooms where there are populations vulnerable to high wind and storm events, such as mobile home parks and campgrounds. A coordinated approach is needed to identify where storm 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 Pennington County is shown in Figure 4; an interactive version of this map can be found on the Pennington County HMP website.

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

Figure 4. History of tornadoes in Pennington County



4.3.1 Probability of Occurrence

Estimating the probability of future tornadoes in Pennington County was done using two methods. The first method summed the total number of tornadoes that either touched down in or traveled through the county. This sum was divided by the number of years tornado data was recorded, resulting in the annual relative frequency of tornado occurrences in the county. Based on records in the NCEI Storm

Events Database through January 2024, there has been one tornado every 5.6 years in Pennington County. These 13 tornadic events occurred in 10 of the 72 years on record.

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

For any location in Pennington County, there was an annual frequency of 2.0–3 tornadoes within a 50-mile radius. The historical frequency was the same across the county. These relative frequencies can be used to infer the probability of these events occurring in the future.

4.3.2 Vulnerability

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

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

Above-Ground Power Lines: Most powerlines throughout Pennington 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. Pennington 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.

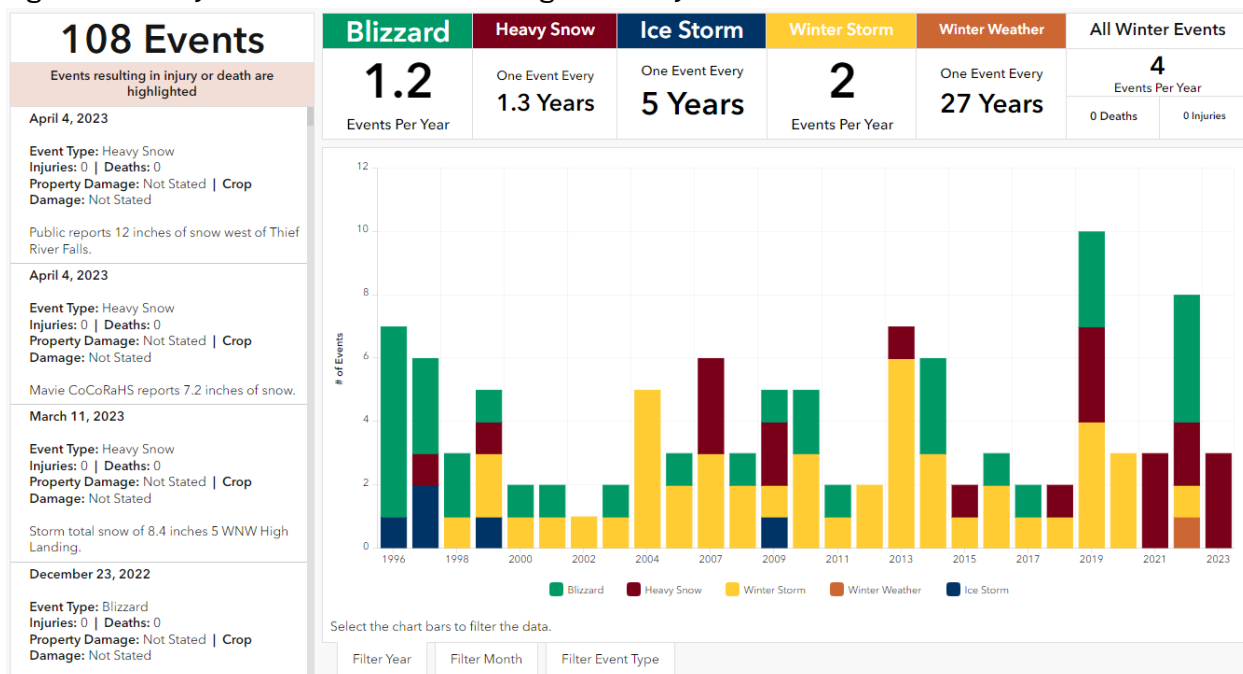
Storm Shelters and Tornado Safe Rooms: There are areas throughout Pennington County without viable storm shelters or tornado safe rooms where there are populations vulnerable to high wind and storm events, such as mobile home parks and campgrounds. A coordinated approach is needed to identify where storm 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 Pennington County is shown in *Figure 5*; an interactive version of this map can be found on the Pennington County HMP website.

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

Figure 5. History of winter storms in Pennington County



4.4.1 Probability of Occurrence

To determine the probability of future winter-related storm events in Pennington County, records of previous events (blizzards, heavy snows, ice storms, winter storms, and winter weather) were summed and divided by the dataset’s period of record, resulting in the annual relative frequency of winter-related storms. Based on records in the NCEI Storm Events Database through January 2024, the relative frequency of winter-related storm events in Pennington County is four 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. It is important that extra consideration be given to the vulnerable populations discussed in Section 3.2. Section 3.4 provides jurisdictional responses of localized vulnerabilities to specific hazards.

4.4.3 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 6 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

Pennington 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 Pennington County are above ground, exposing them to impacts/damage from winter high wind and ice events, potentially leading to localized or extensive power outages.

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

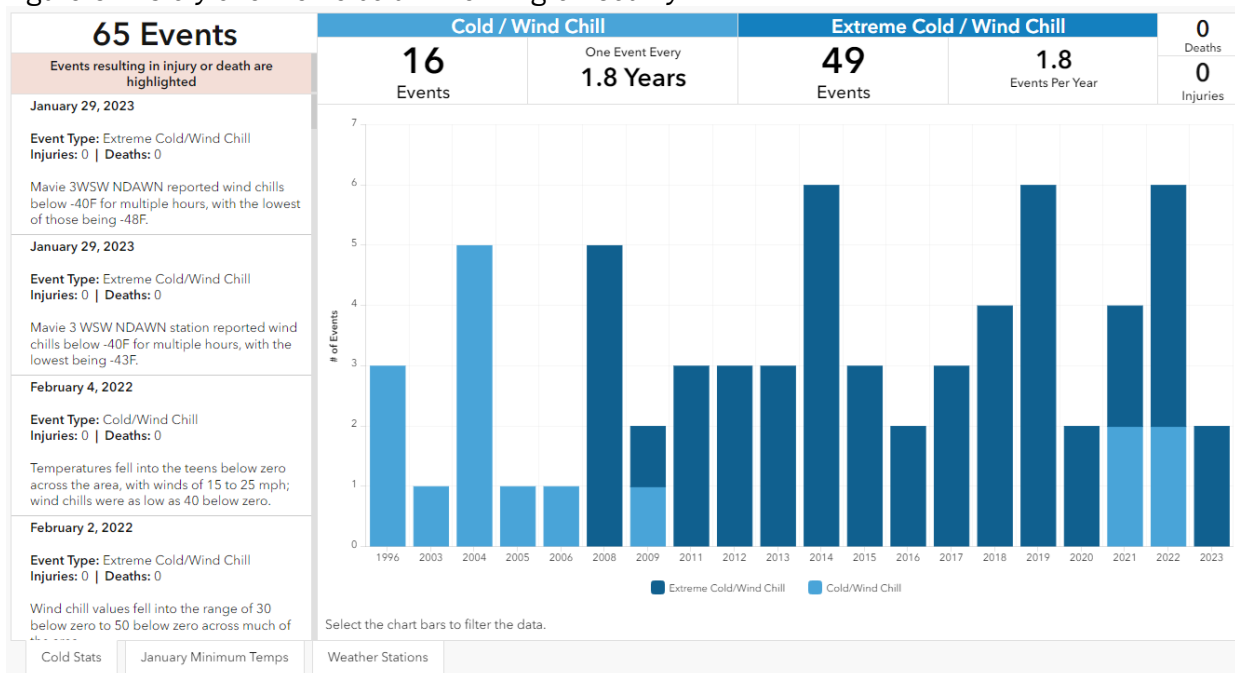
Backup Power: Not all city and townships have backup generator power for their government office or other critical infrastructure if there is an extended power outage due to severe weather. Funding for purchase of generators can be a barrier.

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

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

Figure 6. History of extreme cold in Pennington County



4.5.1 Probability of Occurrence

To determine the probability of future cold-related events in Pennington County, records of previous cold/wind chill and extreme cold/wind chill events were summed and divided by the dataset’s period of record, resulting in the annual relative frequency. Based on records in the NCEI Storm Events Database through January 2024, the relative frequency of extreme cold/wind chill events in Pennington County is 1.8 per year (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 Pennington 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

Pennington 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:

Backup Power: Not all city and townships have backup generator power for their government office or other critical infrastructure if there is an extended power outage due to severe weather. Funding for purchase of generators can be a barrier.

Public Education: Ongoing public education is needed to encourage residents to be prepared for extreme weather, including power outages during periods of extreme cold. Pennington 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. Pennington County's agricultural lands and structures are vulnerable to heat damage and its residents to injury, exacerbation of pre-existing chronic conditions, and even death (Moss, 2017). Medical costs related to extreme heat can be enormous, and with extreme heat estimated to create \$1 billion in health care-related costs in the United States in 2023 (Center for American Progress, 2023). In 2023 in Minnesota, 682 people went to the emergency department and two died from heat-related illness (MDH, 2024).

When the atmospheric moisture content is high, the rate of perspiration from the body decreases and the human body feels warmer (NWS, 2021). Heat stress can be indexed by combining the effects of temperature and humidity.

Data from the Spatial Hazard Events and Losses Database (SHELDUS) for the United States was examined to identify the county's monetary losses due to heat damage to crops. Ranking 53rd among Minnesota counties in crop indemnity payments, heat-related losses for Pennington County totaled over \$839,465.34 (2021 ADJ) for the period of record spanning 1989 to 2022 (CEMHS, 2023).

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

4.6.1 Probability of Occurrence

Based on records in the Midwestern Regional Climate Center (MRCC) that date back to 1991, the average daily maximum temperature for July in Pennington County has historically been in the 78–79 °F range (MRCC, 2021), which is below the 90 °F for 2–3 days criteria for “extreme” heat events (FEMA, 2024). However, the nearest weather station to Pennington County, Red Lake Falls Station, reported daily maximum temperatures above 90 °F a total of 140 times, or an average of 55 days per year. This frequency is lower than most counties in Minnesota.

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.

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

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

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

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

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

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

4.6.3 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).

On average, by mid-century (2040–2059), under a high emissions (SSP 585) scenario, Pennington County may have 7.46 more days/year of temperature greater than 95 degrees F compared to the historical simulations average of 1.76 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

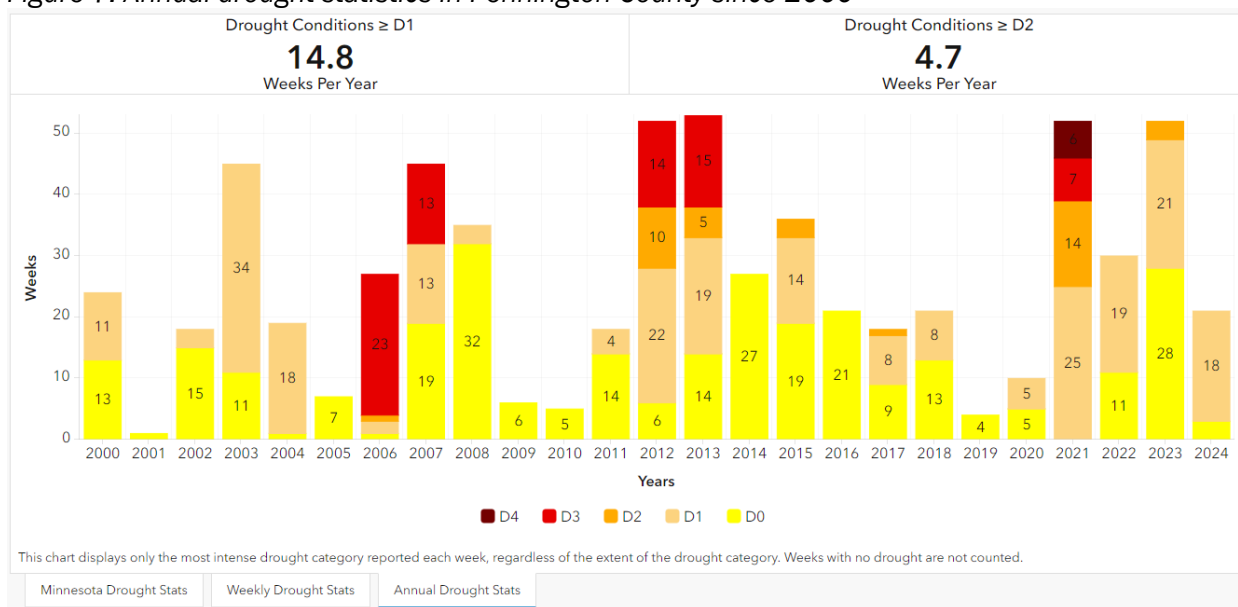
Extreme Heat was considered to be a low priority by the planning team for this HMP. Gaps and Deficiencies were not assessed.

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 7; an interactive version of this dashboard can be found on the Pennington County HMP website.

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

Figure 7. Annual drought statistics in Pennington County since 2000



4.7.1 Probability of Occurrence

To determine the probability of future droughts in Pennington 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–August 6, 2024 for any occurrence of drought ≥ D1 in Pennington County, regardless of the duration of the drought. According to the weekly reported data, the relative frequency of the county experiencing drought conditions ≥ D1 is 14.8 weeks per year, and the relative frequency of drought conditions ≥ D2 is 4.7 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 15 reported drought incidents in Pennington County between 2000 and 2023, impacting seven sectors with greatest impacts to the following sectors: agriculture; plants & wildlife; and relief, response & restrictions (NDMC, 2024a). Since droughts are regional in nature, jurisdictions within Pennington 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, Pennington County's agriculture sector has been impacted by drought more than once, and with 74% of Pennington 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, Pennington County received \$39,955,576.93 (2021 ADJ) in crop indemnity payments due to drought, placing it as the 17th-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

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

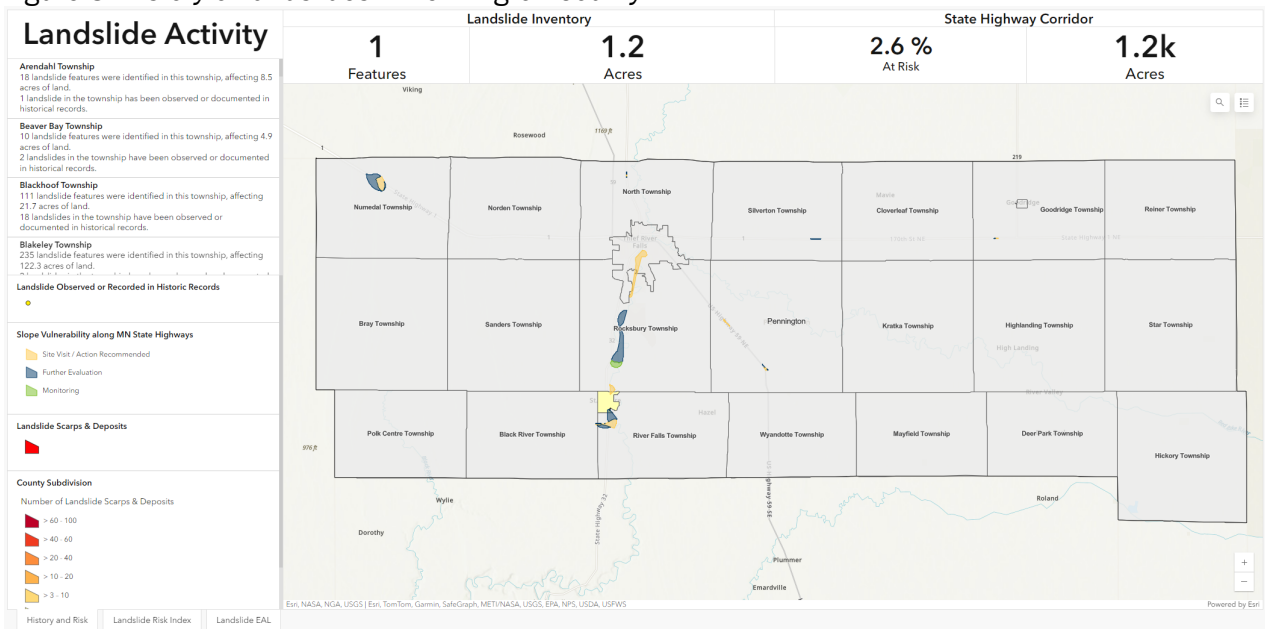
4.8 Landslides

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

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

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

Figure 8. History of landslides in Pennington County



Researchers from eight colleges and universities across Minnesota examined the prevalence of landslides across the state and compiled an inventory of geological activity. This historical landslide inventory was published by USGS (DeLong, et al., 2022). The inventory includes all evidence of historical slides. Pennington County has 228 features in the USGS landslide inventory.

The history of landslides in Pennington County is shown in Figure 8; an interactive version of this map can be found on the Pennington County HMP website.

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

4.8.1 Probability of Occurrence

To determine the frequency of landslides in Pennington County, we require records of previous landslides and the period in which they occurred. Comprehensive data for historical landslide events are not available. The historical data available does not have the associated date of the slope failure. One landslide deposit has been noted in the statewide landslide data inventory in St. Hilaire.

Statewide and national maps suggest that landslide risk in Pennington County is relatively low; however, anecdotal evidence does indicate that there is a risk of landslides in bluff areas and riverbanks. There is a documented increase in frequency of the heaviest 1% of extreme precipitation events (NOAA Climate Adaptation Partnerships, 2022). These extreme rain events are the most likely to cause landslides. The risk to infrastructure and property in Pennington County outside of the Red Lake River corridor is low. Landslides remain a concern to Pennington County Emergency Management.

4.8.2 Vulnerability

The Minnesota Department of Transportation (MnDOT) provided spatial data from a slope vulnerability assessment completed statewide in 2019. This assessment sought to identify slope failure risks along state trunk highways in several MnDOT districts. Then using GIS modeling, researchers mapped and ranked slopes along highways according to failure vulnerability and then developed a method for MnDOT to quantify failure risk for asset and emergency management planning. The assessment resulted in a statewide map also shown the Landslide Risk Dashboard classifying potential risks areas into four categories: high risk—a site visit or action is recommended; moderate risk—further evaluation is required, low risk—the area should be monitored, or no action is required. Three percent of state highway corridor land running through the County is being managed due to risk of slope failure. These areas are primarily within the Red Lake River valley. Preventative action is also recommended in Numedal Township along Highway 1.

4.8.3 Landslides and Climate Change

The conditions that make certain lithologies more vulnerable to erosion, landslides, and mudslides will be exacerbated by the expected increase in the magnitude and frequency of flooding events. The expected increase in storm activity from climate change may increase the risk of soil saturation.

Changing summer storm intensity may result in increased runoff and higher flows, leading to near-channel erosion (DeLong, et al., 2022).

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

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

4.8.4 Program Gaps and Deficiencies

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

Funding for Property Buyouts: Significant outside grant funding is necessary in order to conduct property buyouts of 4 homes that are at risk of slope failure in Thief River Falls.

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 two dams in Pennington County. An interactive version of the dams in Pennington County is available on the [MN State 2024 HMP website](#). Pennington County had no dams classified as High Hazard Dams, one dam classified as a Significant Hazard Dam, and one dam classified as a Low Hazard Dam. No dams have been removed.

4.9.1 Probability of Occurrence

Extreme precipitation is only one factor contributing to dam failure, and the possibility of failure is dam-specific, relating to both environmental and structural conditions. There are no noted dam incidents in Pennington County. Total dam failures are extremely unlikely if the dam is maintained in compliance with Minnesota’s Dam Safety Program. The likelihood of failure in Pennington 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 8 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 8. Downstream hazard potential classification criteria

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

SOURCE: (USACE, 2008)

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

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

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

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

4.9.4 Program Gaps and Deficiencies

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

Section 5 – Mitigation Strategy

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

5.1 Community Capability Assessments

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

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

Information from the capability assessments was used to support the 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 9 lists and describes jurisdictional participation in the National Flood Insurance Program (NFIP).

Table 9. NFIP participation in Pennington County

| FEMA Plan Requirements Plan Review Tool, Section C2 | | Description |
|---|--|---------------------------------------|
| Name of Community | | Pennington County |
| Participation in the NFIP | | Participating – Entry date 05/03/1990 |
| FEMA Map | | FEMA-mapped high-risk areas |
| Current Effective Map Date | | 12/01/2022 |
| Potential Buildings Damaged in Floodplain (including all townships and cities) | | 53 |
| 1. Adoption of NFIP minimum floodplain management criteria via local regulation | Adoption of current floodplain ordinance: 10/25/2022 | |
| 2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable | 10/25/2022 | |
| 3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs | Pennington County enforces requirements of the NFIP through the county’s floodplain ordinance (Pennington County Floodplain Management Ordinance), adopted 10/25/2022 and effective 11/2/2022 (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 Pennington County. The Pennington SWCD 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: Peter Nelson, Pennington Soil and Water Conservation District Manager | |
| 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 Saint Hilaire |
| Participation in the NFIP | | Participating – Entry date 07/06/1984 |
| FEMA Map | | FEMA-mapped high-risk areas |
| Current Effective Map Date | | 12/01/2022 |
| Potential Buildings Damaged in Floodplain | | 2 |

| FEMA Plan Requirements Plan Review Tool, Section C2 | Description |
|---|---|
| 1. Adoption of NFIP minimum floodplain management criteria via local regulation | Adoption of current floodplain ordinance: 8/8/2022 |
| 2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable | 8/8/2022 |
| 3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs | The city of Saint Hilaire enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 8/8/2022 and made effective 8/31/2022 (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: Margret Peterson, 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 Thief River Falls |
| Participation in the NFIP | Participating – Entry date 07/03/1985 |
| FEMA Map | FEMA-mapped high-risk areas |
| Current Effective Map Date | 12/01/2022 |
| Potential Buildings Damaged in Floodplain | 15 |
| 1. Adoption of NFIP minimum floodplain management criteria via local regulation | Adoption of current floodplain ordinance: 12/6/2022 |
| 2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable | 12/6/2022 |
| 3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs | The city of Thief River Falls enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 12/6/2022 and made effective 3/1/2023 (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: Mark Borseth, Zoning Administrator |

| FEMA Plan Requirements Plan Review Tool, Section C2 | Description |
|---|--|
| 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 Goodridge |
| Participation in the NFIP | NOT Participating |
| FEMA Map | No FEMA-mapped high-risk areas 12/1/2022 NSFHA (No Special Flood Hazard Area) |

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

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

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

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

Pennington County has no RL or SRL Properties. For more on the areas that flood repeatedly in Pennington County, see the [Pennington County Flooding page](#).

5.1.2 Plans and Ordinances

Pennington 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

Pennington County has numerous plans and programs in place to address natural hazards. Some of these programs are specific to a hazard and others address impacts and human safety for many types of events (“All-Hazards”). For the purpose of grouping related natural hazards, “Summer Storms”

encompasses Tornadoes, Windstorms, Lightning, and Hail. Following is a description of the plans and programs in place by Pennington County to support mitigation for the hazards addressed in this plan.

All Hazards

All Hazards Emergency Operations Plan: Pennington 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: Pennington 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 Pennington County Emergency Management website page.

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

Preparedness Outreach & Public Education: Pennington County Emergency Management utilizes the Pennington County website 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. Pennington County Emergency Management and Pennington County Public Health 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, Pennington County Emergency Management works in coordination with Pennington & Red Lake County Public Health, the American Red Cross, and local governments/Fire & EMS to provide mass care services as needed. The county EOP includes plans, procedures, and resources available for mass care sheltering. Primary sheltering locations include the Thief River Falls Engelstad Arena (REA) and the National Guard Armory, both of which have back-up power sources.

NOAA Weather Radios: Pennington 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.

StormReady Community: Pennington County is a NOAA and NWS registered StormReady Community. As a StormReady Community the county has met and maintains certain criteria for plans and programs in place to improve hazardous weather operations and public readiness.

Backup Power: Pennington County works to ensure the continuity of operations of county government services and critical infrastructure in the event of an extended power outage. A majority of county building facilities have generator backup or generator hookup capabilities. The City of Thief River Falls has hydro-electric power as back up the hospital or other areas of the city.

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

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

Severe Winter Storms

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

Winter Hazard Awareness Week: Pennington 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. Pennington 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 Pennington County Highway Department conducts winter road maintenance on county roads for the removal of snow and ice control. 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.): Pennington County works to relay severe spring and summer weather statements (such as for thunderstorms, windstorms, or tornadoes) received from the NWS to help alert residents and visitors to hazardous conditions.

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

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

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

Extreme Cold

Emergency Notifications: Extreme cold temperature warnings are issued by the National Weather Service. Pennington County Emergency Management works to relay extreme cold temperature warnings from the NWS to help alert residents and visitors to hazardous conditions. The Pennington 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: Pennington County Emergency Management and Pennington County Public Health promote public awareness of personal safety measure to take during periods of extreme cold, such as sharing information via Facebook posts.

Emergency Sheltering: In the event of an extended power outage coupled with a period of extreme cold, Pennington County Emergency Management will work with Pennington County

Public Health and local Fire or EMS agencies as needed to assist vulnerable residents such as the elderly who may need temporary sheltering.

Drought

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

Precipitation Monitoring: The Pennington 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.

Landslides

Streambank Failure Studies and Property Buyouts: There are 4 homes along Riverside Ave (Near Hartz Park along the Red Lake River) in Thief River Falls that have been identified at risk for slope failure. The Pennington SWCD and Pennington County have been working with the landowners, community leaders, and engineers to determine the best solution. After the 2022 spring flood, Braun Intertec completed Geotechnical Engineering work and their recommendation was property buyouts. This is an effort that is in progress during the 2023-2024 Pennington County HMP update.

Flooding

National Flood Insurance Program (NFIP): Pennington County has FEMA Mapped High Risk Areas and participates in the NFIP. Initial entry date into the program was 05/03/1990.

Floodplain Administrator: The Pennington Soil and Water Conservation District Manager is the county's designated Floodplain Administrator, who is responsible for implementing the requirements of the NFIP.

Floodplain Ordinance: The Pennington County Floodplain Management Ordinance, adopted 10/25/2022, establishes the flood plain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts. The Pennington SWCD 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: Pennington County's current effective FEMA flood map date is 12/01/2022. The Pennington SWCD is the repository for the floodplain maps for the county. The SWCD assists county residents in determining whether their property is affected by an officially mapped flood area.

Shoreland Ordinance: The Pennington SWCD oversees shoreland management and permitting for building within any shoreland area.

Transportation Plan: The Pennington County Highway Department maintains update of the county's 5-year transportation plan and schedules projects for implementation.

Minnesota Buffer Law: The Pennington 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): Pennington SWCD and the Red Lake Watershed District have participated in the Red Lake River 1W1P, Thief River 1W1P, and Clearwater River 1W1P. These plans address regional watershed planning which include measures for flood mitigation.

Dam/Levee Failure

Thief River Falls Municipal Dam: The City of Thief River Falls owns, inspects, and maintains the hydroelectric dam within the city. There is an Emergency Action Plan in place, last revised on 2/27/2018.

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 Pennington County Plan. This framework, as outlined below, will allow for integration of the mitigation actions that are listed by Pennington 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 10.

Table 10. Mitigation strategies and action types

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

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

Local leaders work together with the Pennington 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 Pennington 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 Pennington 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 Goodridge, St. Hilaire, and Thief River Falls.

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

The following is an overview the mitigation action charts and 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 10 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 Pennington 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 11 provides criteria that were taken into consideration in the process.

Table 11. 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 Pennington County Mitigation Action Chart

The Pennington County Mitigation Action Chart is provided in Table 12. 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 12. Pennington 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 | Pennington County Emergency Management (PCEM) | Pennington 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 Pennington 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. | County Funding |
| 2 | All Hazards | Education & Awareness Programs | PUBLIC OUTREACH Conduct outreach to the public to increase awareness and preparedness for severe weather events, periods of extreme temperatures, and extended power outages. | Existing High Ongoing | PCEM | Pennington County Emergency Management utilizes the Pennington County website 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. Pennington County Emergency Management and Pennington County Public Health pages provide emergency preparedness information and resource links for the public. PCEM also participates in the NWS annual Severe Weather Awareness Weeks in April and November each year. | County Funding |
| 3 | All Hazards | Mitigation Preparedness & Response Support | EOP PLANNING Ensure the county’s Emergency Operations Plan (EOP) is updated and addresses policies & procedures needed to support EM functions prior to, during, and following a disaster. | Existing High Ongoing | PCEM | Pennington 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 |

| # | Hazard | Mitigation Strategy | Mitigation Action | Status Priority Timeframe | Responsibility | Comments on Implementation & Integration | Possible 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 Planning., GC Public Works in coord with local gov'ts | Pennington 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. Pennington County uses its Shoreland 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 | PCEM, PCPH | PCEM, PCPH, 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. PCEM 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. PCEM works with PCPH and our GIS department to maintain information on the location of key facilities such as hospitals, nursing homes, and day cares. | County Funding |
| 6 | All Hazards | Mitigation Preparedness & Response Support | MASS CARE SHELTERING Ensure that plans and designated facilities are in place in order to provide temporary sheltering due to a severe weather or other disaster event. | Existing High 2025-2030 | PCEM, PCPH | In the event of a disaster where temporary sheltering is needed, Pennington County Emergency Management works in coordination with Pennington & Red Lake County Public Health, the American Red Cross, and local governments/Fire & EMS to provide mass care services as needed. The county EOP includes plans, procedures, and resources available for mass care sheltering. Primary sheltering locations include the Thief River Falls Engelstad Arena (REA) and the National Guard Armory, both of which have back-up power sources. | County Funding |

| # | Hazard | Mitigation Strategy | Mitigation Action | Status Priority Timeframe | Responsibility | Comments on Implementation & Integration | Possible Funding |
|----|----------------------|--|---|---------------------------|------------------------------|---|--------------------------------|
| 7 | Extreme Cold | Education & Awareness Programs | EXTREME TEMPS PUBLIC OUTREACH Provide outreach and education to the public on personal safety measures to take during periods of extreme cold. | In-Progress High 2024 | PCEM, GCPH | PCEM works to share information received from the Grand Forks National Weather Service (NWS) Forecast Office when periods of extreme cold are forecast and occurring. Public education regarding extreme temperatures also occurs during the NWS Severe Weather Awareness weeks that occurs in November each year. | County Funding |
| 8 | Extreme Cold | Mitigation Preparedness & Response Support | WARMING CENTERS Work with local communities to develop plans for operating warming centers for those who are vulnerable during periods of extreme cold temperature events. | New High 2025-2030 | PCEM | This is an ongoing part of PCEM's emergency preparedness planning. Primary sheltering locations include the Thief River Falls Engelstad Arena (REA) and the National Guard Armory, both of which have back-up power sources. 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. PCEM is available to assist communities in this planning as needed. | County and Local Gov't Funding |
| 9 | 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 | Pennington County Hwy. Dept. | The Pennington County Highway Department conducts winter road maintenance on county roads for the removal of snow and ice control. 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 |
| 10 | 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 | PCEM in coord with NWS | PCEM works with the Grand Forks, ND NWS to offer this training on an annual basis to local fire and law enforcement departments and local residents that wish to be trained as spotters. | National Weather Service |

| # | Hazard | Mitigation Strategy | Mitigation Action | Status Priority Timeframe | Responsibility | Comments on Implementation & Integration | Possible Funding |
|----|-------------------------------|--|--|----------------------------|--|--|--|
| 11 | 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 | PCEM in coord with local jurisdictions | Outdoor warning sirens are located throughout the county (Goodridge -1, St. Hilaire - 2, Smiley Twp - 1, Thief River Falls - 6) and are tested monthly by the Pennington County Sheriff's Office in coordination with local jurisdictions. Warning sirens are owned and maintained by the community where they are located. | County Funding & local jurisdictions |
| 12 | 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 | PCEM in coord with local jurisdictions | PCEM will assist any mobile home park or community in their effort to assess and address the need for construction of a storm shelter or tornado safe room. Grant funding may be available for tornado safe rooms from FEMA Hazard Mitigation grant program funding, based on funding availability and application approval. | County Funding, Local Gov't, Possible FEMA Grant Funding |
| 13 | Severe Summer Storms | Local Planning & Regulations | MHP SAFTEY 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 | Pennington County Public Health | Pennington County Public Health works 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. Pennington County Emergency Management is available to help communities on this effort. | Municipal or County funding |
| 14 | Severe Winter & Summer Storms | Structure & Infrastructure Projects | POWERLINE RETROFITS Encourage municipal and rural electric coops to address burying powerlines or strengthening power poles to avoid power outages from high wind events and storms. | Existing High 2025-2030 | PCEM, local jurisdictions in coord with electric utility providers | PCEM works with our utility coops and local governments on these efforts as needed. FEMA grant funding may be a source for powerline infrastructure retrofits that eligible rural and municipal electric coops can apply for. | Electric Coops, Possible FEMA Grant Funding |

| # | Hazard | Mitigation Strategy | Mitigation Action | Status Priority Timeframe | Responsibility | Comments on Implementation & Integration | Possible Funding |
|----|-------------------------------|------------------------------|--|-----------------------------|--|--|-------------------------------------|
| 15 | Severe Winter & Summer Storms | Local Planning & Regulations | BUILDING SAFETY Ensure that new development projects follow state building codes in order to withstand the impacts of severe weather events, including roof collapse from heavy snow or damages from high wind events. | Existing Moderate 2025-2030 | Pennington County Assessor's Office | Pennington County recommends new development is built to meet the specifications as provided by the State of Minnesota's Department of Labor and Industry in order to minimize financial burdens and potential safety hazards which can arise from poorly constructed buildings. Local jurisdictions enforce their own building permits respectively. | County Funding |
| 16 | Severe Winter & Summer Storms | Natural Systems Protection | VEGETATION MANAGEMENT Manage trees and other vegetation along roads from severe storm events to reduce risk to powerlines and passing motorists. | Existing Moderate 2025-2030 | PC Highway Dept., Local Utility Providers | The Pennington County Highway Department conducts vegetation management along county roads to reduce the risk of downed trees or branches resulting from severe spring and summer storm events. Local utility providers also work to manage vegetation near power lines to reduce the risk of downed lines and power outages. | County/State/Federal, Utility Coops |
| 17 | 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 | Pennington SWCD - Floodplain Administrator | The Pennington County Floodplain Management Ordinance, adopted 10/25/2022 establishes the flood plain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts. The Pennington SWCD 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. | SWCD Funding |
| 18 | Flooding | Local Planning & Regulations | FLOODPLAIN MAPPING & RISK ASSESSMENT Assess current risk of damages to structures in newly mapped floodplain areas. | Existing High 2025-2030 | Pennington SWCD - Floodplain Administrator | Pennington County's current effective FEMA flood map date is 12/01/2022. The Pennington SWCD is the repository for the floodplain maps for the county. The SWCD assists county residents in determining whether their property is affected by an officially mapped flood area. | SWCD Funding |

| # | Hazard | Mitigation Strategy | Mitigation Action | Status Priority Timeframe | Responsibility | Comments on Implementation & Integration | Possible Funding |
|----|-------------------|---|--|-----------------------------|---|--|----------------------------------|
| 19 | 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 | PC Hwy. Dept. | The Pennington County Highway Department maintains update of the county's Transportation Plan. The PC Hwy Dept is responsible for the survey, design, construction, inspection, maintenance and repair of the county road and bridges system which consists of 258.35 County State Aid Highway Miles, 1.69 County State Aid Municipal Miles, 397.17 County Road Miles and 100 Bridges. | County/State/Federal funding |
| 20 | 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 | Pennington SWCD - Floodplain Administrator | Pennington SWCD and the Red Lake Watershed District have participated in the Red Lake River 1W1P, Thief River 1W1P, and Clearwater River 1W1P. These plans address regional watershed planning which include measures for flood mitigation. | SWCD, Watershed District funding |
| 21 | Flooding /Drought | Local Planning & Regulations | PRECIPITATION MONITORING Continue to participate in the MnGAGE precipitation monitoring program to track information related to high rain events or periods of drought. | Existing Moderate 2025-2030 | Pennington SWCD | The Pennington SWCD participates in the MNgage Minnesota Volunteer Precipitation Observing Program, which is administered by the DNR Minnesota State Climatology Office. | SWCD, MN DNR |
| 22 | 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 | PCEM | PCEM continues to provide public outreach and education during drought periods using the county website and local media platforms. PCEM encourages city and townships to promote drought awareness to residents at the local level. | Pennington County |
| 23 | Drought | Local Planning & Regulations | WATERING RESTRICTIONS Implement watering restrictions during periods of drought as per MN DNR guidance. | Existing High 2025-2030 | PCEM in coord with MN DNR and local jurisdictions | The County and local jurisdictions will establish and enforce watering restrictions as per MN DNR guidelines when advised. | County Funding, Local Gov'ts |

| # | Hazard | Mitigation Strategy | Mitigation Action | Status Priority Timeframe | Responsibility | Comments on Implementation & Integration | Possible Funding |
|----|------------|------------------------------|--|--------------------------------------|--|---|--|
| 24 | Landslides | Local Planning & Regulations | THIEF RIVER FALLS PROPERTY BUYOUTS Work with the city of Thief River Falls and the Pennington SWCD on the buyout of 4 homes along Riverside Ave that are at risk of landslide failure due to erosion. | In-Progress Moderate 2025-2030 | PCEM in coord with the City of TRF and Pennington SWCD | Braun Intertec completed Geotechnical Engineering work and recommended property buyouts. This is a top priority for the City of Thief River Falls. The city, county, and SWCD will be working together to develop to apply for FEMA or other outside grant funding to support property buyouts. | Pennington County, City Funding, SWCD funding, Possible FEMA grant funding, Possible MN DNR Flood Risk Reduction grant funding |

Section 6 – Plan Maintenance

6.1 Monitoring, Evaluation, and Updating the Plan

The Pennington 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 Pennington County HMP.

The Pennington 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 Pennington 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 Goodridge, St. Hilaire, and Thief River Falls, 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 Pennington 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 Pennington 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 Pennington 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 Pennington 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 Pennington County EMD so that progress notes may be maintained for the next plan update.

6.2 Implementation

Pennington 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 Pennington County and its jurisdictions (see Appendix H and Section 5.3). The cities of Goodridge, St. Hilaire, and Thief River Falls participated in the HMP planning process and identified the specific mitigation strategies that they would seek to implement in their communities during the five-year planning cycle. These mitigation actions are provided in Appendix H.

Several implementation tools are available to address hazards. The strategies to use will be part of an ongoing discussion as Pennington 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 Pennington 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 Pennington 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 Pennington 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, Pennington County will take the following measures:

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

Appendices

Appendix A – References

Appendix B – Adopting Resolutions

Appendix C – Local Mitigation Survey Report

Appendix E – Past Mitigation Action Review Status Report

Appendix F – Planning Team Meetings

Appendix G – Public Outreach & Engagement Documentation

Appendix H – Mitigation Actions by Jurisdiction

Appendix A – References

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Appendix B – Adopting Resolutions

Appendix C – Local Mitigation Survey Report



Pennington County Local Mitigation Survey Report

Overview

As part of Pennington 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

| | |
|---------------------------|-----|
| Pennington County | Yes |
| City of Goodridge | No |
| City of St. Hilaire | Yes |
| City of Thief River Falls | Yes |

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

Pennington 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 ST. HILAIRE

Point of Contact:

Name: Margaret Peterson
 Job Title: City Clerk/Treasurer
 Phone: 218-964-5257
 Email: citysth@gvtel.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 | No change |
| Winter Storms | X | High | Increased |
| Tornadoes | X | High | No Change |
| Windstorms | X | High | Increased |
| Lightning | X | Moderate | Increased |
| Hail | X | Moderate | No Change |
| Extreme Cold | | Low | No Change |
| Extreme Heat | | Low | No change |
| Drought | X | Moderate | Increased |
| Wildfire | X | Moderate | No Change |
| 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.

Winter storms, windstorms, and more frequent lightning pose threats to the utility infrastructure On May 13th 2022, Windstorms cause damage to structures in town.

3. LOCAL VULNERABILITIES

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

| Natural Hazard (please list) | Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events. |
|---------------------------------|---|
| All Hazards | We need to obtain a portable generator for our City Hall and Community Center that serves as our local shelter if people are displaced from a severe storm event or extended power outage. We also have a large population of senior citizens that do not use cell phones to receive emergency notifications. |
| Flooding | Spring flooding has been an issue on the northwest end of town along the coulee and a culvert on Minnesota Street. |
| Ice Storms, Blizzards | Much of the city’s municipal electrical service consists of overhead power lines and electrical poles. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches. |
| Windstorms and Tornadoes | We have 1 mobile home park within the city that does not have a storm shelter and residents are vulnerable to high wind and tornado events. Our municipal campground is also active during summer and fall months with RVs and campers and does not have a storm shelter. |
| Extreme Cold | Residents are susceptible to dangers from extreme cold, especially if the power goes out during winter storm events. We have a high population of senior citizens and also low-income residents who are more vulnerable during these events. In the past we have experienced frozen water services and damage to roads from spring frost heaves |

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 been working on purchasing a new generator for the well house & lift station. We have a small mobile home park and campground. These residents may use the activity center for shelter if needed during inclement weather.

5. INCREASE IN VULNERABILITY

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

Severe weather can greatly impact a community’s vulnerability in various ways. One of the most significant ways is through physical damage to infrastructure and housing. Buildings and roads can be destroyed or damaged, leaving residents without shelter or access to necessary resources. Additionally severe weather events can disrupt essential services such as power and water supply, communication systems, and transportation networks. This can lead to a breakdown in emergency response and relief

efforts, further exacerbating the community's vulnerability. Furthermore, severe weather can also have a profound impact on the economic stability of a community, particularly for those who rely on agriculture or tourism as a primary source of income. Crops can be destroyed, businesses can be shut down, and job opportunities can diminish, leading to financial insecurity for many residents.

When the campground is full, the biggest concern is evacuating them quickly to the storm shelter in the case of a tornado or high windstorms.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

We do not have a city website or a Facebook page. We post on the community bulletin board at the Post Office/ City Hall. We also utilize the Pennington County Sheriff's department to get urgent information out to residents when required.

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 residents to sign up for the Pennington County's Code Red Emergency Notification System, which allows residents and visitors 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 Pennington County Sheriff's Office website.

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 out to a private building official to enforce state building codes. The Fire Department/Sheriff's Department works with the mobile home court and the campground for emergency evacuation and sheltering.

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 Mayor & Fire Chief serve as our Emergency Managers who work with the Pennington Co. Sheriff's Department and Eric Beitel with the Pennington County Emergency Response Team.

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 Winter/Spring Weather Awareness Week by posting severe weather awareness information out on our city bulletin board.

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. The city worked with FEMA to update our floodplain ordinance. We also receive donations from the community club to help cover unexpected expenses.

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 – Notify residents in the trailer park and the campground that the activity center is the designated storm shelter.

Sever Winter/Summer Storms – Post information on the city's local bulletin board to encourage residents to sign up for the county's emergency management notification system. Participate in the National Weather Service's Severe Weather Awareness Week.

Extreme Cold – Encourage residents to be prepared for periods of extreme cold and potential power outages. Alert residents to the dangers of extreme cold and freezing pipes.

2. GAPS OR DEFICIENCIES

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

Our city does not have its own website or Facebook page to do better outreach to our residents. Not all of our residents are signed up for the county's emergency notification system.

We need to update our city's Comprehensive Plan to address considerations for future hazard events such as flooding.

We are a small city with limited financial and staff resources to address local mitigation projects.

PART D: SURVEY PARTICIPANTS

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

Margaret Peterson – Clerk/Treasurer
Wayne Johnson -Water/Wastewater
Ken Wiggs – Mayor
Brian Steenerson – City Council Member
Garrett Johnson – City Council Member
Gregg Emmans – City Council Member
Jacob Wilde – City Council Member

Pennington 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 THIEF RIVER FALLS

Point of Contact:

Name: Travis Giffen
 Job Title: Public Works Director
 Phone: 218-689-4292
 Email: tgiffen@trfmn.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 | High | No Change |
| Winter Storms | X | High | No Change |
| Tornadoes | X | Moderate | Increased |
| Windstorms | X | Moderate | Increased |
| Lightning | | | |
| Hail | | | |
| Extreme Cold | X | Moderate | No Change |
| Extreme Heat | | | |
| Drought | | | |
| Wildfire | X | Moderate | No Change |
| Landslides | X | High | Increased |
| 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 Thief River Falls is geographically located where traditional prairie land meets the Red Lake watershed. This combination of geography puts the community at a high risk for windstorms, flooding, and wildfires. Windstorms appear to be more frequent in the area lately. Approximately five years ago,

a microburst windstorm toppled many trees within city limits, causing emergency response to clear several roads. Six trailer parks are in the city, placing many people in a vulnerable situation with windstorms. In the spring of 2022, sustained flooding caused much damage to the city’s infrastructure. The water level reached the highest ever since the power plant dam had been keeping records that started in the 1930’s. Damage to parks, stormwater structures, and lift stations all sustained failures. A FEMA disaster declaration was issued for this time period in 2022.

3. LOCAL VULNERABILITIES

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

| Natural Hazard (please list) | Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events. |
|---------------------------------|---|
| Extreme Cold | The community consist of many lower income resident and senior citizens who would be vulnerable during extreme cold and power outages. |
| Landslides | There are 4 homes along Riverside Ave (Near Hartz Park along the Red Lake River) in Thief River Falls that have been identified at risk for slope failure. |
| Windstorms / Tornadoes | Five trailer parks are in the city, placing many people in a vulnerable situation with windstorms. One Park has an onsite storm shelter, the other parks do not. The evacuation plan for the parks that do not have an on-site shelter, are directed to utilize one of the two designated shelters within the city. The Ralph Englestad Arena is located on the Northwest side of town. The National Guard Armory is centrally located. |

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 of Thief River Falls, Pennington SWCD, and Pennington County have been working together with the landowners, community leaders, and engineers to determine the best solution to address the 4 homes along Riverside Ave that are at risk of failure. After the 2022 spring flood, Braun Intertec completed Geotechnical Engineering work and their recommendation was property buyouts. This is an effort that is in progress during the 2023-2024 Pennington County HMP update. The city, county, and SWCD intend to work together seek FEMA or other outside grant funding to support property buyouts if it becomes possible to do so. The City of TRF also works with management of the trailer parks to help the residents understand the evacuation plan, and where to go in dangerous weather. The city can post educational reminders on the city website and utility bills. This is especially important for the more vulnerable folks that reside in the trailer parks.

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.

Many of the aged stormwater infrastructure in our community is aged, and it was sized at maximum capacity. Additional impervious surface and more acute weather events have resulted in some current

under-sizing of stormwater transfer facilities. Non-budgeted end-of-life facilities put us at risk financially.

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 televises city council meetings, making them available for viewing at any time. We periodically reach out to the local newspaper and radio station for special announcements. Our GIS department creates maps that can be both printed and available online. We can create the documents of our choice and place them in the website. Our utility billing department can place short communications on the bills to be mailed. We have a website that is maintained with in-house staffing.

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 encourage our residents to explore our benefits through our website. We can offer some educational opportunities for natural disasters that could affect our area and post a link to the county's sign up for emergency notification. We could continue to explore areas of opportunity with communication to the residents.

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 long-term planning committee to prioritize and recommend road, bridge, and storm sewer projects for the foreseeable future. We also have a building committee to recommend infrastructure improvements for structures. We have a safety committee for review and recommendations of concern of public safety.

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 Fire Chief is the city's designated Emergency Manager. Our City Council includes a Public Safety Committee. We have a city engineer and a public works director that address road maintenance issues for flooding (culverts, repetitive flooding). We have our own municipal utility that is responsible for mitigating power outages. We have worked with the SWCD and Red Lake Watershed 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.

The city's Fire Department coordinates with various Pennington County officials to participate in the National Weather Service Annual Severe Winter/Spring Weather Awareness Week. In 2023, the city appointed an emergency manager. The newly appointed emergency manager is currently working on an Emergency Operational Plan specifically for the City of Thief River Falls. Public works departments monitor, de-ice, and remove debris of the city's stormwater infrastructure. This practice helps manage stormwater flooding risks during spring thaw. We perform outreach to residents encouraging maintenance and testing of sump pumps to reduce the chances of basement flooding. We also educate and promote our residents to actively clear catch basins that may be clogged by leaves. The city employs a full-time forester, to help with the removal of unhealthy trees and safety risks. There are various structures in the city designated as storm shelters and on file with the emergency manager.

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 traditionally used its own budget to address mitigation project construction. Public Works Department responds quickly to emergency repairs needed to the stormwater infrastructure to prevent further damage. There is a budgeted amount of emergency repairs in our annual stormwater budget. The city's GIS department monitors and maintains maps related to floodplain levels and local ordinance. The city works with SWCD and the local watershed board on projects designed to lower our risk of localized flooding. The Red Lake Watershed Board, MNDOT, Pennington County Highway Department, and the City of Thief River Falls constructed a large stormwater diversion system to transfer stormwater out of the city limits and a re-route to eventually drain back into the red lake river system. This diversion greatly reduced the risk of localized flooding on the west side of the city. In 2022, FEMA declared disaster funding due to sustained spring flooding. The city is currently working on projects with FEMA to repair damage from that event. We a programmed for a 2026 federal grant opportunity to increase our sixth street stormwater capacity located by the Ralph Englestad Arena.

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 – Monitor, maintain, and budget the city's warning siren system for uninterrupted service to the residents. Explore areas of vulnerability and solutions with our mobile park communities. Continue to post and improve the information on the city's website. Encourage residents to sign up for the county's emergency notification system. Promote National Weather Service's- Severe Weather awareness week. Encourage residents to consider removal of privately owned unhealthy and unsafe trees. Develop a tree management inventory.

Flooding - Continue to work with the SWCD, and the local watershed board to deliver quality water management and flood reduction projects for the community. Continue to search for high impact stormwater projects, as well as funding opportunities to align with them.

Landslides - The City of Thief River Falls, Pennington SWCD, and Pennington County have been working with the landowners, community leaders, and engineers to determine the best solution to address the 4 homes along Riverside Ave that are at risk of failure. After the 2022 spring flood, Braun Intertec completed Geotechnical Engineering work and their recommendation was property buyouts. This is an effort that is in progress during the 2023-2024 Pennington County HMP update. The city, county, and SWCD intend to work together seek FEMA or other outside grant funding to support property buyouts if it becomes possible to do so.

Drought - Continue to update and enforce code restrictions for watering during periods of low water(drought).

Wildfire - Continue to create public awareness of the dangers of wildfires.

Extreme cold -Educate residents on best practices during periods of extreme cold and power outages. Utilize utility billing and the city website as opportunities for communication with our residents.

2. GAPS OR DEFICIENCIES

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

Significant outside grant funding is necessary to facilitate property buyouts of 4 homes that are at risk of slope failure(landslide) in Thief River Falls. Most major financial mitigation projects require co-funding to deliver.

PART D: SURVEY PARTICIPANTS

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

Travis Giffen, Public Works Director
Angie Phillip, City Administrator
Rick Beier, Fire Chief/Emergency Manager
Marissa Adam, Police Chief

Appendix D – Plans & Programs in Place

Pennington County

HMP Plans & Programs in Place Form

| EMERGENCY PLANNING CAPABILITIES | Yes/No | Comments |
|--|--------|---|
| Emergency Mass Notification System | Yes | CodeRED |
| Outdoor Warning Sirens (#'s and location) | Yes | Goodridge - 1 St. Hilaire – 2 (1 Smiley Crt) Thief River Falls - 6 |
| Emergency Operations Plan (EOP) | yes | County EOP is typically updated annually |
| Mass Care Sheltering Plan / List of Shelter Facilities | Yes | Addressed in EOP and in coordination with local jurisdictions |
| Tornado Safe Rooms / Storm Shelters | No | Addressed in coordination with schools & local jurisdictions with local vulnerabilities |
| NWS Weather Ready Nation / StormReady Certification | Yes | Pennington County is registered as a StormReady Community by the NWS. |
| Coordination with Schools | Yes | Tornado Drills, other trainings |
| Coordination with Neighboring County/Tribal Jurisdictions | Yes | Annual regional planning and training; statewide AMEM conference |
| Coordination with Local / Regional Agencies involved in mitigation | Yes | SWCD, MN DNR, MnDOT, Rural and Municipal Electric Cooperatives, Watershed Districts |
| Coordination with organizations or agencies addressing disaster related issues and vulnerable populations, emergency preparedness, access and functional needs populations | Yes | Public Health, American Red Cross, Salvation Army |
| Hazard data and information | Yes | Damage information is kept on file from past storm events and disaster declarations |
| <i>Other (please describe)</i> | Yes | PH has preparedness plans in place |

| PLANNING & REGULATORY CAPABILITIES | Yes/No | Comments |
|---|---------------|---|
| Comprehensive/Land Use Plan | No | |
| Capital Improvements Plan | No | |
| Economic Development Plan | Yes | Pennington County Department of Employment and Economic Development provides business development programs. |
| Climate Adaptation Plan | No | |
| Continuity of Operations Plan (COOP) | Yes | Pennington County Emergency Management in coordination with other county departments |
| Transportation Plan (Roads, Bridges, Culverts, Ditches) | Yes | Pennington County Highway Department 2022 5-Year Plan |
| Stormwater Management Plan / Drainage Plan | No | |
| Burning Permits/Restrictions (Sheriff's Office or MN DNR) | Yes | MN DNR |
| Comprehensive Local Water Management Plan | Yes | Under SWCD – Pennington County 2010-2020 Comprehensive Local Water Management Plan |
| Watershed Plan (One Watershed, One Plan) | Yes | Red Lake River One Watershed One Plan and Thief River Watershed One Watershed One Plan are complete. A grant application has been submitted for the Clearwater River 1W1P |
| Wellhead Protection Plan | | Municipal level plans are done in coordination with MDH |
| Forest Management Plan | No | |
| Community Wildfire Protection Plan (CWPP) | No | |
| Participation in MN DNR Firewise Program | No | |

| | | |
|--------------------------------------|----|---|
| Database of Dry Hydrants/Well Access | No | Local fire departments and MN DNR maintain information on water resources for wildland firefighting |
| <i>Other (please describe)</i> | | |

| LOCAL POLICY / PROGRAM CAPABILITIES | Yes/No | Comments |
|---|---------------|---|
| Land Use, Planning, & Zoning Ordinance | No | |
| Subdivision Ordinance | No | |
| Building Codes | No | |
| National Flood Insurance Program (NFIP) | Yes | Pennington County NFIP entry date 05/03/90 |
| Flood insurance rate maps | Yes | Current effective map date 12/01/2022 |
| Floodplain Ordinance | Yes | Pennington County Floodplain Ordinance, adopted 10/25/2022 and made effective 11/2/2022 |
| Shoreland Ordinance | No | Pennington SWCD oversees shoreland management and permitting for building within any shoreland area. |
| Minnesota Buffer Law / Soil Erosion Ordinance | Yes | SWCD enforces compliance requirements for the State Buffer Law |
| Home Buyouts for flood or erosion mitigation | No/ yes 2024 | Upon HMP update in approval in 2024, Pennington County Emergency Management is planning to work with the City of TRF on an application for 2024 HMA grants assistance. A notice of interest has already been submitted to HSEM. |
| Other natural hazard specific ordinance (i.e., stormwater, steep slope, wildfire) | No | |

| | | |
|-------------------------------------|-----|--|
| Maintenance programs to reduce risk | Yes | Highway Dept. ROW maintenance and drainage systems |
| <i>Other (please describe)</i> | Yes | Pennington SWCD Rainfall Monitoring in coordination with MN State Climatology Office |

| ADMINISTRATIVE/TECHNICAL CAPABILITIES | Yes/No | Comments |
|--|---------------|--|
| Emergency Management Director | Yes | Pennington County Emergency Management Director |
| Sheriff/Police Department | Yes | Pennington County Sheriff's Office |
| Floodplain Administrator | Yes | Pennington SWCD District Manager |
| Chief Building Official | No | |
| County Engineer | Yes | Pennington County Highway Department |
| Mapping Specialist (GIS) | Yes | Pennington County Highway Dept. |
| Public Health Coordinator/Department | Yes | Pennington & Red Lake County Public Health & Home Care |
| Planning Commission | No | |
| Soil and Water Conservation District | Yes | Pennington County SWCD & NRCS |
| Minnesota Department of Natural Resources | Yes | |
| Mitigation Planning Committee | Yes | 2023 HMP Update Planning Team |
| Mutual Aid Agreements | Yes | Regional |
| <i>Other (please describe)</i> | | |

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

Appendix E – Past Mitigation Action Review Status Report

Pennington County

Past Mitigation Action Review Status Report

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

| Hazard | Mitigation Action | Jurisdiction | Status | Comments |
|-------------------------------|---|--------------------------------|---------|---|
| All-Hazards | Incorporate mitigation based on city and county planning. | Pennington County & All Cities | Ongoing | County and cities continue to incorporate mitigation planning and projects into existing related plans. |
| Wildfire | Enforce any set fire or burning bans. | Pennington County & All Cities | Ongoing | Burning restrictions are put into place by the MN DNR. PC Sheriff's Office and local cities help to notify the public and enforce restrictions. |
| Severe Winter & Summer Storms | Promote the use of weather radio for homes and businesses. | Pennington County & All Cities | Ongoing | This is an ongoing effort of Pennington County Emergency Management (PCEM) and city governments. |
| Severe Winter & Summer Storms | Encourage no/limited travel during severe weather conditions. | Pennington County & All Cities | Ongoing | The county and cities continue to share severe weather alerts and recommended travel restrictions put out by the National Weather Service. |
| Flooding | Incorporate the watershed's water management plans concerning roads, drainage, culverts, bridges and dams etc. | Pennington County & All Cities | Ongoing | The county and cities work with the SWCD and watershed districts on related flood mitigation planning and projects. |
| Severe Winter & Summer Storms | Create a multi-hazard education plan that encourages individuals to take on individual responsibility. | Pennington County & All Cities | Ongoing | This falls under ongoing PCEM and local public education and awareness efforts for severe weather preparedness. |
| Flooding | Continue to monitor, develop, enhance & enforce current floodplain, building and other mitigation related ordinances. | Pennington County & All Cities | Ongoing | Pennington County and cities with mapped flood risk areas continue to enforce local floodplain ordinances. The county's current effective map date is 12/01/22. |

| Hazard | Mitigation Action | Jurisdiction | Status | Comments |
|-------------------------------|--|--------------------------------|---------|--|
| Severe Winter & Summer Storms | Continue working with the National Weather Service to improve storm warning and awareness. | Pennington County & All Cities | Ongoing | PCEM participates in the NWS Severe Weather Awareness Weeks in April and November. Cities are encouraged to participate sharing information locally. |
| All-Hazards | Continue to monitor, develop and enhance a comprehensive shelter plan. | Pennington County & All Cities | Ongoing | PCEM works with Public Health and local jurisdictions to ensure designated facilities and plans are in place for emergency sheltering. |
| Severe Winter & Summer Storms | Incorporate mitigation based on municipal electrical cooperatives and other power company plans. Municipal. Electrical cooperatives. | Pennington County & All Cities | Ongoing | Rural and municipal electric cooperatives that serve the county have oversight on identifying and addressing mitigation measures for risk reduction of power outages due to severe weather events. |
| All-Hazards | Maintain an awareness of new technologies for citizen alert, such as emergency/telephonic alert. | Pennington County & All Cities | Delete | Not a necessary mitigation action. Pennington County uses and promotes the CodeRED emergency notification system. |
| Flooding | Continue to monitor, develop, enhance & enforce current building and shore land ordinances. | Pennington County & All Cities | Ongoing | Ongoing by county and local governments. |
| Erosion | Concerning issues of subsidence, incorporate watershed management plans. | Pennington County & All Cities | Ongoing | Pennington County Soil and Water Conservation District oversees planning and projects related to flood and erosion mitigation including shoreland management and the One Watershed, One Plan. |
| Severe Winter & Summer Storms | Encourage individuals to have a shelter in place plan. | Pennington County & All Cities | Ongoing | PCEM encourages residents to be aware of and prepared for severe storm events, including sheltering in place if needed. |
| Severe Winter & Summer Storms | Concerning backup power, continue to monitor, develop and enhance critical infrastructure plan. | Pennington County & All Cities | Ongoing | The county and cities continue to address obtaining backup power as needed for the operations of critical infrastructure and services |
| Severe Winter & Summer Storms | Update/create and incorporate storm plans for nursing homes, hospitals, public events and schools. into multi-jurisdictional plans. | Pennington County & All Cities | Ongoing | PCEM and local cities continue to work on emergency planning for storms, power outages, sheltering in place or evacuation if needed. |

| Hazard | Mitigation Action | Jurisdiction | Status | Comments |
|-------------------------------|---|--|---------|---|
| Erosion | Continue to monitor, develop, enhance & stabilize eroding river banks. | PC, St. Hilaire, and Thief River Falls | Ongoing | Ongoing as needed in coordination with SWCD. |
| All-Hazards | Continue to Identify and protect structures that are repeatedly damaged by natural hazards. | Pennington County & All Cities | Ongoing | The county and cities will continue to identify and address any buildings or infrastructure that are vulnerable to severe weather. |
| Severe Winter & Summer Storms | Continue to Mitigate at risk power lines. | Pennington County & All Cities | Ongoing | This will continue to occur in coordination with electric coops which have the authority to address mitigation measures such as burying power lines or strengthening power poles. |
| Flooding | Continue to monitor, maintain and upgrade city drainage. | Goodridge, St. Hilaire & Thief River Falls | Ongoing | All cities continue to address improvement to sewer and stormwater systems as necessary. |

Appendix F – Planning Team Meetings

Pennington 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 Pennington 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

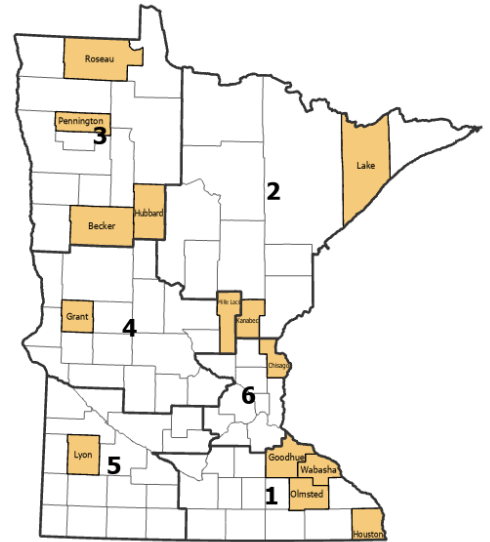
The U-Spatial@UMD team will coordinate with each Emergency Manager throughout the plan update process to engage participating jurisdictions and other stakeholders in the planning process. Following is an overview of key tasks that the U-Spatial@UMD team will facilitate to meet FEMA requirements in the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



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

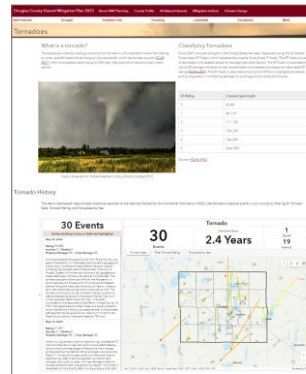
- Contains almost all required elements
- No mapping
- Community outreach/input remains the same
- Includes appendices with jurisdictional outreach

- 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

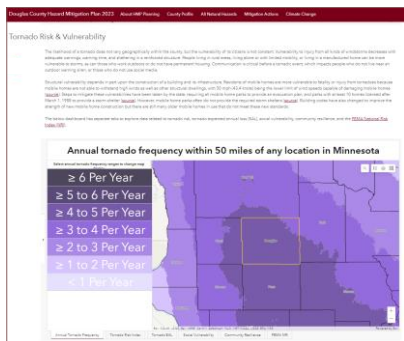
Stacey Stark



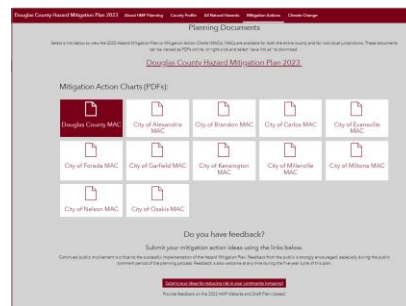
Example Web Site



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>

Pennington County HMP Update

JURISDICTIONAL CONTACT LIST

COUNTY CONTACTS

| Name | Title | Phone | Email |
|-------------------|------------------------------------|-----------------------|--|
| Erik Beitel | Emergency Management Director | (218) 683-7087 | elbeitel@co.pennington.mn.us |
| Seth Vettleson | County Sheriff | 218-681-6161 | svettleson@penningtonsheriff.org |
| Kevin Erickson | County Coordinator | 218-683-7000 ext 2 | kwerickson@co.pennington.mn.us |
| Carl Bruzek | County Assessor | 218-683-7029 | Assessors@co.pennington.mn.us |
| Jennifer Herzberg | County Auditor/Treasurer | 218-683-7000 | jmherzberg@co.pennington.mn.us |
| Mike Flaagan | County Engineer | 218-683-7017 | mflaagan@co.pennington.mn.us |
| Julie Sjostrand | Human Services Director | 218-681-2880 | jasjostrand@co.pennington.mn.us |
| Kayla Jore | Kayla Jore, Public Health Director | (218) 253-4378 | krjore@co.pennington.mn.us |
| Seth Nelson | District 1 Commissioner | 218-277-9042 | srnelson@co.pennington.mn.us |
| Dave Sorenson | District 2 Commissioner | 218-689-5330 | dssorenson@co.pennington.mn.us |
| Neil Peterson | District 3 Commissioner | 218-689-3808 | ndpeterson@co.pennington.mn.us |
| Roy Sourdif | District 4 Commissioner | 218-689-4990 | rrsourdif@co.pennington.mn.us |
| Bruce Lawrence | District 5 Commissioner | 218-686-9892 | blawrence@co.pennington.mn.us |

CITY CONTACTS

CITY OF GOODRIDGE (116)

| Name | Title | Phone | Email |
|--------------|---------------|--------------|--|
| Shannon Moen | City Clerk | 218-689-6702 | sjulestad@rocketmail.com |
| Judy Jones | Mayor | 218-378-4170 | jjones1954@hotmail.com |
| Mike Lovely | Fire Chief | 218-686-1720 | mikelovly8@yahoo.com |
| Joe Ruby | Co-Fire Chief | | hrubyjoe@gmail.com |

CITY OF ST. HILAIRE (217)

| Name | Title | Phone | Email |
|------------------|------------|--------------|--|
| Margret Peterson | City Clerk | 218-964-5257 | citysth@gvtel.com |
| Ken Wigg | Mayor | 218-964-5257 | citysth@gvtel.com |
| Brad Naplin | Fire Chief | 218-242-6616 | St.hilairefire@gmail.com |

CITY OF THIEF RIVER FALLS (8,815)

| Name | Title | Phone | Email |
|--------------------|-----------------------|--------------|--|
| Angie Phillip | City Administrator | 218-689-2943 | aphilipp@trfmn.gov |
| Mayor Brian Holmer | Mayor | 218-686-8252 | mayorholmer@trfmn.gov |
| Rick Beier | Fire Chief / EM | 218-681-3943 | firechief@trfmn.gov |
| Marissa Adam | Police Chief | 218-681-6161 | madam.trfpd@trfmn.gov |
| Travis Giffen | Director Public Works | 218-689-4292 | tgiffen@trfmn.gov |

TOWNSHIP CONTACTS

| Name of Township | Name & Title | Phone | Email |
|----------------------|------------------------|--------------|--|
| Black River Township | Michelle Naplin | 218-686-3418 | miki@gvtel.com |
| Bray Township | Dave Erickson | 218-964-5529 | braytwp@gvtel.com |
| Clover Leaf Township | Andy Beck | 801-205-2551 | flatheadbecks@gmail.com |
| Deer Park Township | John Kimball | 218-686-2983 | jkimball@gvtel.com |
| Goodridge Township | John Lovely | 218-378-4585 | raincare@gvtel.com |
| Hickory Township | Cheryl Bjerklie | 218-689-4453 | c.bjerklie@yahoo.com |
| Highlanding Township | Robert Coan | 218-378-4280 | |
| Kratka Township | Brad Barth, Supervisor | 218-684-5154 | bbarth@gvtel.com |
| Mayfield Township | Elaine Berg | 218-796-5327 | laniemack@hotmail.com |
| Norden Township | Chris Bjerklie | 218-556-4151 | nordentownshipclerk@gmail.com |
| North Township | Debra Dietz | 218-681-8048 | debradietz@msn.com |
| Numedal Township | Jennifer Reigstad | 218-686-1410 | Jenny.reigstad@digikey.com |
| Polk Centre Township | Deb Cota | 218-964-5757 | |
| Reiner Township | Cherie Sigerud | 218-378-4200 | csigerud@gmail.com |
| River Falls Township | Jill Jonson | 218-964-5325 | jjriverfallstownship@gmail.com |
| Rocksbury Township | Kristin Haase | 218-289-0545 | nkhaase@gmail.com |
| Sanders Township | Eileen Hoefer | 218-686-2452 | hoefer@gvtel.com |
| Silverton Township | Mark Hanson | 218-689-6871 | Maud69@gmail.com |
| Smiley Township | Faye Auchenpaugh | 218-681-3410 | auchenpaugh@gmail.com |
| Star Township | Ronald Kotrba | 218-689-5702 | tkotrba@gvtel.com |
| Wyandotte Township | Cassandra Torkelson | 218-681-0498 | Cassandra.torkelson@gmail.com |

OTHER STAKEHOLDER CONTACTS

LOCAL & REGIONAL AGENCIES INVOLVED IN HAZARD MITIGATION

| Name of Agency / Organization | Name & Title | Phone | Email |
|--|--|-------------------------|--|
| MN Homeland Security & Emergency Management | Jennifer Olson, HSEM Region 3 Regional Program Coordinator | 651-396-0480 cell | Jennifer.Olson@state.mn.us |
| Pennington Soil & Water Conservation District (SWCD) | Peter Nelson, District Manager | 218-683-7075 | Peter.Nelson@pennington.mnswcd.org |
| Natural Resources Conservation Service (NRCS) | Nico Bennett, District Conservationist | (218) 681-1612 Ext. 120 | nicol.bennett@usda.gov |
| USDA Rural Development Community Programs | Laura Pettit, Area Specialist | (218) 847-9392 x3299 | laura.pettit@usda.gov |

| | | | |
|--|--|----------------|--|
| MnDOT District 2 | J.T. Anderson, District Transportation Engineer | 218-755-6549 | j.t.anderson@state.mn.us |
| MN DNR Firewise Program | Allissa Reynolds, Wildfire Prevention Supervisor | 651-259-5288 | allissa.reynolds@state.mn.us |
| MN DNR Ecological and Water Resources Division | Stephanie Klamm, Region 1 Northwest Area Hydrologist | (651) 587-5448 | Stephanie.Klamm@state.mn.us |

REPRESENTATIVES OF BUSINESSES, ACADEMIA, AND OTHER PRIVATE ORGANIZATIONS

| Name of Agency / Organization | Name & Title | Phone | Email |
|---|--|--------------|--|
| Digi-Key Electronics | Mark Borseth, Director, Corporate Facilities | 218-681-8000 | Mark.borseth@digkey.com |
| Sanford Thief River Falls Med Center | Carla Szklarski, Emergency Manager | 218-686-4181 | carla.szklarski@sandfordhealth.org |
| Thief River Falls Public Schools ISD #564 | Paula Henry, Superintendent | 218-681-8711 | Paula.henry@myproowler.org |
| Goodridge School District ISD #561 | Tomas Loberg, Superintendent | 218-378-4134 | Tomas.loberg@goodridgeisd561.org |

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

| Name of Agency / Organization | Name & Title | Phone | Email |
|---|--|----------------|--|
| Salvation Army Northern Division (MN/ND) | Major Michele Heaver | 651-238-7783 | Michele.heaver@usc.salvationarmy.org |
| American Red Cross Northwestern Minnesota | Christopher Schenk, Disaster Program Manager (Fargo, ND) | (701) 364-1800 | christopher.schenk2@redcross.org |
| Northwest Regional Development Commission | Darla Waldner, Executive Director | (218) 745-9109 | darla@nwrdc.org |
| Northwest Minnesota Foundation | Nate Dorr, VP For Advocacy and Dawn Ganje, Director for Community Philanthropy | 218-759-2057 | nated@nwmf.org dawng@nwmf.org |

NEIGHBORING JURISDICTIONS

| Name of Jurisdiction | Name & Title | Phone | Email |
|----------------------|-------------------------|----------------|--|
| Marshall County | Josh Johnston, EMD | (218) 745-5841 | josh.johnston@co.marshall.mn.us |
| Beltrami County | Chris Muller, EMD | (218) 333-8386 | Chris.muller@co.beltrami.mn.us |
| Clearwater County | Andy Anderson, EMD | (218) 776-3112 | andy.anderson@co.clearwater.mn.us |
| Red Lake County | Mitch Bernstein, EMD | (218) 253-2996 | oklee06@yahoo.com |
| Polk County | Jody Beauchane, EMD | (218) 470-8263 | jody.beauchane@co.polk.mn.us |
| Red Lake Reservation | Robert Neadeau Jr., EMD | 218-679-3341 | rneadeau@redlakenation.org |

LOCAL MEDIA CONTACTS

| Name of Local Media | Media Contact | Phone | Email |
|-------------------------|--------------------------|--------------|--|
| Thief River Falls Times | April Scheinoha | 218-681-4450 | april@trftimes.com |
| KTRF Radio | Terry Olson / Mark Allen | 218-681-1230 | mark@trfradio.com |

Pennington County HMP Planning Team Meeting #1 Presentation and Discussion 2/7/24 Meeting Summary & Documentation

Summary: On February 7, 2024 Pennington 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 Pennington County Hazard Mitigation Plan (HMP). The purpose of the meeting was to formally present information about the Pennington 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: Pennington 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 **20** people attended the meeting. Representation included elected officials and departmental staff from Pennington County and the cities of St. Hilaire and Thief River Falls. Representatives from the city of Goodview were not available to attend. Other agency and organizational stakeholders also participated in the meeting. A participant list is provided below:

| | Name | Organization | Job Title |
|----|------------------|--|-------------------------------|
| 1 | Erik Beitel | Pennington County Emergency Management | Emergency Management Director |
| 2 | Mike Flaagan | Pennington County Highway Dept. | County Engineer |
| 3 | Kevin Erickson | Pennington County | County Coordinator |
| 4 | Carl Bruzek | Pennington County | County Assessor |
| 5 | Dave Sorenson | Pennington County | County Commissioner |
| 6 | Seth Nelson | County government | County Commissioner |
| 7 | Neil Peterson | Pennington County | County Commissioner |
| 8 | Ashley Benson | Pennington County | Assessor/Appraiser |
| 9 | Kayla Jore | Pennington & Red Lake County Public Health | Director |
| 10 | Brian Steenerson | City of St. Hilaire | Council Member |
| 11 | Bradley Naplin | City of St. Hilaire Fire & Rescue | Fire Chief |

| | | | |
|----|--------------------|-----------------------------------|--------------------------------|
| 12 | Angela Philipp | City of Thief River Falls | City Administrator |
| 13 | Brian Holmer | City of Thief River Falls | Mayor |
| 14 | Travis Giffen | City of Thief River Falls | Public Works Director |
| 15 | Rick Beier | Thief River Falls Fire Department | Fire Chief |
| 16 | Debra Dietz | North Township | Clerk |
| 17 | John Kimball | Deer Park Township | Clerk |
| 18 | Peter Nelson | Pennington SWCD | District Manager |
| 19 | Christopher Schenk | American Red Cross | Disaster Program Manager |
| 20 | Mark Borseth | Digi-Key Electronics | Director, Corporate Facilities |

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

PENNINGTON COUNTY HMP PLANNING TEAM MEETING #1 DISCUSSION NOTES

PARTICIPANT POLLS

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

POLL #1: TOP HAZARDS

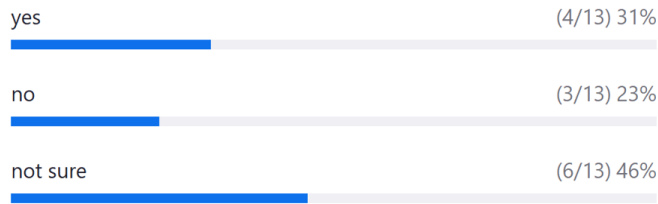
What are the top three hazards of most concern to you in this county? (Multiple Choice)



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

POLL #2: CHANGE IN PERCEIVED RISK

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



What hazard risk has changed, and in what jurisdiction?

- Bradley Naplin - I would say the severity of windstorms and potential tornadoes have increased in the past 5 years, along with the severity of winter storms when they do arrive in the area.
- Brian Holmer – Thief River Falls gets drinking water from river and so drought is a concern.
- Kevin Erickson – Flooding is more prevalent; winter storms often more severe.
- Ashley Benson - Weather changes.
- Peter Nelson - Landslides from 2022 spring flood in Thief River Falls.

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 Pennington County or within your own local jurisdiction? If so, are there any best outreach methods to provide an opportunity to participate?*

- Mike Flaagan - Our elderly community is a vulnerable group. We also have a community of non-English speaking individuals. We have issues getting emergency services to rural homes due to winter storm issues.
- Kayla Jore - We have a recent increase in non-English speaking individuals.
- Bradley Naplin - The rural communities that may have an event that will take first responders or fire departments more than 10 minutes to respond.

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

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

Comments:

Regarding the prioritization of hazards

Travis Giffen - Are the risk rankings used for community awareness, or is this used by FEMA in a disaster declaration? / Stacey Stark - The rankings don't have anything to do with disaster declaration. If a hazard is moderate or high priority - each jurisdiction MUST identify mitigation actions to address it.

Flooding

Erik Beitel – We have a long history of overland flooding.

Peter Nelson - The FEMA Floodplain Maps were updated in 2022 for Pennington. Is this the current data? / Stacey Stark – Yes. We did get those floodplain maps; we got the access to the newest data.

Drought

Erik Beitel – We are expecting to go into drought stage again. We just came out of a moderate drought in 2023. The main concern is related to the Thief River Falls dam, which is a water source related to drinking water and water quality.

Wildfire

Brad Naplin - Wildfire is a concern with the current drought situation in the county but not nearly as many acres of grass and crop in the area as there used to be.

Landslides

Erik Beitel – Should be noted as moderate to high, at least locally for Thief River Falls as there are considerations underway to address potential buyouts for 4 homes at risk. The county has filed a Notice of Intent for funding to HSEM, however, our HMP update must certify the need for the project. We don't have other areas of landslide concern in the county.

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

No comments made. Participants were encouraged to submit any additional feedback on local mitigation actions following the meeting.

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

MEETING DOCUMENTATION

Attached are additional documentation items for the Pennington 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: [Erik Beitel](#)
To: [Erik Beitel](#); [Seth Vettleson](#); [Kevin Erickson](#); [Assessors](#); [Jennifer Herzberg](#); [Michael Flaagan](#); [Julie Sjostrand](#); [Kayla Jore](#); [Seth Nelson](#); [Dave Sorenson](#); [Neil Peterson](#); [Roy Sourdif](#); [Bruce Lawrence](#); [sjulestad@rocketmail.com](#); [jjones1954@hotmail.com](#); [mikelovly8@yahoo.com](#); [citysth@gvtel.com](#); [St.hiltairefire@gmail.com](#); [aphilipp@citytrf.net](#); [mayorholmer@citytrf.net](#); [firechief@citytrf.net](#); [madam.trfpd@citytrf.net](#); [tgiffen@citytrf.net](#); [miki@gvtel.com](#); [braytwp@gvtel.com](#); [flatheadbecks@gmail.com](#); [jkimball@gvtel.com](#); [raincare@gvtel.com](#); [c.bjerklie@yahoo.com](#); [bbarth@gvtel.com](#); [janemack@hotmail.com](#); [nordentownshipclerk@gmail.com](#); [debradietz@msn.com](#); [Jenny.reigstad@digkey.com](#); [csigerud@gmail.com](#); [jriverfallstowship@gmail.com](#); [nkhaase@gmail.com](#); [hoefer@gvtel.com](#); [Maud69@gmail.com](#); [auchenpaugh@gmail.com](#); [tkotrba@gvtel.com](#); [Cassandra.torkelson@gmail.com](#); [andrew.tepfer@state.mn.us](#); [Peter.Nelson@pennington.mnswcd.org](#); [nicol.bennett@usda.gov](#); [laura.pettit@usda.gov](#); [j.t.anderson@state.mn.us](#); [allissa.reynolds@state.mn.us](#); [Stephanie.Klamm@state.mn.us](#); [jolson@nwrdc.org](#); [Michele.heaver@usc.salvationarmy.org](#); [owen.fifield@redcross.org](#); [Mark.borseth@digkey.com](#); [carla.szklarski@sandfordhealth.org](#); [Paula.henry@myprowler.org](#); [Tomas.loberg@goodridgeisd561.org](#); [darla@nwrdc.org](#); [nated@nwmf.org](#); [dawn@nwmf.org](#); [josh.johnston@co.marshall.mn.us](#); [Chris.muller@co.beltrami.mn.us](#); [andy.anderson@co.clearwater.mn.us](#); [oklee06@yahoo.com](#); [jody.beauchane@co.polk.mn.us](#); [rneadeau@redlakenation.org](#)
Cc: [Bonnie K Hundrieser](#)
Subject: Pennington County Hazard Mitigation Plan
Date: Wednesday, January 3, 2024 9:45:26 AM

Greetings,

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

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

Date: Wednesday, February 7, 2024

Time: 1:00 – 2:30 p.m.

Zoom Link: https://umn-private.zoom.us/webinar/register/WN_Kcz9fBBrTcyFrTqeknAZtw

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 Pennington 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 Pennington 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 Pennington 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,

Erik Beitel
Pennington County
Emergency Management
218-683-7087 office
218-416-2274 cell

From: [Bonnie K Hundrieser](#) on behalf of hundrieserconsulting@outlook.com
To: "elbeitel@co.pennington.mn.us"; "svettleson@penningtonsheriff.org"; "kwerickson@co.pennington.mn.us"; "Assessors@co.pennington.mn.us"; "jmherzberg@co.pennington.mn.us"; "mlflaagan@co.pennington.mn.us"; "jasjostrand@co.pennington.mn.us"; "krjore@co.pennington.mn.us"; "srnelson@co.pennington.mn.us"; "dssorenson@co.pennington.mn.us"; "ndpeterson@co.pennington.mn.us"; "rrsourdif@co.pennington.mn.us"; "blawrence@co.pennington.mn.us"; "sjulestad@rocketmail.com"; "jjones1954@hotmail.com"; "mikelovly8@yahoo.com"; "citysth@gvtel.com"; "St.hilairefire@gmail.com"; "aphilipp@citytrf.net"; "mayorholmer@citytrf.net"; "firechief@citytrf.net"; "madam.trfpd@citytrf.net"; "tgiffen@citytrf.net"; "miki@gvtel.com"; "braytwp@gvtel.com"; "flatheadbecks@gmail.com"; "jkimball@gvtel.com"; "raincare@gvtel.com"; "c.bjerklie@yahoo.com"; "bbarth@gvtel.com"; "laniemack@hotmail.com"; "nordentownshipclerk@gmail.com"; "debradietz@msn.com"; "Jenny.reigstad@digike.com"; "csigerud@gmail.com"; "jriverfallstowship@gmail.com"; "nkaase@gmail.com"; "hoefer@gvtel.com"; "Maud69@gmail.com"; "auchenpauqh@gmail.com"; "tkotrba@gvtel.com"; "Cassandra.torkelson@gmail.com"; "andrew.tepfer@state.mn.us"; "Peter.Nelson@pennington.mnswcd.org"; "nicol.bennett@usda.gov"; "laura.pettit@usda.gov"; "J.T.anderson@state.mn.us"; "allissa.reynolds@state.mn.us"; "Stephanie.Klamm@state.mn.us"; "jolson@nwrdc.org"; "Michele.heaver@usc.salvationarmy.org"; "owen.fiffeld@redcross.org"; "Mark.borseth@digike.com"; "carla.szklarski@sandfordhealth.org"; "Paula.henry@myproowler.org"; "Tomas.loberg@goodridgeisd561.org"; "darla@nwrdc.org"; "nated@nwmf.org"; "dawng@nwmf.org"; "josh.johnston@co.marshall.mn.us"; "Chris.muller@co.beltrami.mn.us"; "andy.anderson@co.clearwater.mn.us"; "oklee06@yahoo.com"; "jody.beauchane@co.polk.mn.us"; "rneadeau@redlakenation.org"
Cc: "Stacey Stark"
Subject: Pennington County HMP Planning Team Meeting Materials – Please Review
Date: Tuesday, February 6, 2024 9:35:00 AM
Attachments: [Pennington County 2023-2024 HMP Overview handout.pdf](#)
[Pennington County HMP Mtg. #1 Discussion Questions.docx](#)
[HSEM HMA Grants Program Overview.pdf](#)
Importance: High

Greetings,

The Pennington County Hazard Mitigation Plan (HMP) Update – Planning Team Meeting #1 will be held via Zoom on **Wednesday, February 7, 2024 from 1:00 – 2:30 p.m.** This meeting is a critical step in the plan update process where we meet with county and local government officials, departmental staff, and other agency stakeholders to provide an overview of the plan update and gather important feedback.

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

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

If you have not registered yet but wish to do so, please control+click on the following registration link: https://umn-private.zoom.us/webinar/register/WN_Kcz9fBBRTcyFrTqeknAZtw

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



Pennington 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 **Pennington 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 Pennington 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 Pennington 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.

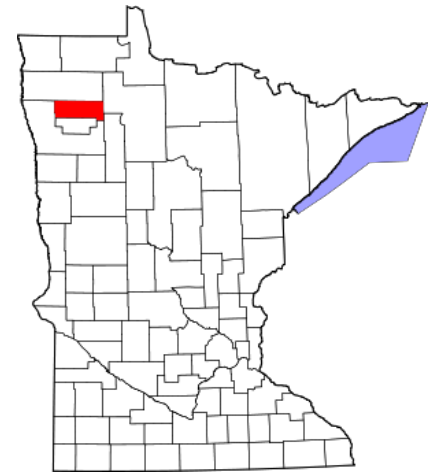
Plan Content: The HMP addresses the natural hazards that pose risk to Pennington County, such as flooding, severe winter storms, windstorms, tornadoes, extreme temperatures, and drought. A hazard profile is developed for each hazard prioritized as moderate to high. Each profile includes a description, 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 Pennington 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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Pennington County Hazard Mitigation Plan Update

Planning Team Meeting #1 Discussion Questions

As part of the Pennington 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 Pennington 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.

PENNINGTON COUNTY 2016 HAZARD MITIGATION PLAN

| Hazards | Risk Priority |
|---------------|---------------|
| Flood | Moderate |
| Tornado | Moderate |
| Winter Storms | Moderate |
| Hail | Moderate |
| Erosion | Moderate |
| Drought | Low |

| | |
|-------------------|---------------|
| Subsidence | Low |
| Windstorms | Low |
| Extreme Heat | Low |
| Lightning | Low |
| Wildfire | Low |
| Dam/Levee Failure | Low |
| Landslides | Not Addressed |

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

PENNINGTON 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 Pennington 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>

PENNINGTON COUNTY Hazard Mitigation Plan Update 2024

Planning Team Meeting #1
Presentation & Discussion, 2/7/24



U-SPATIAL
UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover

Welcome & Introductions

U-Spatial@UMD Project Leads



Stacey Stark
Project Manager
U-Spatial@UMD

Pennington County Project Lead

- Erik Beitel, Pennington County Emergency Management Director



Bonnie Hundrieser
HMP Planning Specialist
Hundrieser Consulting LLC



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

PRESENTER: STACEY STARK

Zoom Logistics

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

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

USE CHAT:



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

ASK TO SPEAK:



PRESENTER: STACEY STARK

Meeting Purpose & Agenda

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

AGENDA

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

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

PRESENTER: STACEY STARK

HMP OVERVIEW – KEY POINTS

PENNINGTON COUNTY 2024 HMP UPDATE

Plan Requirement



The Hazard Mitigation Plan (HMP) is a requirement of the Federal Disaster Mitigation Act of 2000 (DMA 2000).

- > The development of a local government plan is required to maintain eligibility for FEMA HMA grant programs.
- > Plans must be updated every 5 years.
- > Must address all jurisdictions and engage key stakeholders + the public
- > Must be approved by FEMA for meeting all federal requirements.

Pennington County HMP Update 2024

- Last plan was adopted in 2016.
- The updated plan will cover a 5-year window for implementation and grant program eligibility
- Participating jurisdictions must have documented engagement in the planning process and adopt the final plan.

PRESENTER: BONNIE HUNDRIESER

Who the Plan Covers

This is a **multi-jurisdictional plan** that covers Pennington County, including all cities and townships within the county.

The plan also takes into consideration the needs and concerns of other stakeholders such as schools, watershed districts, and agencies or organizations involved in mitigation or services to vulnerable populations within the county.



PRESENTER: BONNIE HUNDRIESER

Who Participates



Planning Team

The HMP is developed in coordination with county, city, and township government officials and departmental staff and other related key stakeholders.

- Two planning team meetings
- Assistance with public outreach
- Participation in Local Mitigation Survey, Mitigation Action Chart development, and final plan review

The Public

It is required to provide an opportunity to the public to be aware of and provide input to the HMP plan update process.

- Information is shared via news releases, social media, local bulletin boards, and public events.
- Public outreach must include vulnerable populations or underserved communities within the planning area.

PRESENTER: BONNIE HUNDRIESER

Discussion Question #1:

Who are the vulnerable populations or underserved communities in Pennington County or within your own local jurisdiction?

What are outreach methods to provide these groups an opportunity to participate?

Plan Content

What Hazards are Addressed

- The HMP addresses the **natural hazards** that pose risk to the county and its jurisdictions.
- Manmade hazards are not required to be addressed (per the DMA 2000).
- Hazards that are deemed to be of low risk may be omitted from the plan.
- Hazard risk may differ in cities and the county overall.

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

Natural hazard categories as per the State Hazard Mitigation Plan

Poll #1

PRESENTER: BONNIE HUNDRIESER

Plan Content

Risk Assessment & Vulnerability Analysis

The U-Spatial@UMD Team will work closely with the county and each city to provide information as needed.

- Inventory of critical infrastructure.
- Identify specific, local-level impacts and vulnerabilities.
- Identify any factors (i.e., new development) that may increase the community's vulnerability.
- Review social vulnerability factors.
- Identify if and how risk priorities have changed since the last plan. (Increased / Decreased)



PRESENTER: STACEY STARK

Timeframe for development & Plan Format

Timeframe:

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

- The Pennington County Plan will be completed in **2024**.

Format:

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



Comments and Questions?

Hazard Prioritization

REVIEW OF THE HAZARD RISK PRIORITIES FOR PENNINGTON COUNTY

Pennington County 2016 HMP Risk Rankings

| | |
|-------------------|---------------|
| Flood | Moderate |
| Tornado | Moderate |
| Winter Storms | Moderate |
| Hail | Moderate |
| Erosion | Moderate |
| Drought | Low |
| Subsidence | Low |
| Windstorms | Low |
| Extreme Heat | Low |
| Lightning | Low |
| Wildfire | Low |
| Dam/Levee Failure | Low |
| Landslides | Not Addressed |

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

Please consider:

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

Poll #2

PRESENTER: STACEY STARK

Discussion Question #2

What should be recorded as the updated Hazard Prioritizations for the Pennington County 2024 HMP?

<https://z.umn.edu/PenningtonHMP>

PRESENTER: STACEY STARK

Natural Hazards Assessment on Website- Demo

PENNINGTON COUNTY HMP UPDATE Review of hazard prioritizations

| Hazards | 2024 Risk Priority (Low, Moderate, or High) |
|---|---|
| Flooding | |
| Windstorms | |
| Tornadoes | |
| Hail | |
| Lightning | |
| Winter Storms (heavy snow, blizzards, ice storms) | |
| Extreme Heat | |
| Extreme Cold | |
| Drought | |
| Wildfire | |
| Landslides | |
| Dam/Levee Failure | |

Comments and Questions?

Mitigation Strategies, Actions & FEMA HMA grants

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

PRESENTER: BONNIE HUNDRIESER

Overview of Mitigation Actions



Mitigation Action Charts are the end product of the HMP.

- Mitigation actions address hazards of moderate to high priority.
- Mitigation actions are specific.
- Mitigation actions address known vulnerabilities.
- Mitigation actions utilize capabilities to reduce risk.
- Jurisdiction mitigation action charts will be developed for the county and each city. Townships and other related agency mitigation efforts will be integrated where appropriate.

PRESENTER: BONNIE HUNDRIESER

FEMA HMA Grant Funding



Eligible Activities:

- All applicants must be covered by an approved HMP
 - Cost share: Federal 75%, Applicant 25%
 - Projects must address risk reduction.
 - Eligible projects must be identified in the plan of action.
- Property Acquisition (flooding/erosion)
 - Tornado Safe Rooms (new/retrofit)
 - Infrastructure Retrofits (utility systems, roads & bridges)
 - Wildfire Mitigation
 - Soil Stabilization
 - Flood Risk Reduction
 - Green Infrastructure
 - Other projects difficult to conduct a standard BCA

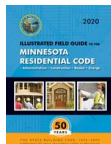
PRESENTER: BONNIE HUNDRIESER

Local Planning & Regulations



Examples:

- Enrollment in the NFIP and enforcement of county and local floodplain ordinances.
- Participation in regional One Watershed, One Plan (1W1P) and partnership projects
- Working with mobile home parks to be in compliance with Minnesota State statutes for storm shelters & evacuation plans.
- Permitting for new development and adhering to MN state building codes to reduce impacts of severe weather to structures.



PRESENTER: BONNIE HUNDRIESER

Structure & Infrastructure Projects

Examples:

- Installation of new outdoor warning sirens
- Construction of safe rooms / storm shelters
- Burying powerlines to reduce power failure
- Conducting property buyouts for flooding
- Addressing road, bridge, culvert, and drainage ditch improvements to reduce localized flood risks
- Protection of vulnerable critical infrastructure such as lift stations and Fire Halls



PRESENTER: BONNIE HUNDRIESER

Natural Systems Protection



Examples:

- Conduct vegetation management along roads to reduce the risk of downed trees and branches resulting from severe storms. (County, Local, Electric Coop)
- Planting Living Snow Fences to reduce snow drifting
- Installing Rain Gardens to reduce impacts of high rain events



PRESENTER: BONNIE HUNDRIESER

Education & Awareness Programs

Examples:

- Promoting sign-up for the county's emergency notification system and EM Facebook page.
- Providing presentations and information on preparedness at schools, special facilities, and public events.
- Participation in the NWS Severe Weather Awareness Weeks and SKYWARN Storm Spotter Training
- Outreach to vulnerable populations



PRESENTER: BONNIE HUNDRIESER

Mitigation Preparedness & Response Support

Examples:

- Acquire generators for backup power of critical infrastructure and key facilities
- Update of county EOP
- Conduct local and regional shelter planning
- Preparation for extended power outages and evacuation of vulnerable populations.
- Testing of outdoor warning sirens.
- Participate in regional EM planning, training, and exercising



PRESENTER: BONNIE HUNDRIESER

Discussion Question #3

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

PRESENTER: BONNIE HUNDRIESER



Following Planning Team Meeting #1

Development of Local Mitigation Surveys

Representatives from Pennington County and each city jurisdiction will participate in filling out Local Mitigation Survey forms. These forms include:

- Local hazard identification & risk prioritization.
- Local vulnerabilities (critical infrastructure, populations or assets)
- Local-level capabilities (programs, polices, staff, funding)
- Identify local mitigation projects.

PRESENTER: BONNIE HUNDRIESER

Questions?

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

PRESENTER: STACEY STARK

Contact Information

Stacey Stark, MS, GISP

U-Spatial@UMD

slstark@d.umn.edu

218-726-7438

Bonnie Hundrieser, HM Planner

Hundrieser Consulting LLC

hundrieserconsulting@outlook.com

218-343-3468



PRESENTER: STACEY STARK

Pennington County HMP Planning Team Meeting #2 9/25/24 Meeting Summary & Documentation

Summary: On Wednesday, September 25, 2024, Pennington 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 Pennington County Hazard Mitigation Plan (HMP). The purpose of the meeting was to formally convene the Pennington 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: Pennington 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 **20** people attended the meeting. Representation included elected officials and departmental staff from Pennington County and the cities of Thief River Falls. The cities of Goodridge and St. Hilaire 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 | Erik Beitel | Pennington County Emergency Management | Emergency Management Director |
| 2 | Mike Flaagan | Pennington County Highway Department | County Engineer |
| 3 | Peter Nelson | Pennington SWCD | District Manager |
| 4 | Carl Bruzek | Pennington County Assessor's Office | County Assessor |
| 5 | Seth Vettleson | Pennington County Sheriff's Office | Sheriff |
| 6 | Kayla Jore | Pennington & Red Lake County Public Health & Home Care | PHN Director |
| 7 | Allison Matter | Pennington & Red Lake County Public Health & Home Care | PHEP Coordinator |
| 8 | Bruce Lawrence | Pennington County | County Commissioner |
| 9 | Seth Nelson | Pennington County MN | County Commissioner |
| 10 | Dave Sorenson | Pennington County | County Commissioner |
| 11 | Travis Giffen | City of Thief River Falls | Public Works Director |
| 12 | Angela Philipp | City of Thief River Falls | City Administrator |
| 13 | Rick Beier | City of Thief River Falls Fire Dept. | Fire Chief |
| 14 | Deb Dietz | North Township | Clerk |
| 15 | Mark Borseth | Digi-Key Corporation | Director, Corporate Facilities |

| | | | |
|----|--------------------|---------------------------|------------------------------|
| 16 | Stephanie Klamm | MN DNR | Hydrologist |
| 17 | Jennifer Olson | HSEM | Regional Program Coordinator |
| 18 | Tomas Loberg | Goodridge School District | Superintendent |
| 19 | Josh Johnston | Marshall County | E.M. Director |
| 20 | Christopher Muller | Beltrami County | EM Director |

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

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

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

PENNINGTON COUNTY HMP PLANNING TEAM MEETING #2 DISCUSSION NOTES

Discussion regarding mapping of critical infrastructure:

- Mike Flaagan, Pennington County Highway Engineer – Are there emergency services that are located outside of the county but serve the county that could be shown the map? I know that the Warren Fire Department covers a township in Pennington County. I think it would be nice for the public to see the sorts of emergency services (Fire/EMS) from outside the county help cover our county.
- Erik Beitel response – I think you are talking about mutual aid resources. They do exist but not they are not on the map.
- Stacey Stark response – Please let me know what communities you would like to have shown on the map and we can work on that with the datasets that we have. I would not be able to show cover areas however since that's not data we have.

Regarding mitigation action ideas

- Mike Flaagan, Pennington County Highway Engineer – Is acquiring Armer radios for the highway department the kind of thing we can add in ?
- Erik Beitel response – I don't think we necessarily need to list it as a mitigation action, since it is more related to our emergency response planning for communications. We are currently waiting to hear on a grant application we have submitted for new ARMER equipment, and will also be working to see how we can distribute some of the older equipment such as handheld mobile radios etc.

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 Pennington 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: [Erik Beitel](#)
To: [Erik Beitel](#); [svettleson@penningtonsheriff.org](#); [Kevin Erickson](#); [Assessors](#); [Jennifer Herzberg](#); [Michael Flaagan](#); [Julie Sjostrand](#); [Kayla Jore](#); [Seth Nelson](#); [Dave Sorenson](#); [Neil Peterson](#); [Roy Sourdif](#); [Bruce Lawrence](#); [sjulestad@rocketmail.com](#); [jjones1954@hotmail.com](#); [mikelovly8@yahoo.com](#); [hrubyjoe@gmail.com](#); [citysth@gvtel.com](#); [St.hilairefire@gmail.com](#); [aphilipp@trfmn.gov](#); [mayorholmer@trfmn.gov](#); [firechief@trfmn.gov](#); [madam.trfpd@trfmn.gov](#); [tgiffen@trfmn.gov](#); [miki@gvtel.com](#); [braytwp@gvtel.com](#); [flatheadbecks@gmail.com](#); [jkimball@gvtel.com](#); [raincare@gvtel.com](#); [c.bjerklie@yahoo.com](#); [bbarth@gvtel.com](#); [laniemack@hotmail.com](#); [nordentownshipclerk@gmail.com](#); [debradietz@msn.com](#); [Jenny.reigstad@digikey.com](#); [cslgerud@gmail.com](#); [jriverfallstowship@gmail.com](#); [nkaase@gmail.com](#); [hoefer@gvtel.com](#); [Maud69@gmail.com](#); [auchenpaugh@gmail.com](#); [tkotrba@gvtel.com](#); [Cassandra.torkelson@gmail.com](#); [andrew.tepfer@state.mn.us](#); [Peter.Nelson@pennington.mnswcd.org](#); [nicol.bennett@usda.gov](#); [laura.pettit@usda.gov](#); [j.t.anderson@state.mn.us](#); [allissa.reynolds@state.mn.us](#); [Stephanie.Klamm@state.mn.us](#); [jolson@nwrdc.org](#); [Michele.heaver@usc.salvationarmy.org](#); [christopher.schenk2@redcross.org](#); [Mark.borseth@digikey.com](#); [carla.szklarski@sandfordhealth.org](#); [Paula.henry@myproowler.org](#); [Tomas.loberg@goodridgesd561.org](#); [darla@nwrdc.org](#); [nated@nwmf.org](#); [dawng@nwmf.org](#); [josh.johnston@co.marshall.mn.us](#); [Chris.muller@co.beltrami.mn.us](#); [andy.anderson@co.clearwater.mn.us](#); [oklee06@yahoo.com](#); [jody.beauchane@co.polk.mn.us](#); [rneadeau@redlakenation.org](#)
Cc: [Bonnie K Hundrieser](#)
Subject: Pennington County Hazard Mitigation
Date: Wednesday, August 21, 2024 9:35:59 AM

Greetings,

Your presence is requested at the **2nd Planning Team Meeting** for the update of the **Pennington County Hazard Mitigation Plan (HMP)**. You are requested to participate in this vital meeting because you have a position of administrative or departmental responsibility within either the county, a municipal government, or are a key stakeholder related to the planning process. Emergency Managers from neighboring jurisdictions are also encouraged to attend so we may strengthen our shared mitigation efforts. This meeting will be the final planning meeting for the HMP update process.

We will be holding the meeting virtually using Zoom webinar:

Date: Wednesday, September 25, 2024
Time: 10:00 a.m. – 11:30 a.m.

Register: [Control+Click here to follow to link to register for the meeting](#)

The purpose of this meeting is to provide an overview of the plan and interactive website, including a review of the updated risk assessment for natural hazards that affect the county. We will also discuss the Mitigation Action Charts that will be specific to Pennington 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 Pennington 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,

Erik Beitel
Pennington County
Emergency Management
218-683-7087 office
218-416-2274 cell

Pennington County Hazard Mitigation Plan Update 2024 Planning Team Meeting #2

September 25, 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

Pennington County Project Lead

- Erik Beitel, Pennington 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 Pennington and jurisdiction or department in the Chat window

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

USE CHAT:



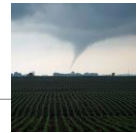
- Send a message to everyone
- Send a message to individuals or the presenters
- Send a message to host to ask for help or ask a question that isn't for the whole group. The host is Stacey Stark

ASK TO SPEAK:



PRESENTER: STACEY STARK

Meeting Purpose & Agenda



This meeting formally convenes the **Pennington 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

Pennington 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.

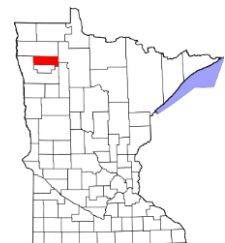
PRESENTER: BONNIE HUNDRIESER

Who the Plan Covers



This is a **multi-jurisdictional plan** that covers Pennington County, including all cities and townships within the county.

The plan also takes into consideration the needs and concerns of other stakeholders such as schools, watershed districts, and agencies or organizations involved in mitigation or services to vulnerable populations within the county.



PRESENTER: BONNIE HUNDRIESER

Stakeholder Involvement



Planning Team

- County and local government, other agencies & organizations.
- Participation in planning team meetings, public outreach, local mitigation survey, provision of spatial or other data, and review of draft plan.

The Public

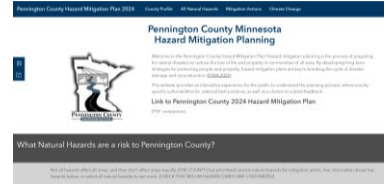
- Opportunity to learn about the plan and provide feedback on local-level concerns, mitigation ideas, and review of draft plan.

PRESENTER: BONNIE HUNDRIEISER

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 Pennington County



Prioritization of hazards by the Pennington 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 |
| Tornadoes | High |
| Winter Storms | High |
| Windstorms | Moderate |
| Landslides | Moderate |
| Extreme Cold | Moderate |
| Drought | Moderate |
| Lightning | Low |
| Hailstorms | Low |
| Extreme Heat | Low |
| Wildfire | Low |
| Dam Failure | Low |

PRESENTER: STACEY STARK

Hazards Risk Assessment

- Validates the prioritization of hazards
- Provides probability and severity of future events as possible
- Identifies vulnerable populations and structures at risk as possible
- Considers variable jurisdictional vulnerability
- Informs Mitigation Actions in the HMP



PRESENTER: STACEY STARK

Website Demo

z.umn.edu/PenningtonHMP

Comments and Questions?

Overview of Mitigation Action Charts



Mitigation Action Charts are the end product of the HMP.

They demonstrate a community's 5-year plan to:

- Reduce future risk to natural hazard events.
- Address local vulnerabilities through targeted activities.
- Utilize local capabilities to implement actions.

★ Eligible FEMA Section 404 grant activities must be identified in the plan of action.

PRESENTER: BONNIE HUNDRIESER

FEMA Mitigation Grant Funding



Example Section 404 activities:

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.

- Property Acquisition
- Tornado Safe Rooms
- Infrastructure Retrofits
- Wildfire Mitigation
- Soil Stabilization
- Flood Risk Reduction
- Green Infrastructure
- Other projects difficult to conduct a standard BCA

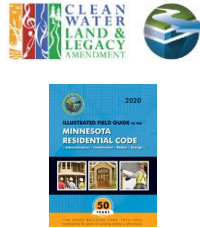
PRESENTER: BONNIE HUNDRIESER

Local Planning & Regulations



Pennington County Examples:

- Enrollment in the NFIP and enforcement of county and local floodplain ordinances.
- Participation in regional watershed planning with SWCD and area WD's (1W1P).
- Implementation of watering restrictions during periods of extreme drought.
- Encourage all new development to follow state building codes to help withstand impacts of severe weather to structures.



PRESENTER: BONNIE HUNDRIESER

Structure & Infrastructure Projects

Pennington County Examples:

- Installation of new outdoor warning sirens
- Construction of storm shelters or tornado safe rooms
- Burying powerlines to reduce power failure
- Conducting property buyouts for flooding (Thief River Falls, Pennington County & SWCD) – 4 homes
- Stormwater management improvements (culverts, drainage systems, curb & gutter)
- Road and bridge improvements



PRESENTER: BONNIE HUNDRIESER

Natural Systems Protection

Pennington 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

Pennington County Examples:

- Promoting sign-up for the county's emergency notification system.
- Encouraging residents to be aware of and prepared for severe weather events, extreme temperatures, and extended power outages.
 - Outreach methods vary by community
 - Should consider vulnerable populations
 - NWS Severe Weather Awareness Weeks
 - SKYWARN Storm Spotter Training

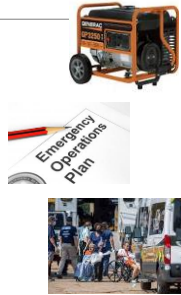


PRESENTER: BONNIE HUNDRIESER

Mitigation Preparedness & Response Support

Pennington County Examples:

- Acquire generators for backup power
 - St. Hilare - city well house, lift station, City Hall & Community Center.
- Planning for temporary sheltering and warming shelters
 - Thief River Falls Engelstad Arena (REA) and the National Guard Armory
- Maintenance and testing of sirens.
- Participate in regional EM planning, training, and exercising



PRESENTER: BONNIE HUNDRIESER

Comments and Questions?



Fall 2024

Following Planning Team Mtg. #2

EM + Local Gov't Review of Draft Plan and Public Review & Comment Period



- EM + Local government review of draft plan
- Public review & comment period (News Release #2)
- Document local postings
- Document public feedback & incorporate as appropriate

PRESENTER: BONNIE HUNDRIESER



Fall/Winter 2024

Draft Plan Submission to HSEM & FEMA, Plan Approval, and Collection of Adopting Resolutions

- Draft plan will be submitted first to HSEM and then to FEMA for approval for meeting all Federal requirements.
- Typically requires 1-2 months.
- APA letter
- EM coordination of adopting resolutions from each city.
- Final approval letter

PRESENTER: BONNIE HUNDRIESER

Questions?

What questions do you have for U-Spatial@UMD about the draft MHMP or next steps ?

PRESENTER: STACEY STARK

Contact Information

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

Bonnie Hundrieser, HM Planner
 Hundrieser Consulting LLC
hundrieserconsulting@outlook.com
 218-343-3468



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

Pennington County MHMP News Release #1 Record of Public Input & Incorporation

Overview: On **June 7, 2023**, Pennington 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. Pennington 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 Pennington 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 Pennington 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: Pennington County Emergency Management and local jurisdictions did not receive any public input following News Release #1.

From: [Erik Beitel](#)
To: [Erik Beitel](#); [Seth Vettleson](#); [Kevin Erickson](#); [Assessors](#); [Jennifer Herzberg](#); [Michael Flaagan](#); [Julie Sjostrand](#); [Kayla Jore](#); [Seth Nelson](#); [Dave Sorenson](#); [Neil Peterson](#); [Roy Sourdif](#); [Bruce Lawrence](#); [sjulestad@rocketmail.com](#); [jjones1954@hotmail.com](#); [mikelovly8@yahoo.com](#); [citysth@gvtel.com](#); [St.hilairefire@gmail.com](#); [aphilipp@citytrf.net](#); [mayorholmer@citytrf.net](#); [firechief@citytrf.net](#); [madam.trfpd@citytrf.net](#); [tgiffen@citytrf.net](#); [miki@gvtel.com](#); [braytwp@gvtel.com](#); [flatheadbecks@gmail.com](#); [jkimball@gvtel.com](#); [raincare@gvtel.com](#); [c.bjerklie@yahoo.com](#); [bbarth@gvtel.com](#); [janiemack@hotmail.com](#); [nordentownshipclerk@gmail.com](#); [debradietz@msn.com](#); [Jenny.reigstad@digikee.com](#); [csigerud@gmail.com](#); [jriverfallstowship@gmail.com](#); [nkhaase@gmail.com](#); [hoefer@gvtel.com](#); [Maud69@gmail.com](#); [auchenpaugh@gmail.com](#); [tkotrba@gvtel.com](#); [Cassandra.torkelson@gmail.com](#); [Heather.Winkleblack@state.mn.us](#); [Peter.Nelson@pennington.mnswcd.org](#); [nicol.bennett@usda.gov](#); [laura.pettit@usda.gov](#); [j.t.anderson@state.mn.us](#); [allissa.reynolds@state.mn.us](#); [Stephanie.Klamm@state.mn.us](#); [jolson@nwrdc.org](#); [Michele.heaver@usc.salvationarmy.org](#); [owen.fifield@redcross.org](#); [Mark.borseth@digikee.com](#); [carla.szklarski@sandfordhealth.org](#); [Paula.henry@myprowler.org](#); [Tomas.loberg@goodridgeisd561.org](#); [darla@nwrdc.org](#); [nated@nwmf.org](#); [dawn@nwmf.org](#); [josh.johnston@co.marshall.mn.us](#); [Chris.muller@co.beltrami.mn.us](#); [andy.anderson@co.clearwater.mn.us](#); [oklee06@yahoo.com](#); [jody.beauchane@co.polk.mn.us](#); [rneadeau@redlakenation.org](#)
Cc: [Bonnie K Hundrieser](#)
Subject: Pennington County Hazard Mitigation Update
Date: Wednesday, June 7, 2023 10:14:40 AM
Attachments: [Hazard Mitigation PSA.docx](#)

Greetings,

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

If you have any questions, please let me know.

Thank you,

Erik Beitel
Pennington County
Emergency Management
218-683-7087 office
218-416-2274 cell

From: [Erik Beitel](#)
To: [April](#); [Mark Allen](#)
Cc: [Bonnie K Hundrieser](#)
Subject: Pennington County Hazard Mitigation News Release
Date: Wednesday, June 7, 2023 10:09:33 AM
Attachments: [Hazard Mitigation PSA.docx](#)

Greetings,

Pennington County Emergency Management is commencing work on the update of the Pennington 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:

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I look forward to your participation in the Pennington County HMP update.

If you have any questions, please let me know.

Thank you,

Erik Beitel
Pennington County
Emergency Management

218-683-7087 office

218-416-2274 cell



Emergency Management

101 Main Avenue North

P.O. Box 616

Thief River Falls, MN 56701

(218) 683-7000

PENNINGTON COUNTY NEWS RELEASE

June 7, 2023

Public Input Wanted as County Updates Hazard Mitigation Plan

Pennington 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 Pennington County Office of Emergency Management is working with U-Spatial at the University of Minnesota Duluth to update the county's Hazard Mitigation Plan (HMP). The plan assesses the natural hazards that pose risk to the county, such as tornadoes, straight line winds, ice storms, blizzards, wildfire, flooding, and extreme temperatures and identifies ways to minimize the damage of future events. As the county works to update the plan, it wants to hear from the public.

The Pennington County HMP is a multi-jurisdictional plan that covers Pennington County, including the cities of Goodridge, St. Hilaire, and Thief River Falls. The Pennington County HMP also incorporates the concerns and needs of townships, school districts, and area agencies or organizations participating in the plan. The plan will be updated by a planning team made up of representatives from county departments, local municipalities, school districts and other key stakeholders. When completed, the plan will be submitted to the Minnesota Department of Homeland Security and Emergency Management and the Federal Emergency Management Agency (FEMA) for approval.

“Hazard mitigation planning is a central part of our emergency management program,” said Erik Beitel, Pennington County Emergency Management Director. “Understanding the natural hazards that can cause serious impact to our communities and taking action to reduce or eliminate the impact of future disasters makes us more resilient. Hazard mitigation helps us to break the cycle of damage and repair caused by things like flooding, ice storms, and severe wind events that can damage property, stress economies, and threaten life safety in our county.”

Examples of hazard mitigation include:

- Conducting public outreach on severe weather awareness and preparedness
- Limiting or restricting development in floodplain areas
- Removing existing buildings from flood or erosion prone hazard areas
- Using snow fences to limit blowing and drifting of snow over road corridors
- Constructing tornado safe rooms in vulnerable areas such as mobile home parks
- Burying overhead powerlines that may fail due to heavy snow, ice, or windstorms

Some mitigation activities may be eligible for future FEMA Hazard Mitigation Assistance grant funding.

Public input is an essential part of the plan update. As part of the planning process, Pennington 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 Pennington County Emergency Management by phone, email, or by posting a comment via a social media posting of this article.

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

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

Contact

Erik Beitel
Pennington County Emergency Management Director
Phone: (218) 683-7087

Email: elbeitel@co.pennington.mn.us

Pennington County HMP News Release #1 – June 7, 2023
Chart Documentation of News Release Postings

| Jurisdiction or Agency | Posting Representative | Date & Location of News Release Posting |
|-------------------------------|------------------------------------|---|
| Pennington County | Erik Beitel, Pennington County EMD | 6/7/23, Pennington County website |
| City of Goodridge | Shannon Moen, City Clerk | 6/23/23, City Hall bulletin board |
| City of St. Hilaire | Margaret Peterson, City Clerk | 6/23/23, City Hall bulletin board |
| City of Thief River Falls | Joanne Olson, IT Coordinator | 6/20/23, City website |
| Goodridge Public School | Tomas Loberg, Superintendent, | 6/8/23, Staff lounge bulletin board, School website |
| Thief River Falls Times | Dan Hill, News Editor | 6/10/23, Thief River Falls – Northern Watch Newspaper printed news article / online PDF |

Pennington County HMP News Release #2 Record of Public Input & Incorporation

Overview: On October 21, 2024 Pennington 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 Pennington County Hazard Mitigation Plan and invitation for public review and comment. The news release informed jurisdictional stakeholders and the public that a copy of the draft plan, interactive website, and comment form for public feedback was available online with a website link. The public review period for the draft plan was open from 10/21/24 – 11/4/24 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 Penningtons, 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 Pennington 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 Pennington County news release and how the input will be incorporated into the plan update, and if not relevant to be addressed, why.

From: Klamm, Stephanie (DNR) <stephanie.klamm@state.mn.us>

Sent: Tuesday, October 22, 2024 11:02 AM

To: Erik Beitel <elbeitel@co.pennington.mn.us>

Subject: [EXTERNAL] RE: Pennington County Hazard Mitigation Plan local Government review.

10/30/24 email from Stephanie Klamm, MN DNR Region 1 Northwest Area Hydrologist to Erik Beitel, Pennington County Emergency Management Director

Erik,

I read through the PC Hazard Mitigation Plan and have a few comments.

I am using the page numbers on the bottom of the document rather than the PDF page numbers.

On page 16, the Mental Health paragraph is listed twice, with almost the exact wording; I recommend removing the 1st paragraph.

On page 18, Are there no vulnerabilities in Goodridge? I would imagine that Goodridge and St. Hilaire would have some of the same vulnerabilities as overhead power lines; I feel that they should at least list one or two things....

On pages 18 and 19, the four homes are listed under both Penn County and the City of TRF. Should they just be listed under one, or does it show more urgency if they are listed as issues/concerns in both?

On page 34, Section 4.6.1 discusses extreme heat events and mentions the RLF station having max temps above 90F 140 times or on average 55 days a year. When was that data collected, over 100 years or over 10 years? Putting in the time range would hit home: the temps are increasing.

On page 35, Pennington County is typed out twice in that paragraph, a typo.

On page 38, The landslide interactive map wasn't working when the link was clicked to take you to the interactive map.

On page 42, are there no program gaps or deficiencies for dams? What about public outreach to downstream landowners if a dam were to fail?

On page 48, it mentioned hydropower backup for the hospital. Is this current? The hospital is a way out of town from the dam.

On page 51, EAP for dams...this should be reviewed and updated as it hasn't been since 2018; it may be something to review and think about doing this winter!

Thanks for the chance to review, I like the interactive map feature in this document...
Stephanie

Incorporation: Corrections were made within the plan document by the UMD team. Suggested changes were not made for the local vulnerabilities for Goodridge and St. Hilaire. In the planning process we look to each community to participate in sharing what they feel are their local vulnerabilities. We don't backfill comments unless the county EM Director feels it was necessary, and in this case it was not deemed necessary.

10/23/24 online comment - Heather Burrier

My dad owns one of the 4 houses on Riverside. Is there any kind of a time frame for the implementation of the buy-out plan? He has been paying for a house he can't sell since the flood, and it is causing financial and emotional strain on him. He is 81.

11/3/24, online comment - no name submitted

Glad to see Riverside Ave is listed in the Mitigation Action Chart. I do have a concern. I'm fully aware that this process takes time. I have talked with you and others from FEMA. I have also spoken to a few people from other counties who have had their homes bought out by FEMA and other organizations. They all have said it took an average of 5 years for their buyouts. The current chart shows a timeframe from 2025-2040. Riverside Ave property owners experienced major erosion damage April 2022. I'm not expecting anything to happen overnight or even a year from now but having to deal with the stress and not knowing when more of your property will fall into the river for possibility of a total of 17 years seems out of the norm. The four property owners on Riverside Ave in the mitigation chart consist of 3 single women and 1 elderly man. We need assistance as soon as possible. We have been patient for over 2.5 years. Please keep us updated. Thank you

Incorporation: No changes necessary. Both comments regarding the property buyouts in Thief River Falls were already addressed in the Thief River Falls mitigation action chart and the Pennington County mitigation action charts. These comments were shared with the Pennington County Emergency Management Director and the Pennington Soil & Water Conservation District administrator so that they could do additional follow up as needed.

From: [Erik Beitel](#)
To: [April](#)
Cc: [Bonnie K Hundrieser](#)
Subject: Public News Release
Date: Monday, October 21, 2024 9:31:32 AM
Attachments: [Pennington County News Release HMP Public Review \(10-21-24\).pdf](#)

April,

The public review and comment period is now open for the Pennington County Hazard Mitigation Plan. Please see the attached news release. The public review period will run from **October 21st to November 4th**, prior to submission of the plan to FEMA. Thank you for your assistance on conducting this public outreach.

I am thinking release in both papers. Please follow normal billing procedures for Pennington County.

v/r

Erik Beitel
Pennington County
Emergency Management
218-683-7087 office
218-416-2274 cell

From: [Bonnie K Hundrieser](#)
To: svettleson@penningtonsheriff.org; [Kevin Erickson](#); [Assessors](#); [Jennifer Herzberg](#); [Michael Flaagan](#); [Julie Sjostrand](#); [Kayla Jore](#); [Seth Nelson](#); [Dave Sorenson](#); [Neil Peterson](#); [Roy Sourdif](#); [Bruce Lawrence](#); sjulestad@rocketmail.com; jjones1954@hotmail.com; mikelovly8@yahoo.com; hrubyjoe@gmail.com; citysth@gvtel.com; St.hilairefire@gmail.com; aphilipp@trfmn.gov; mayorholmer@trfmn.gov; firechief@trfmn.gov; madam.trfpd@trfmn.gov; tgiffen@trfmn.gov; miki@gvtel.com; braytwp@gvtel.com; flatheadbecks@gmail.com; jkimball@gvtel.com; raincare@gvtel.com; c.bjerklie@yahoo.com; bbarth@gvtel.com; laniemack@hotmail.com; nordentownshipclerk@gmail.com; debradietz@msn.com; Jenny.reigstad@digikey.com; csligerud@gmail.com; jjriverfallstowship@gmail.com; nkhaase@gmail.com; hoefer@gvtel.com; Maud69@gmail.com; auchenpaugh@gmail.com; tkotrba@gvtel.com; Cassandra.torkelson@gmail.com; andrew.tepfer@state.mn.us; Peter.Nelson@pennington.mnswcd.org; nicol.bennett@usda.gov; laura.pettit@usda.gov; j.l.anderson@state.mn.us; allissa.reynolds@state.mn.us; Stephanie.Klamm@state.mn.us; joelson@nwrdc.org; Michele.heaver@usc.salvationarmy.org; christopher.schenk2@redcross.org; Mark.borseth@digikey.com; carla.szklarski@sandfordhealth.org; Paula.henry@myproowler.org; Tomas.loberg@goodridgelsd561.org; darla@nwrdc.org; nated@nwmf.org; dawng@nwmf.org; josh.johnston@co.marshall.mn.us; Chris.muller@co.beltrami.mn.us; andy.anderson@co.clearwater.mn.us; oklee06@yahoo.com; jody.beauchane@co.polk.mn.us; rneadeau@redlakenation.org
Cc: [Erik Beitel](#)
Subject: Pennington County HMP News Release - Public Review of Draft Plan
Date: Tuesday, October 22, 2024 8:12:00 AM
Attachments: [Pennington County News Release HMP Public Review \(10-21-24\).pdf](#)
Importance: High

Hello,

This is a follow up to the news release sent out by Erik Beitel. The public review and comment period is now open for the Pennington County Hazard Mitigation Plan.

The public review period will run from from **October 21st to November 4th**, prior to submission of the plan to FEMA.

Please participate in sharing this news release.

As a jurisdiction or related stakeholder involved in the Pennington County plan update, your assistance is requested to help post the news release and also to review the draft plan.

Please post the news release promptly to the areas where you share information with the public, such as your website, Facebook page, bulletin boards, or other locations. Please email [Erik Beitel](#) and let him know the date and location(s) of where the news release was posted.

In addition, if you have not already reviewed the plan during the government review period, you are strongly encouraged to do so. There are website links as well as a QR code in the news release that will take you to PDF of the plan, interactive website, mitigation action charts. There is also an online feedback form where you are encouraged to provide any comments, questions, or other feedback. If you review the plan, please let me know.

Please respond no later than November 4th.

Thank you for your assistance on conducting this public outreach.

Bonnie Hundrieser

Bonnie K. Hundrieser

Hazard Mitigation Planning Specialist

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

Hundrieser Consulting LLC

Phone: 218-343-3468

From: Erik Beitel <elbeitel@co.pennington.mn.us>

Sent: Monday, October 21, 2024 9:22 AM

To: Erik Beitel <elbeitel@co.pennington.mn.us>; svettleson@penningtonsheriff.org; Kevin Erickson <kwerickson@co.pennington.mn.us>; Assessors <Assessors@co.pennington.mn.us>; Jennifer Herzberg <JMHERZBERG@CO.PENNINGTON.MN.US>; Michael Flaagan <mlflaagan@co.pennington.mn.us>; Julie Sjostrand <jasjostrand@co.pennington.mn.us>; Kayla Jore <Krijore@co.pennington.mn.us>; Seth Nelson <srnelson@co.pennington.mn.us>; Dave Sorenson <dssorenson@co.pennington.mn.us>; Neil Peterson <ndpeterson@co.pennington.mn.us>; Roy Sourdif <rrsourdif@co.pennington.mn.us>; Bruce Lawrence <blawrence@co.pennington.mn.us>; sjulestad@rocketmail.com; jjones1954@hotmail.com; mikelovly8@yahoo.com; hrubyjoe@gmail.com; citysth@gvtel.com; St.hilairefire@gmail.com; philipp@trfmn.gov; mayorholmer@trfmn.gov; firechief@trfmn.gov; madam.trfpd@trfmn.gov; tgiffen@trfmn.gov; miki@gvtel.com; braytwp@gvtel.com; flatheadbecks@gmail.com; jkimball@gvtel.com; raincare@gvtel.com; c.bjerklie@yahoo.com; bbarth@gvtel.com; laniemack@hotmail.com; nordentownshipclerk@gmail.com; debradietz@msn.com; Jenny.reigstad@digikey.com; csigerud@gmail.com; jjriverfallstowship@gmail.com; nkhaase@gmail.com; hoefler@gvtel.com; Maud69@gmail.com; auchenpaugh@gmail.com; tkotrba@gvtel.com; Cassandra.torkelson@gmail.com; andrew.tepfer@state.mn.us; Peter.Nelson@pennington.mnswcd.org; nicol.bennett@usda.gov; laura.pettit@usda.gov; j.t.anderson@state.mn.us; allissa.reynolds@state.mn.us; Stephanie.Klamm@state.mn.us; jolson@nwrdc.org; Michele.heaver@usc.salvationarmy.org; christopher.schenk2@redcross.org; Mark.borseth@digikey.com; carla.szklarski@sandfordhealth.org; Paula.henry@myprowler.org; Tomas.loberg@goodridgeisd561.org; darla@nwrdc.org; nated@nwmf.org; dawng@nwmf.org; josh.johnston@co.marshall.mn.us; Chris.muller@co.beltrami.mn.us; andy.anderson@co.clearwater.mn.us; oklee06@yahoo.com; jody.beauchane@co.polk.mn.us; rneadeau@redlakenation.org

Cc: Bonnie K Hundrieser <hundrieserconsulting@outlook.com>

Subject: Public News Release

v/r

Erik Beitel
Pennington County
Emergency Management
218-683-7087 office
218-416-2274 cell



Emergency Management

101 Main Avenue North

P.O. Box 616

Thief River Falls, MN 56701

(218) 683-7000

PENNINGTON COUNTY NEWS RELEASE

October 21, 2024

Public Comment Sought for Pennington County's Hazard Mitigation Plan

Pennington County has completed an updated draft of its Hazard Mitigation Plan (HMP) and is now seeking public feedback. Like all Minnesota counties, Pennington County is vulnerable to a variety of natural hazards such as tornadoes, windstorms, severe winter storms, flooding, drought, and extreme temperatures, which can threaten the loss of life and property in the county. Planning for natural disasters minimizes the impact of events that can cause vast economic loss and personal hardship.

All county residents, as well as other interested agency or organizational stakeholders are strongly encouraged to review and offer feedback on the interactive website, PDF of the draft plan, and proposed local mitigation actions. The review and comment period is open for a period of 15 days through November 4, 2024. The public can access the plan using the following hyperlinks:

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

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

The Pennington County HMP is a multi-jurisdictional plan that covers Pennington County, including all cities and townships within the county. The Pennington County HMP also incorporates the concerns and needs of other key stakeholders such as school districts and related agencies, organizations, or businesses participating in the planning process.

Update of the plan has been under direction of Pennington County Emergency Management in cooperation with U-Spatial at the University of Minnesota Duluth and representatives from county departments, city and township governments and other participating stakeholders. Together, the planning team worked to identify cost-effective and sustainable actions to reduce or eliminate the long-term risk to human life or property from natural hazards. Examples include infrastructure projects for areas that experience repetitive flooding; construction of safe rooms in areas where residents and visitors are vulnerable to tornadoes and severe storm events; burying powerlines that may fail due to heavy snow, ice, or wind storms; ensuring timely emergency communication to the public through warning sirens and mass notification systems; and conducting outreach to increase public awareness of severe weather and personal preparedness.

Hazard mitigation planning helps Pennington 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 Pennington 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. Pennington 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 Pennington County Emergency Management.

Contact

Erik Beitel
Pennington County Emergency Management Director
Phone: (218) 683-7087
Email: elbeitel@co.pennington.mn.us

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



Pennington County HMP News Release #2 – October 21, 2024
Chart Documentation of News Release Postings

| Jurisdiction or Agency | Posting Representative | Date & Location of News Release Posting |
|-------------------------------|---------------------------------------|---|
| Pennington County | Erik Beitel, Pennington County EMD | Oct 21, 2024; Times and Watch News Paper Pennington County Website |
| City of Goodridge | Shanon Moen, City Clerk | Oct 24, 2024; City Bulletin Board |
| City of St. Hilaire | Margret Peterson City Clerk | Oct 24, 2024; City Bulletin Board |
| City of Thief River Falls | Joanne Olson Info Tech Coordinator | City On-line Homepage and city e-subscribers |

Appendix H – Mitigation Actions by Jurisdiction

CITY OF GOODRIDGE

Mitigation Action Chart

| # | Hazard | Mitigation Strategy | Mitigation Action | Status Priority Timeframe | Responsibility | Comments on Implementation & Integration | Possible Funding |
|---|--------------|---|--|---------------------------------|--|--|------------------|
| 1 | All-Hazards | Education & Awareness Programs | Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages. | Existing High 2025-2030 | City Admin / City EM | The city shares information with our residents by posting informational flyers and making occasional announcements at City Council meetings. We do not have a city website or Facebook page. Residents are encouraged to follow local news and radio for severe weather information. | 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 residents to go to the Pennington County website to sign up for the CodeRed emergency notification system. | City Funding |
| 3 | Extreme Cold | Education & Awareness Programs | Encourage residents to be prepared for periods of extreme cold, potential power outages, and ways to reduce the chances of freezing water pipes. | Existing High 2024-2029 | City Admin / City EM / Public Works | During periods of extreme cold we continue to remind residents to run a stream of warm water to avoid water pipes from freezing. Residents are also encouraged to be prepared for power outages. | City |
| 4 | Drought | Local Planning & Regulations / Education & Awareness Programs | Establish watering restrictions during drought conditions and raise public awareness of water conservation measures. | New Moderate 2025-2030 | City Admin | The city will establish watering restrictions as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage. | City |

CITY OF ST. HILAIRE

Mitigation Action Chart

| # | Hazard | Mitigation Strategy | Mitigation Action | Status Priority Timeframe | Responsibility | Comments on Implementation & Integration | Possible Funding |
|---|-------------|--------------------------------|---|---------------------------|--|---|------------------|
| 1 | All-Hazards | Education & Awareness Programs | Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages. | Existing High 2025-2030 | City Admin / City EM | We do not have a city website or a Facebook page. We post on the community bulletin board at the Post Office/ City Hall. We also utilize the Pennington County Sheriff's department to get urgent information out to residents when required. Our city works with the county to participate in the National Weather Service's annual Winter/Spring Weather Awareness Week by posting severe weather awareness information out on our city bulletin board. | City Funding |
| 2 | All-Hazards | Education & Awareness Programs | Encourage residents in our community to sign up for the county's emergency notification system. | New High 2025-2030 | City Admin / City EM | We will post information on the city's local bulletin board to encourage residents to sign up for the county's emergency management notification system on the Pennington County Sheriff's Office website. | City Funding |
| 3 | All-Hazards | Local Planning & Regulations | Incorporate mitigation strategies across the city's long-term plans and policies for future growth and development. | Existing High 2025-2030 | City Admin / City EM / City Public Works | The city contracts out to a private building official to enforce state building codes. The Fire Department/Sheriff's Department works with the mobile home court and the campground for emergency evacuation and sheltering. We need to update our city's Comprehensive Plan to address considerations for future hazard events such as flooding. | City Funding |

CITY OF ST. HILAIRE

Mitigation Action Chart

| # | Hazard | Mitigation Strategy | Mitigation Action | Status Priority Timeframe | Responsibility | Comments on Implementation & Integration | Possible Funding |
|---|-------------------------------|---|--|---------------------------|--|--|------------------|
| 4 | Severe Winter & Summer Storms | Mitigation Preparedness & Response Support | Obtain generator backup power for our city well house, lift station, City Hall & Community Center. | Existing High 2025-2030 | City Admin / City EM / City Public Works | The city has been working on purchasing a new generator for the well house & lift station. We would also like to secure a portable generator for our City Hall and Community Center that serves as our local shelter if people are displaced from a severe storm event or extended power outage. | City Funding |
| 5 | Severe Summer Storms | Education & Awareness Programs | Notify residents in the trailer park and the campground that the activity center is the designated storm shelter. | Existing High 2025-2030 | City Admin / City EM | The city continues to keep residents of the trailer park and campground informed of procedures for evacuation in the event of severe wind or storm events. | City Funding |
| 6 | Extreme Cold | Education & Awareness Programs | Encourage residents to be prepared for periods of extreme cold, potential power outages, and ways to reduce the chances of freezing water pipes. | Existing High 2024-2029 | City Admin / City EM / Public Works | During periods of extreme cold we continue to remind residents to run a stream of warm water to avoid water pipes from freezing. Residents are also encouraged to be prepared for power outages. | City Funding |
| 7 | Drought | Local Planning & Regulations / Education & Awareness Programs | Establish watering restrictions during drought conditions and raise public awareness of water conservation measures. | New Moderate 2025-2030 | City Admin | The city will establish watering restrictions as per MN DNR guidelines during periods of severe drought. The city will do local outreach to help make residents aware of the ordinance and the limitations on non-essential water usage. | City Funding |
| 8 | Flooding | Structure & Infrastructure Projects | Address ways to reduce the impacts of spring flooding on the northwest end of town along the coulee and a culvert on Minnesota Street. | New High 2025-2030 | City Public Works | This falls under the direction of our City Public Works department. Stormwater infrastructure improvements are made as city funding will allow on an annual basis. | City Funding |

CITY OF THIEF RIVER 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 to share information with residents, and we also post information for the public at City Hall. The city’s Fire Department coordinates with Pennington County Emergency Management to participate in the National Weather Service Annual Severe Winter/Spring Weather Awareness Week. | 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 residents to sign up for the Pennington County CodeRED system. It is located under the “Emergency” tab on the homepage of the city website. We also have a link on our website where residents can sign up for “E-Alerts.” | 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 & Committees | 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 long-term planning committee to prioritize and recommend road, bridge, and storm sewer projects for the foreseeable future. We also have a building committee to recommend infrastructure improvements for structures. We have a safety committee for review and recommendations of concern of public safety. | City Funding |
| 4 | Extreme Cold | Education & Awareness Programs | Educate residents on best practices during periods of extreme cold and power outages. | Existing High 2025-2030 | City Admin / City Public Works | Our utility billing department can place short communications on the bills to be mailed. We will utilize our utility billing and the city website as opportunities for communication with our residents. | City Funding |

CITY OF THIEF RIVER FALLS

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 | Monitor, maintain, and budget the city's warning siren system for uninterrupted service to the residents. | Existing High 2025-2030 | City EM | This is an ongoing effort of the city in coordination with the Pennington County Sheriff's Office. Our warning sirens are tested on a monthly basis and are maintained by the city. | City Funding |
| 6 | Severe Summer Storms | Local Planning & Regulations | Ensure plans are in place for the evacuation and sheltering of residents of trailer parks within the city. | Existing High 2025-2030 | City Admin / City EM | 5 trailer parks are in the city, placing many people in a vulnerable situation with windstorms. One Park has an onsite storm shelter, the other parks do not. The evacuation plan for the parks that do not have an on-site shelter, are directed to utilize one of the two designated shelters within the city. The Ralph Englestad Arena is located on the Northwest side of town. The National Guard Armory is centrally located. If the city seeks to construct a tornado safe room at any trailer park, significant outside grant funding would be necessary. This is something that the city of TRF may look to apply for FEMA grant funding in the future. | City Funding, FEMA Grant Funding |
| 7 | Severe Summer Storms | Structure & Infrastructure Projects | Reduce the risk of downed trees and tree branches due to severe summer storms. | Existing High 2025-2030 | City Admin / City Public Works | The city will encourage residents to consider removal of privately owned unhealthy and unsafe trees. We will also work to develop a tree management inventory. Our utility billing department can place short communications on the bills to be mailed. | City Funding |

CITY OF THIEF RIVER FALLS

Mitigation Action Chart

| # | Hazard | Mitigation Strategy | Mitigation Action | Status Priority Timeframe | Responsibility | Comments on Implementation & Integration | Possible Funding |
|----|--------------------|--|---|-----------------------------|--|--|--|
| 8 | Flooding | Local Planning & Regulations | Work with watershed partners to address stormwater management planning to handle future high-rain events that impact the city. | Existing Moderate 2025-2030 | City Admin / City Public Works | The city of TRF continues to work with the SWCD and the local watershed board to deliver quality water management and flood reduction projects for the community. Our Public Works department will continue to search for high impact stormwater projects, as well as funding opportunities to align with them. There is a budgeted amount of emergency repairs in our annual stormwater budget. | City Funding |
| 9 | Landslides | Local Planning & Regulations / Structure & Infrastructure Projects | Work with Pennington County Emergency Management and the Pennington SWCD on the buyout of 4 homes along Riverside Ave that are at risk of landslide failure due to erosion. | In-Progress High 2025-2040 | City Admin / City EM / City Public Works in coord with SWCD and PCEM | Braun Intertec completed Geotechnical Engineering work and recommended property buyouts. This is a top priority for the City of Thief River Falls. The city, county, and SWCD will be working together to develop to apply for FEMA or other outside grant funding to support property buyouts. | City Funding, SWCD Funding, Possible FEMA Grant Funding or MN DNR flood risk reduction grant funding |
| 10 | Drought | Local Planning & Regulations / Education & Awareness Programs | Continue to update and enforce code restrictions for watering during periods of low water (drought). | Existing Moderate 2025-2030 | City Admin / City EM / City Public Works | The city will continue to enforce watering restrictions as per MN DNR guidance during periods of severe drought. We will use our city website, utility billing, and local media to help make residents aware of the limitations on non-essential water usage. | City Funding |
| 11 | Wildfire / Drought | Education & Awareness Programs | Continue to create public awareness of the dangers of wildfires. | Existing Moderate 2025-2030 | City Admin / City EM | The city continues to conduct public outreach on the current level of wildfire danger during periods of drought. We utilize our city website and local media. | City Funding |

CITY OF THIEF RIVER FALLS**Mitigation Action Chart**

| # | Hazard | Mitigation Strategy | Mitigation Action | Status Priority Timeframe | Responsibility | Comments on Implementation & Integration | Possible Funding |
|----------|---------------|---------------------------------|---|--|--|---|-----------------------------|
| 12 | Wildfire | Local Planning & Regulations | Identify possible high risk wildfire areas adjacent to city limit boundaries. | Existing Moderate 2025-2030 | TRF Fire Department in coord with neighboring FD's | This is an ongoing effort by the TRF FD. We are working to continue to identify and address any areas adjacent to city boundaries that may pose wildfire risk and will address these areas in coordination with neighboring fire departments. | City Funding |