Bois Forte Reservation
2025 Hazard Mitigation Plan

Department of Public Safety | Division of Homeland Security and Emergency Management

Bois Forte Reservation Minnesota

2025 Hazard Mitigation Plan

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Section 1 – Introduction

1.1 Hazard Mitigation Planning in Minnesota

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

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

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

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

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

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

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

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

Bois Forte Reservation HMP Website

The Bois Forte Reservation HMP provides assurances that the Bois Forte Band will comply with all applicable federal statutes and regulations during the periods for which it may receive federal grant

funding to implement eligible mitigation actions, in compliance with 44 CFR 13.11(c), and will amend this Annex whenever necessary to reflect changes in tribal or federal laws and statutes as required in 44 CFR 13.11(d).

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 Bois Forte Reservation Emergency Management to facilitate an update to the 2018 Bois Forte Reservation 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 tribal and stakeholder outreach as well as mitigation action development related to this plan.

This HMP evaluates and prioritizes the major natural hazards affecting Bois Forte Reservation 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 single-jurisdiction plan that covers the Bois Forte Reservation, which is located within the counties of Itasca, Koochiching, and St. Louis in northeast Minnesota. The reservation is comprised of three sub-divisions, including Nett Lake, Deer Creek, and Lake Vermillion

Representatives of the Bois Forte Reservation and additional stakeholders 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 implementation (see also Section 2.2). The Bois Forte Reservation has adopted the plan by resolution (before its submittal to FEMA (see Appendix B).

Bois Forte Reservation has specified the following goals for this plan update:

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

1.1.2 Hazard Mitigation Definition

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

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

1.2 State Administration of Mitigation Grants

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

Section 2 – Public Planning Process

2.1 Planning Team Information

The Bois Forte Reservation HMP planning team is headed by the Bois Forte Band of Chippewa emergency management director, who serves as the primary point of contact. Planning team members include representatives from public and governmental sectors. Table 1 identifies the planning team individuals and organizations that participated in virtual planning team meetings during the plan update process.

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

Find the planning team members on the Bois Forte Reservation HMP website

Table 1. Hazard Mitigation Planning (HMP) Team

Name	Agency/Organization	Participant Title
Teresa Isham	Bois Forte Emergency Management	Emergency Management Specialist
Teri Morrison	Bois Forte HHS	Community Health Programs Manager
Randy Long	Bois Forte Tribal Government	IT Director
Jaime Burdick	Bois Forte Law Enforcement	Chief of Police
Miranda Lilya	Bois Forte Reservation Tribal Government	Executive Director
Vondalee Carr	Bois Forte Tribal Government	477 Program Director
Robbie Goggleye	Bois Forte Tribal Government	Maintenance Director
Carlos Hernandez	Bois Forte Tribal Government	Chairman
Tara Grshick	Bois Forte Tribal Government	Secretary Treasurer
Robert Moyer	Bois Forte Tribal Government	District 2 Representative
Jeneal Goggleye	Bois Forte Band of Chippewa-MCT	Housing Director
Brady Boutto	Bois Forte Forestry	Forestry Tech/ Wildland Firefighter
Dan Rabideaux	Bois Forte Health and Human Services	Chief Executive Officer
Cody Swanson	Bois Forte Natural Resources	Forestry Program Manager
Carol Burr	Bois Forte RTG	Planning & Community Development Director
Lance Hill	Bois Forte RTG	Realty Manager
Frank Villebrun	Bois Forte Environmental Services	Environmental Services Program Coordinator
Donna Hoffer	Bureau of Indian Affairs	Law Enforcement Assistant

Name	Agency/Organization	Participant Title
George Strong	KBFT 89.9FM Bois Forte Tribal Community Radio	General Manager
Tony Yeley	Fortune Bay Resort Casino	Risk Manager
Derek Howe	Lake Country Power	Chief Operating Officer
Kelvin McCuskey	MN HSEM	Region 2 Regional Program Coordinator
Nathan Lynum	National Weather Service – Duluth	Meteorologist
Michael Palmer	MN DNR	Regional Firewise Specialist
Alex Jaye	St. Louis County Sheriff's Office	Emergency Management Specialist
Lois Roskoski	Greenwood Township	Chair, Greenwood Board of Supervisors

2.2 Review of Existing Plans, Capabilities & Vulnerabilities

Bois Forte Reservation and its local communities utilized a variety of planning documents to direct plan development. These documents included a Comprehensive/Master Plan, Emergency Operations Plan, Transportation Plan, etc. (see Section 5.1.4 and Appendix D). The planning process also incorporated the existing natural hazard mitigation elements from previous planning efforts. In addition, the 2024 Minnesota All-Hazard Mitigation Plan was consulted.

In the development of the Bois Forte Reservation HMP, U-Spatial consultants reviewed and incorporated a variety of planning documents that direct community development and influence land use decisions within the reservation. In addition, U-Spatial consultants worked closely with the Bois Forte Reservation emergency management director, key tribal departmental staff, and other related stakeholders to collect feedback on local mitigation capabilities and vulnerabilities that either support or hinder the ability to mitigate against natural hazards at the local level.

Building codes offer a way to incorporate geographically relevant and best available building science with policies and programs. When public buildings are constructed on the Bois Forte Reservation, they tend to follow Minnesota State Building Code very closely; however, Bois Forte has not and is not required to adopt the Minnesota State Building Code. Private buildings are required to go through a permit process where they are reviewed and approved on a case-by-case basis, depending on their location and what codes would be reasonable to follow.

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 Bois Forte Reservation 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 Bois Forte Reservation to support mitigation.

Local Mitigation Surveys: As part of Bois Forte Reservation's 2025 HMP update, Bois Forte Reservation Emergency Management, key tribal departments, and additional agency stakeholders were asked to fill out a Local Mitigation Survey (LMS) form. Questions in the LMS form addressed the following:

- Hazard Identification, Risk Assessment & Vulnerability Analysis
- Local Mitigation Capabilities Assessment
- Local Mitigation Projects
- Survey Participants

The purpose of the survey was to gather community- specific information needed to support the update of the plan and to help inform development of tribal mitigation actions for the next five-year planning cycle (for the full Bois Forte Reservation LMS report, see Appendix C).

2.3 Planning Process Timeline and Steps

To update the 2018 Bois Forte Reservation HMP, U-Spatial consultants coordinated with Bois Forte Reservation Emergency Management and members of the planning team. The updated plan includes new data documenting the types of hazards faced by Bois Forte Reservation residents and emergency planning officials as well as new thinking on how to address these hazards.

Updating the plan also included providing opportunities to the public to participate in the planning process. The Bois Forte Tribal Council, the authorized governing body of the Bois Forte Reservation, defines "public" as Bois Forte Reservation elected officials, tribal departmental and other staff, and tribal residents that are living or working on or outside of Bois Forte Reservation boundaries, as well as non-tribal neighboring jurisdictions or key agencies with a partnership role to the tribe in emergency preparedness and response.

2.3.1 Bois Forte Reservation Stakeholder Coordination

Two planning team meetings took place via Zoom video conference hosted by U-Spatial. Meeting participants included representatives from Bois Forte Reservation tribal government and departments, neighboring jurisdictions, and other related agencies and organizations. Appendix F provides documentation of stakeholder outreach and participation in the plan update.

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

To provide the opportunity for public input, Bois Forte Reservation 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 Bois Forte Reservation HMP website, hosted by U-Spatial, and the feedback and mitigation action ideas survey will remain available through the five-year planning period to foster public engagement. Table 2 documents dates of Hazard Mitigation update meetings and public outreach. The public feedback period for the draft plan was open from 11/12/25 to 11/26/25, for a period of 14 days. Appendix G provides documentation of the public outreach for feedback on the draft plan by Bois Forte Reservation and jurisdictions.

Table 2. Bois Forte Reservation hazard mitigation update meetings and public outreach

Event	Date	Appendix
Kickoff Webinar	8/8/24	Appendix F, Planning Team Meetings
News Release #1	9/30/24	Appendix G, Public Outreach & Engagement Documentation
Planning Team Meeting #1	2/13/25	Appendix F, Planning Team Meetings
Planning Team Meeting #2	9/16/25	Appendix F, Planning Team Meetings
News Release #2	11/12/25	Appendix G, Public Outreach & Engagement Documentation

At the close of the public outreach period, the U-Spatial consultants worked with the Bois Forte Reservation Emergency Manager and planning team to incorporate public feedback into the HMP.

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

2.3.2 Overview of Community Participation

Throughout the planning process, Bois Forte Reservation and the U-Spatial team worked to engage representatives from communities in the update of the plan. Key activities included assisting with public outreach, participating in planning team meetings, providing local-level information, and reviewing and providing feedback to the plan update.

U-Spatial and Bois Forte Reservation actively used the following methods to engage community members 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 tribal 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 Bois Forte Reservation 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 local participation and collection of locally specific information.

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

- **Phone Calls**: Phone calls were frequently used to conduct direct outreach or follow-up to Bois Forte Emergency Management and other tribal departments to ensure participation or to

collect information via one-on-one interviews. Phone calls proved to be an effective tool that resulted in increased participation and collection of quality information.

Table 3 provides an overview of participation in the Bois Forte Reservation HMP update planning process and a reference to supporting documentation.

Table 3. Local participation in the planning process

Jurisdiction (2024 Population, U.S. Decennial Census)	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
Bois Forte Reservation and Off-Reservation Trust Land (984)	X	X	X	X	X	X
Neighboring Jurisdictions:						
Itasca County						
Koochiching County						
St. Louis County		X	X		X	
Greenwood Township		X			X	

Section 3 – Risk Assessment and Vulnerability Analysis

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

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

3.1 Natural Hazard Identification

This assessment identifies the characteristics of natural hazard events, the severity of the risk, the likelihood of these events occurring, and the vulnerability of Bois Forte Reservation'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 local communities. Listed below are the natural hazards addressed in the 2024 Minnesota State Hazard Mitigation Plan:

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

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 Bois Forte Reservation, updated the existing mitigation actions published in the 2018 HMP, and proposed new mitigation actions.

The team examined the hazards identified in the 2018 HMP and adjusted them to reflect the definitions of natural hazards used in the 2024 Minnesota State Hazard Mitigation Plan. While this HMP focuses on natural hazards, planning took place with the understanding that many non-natural hazards could occur due to natural disasters (e.g., disruption in electrical service due to downed powerlines from heavy snow, ice storms, or high wind events).

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

Table 4. Prioritization of hazards for 2025 Bois Forte Reservation HMP Update

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

3.1.2 FEMA- and Minnesota-Declared Disasters and Assistance

Another historical perspective is derived from FEMA-declared disasters. Between 1957 and August 2025, Bois Forte Reservation has been included in three federal disaster declarations: 4182, 4531 (COVID), 4659.

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

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, summaries of at-risk populations are available on the reservation profile page. Vulnerable attributes of a population are addressed with each natural hazard.

Explore population vulnerability on the Bois Forte Reservation HMP Website

3.2.1 Cultural Resources

Cultural resources on the Bois Forte Reservation include ceremonial sites, burial grounds, and traditional gathering sites for resources such as maple syrup, wild rice, berries, medicinal plants and wood fibers. These resources are extensive and all locations have not been identified. A list of known locations of ceremonial sites and burial grounds are maintained by Bois Forte Maintenance and the Bois Forte Tribal Historic Preservation Officer (THPO) and are not considered public information. The Bois Forte THPO provides research, documentation and legal protection of the Band's cultural and sacred sites and artifacts. Information on Bois Forte cultural and sacred sites is secured by the THPO and the Bois Forte Band and will be considered for any vulnerabilities and associated mitigation measures as deemed appropriate.

Wild rice (*Zizania palustris*), or manoomin, is an important cultural and economic resource in the Bois Forte Reservation. According to a 2008 wild rice study by the Minnesota DNR,

> Nowhere has natural wild rice been more important, nor had a richer history, than in Minnesota. No other native Minnesota plant approaches the level of cultural, ecological, and economic values embodied by this species. Natural wild rice has been hand harvested as a source of food in the Great Lakes region for thousands of years. […] It is thought that more than 3000 tribal members participate in wild rice harvesting, providing a statewide total (tribal and nontribal) of 4000-5000 individuals annually (MN DNR, 2008).

The Minnesota counties of Aitkin, Cass, Crow Wing, Itasca, and St. Louis contain over half of the state's inventoried natural wild rice acreage. However, various threats to wild rice exist, including loss of genetic integrity, invasive species, water quality, and climate change (MN DNR, 2025c). The MN DNR recognizes the importance of protecting natural wild rice beds from genetic modification and sees this protection as critical to the future of wild rice.

Wild rice is also of high ecological importance, as both migrating and resident wildlife rely on its seeds (one acre of natural wild rice can produce over 500 pounds of seed). Wild rice not only feeds waterfowl, but herbivores such as beaver, white-tailed deer, and moose. Fish also benefit from wild rice, as it can protect shorelines and provide fish habitat. Wild rice lakes and streams provide critical habitat for 17 bird species, including the Common Loon, Trumpeter Swan, and Bald Eagle (MN DNR, 2008).

Wild rice is also an important economic asset in the Bois Forte Reservation. The price for traditionally hand-parched wild rice from Nett Lake is 19.50/pound. This provides economic support for the people of Bois Forte (Bois Forte Band of Chippewa, 2025).

Subsistence hunting, fishing, trapping, and gathering are the foundation of Ojibwe culture, and the 1854 Treaty allows hunting, fishing, and foraging within the ceded territory (Thompson, 2020). The protection of resources are held as a priority within and outside the Bois Forte Reservation boundaries.

Hunting and fishing are important resources in the Bois Forte Reservation. Many people rely on this as a food source year-round. Fishing is allowed all year, and the hunting season is July 1st-December 31st. Permits and licenses are issued by the Bois Forte Department of Natural Resources (Bois Forte Band of Chippewa, 2025)

3.3 Climate Change

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

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

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

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

To help the public understand how the changing climate has affected and is expected to affect the behavior of common weather hazards in Minnesota, the MN DNR State Climatology Office developed graphical summaries of the scientific confidence associated with each hazard's relationship to climate

change (Table 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
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.

Bois Forte Reservation participated in a 2016 climate adaptation plan that conducted vulnerability assessments for the territory ceded by Ojibwe people to the United States government in the 1854 Treaty. For Ojibwe people, natural resources and cultural resources are inextricably intertwined, and climate change is therefore considered a threat to Ojibwe culture, affecting "flora and fauna that are imperative to the culture, history, well-being, and life-ways of the Ojibwe people" (Stults et al., 2016).

3.3.2 Health Impacts of Climate Change in Minnesota

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

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

Heat

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

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

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

Just as one example of the devastating effects of heat, in the summer of 2011, Minnesota had six days when the heat index was 105 degrees F or higher—and that same summer there were 1,302

emergency department visits and 3 deaths due to heat. What makes these numbers tragic is that heat-related illnesses are preventable.

Air Pollution

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

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

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

There are three pollen seasons in Minnesota: trees, grasses, and weeds. Trees are the first to release pollen, typically starting in early April, grasses usually ramp up pollen release in early June, and weeds typically begin releasing pollen in mid-June and continue until the first hard frost. Research shows that the growing season for ragweed pollen, which is highly allergenic, has increased by 15 to 25 days in and around Minnesota. The lengthening pollen season is strongly related to climate change characteristics, such as lengthening of the frost-free season and later timing of the first fall frost.

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

Those most at risk include:

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

Extreme Precipitation, Floods, Drought

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

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

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

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

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

Localized flash flooding can also be a problem where our infrastructure is undersized, and people get caught off guard by flooded roads. This is an important public health safety concern as almost half of flash flood fatalities occur in vehicles. It takes as little as six inches of fast-moving water to knock over and carry away an adult, and as little as 12 inches can carry away a small car.

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

Zoonotic Diseases

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

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

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

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

Harmful Algal Blooms

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

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

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

Mental Health

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

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

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

3.3.3 Climate Change Adaptation

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

3.3.4 Climate Change Data and Tools in Minnesota

The University of Minnesota Extension and the University of Minnesota's Water Resources Center coordinate the Minnesota Climate Adaptation Partnership (MCAP), which brings together federal and state agencies, organizations, and individuals statewide with an interest in climate adaptation. MCAP received funding after the 2021 legislative session to develop high-resolution (2.6 mile/4km grid) dynamically downscaled climate projections utilizing the University of Minnesota's Supercomputing

Institute. This data is being made publicly accessible via the new Minnesota CliMAT—Climate Mapping and Analysis Tool. This interactive online tool provides highly localized climate projections for Minnesota. MN CliMAT is based on data from the latest generation of global climate models, called CMIP6. With the dynamically downscaled climate projection data, users can visualize even how small cities will likely be impacted in the coming decades (Liess, S. et al., 2023).

More resources are available on the climate change page of the Bois Forte Reservation HMP website

3.4 Jurisdictional Change in Risk or Vulnerability Assessment

Areas within the Bois Forte Reservation have varying vulnerabilities and concerns about impacts to their communities. Interviews with tribal representatives, in addition to the Local Mitigation Survey, resulted in some specific concerns (see Appendix C). Participants were asked to provide feedback on how the reservation'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.

Representatives from several Bois Forte Reservation departments noted 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, Bois Forte Reservation Emergency Management was asked to provide a vulnerability assessment that described what structures, systems, populations, or other community assets were susceptible to damage and loss from specific hazard events. This information was used to help tie local vulnerability back to the exposure of people, buildings, infrastructure, and the environment to the natural hazards listed in Table 4 and to assist the tribal government in development of related local mitigation actions to reduce risk.

The following is a compilation of common responses taken directly from tribal representatives as preserved in Appendix C: Question 2 – Local Vulnerabilities. Responses here are edited only for clarity.

Bois Forte Reservation

> *Winter Storms, Extreme Cold:* Severe winter weather including ice storms, blizzards, and extreme cold can cause hardship on the community in regards to travel and oftentimes loss of electricity which may then contribute to heat loss or refrigeration or freezer loss. Our generators are in poor unmaintained condition. New generators need to be obtained for emergency backup power.
>
> *Flooding:* Flooding could cause damage to any homes on the reservation. The design of the lift station on Whiskey Point needs to be redone or grinder pumps installed at individual residences that are prone to sewer back up along that road.
>
> *Wildfire:* Wildfire could be detrimental to the reservation properties because we are surrounded by forests.

Other Stakeholders

St. Louis County

> *Flooding:* Yearly flooding causes damage to private and public infrastructure. Limited river gauges in key areas make forecasting of downstream flooding difficult.
>
> *Wildfire:* St. Louis County as a whole ranks among the highest wildfire risk for anywhere within the Midwest, specifically north SLC where tree density, species and tree disease increase the risk.
>
> *Windstorms, Tornadoes:* Many parts of the county have limited cell coverage making warning and notification of wind events difficult. This is especially true with tourists to the area that are oftentimes hunting, fishing, camping or hiking in remote areas.

3.4.2 Future Development

Because Bois Forte Reservation is vulnerable to a variety of natural hazards, the tribal government—in partnership with the state government—must commit to preparing for the management of these events. Bois Forte Reservation is committed to ensuring that tribal elected officials become informed leaders regarding community hazards so that they are better prepared to set and direct policies for emergency management and tribal response.

As part of the vulnerability assessment conducted for the Bois Forte Reservation HMP update, participants were asked to describe if there were any factors related to population growth, zoning, or development they felt have increased their community's vulnerability to future severe weather or disaster events. The following is a compilation of responses taken directly from departmental representatives as preserved in Appendix C: Question 4 – Increase in Vulnerability. Responses here are edited only for clarity.

Bois Forte Reservation

> We have added some buildings in the community, but most importantly, upgraded the dam to save the rice. No increase in vulnerability.

In the development of local mitigation actions, all planning team members 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.

The Bois Forte Reservation emergency management director will work to keep the communities covered by the HMP engaged and informed during the plan's cycle. By keeping tribal leaders involved in the monitoring, evaluation, and update of the HMP, they will be 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 Bois Forte Reservation 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 reservation was independently reviewed for its past hazard history, relationship to future trends, and vulnerability to future events. The reservation also conducted a capabilities assessment to review the plans and programs that are in place or lacking (program gaps or deficiencies) for implementing mitigation efforts, as related to each natural hazard. An assessment was also conducted for the tribe to identify the plans, policies, programs, staff, and funding they have in place to incorporate mitigation into other planning mechanisms (see Section 5.1 and Appendix C).

Read more about natural hazard prioritization and view interactive information on all hazards

The following hazard profiles address hazards that the Bois Forte Reservation HMP Planning Team deemed moderate to high risk. Hazards determined to be low risk or without substantive mitigation actions are not required to be included.

4.1 Flooding

Flooding is the most significant and costly natural hazard in Minnesota. Two of the three federal disaster declarations in Bois Forte Reservation included flooding.

After several years of drought and exceptionally mild winter, the first half of 2024 was extremely wet with frequent, heavy precipitation causing widespread flooding throughout Minnesota, resulting in Federal Disaster Declaration 4797, affecting 22 counties. Bois Forte Reservation was included in this declaration (FEMA, 2024c).

4.1.1 Probability of Occurrence

From 1996 through May 2025, the NCEI Storm Events Database has recorded 134 flood and flash flood events in the three counties surrounding and including Bois Forte Reservation. This area of Koochiching, Itasca, and Saint Louis Counties has experienced 3.8 flash flood events every year and one riverine flood event every 1.1 years on average during this period.

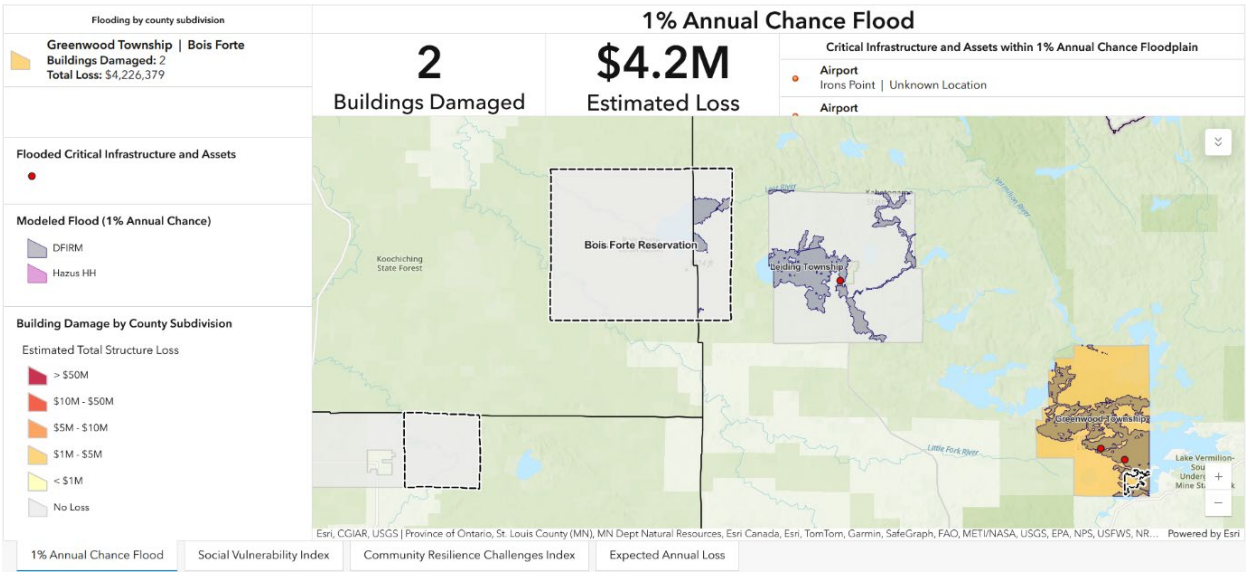
View interactive maps and see information about flooding history, risk, and vulnerability

Minnesota HSEM has encouraged a potential risk and economic loss analysis for a 1% annual chance flood using the FEMA tool, Hazus for ArcGIS. A Digital Flood Insurance Rate Map (DFIRM) defined the 1% annual chance flood boundary.

A raster layer (10m resolution) of flood water depths within the DFIRM boundary was calculated by taking the difference between the elevation of the ground and the surface of the flood water. The method of calculating the flood water surface elevation (WSEL) varied by the data available. For this analysis, water surface elevations within the DFIRM boundaries were calculated by interpolating the

regulatory water surface elevation values of cross section line data, where available, and the elevation at the flood boundary where cross section data was not available. The resulting Hazus 1% annual chance floodplain is shown in the Flood Vulnerability dashboard on the Bois Forte HMP website (Figure 1), where it is available in an interactive form.

Figure 1. 1% Annual chance flood in Bois Forte Reservation



4.1.2 Vulnerability

Potential economic loss estimates were based on reservation-specific building data. Bois Forte Reservation 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 within Bois Forte Reservation

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, 795 points were input to Hazus to represent buildings with a total estimated building plus contents value of $144 million. Approximately 71% of the buildings (and 62% of the building value) are associated with residential housing. The estimated loss by occupancy class for the entire county is shown in Table 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	567	$88,708,731	2	$17,698,977	2	$4,226,379
Commercial	89	$31,773,498	0	$0	0	$0
Other	139	$23,562,454	0	$0	0	$0
Totals	795	$144,044,683	2	$17,698,977	2	$4,226,379

SOURCE: (FEMA, 2024B)

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 Bois Forte Reservation.

Buildings identified as essential facilities for the Hazus flood analysis include hospitals, police and fire stations, and schools (often used as shelters). Many 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 Bois Forte Reservation's essential facilities included in the Hazus flood analysis are located within the 1% annual chance floodplain

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

It is important to identify other critical infrastructure within the 1% annual chance floodplain, given the higher risk of the facility or infrastructure being incapacitated or destroyed during a flood. In Saint Louis County, two airports were found to be at risk in the 1% annual chance flood, as well as the Pine Acres Resort & Campground in the City of Orr; none of this infrastructure is within Bois Forte Reservation. This infrastructure is mapped in the Bois Forte HMP website. This flood analysis did not evaluate flooding bridges, roads, or other linear features.

Community Vulnerability

Potential economic losses were estimated by Census Minor Civil Division. The Vermilion sector of Bois Forte Reservation, which intersects Greenwood Township, would suffer an estimated total loss of $4.2 million in the 1% annual chance flood.

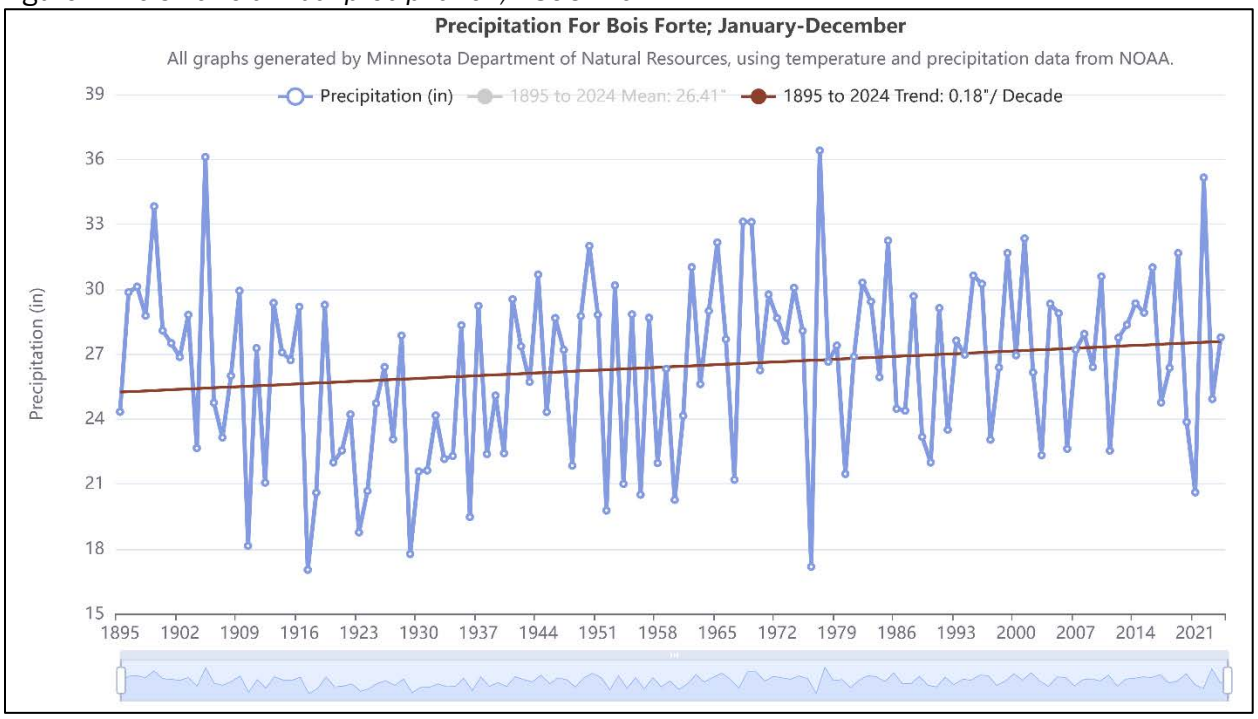
The status of jurisdictional participation in the National Flood Insurance Program and any repetitive loss properties are detailed in Section 5.1.1. National Flood Insurance Program (NFIP).

Section 3.4 provides responses to localized vulnerabilities to specific hazards.

4.1.3 Flooding and Climate Change

Higher temperatures globally have evaporated more surface and ocean water into the atmosphere, which, in turn, has provided more potential moisture for precipitating weather systems. In Bois Forte Reservation, the result has been increased precipitation, with annual totals increasing at an average rate of 0.18 inches per decade statewide since 1895 (see Figure 2).

Figure 2. Bois Forte annual precipitation, 1895–2024



SOURCE:(MN DNR, 2025B)

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

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

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

4.1.4 Program Gaps and Deficiencies

Bois Forte Reservation 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:

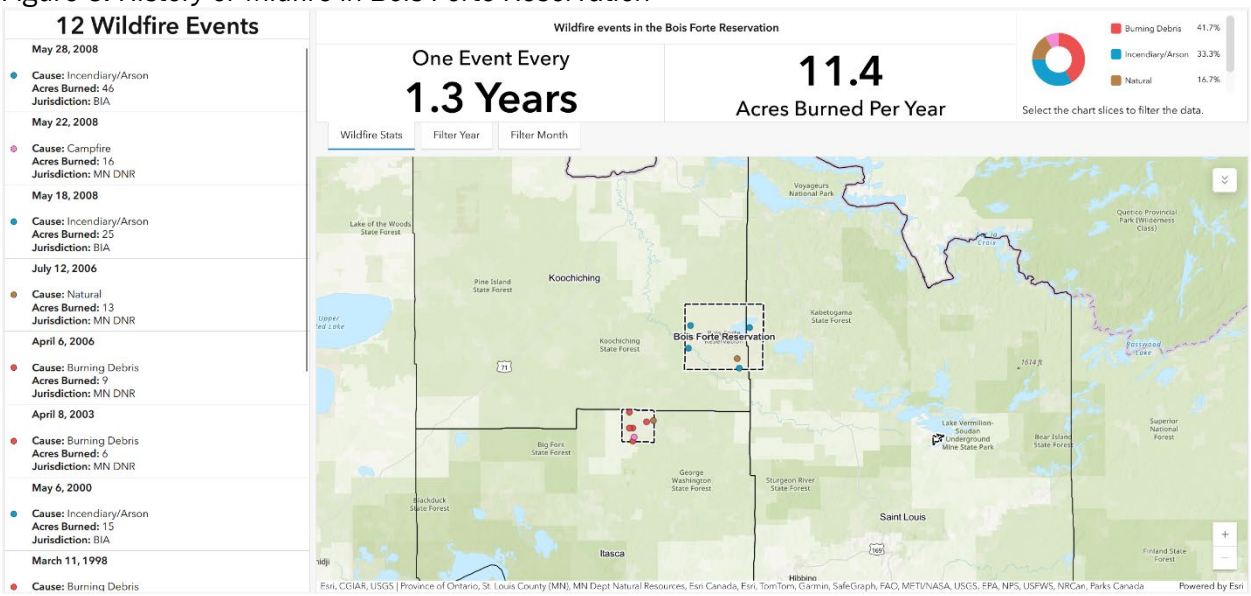
Lift Station: The design of the lift station on Whiskey Point needs to be redone or grinder pumps installed at individual residents that are prone to sewer back up along that road.

4.2 Wildfire

Wildfire is an uncontrolled fire spreading through vegetative fuels, posing danger and destruction to property. Minnesota experienced an average of 427.4 wildfires that burned at least five acres each year between June 1992 and July 2025 (MN DNR, 2021b). Wildfires occur throughout the spring, summer, and fall; however, most wildfires in Minnesota take place in March, April and May. The history of wildfire in Bois Forte Reservation is shown in Figure 3; an interactive map is available on the Bois Forte Reservation HMP website.

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

Figure 3. History of wildfire in Bois Forte Reservation



4.2.1 Probability of Occurrence

To determine the probability of future wildfires, Minnesota DNR and National Interagency Fire Center records of previous wildfire events in the Bois Forte Reservation were summed and divided by the dataset's period of record, resulting in an annual relative frequency of wildfires during that period. From January 1992 to July 1, 2025, the relative frequency of wildfire events in the reservation is one every 1.3 years (MN DNR, 2025d). This relative frequency can be used to infer the probability of these events occurring in the future.

4.2.2 Vulnerability

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

Structures located in areas near undeveloped wildland are vulnerable to wildfires. The SILVIS Lab at University of Wisconsin–Madison created a dataset documenting the changes of the wildland–urban interface (WUI) in the United States from 1990 to 2020. Radeloff et al. (2018) define WUI as the area where structures and other human development meet or intermingle with wildland vegetation. With the increase of development in metropolitan fringes and rural areas, the WUI is growing. The expansion of the WUI in recent decades has significant implications for wildfire management and impact as it creates an environment in which fire can readily move between structural and vegetation fuels. Its expansion has increased the likelihood that wildfires will threaten structures and people (Radeloff et al., 2018).

There are two main types of WUI: intermix and interface. Intermix WUI are areas where housing and wildland vegetation intermingle; interface WUI are areas where housing are adjacent to wildland vegetation (Radeloff et al., 2018). Table 8 shows the change of total WUI (intermix and interface) in the reservation from 2000 to 2020, and the percentage of the reservation's land, housing, and population in the WUI area.

Communities with higher proportions of WUI areas are more vulnerable to wildfires. The percentage of WUI within individual communities in Bois Forte Reservation is shown in Table 9.

Table 8. Wildland-Urban Interface (WUI), Bois Forte Reservation, 2000–2020

	Total WUI 2000	Total WUI 2010	Total WUI 2020	% Change (2000–2020)
Land Area	7.3%	8.7%	8%	+9.6%
Housing	79.5%	81.5%	78.8%	–0.9%

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

Table 9. Percentage of land area classified as WUI per jurisdiction in Bois Forte Reservation

Township / City	Percent WUI
Bena	94.5
Boy Lake	9.8
Cass Lake	48.2
Otter Tail Peninsula	8.5
Pike Bay	27.2
Squaw Lake	89.1
Ten Lake	29.4
Wilkinson	7.7

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

Section 3.4 provides responses to localized vulnerabilities to specific hazards.

4.2.3 Wildfire and Climate Change

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

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

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

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

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

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

4.2.4 Program Gaps and Deficiencies

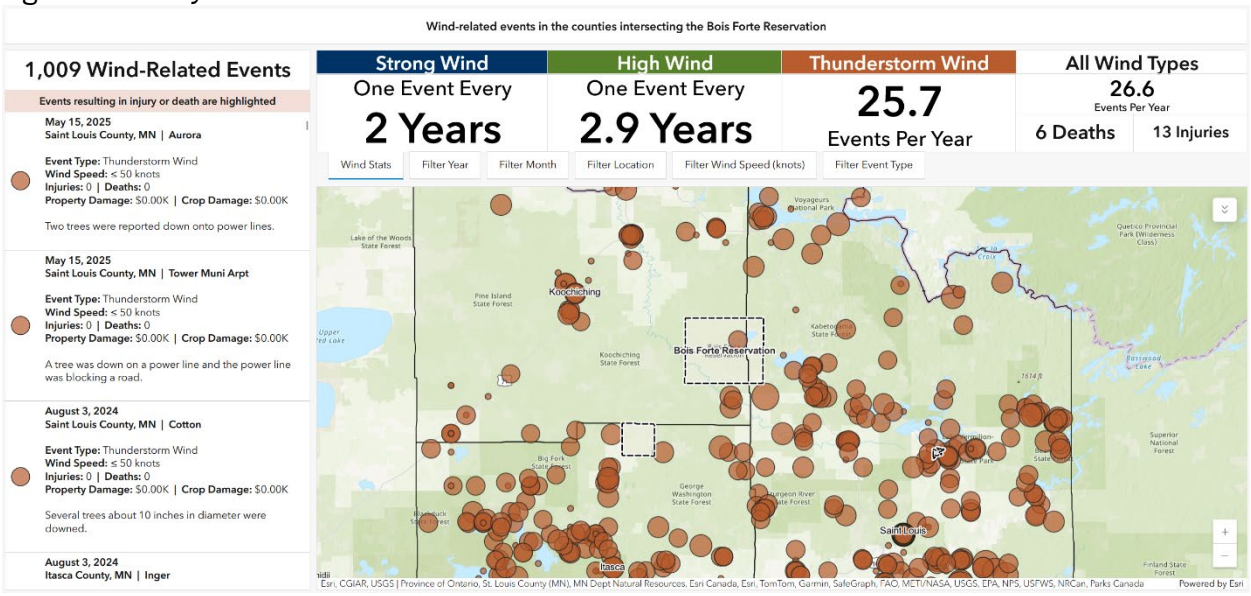
Bois Forte Reservation Management identified existing program gaps and deficiencies that make its residents more vulnerable to wildfire. These gaps should be addressed with new mitigation efforts to reduce vulnerability, outlined as follows:

Defensible Space: Wildfire could be detrimental to the reservation properties because we are surrounded by forests. Ongoing work needs to be done by Bois Forte Forestry and Bois Forte Emergency Management to raise awareness by residents of how to create defensible space for wildfire safety.

4.3 Windstorms

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

Figure 4. History of windstorms in Bois Forte Reservation



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

4.3.1 Probability of Occurrence

To determine the probability of future wind-related events in Bois Forte Reservation, records from January 1996 to May 2025 of previous wind-related events (strong wind, high wind, and thunderstorm wind) were examined in the three counties surrounding and including Bois Forte Reservation. This area of Koochiching, Itasca, and Saint Louis Counties has experienced an average of 26.6 wind events per year. These relative frequencies can be used to infer the probability of these events occurring in the future.

4.3.2 Vulnerability

The likelihood of a windstorm event does not vary geographically within the reservation, 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 responses to localized vulnerabilities to specific hazards.

4.3.3 Windstorms and Climate Change

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

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

4.3.4 Program Gaps and Deficiencies

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

Above-Ground Power Lines: Most power lines throughout Bois Forte Reservation are above ground, exposing them to potential damage from high wind events. Lake Country Power is our provider that can determine where it is possible to convert overhead power lines to underground or to implement other measures to reduce risk of power failure.

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

also wishes to continue to encourage residents to be aware of and ready for severe storm events that can lead to long-term power outages.

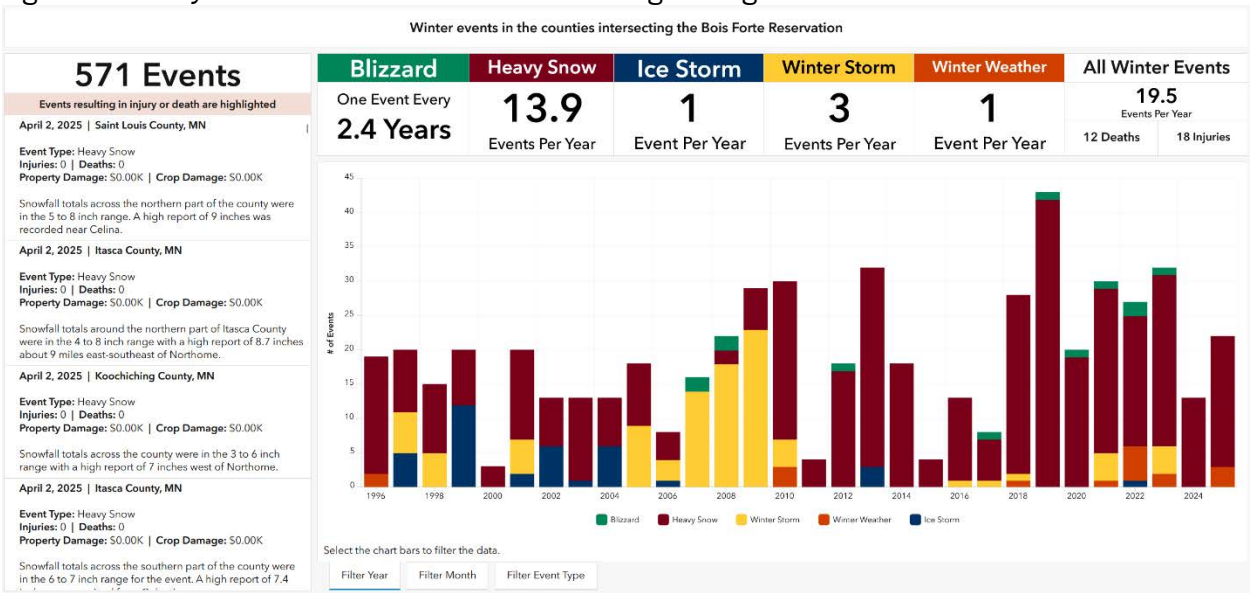
Shelter Planning: Bois Forte Tribal Government needs to ensure the tribe is ready with facilities and resources to provide emergency sheltering to those vulnerable and affected or displaced from damaging severe summer storm events that may take out power or damage homes.

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 Bois Forte Reservation is shown in Figure 5; an interactive version of this map can be found on the Bois Forte Reservation HMP website.

View interactive maps and see information about winter storm history, risk, and vulnerability

Figure 5. History of winter storms in the counties neighboring Bois Forte Reservation



4.4.1 Probability of Occurrence

To determine the probability of future winter-related storm events in Bois Forte Reservation, records of previous events (blizzards, heavy snows, ice storms, winter storms, and winter weather) were summed and divided by the dataset's period of record, resulting in the annual relative frequency of winter-related storms. Based on records in the NCEI Storm Events Database through May 2025 for Koochiching, Itasca, and Saint Louis Counties, the relative frequency of winter-related storm events reported in or near Bois Forte Reservation is 19.5 per year. Please note, a single event may have been

recorded in more than one county and may result in overcounting. This relative frequency can 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 reservation. These events do not vary geographically within the reservation; all areas 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. Residents 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 responses to 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

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

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

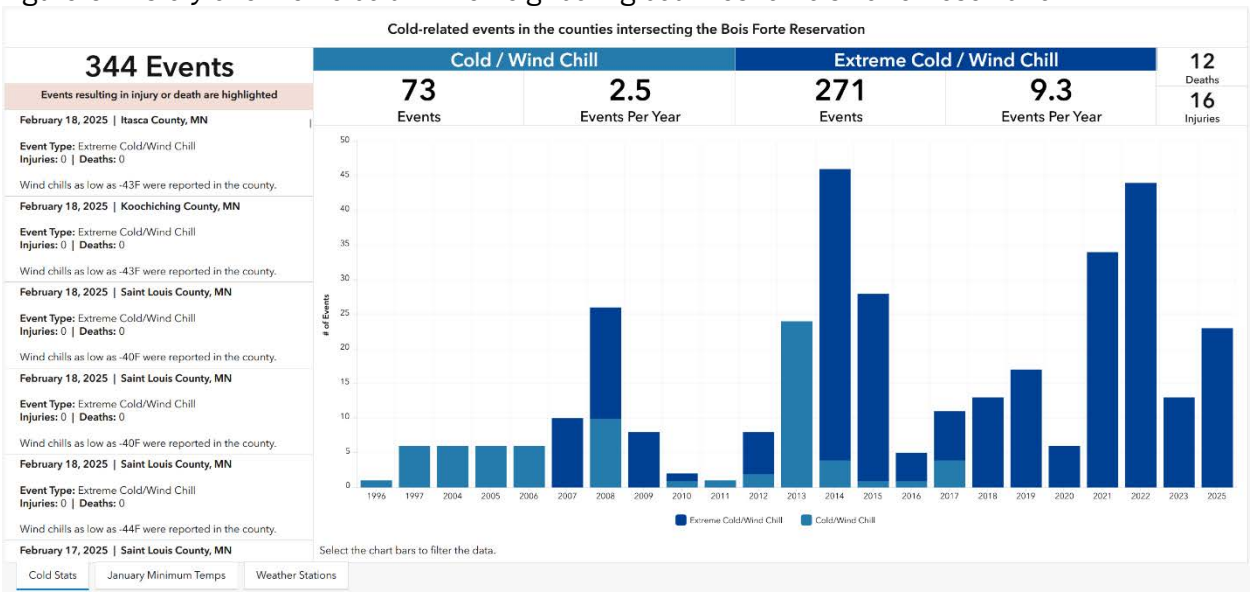
Public Education: Ongoing public education is needed to encourage residents to be ready for long-term power outages or to be snowed in during dangerous winter events such as ice storms and blizzards.

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

View interactive maps and see information about extreme cold history, risk, and vulnerability

Figure 6. History of extreme cold in the neighboring counties to Bois Forte Reservation



4.5.1 Probability of Occurrence

To determine the probability of future cold-related events in Bois Forte Reservation, records of previous cold/wind chill and extreme cold/wind chill events were summed and divided by the dataset's period of record, resulting in the annual relative frequency. Based on records in the NCEI Storm Events Database through May 2025 for Koochiching, Itasca, and Saint Louis Counties, the relative frequency of extreme cold/wind chill events in and near Bois Forte Reservation is 9.3 per year. (NCEI, 2025). Please note, a single event may have been recorded in more than one county and may result in overcounting. 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 reservation. 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 Bois Forte Reservation

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 responses to 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

Bois Forte Reservation 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:

Public Education: Ongoing public education is needed to encourage residents to be prepared for extreme weather, including power outages during periods of extreme cold.

Shelter Planning: Bois Forte Tribal Government needs to ensure the tribe is ready with facilities and resources to provide emergency sheltering to those vulnerable and affected during extreme temperature events, especially coupled with an extended power outage.

4.6 Extreme Heat

Extreme heat describes weather that is much hotter and/or humid than typical for a place and time of year. In the United States, extreme heat is the deadliest weather-related hazard and causes more deaths than flooding, tornadoes, and hurricanes combined. While heat waves are infrequent in a northern state like Minnesota, they can have severe consequences for residents who are not acclimatized to their effects (Runkle et al., 2022).

While Bois Forte Reservation has ranked extreme heat as a low-priority hazard, it is included in this plan due to its significant health impacts. The Minnesota Climate Action Framework states a goal for

each jurisdictional HMP in Minnesota to profile the risk of extreme heat, regardless of its prioritization of this hazard. Minnesota Homeland Security and Emergency Management and the Minnesota Department of Health support this inclusion as a form of outreach. Jurisdictions do not need to have mitigation action addressing extreme heat unless the hazard is also a moderate or high priority for the county.

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

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

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

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

View interactive maps and see information about extreme heat history, risk, and vulnerability

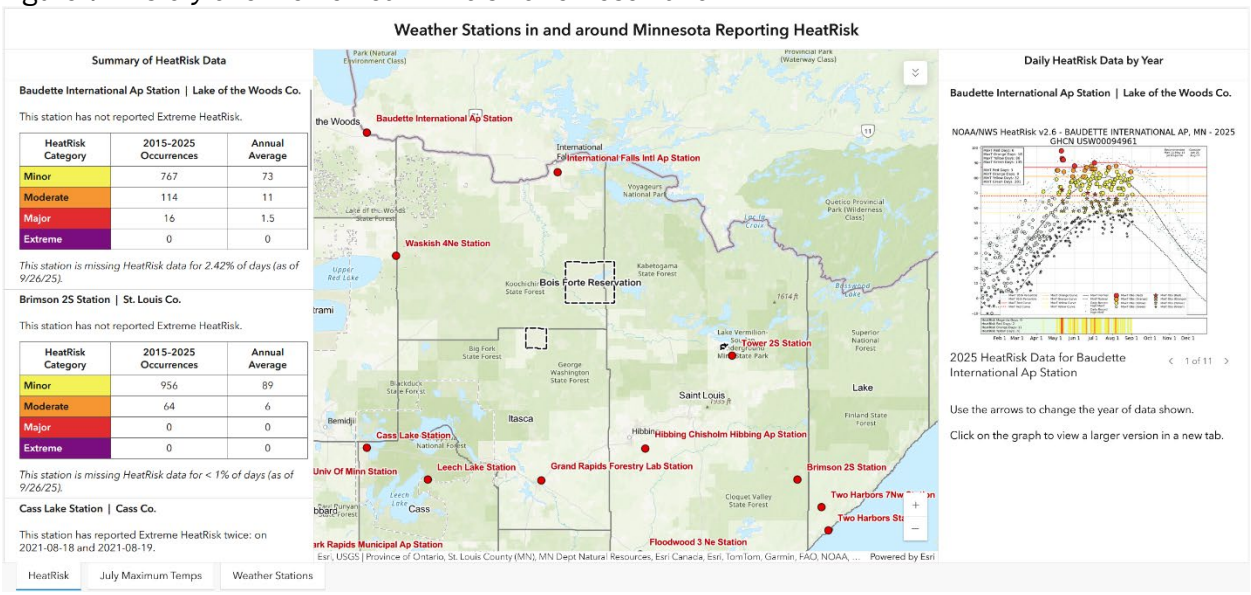
Bois Forte Reservation's lands and structures are vulnerable to heat damage and its residents to injury, exacerbation of pre-existing chronic conditions, and even death (Moss, 2017). In the United States, heat is estimated to result in $100 billion in economic losses annually, primarily due to lost productivity, and it accounts for $1 billion in direct healthcare costs each year (American Public Health Association, 2025). In 2022, extreme heat led to 682 emergency department visits, 63 hospitalizations, and two deaths in Minnesota (MDH, 2025).

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

The history of extreme heat in Bois Forte Reservation is shown in Figure 7; an interactive version of this chart can be found on the Bois Forte Reservation HMP website. This dashboard summarizes the

occurrences of days when each HeatRisk category threshold was met for each year from 2015–2024. For the purposes of hazard mitigation planning, we have considered days in the Major (Red) Category (a level of heat affects anyone without effective cooling and/or adequate hydration. Impacts are likely in some health systems, heat-sensitive industries, and infrastructure) and the Extreme (Magenta) Category (level of rare and/or long-duration extreme heat with little to no overnight relief affects anyone without effective cooling and/or adequate hydration. Impacts are likely in most health systems, heat-sensitive industries, and infrastructure) as extreme heat-related events.

Figure 7. History of extreme heat in Bois Forte Reservation



4.6.1 Probability of Occurrence

To determine the probability of future heat-related events in Bois Forte Reservation, the average number of days exceeding the major or extreme HeatRisk categories is used to reflect heat events at the two weather stations near the reservation. The Tower 2S Station (Saint Louis County) experiences major or extreme HeatRisk days an average of 0.4 days per year, and the Waskish Station (Beltrami County) experiences these events an average of 1.5 days per year based on the 11 years of record. This relative frequency can infer the probability of these events occurring in the future.

Based on records in the Midwestern Regional Climate Center (MRCC) that date back to 1991, the average daily maximum temperature for July in Bois Forte Reservation has historically been in the 76–77.9 °F range (MRCC, 2021), which is below the 90 °F for 2–3 days criteria for "extreme" heat events (FEMA, 2024a). However, the Tower Weather Station reported daily maximum temperatures above 90 °F 108 times, an average of three days per year. This historical average can be used to infer future events, although climate change projections show an increase in the number of days that exceed 90 °F by mid-century (see Section 4.6.3).

4.6.2 Vulnerability

The Minnesota Department of Health updated the Minnesota Extreme Heat Toolkit in 2025 to help local governments prepare for extreme heat events. In their toolkit, they note extreme heat events are

often dubbed "silent killers" because deaths and illnesses from these events are often misunderstood and underreported. In fact, extreme heat kills more people in the United States than all extreme weather events combined (Adams-Fuller, 2023). Minnesota does not have a mandated reporting system to report deaths and illnesses linked to extreme heat (MDH, 2025), but is important to not underestimate the danger of extreme heat events within the state.

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

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

Everyone is susceptible to extreme heat, but certain individuals are at a higher risk of developing heat-related illnesses. According to the Centers for Disease Control and Prevention (CDC), population groups more vulnerable to extreme heat include:

- Older adults (≥65 years old). The elderly cannot easily adjust to sudden changes in temperature and are more likely to have a chronic medical condition or take medication affecting their body's ability to control its temperature.
- Infants and children. Young children and infants have limited control of their surroundings and rely on others to keep them cool and hydrated.
- Individuals with chronic health conditions. These individuals are less likely to respond to changes in temperature, may be taking a medication that exacerbates the effects of extreme heat, or have a condition that is a risk factor for heat-related illness (e.g., heart disease, mental illness, poor blood circulation, and obesity).
- People with low income. These individuals may not be able to afford to properly cool their home and may face transportation challenges when trying to access cooling shelters.
- Athletes and people working outdoors. Both groups are likely to exert energy while being exposed to the heat (CDC, 2020).

Table 10 shows characteristics that MDH has determined make individuals more at risk to adverse health effects from extreme heat, including how that vulnerability ranks among Minnesota counties. The indicator's percentile rank within Minnesota determines the vulnerability level of Koochiching County for that indicator (e.g., the 1st –25th percentile is associated with the highest vulnerability compared to other Minnesota counties). The population of Koochiching County—the county with the highest population of Bois Forte Reservation residents—is used as a representative population for the table. For more information on what makes individuals and communities more vulnerable, see the Minnesota Extreme Heat Toolkit.

Table 10. Populations vulnerable to extreme heat in Koochiching County

Vulnerability Indicator	Percentage of Population	Percentile Rank within Minnesota	Vulnerability Level
Adults with COPD	8.4%	91st	Highest
Adults with a self-care disability	4.1%	79th	High
Adults with coronary heart disease	9.5%	93rd	Highest
Adults with diabetes	13.4%	92nd	Highest
Families at less than 200% of poverty level	18.1%	44th	Moderate
Households where a person age 65 or over lives alone	16.7%	91st	Highest
Households with no computing device	8.5%	77th	High
Households with no vehicle available	8.0%	91st	Highest
Households with rent over 50% of income	2.8%	24th	Low
Medicare beneficiaries who are electricity-dependent	4.5%	60th	Moderate
Medicare–Medicaid-enrolled beneficiaries	5.1%	99th	Highest
People age 5 or over with limited English	0.3%	2nd	Lowest
People age 65 or over	27.7%	98th	Highest
People over age 16 who work outdoors	5.3%	10th	Lowest
People under age 5	4.4%	2nd	Lowest
People who are experiencing homelessness	0.1%	64th	High
People who are uninsured	5.0%	53rd	Moderate
People who do not identify as “White alone, not Hispanic or Latino”	10.1%	34th	Low

View interactive information about at-risk populations in Bois Forte Reservation

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

Warming temperatures will continue to increase the risk of extreme heat, especially among these already vulnerable populations. Section 3.4 provides 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). In Koochiching County, the county with the most overlap with Bois Forte Reservation, the average temperature from July to September has increased 0.21 degrees Fahrenheit per decade since 1895.

Nights are warming at a much higher rate than days in Minnesota. In Koochiching County, nighttime minimum temperatures from July to September have increased at a rate of 0.29 degrees Fahrenheit per decade (MN DNR, 2025b).

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

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

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

Table 11 compares historical temperature averages to projections under a high emissions (SSP 585) scenario, demonstrating how many more days will reach above 90 °F and nights where the minimum does not go below 75.2 °F. The data in the table is taken from Minnesota CliMAT, an interactive online tool that provides highly localized climate projections for Minnesota and visualize how even specific towns will likely be impacted in the coming decades (Liess, S. et al., 2023). While models differ on how many degrees of warming will be caused by climate change, all models agree that temperatures will continue to rise.

Greenhouse gas concentrations will continue rising through the century, and the air's ability to trap heat from the Earth's surface will increase accordingly. Warming of the atmosphere will evaporate even more water into the air, further limiting the amount of cooling Minnesota will be able to achieve at night and during the winter. As warmer winters and warmer baseline conditions transition into summer, it will be much easier to attain extreme heat (MN DNR, 2025a).

Table 11. Historical vs projected number of days reaching temp. thresholds in Koochiching County

	Historical (1995–2014)	Projected (2040–2059)	Change
Days Above 90	2.00	9.87	+7.87
Nighttime Minimum > 75.2	0.06	0.85	+0.80

4.6.4 Program Gaps and Deficiencies

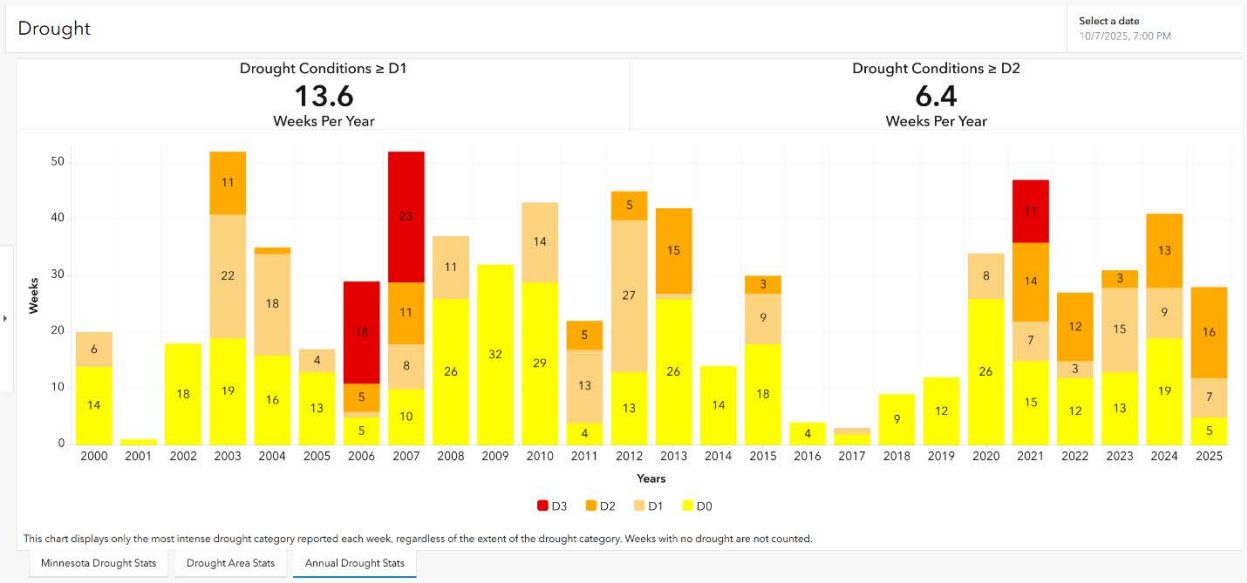
Extreme Heat was considered a low priority by the planning team for the 2025 HMP. Gaps and deficiencies were not addressed.

4.7 Drought

There are numerous approaches to assessing drought conditions. The current gold standard for accurate drought conditions in the United States is the United States Drought Monitor (USDM). Annual drought statistics since 2000 can be seen in Figure 8; an interactive version of this dashboard can be found on the Bois Forte Reservation HMP website.

See interactive information about drought, including history and the USDM Dashboard, on the Bois Forte Reservation HMP website

Figure 8. Annual drought statistics in Bois Forte Reservation since 2000



4.7.1 Probability of Occurrence

To determine the probability of future droughts in Bois Forte Reservation, records of previous droughts were summed and divided by the dataset's period of record, resulting in the annual relative frequency of droughts. The USDM database was examined from January 2000–October 7, 2025 for any occurrence of drought ≥ D1 in Bois Forte Reservation, regardless of the duration of the drought. According to the weekly reported data, the relative frequency of the reservation experiencing drought conditions ≥ D1 is 13.6 weeks per year, and the relative frequency of drought conditions ≥ D2 is 6.4 weeks per year (NDMC, 2025b). The relative frequency of past droughts can be used to infer the probability of similar droughts occurring in the future.

4.7.2 Vulnerability

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

identifies the sector(s) impacted by each drought. The NDMC (NDMC, 2025b) defines a drought impact as "[a]n observable loss or change that occurred at a specific place and time because of drought." A drought meeting this definition is categorized based on the sector(s) the drought impacts; therefore, a single drought affecting multiple sectors will be counted once for each respective sector it impacted.

DIR records show 92 reported drought incidents covering all three neighboring counties to Bois Forte Reservation between 2000 and 2025. These incidents were mostly related to burning restrictions and wildfire in the counties. (NDMC, 2025a). Since droughts are regional in nature, communities within Bois Forte Reservation do not vary in their vulnerability to drought; however, the impact from droughts may not be equal.

Drought conditions may impact soil moisture reserves, groundwater supplies, lake levels, and stream flows. Water-dependent industries that experience the greatest impacts include: agriculture, public utilities, forestry, and tourism (MN DNR, 2021a). In addition, droughts may negatively affect an individual's health by contributing to poor air quality caused by wildfire smoke and particulate matter, or a dusty environment. The 2021 drought resulted in elevated fire danger in roughly the northern two-thirds of the state, and record-high particulate readings across Minnesota due to the Canadian wildfires (Huttner, 2021). Populations vulnerable to these conditions include children, older adults, and those with respiratory issues.

Section 3.4 provides responses to 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

Bois Forte Reservation Emergency Management did not identify any program gaps or deficiencies that make its citizens more vulnerable to drought.

4.8 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 Bois Forte Reservation. Dams are mapped on the MN State 2024 HMP website. Bois Forte Reservation has zero dams classified as High Hazard Dams, zero dams classified as Significant Hazard Dams, and two dams classified as Low Hazard Dams. The Minnesota Dam Safety Program office was consulted to identify dam incidents and concerns. None were raised for dams within Bois Forte Reservation.

4.8.1 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 have been no known dam incidents in Bois Forte Reservation. Dam failures are extremely unlikely if the dam is maintained in compliance with Minnesota's Dam Safety Program. The likelihood of failure in Bois Forte Reservation is low.

4.8.2 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 12 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 12. 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).

4.8.3 Dam Failure and Climate Change

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

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

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

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

4.8.4 Program Gaps and Deficiencies

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

Section 5 – Mitigation Strategy

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

5.1 Community Capability Assessments

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

- Appendix D: Lists the plans and programs in place in Bois Forte Reservation as related to hazard mitigation.
- Appendix C: As part of the Bois Forte Reservation HMP update, the tribal government was 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 Bois Forte Reservation.

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

5.1.1 National Flood Insurance Program (NFIP)

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

Bois Forte Reservation is not participating in the NFIP.

5.1.2 Repetitive Loss Properties

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

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

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

Repetitive Loss properties are not inventoried for Bois Forte Reservation.

5.1.3 Previous Integration of Hazard Mitigation into Planning Mechanisms

The Bois Forte Band of Chippewa is encouraged to integrate relevant information from this mitigation plan into their other planning mechanisms. This demonstrates local progress in mitigation efforts for the Bois Forte Reservation and strengthens the overall mitigation planning process. As part of this plan update, Bois Forte Reservation representatives were asked to report whether and how information from the 2018 plan was incorporated into other tribal planning mechanisms (e.g., plans, policies, programs, partnerships, or other documents). The following provides an overview of responses.

Bois Forte Emergency Management

- Bois Forte Reservation has maintained staffing of an Emergency Management Director position. Our tribal EM Director partners with other HSEM Region 2 county and tribal Emergency Managers on regional training and planning efforts as part of the Arrowhead Regional Emergency Management Agency (AREMA).
- Our EM Director has continued to work to ensure the tribe is ready with facilities and resources to provide emergency sheltering to those vulnerable and affected during extreme temperature events, especially coupled with an extended power outage. The Bois Forte Tribal Government opens its doors for those in need of electricity, water and shelter if needed.
- The Bois Forte Tribal Government shares weather notifications and emergency preparedness on our instant alert system, social media, and email. We also use in-person "word of mouth" to share information with people in our community.
- Some repair has been done to our warning sirens in the past 2 years to ensure residents are alerted of dangerous high wind events.

- We established a new emergency notification system for the reservation (Re-Group). We promote sign up for the system on the Bois Forte Reservation website and in person at events.

Bois Forte Public Works

- The Bois Forte Public Works Department has continued to address winter road safety, keeping roads accessible for travel in and out of the reservation.
- Flood mitigation for the Bois Forte Reservation has included structural projects like the restoration of the original 1936 dam to control water levels for wild rice beds. This effort has helped to protect both the reservation's natural resources and cultural well-being.

Bois Forte Planning & Community Development

- The Bois Forte Planning Department continues to research funding opportunities for accomplishing mitigation activities from Federal, State and Private grant sources.
- Private buildings are required to go through a permit process where they are reviewed and approved on a case-by-case basis depending on their location and what codes would be reasonable to follow. When public buildings are constructed on the Bois Forte Reservation, they tend to follow MN state building codes very closely.
- The Bois Forte Reservation has a multi-faceted climate change plan, including a 1854 Ceded Territory Climate Change Vulnerability Assessment and Adaptation Plan developed with the 1854 Treaty Authority, and a more recent Carbon Banking Project Plan (also known as the "Climate, Community and Biodiversity" plan) that is currently undergoing public review. The older plan assesses risks and recommends adaptation strategies for the region, while the new carbon banking plan focuses on a specific land acquisition to generate carbon credits for a sustainable forest management project.

Bois Forte Forestry

- The Bois Forte Natural Resources Department– Forestry Division manages mitigation programs related to wildfire. Since update of the last plan the Forestry Dept. has worked to implement several activities to prevent destructive fires from occurring at Nett Lake, including: issuance of burning permits, development of a Spatial Fire Management Plan, and working with Bois Forte DNR/Realty Dept. on updating our Land Use plan. The Forestry Dept. has also incorporated the past HMP for wildfire mitigations into our program of fuel reduction measures (removal of brush, creating fuel breaks, and conducting prescribed controlled fires), ensuring we have necessary equipment for wildfire suppression, and continued fire prevention awareness to reservation residents.

5.1.4 Plans and Programs in Place to Address Natural Hazards

Bois Forte Reservation has numerous plans and programs in place to address natural hazards. Some of these programs are specific to a hazard and others address impacts and human safety for many types of events (“All Hazards”). To group related natural hazards, “Summer Storms” encompasses

Tornadoes, Windstorms, Lightning, and Hail. The plans and programs in place by Bois Forte Reservation to support mitigation for the hazards addressed in this plan are described as follows:

All Hazards

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

Emergency Notification System: Bois Forte Reservation maintains the ReGroup 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 Bois Forte Reservation website.

Preparedness Outreach & Education: The Bois Forte Tribal Government shares weather notifications and emergency preparedness on our instant alert system, social media and via email. We also use in-person "word of mouth" to share information with people in our community. We also utilize outdoor warning sirens when needed.

Mass Care Sheltering: In the event of a disaster where temporary sheltering is needed, Bois Forte Reservation Emergency Management works in coordination with Bois Forte Reservation Public Health, as well as the American Red Cross if necessary.

Backup Power: Bois Forte Reservation works to ensure the continuity of operations of tribal government services and critical infrastructure in the event of an extended power outage. Reservation residents are encouraged to assess where backup power is needed and to obtain emergency generators.

Schools Support: Bois Forte Reservation Emergency Management coordinates with the Nett Lake School District as needed on related emergency planning and preparedness. The school district has its own policies, decision-making protocols, and communications plans in place to determine the need to close school and to notify students and staff in the event of severe weather, extreme temperatures, or other events that pose safety risk.

Regional Collaboration: Bois Forte Reservation Emergency Management works with neighboring emergency managers in HSEM Region 2 and the Arrowhead Region Emergency Managers Association (AREMA) on a range of planning, training, and exercises to support all-hazards preparedness, mitigation, response, and recovery capabilities. Bois Forte Reservation Emergency Management also works closely with our regional National Weather Service (NWS) office, having access to all live and on-demand briefings, announcements, and educational opportunities, and contact information for direct collaboration as needed.

Severe Winter Storms

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

Winter Hazard Awareness Week: Bois Forte Reservation participates in the Winter Hazard Awareness Week campaign sponsored by MN HSEM and the National Weather Service each November. The week-long effort provides specific information each day covering the topics of winter weather, outdoor winter safety, indoor winter safety, and winter driving safety. Bois Forte Reservation Emergency Management promotes and shares information during the week via social media and area news media.

Snow Removal & Ice Control: The Bois Forte Reservation Public Works conducts winter road maintenance on tribal roads to address snow removal and ice control treatments.

Severe Summer Storms

Severe Weather Statements (Watch, Advisory, Warning, etc.): Bois Forte Reservation works to share 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 on the reservation and are tested monthly.

Severe Weather Awareness Week: Bois Forte Reservation 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. Bois Forte Reservation Emergency Management promotes and shares information during the week via social media, tribal website, and announcements.

Vegetation Management: The Bois Forte Reservation Public Works conducts vegetation management along reservation roads to reduce the risk of downed trees or branches resulting from severe spring and summer storm events. Lake Country Power also works to manage vegetation near power lines.

Extreme Cold

Emergency Notifications: Extreme cold temperature warnings are issued by the National Weather Service. Bois Forte Reservation Emergency Management works to share extreme cold temperature warnings from the NWS to help alert residents and visitors to hazardous conditions. The Bois Forte Reservation 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: Bois Forte Reservation Emergency Management and Bois Forte Reservation Public Health promote public awareness of personal safety measure to take during periods of extreme cold, such as sharing information via our social media and talking with community members.

Emergency Sheltering: In the event of an extended power outage coupled with a period of extreme cold, Bois Forte Reservation Emergency Management will work with Bois Forte Reservation Public Health 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, Bois Forte Reservation works to raise public awareness of drought conditions and recommended water use restrictions as per MN DNR guidance.

Precipitation Monitoring: The Bois Forte Reservation Natural Resources Dept. monitors water levels on our Wild Rice lakes throughout the year and particularly during periods of drought, which will affect the health of our Wild Rice.

Wildfire

Wildfire Management: Bois Forte Natural Resources – Forestry has a Wildland Fire Management Plan in place and has a supporting cooperative agreement with the BIA/Bois Forte for wildland fire. The Forestry dept also maintains a Spatial Fire Management Plan. Bois Forte Forestry manages mitigation programs related to wildfire. Bois Forte Forestry works to remove flammable brush around residential areas so that if a fire does start, losses will be minimal. Fuel reduction also includes cutting fire breaks to stop forest fires.

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

Burning Restrictions/Permits: Burning permits are issued through the Bois Forte Forestry Department.

Flooding

Transportation Plan: The Bois Forte Public Works Department also maintains a transportation improvement plan for projects as needed.

Dam/Levee Failure

Bois Forte Reservation does not have any plans in place in regards to dam or levee failure.

5.2 Mitigation Goals

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

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

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

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

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

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

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

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

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

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

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

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

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

5.3 Mitigation Action and Project Strategies

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

Table 13. Mitigation strategies and action types

Mitigation Strategy	Description	Example Mitigation Actions
Local Plans and Regulations	These actions include government authorities, policies, or codes, that influence the way land and buildings are developed and built.	• Comprehensive plans • Land use ordinances • Planning and zoning • Building codes and enforcement • Floodplain ordinances • NFIP Community Rating System • Capital improvement programs • Open space preservation • Shoreline codes • Stormwater management regulations and master plans
Structure and Infrastructure Projects	These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards. Many of these types of actions are projects eligible for funding through the FEMA Hazard Mitigation Assistance program.	• Acquisitions and elevations of structures in flood-prone areas • Utility undergrounding • Structural retrofits • Floodwalls and retaining walls • Detention and retention structures • Culverts • Safe rooms
Natural Systems Protection	These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.	• Sediment and erosion control • Stream corridor restoration • Forest management • Conservation easements • Wetland restoration and preservation
Education and Awareness Programs	These are actions to inform and educate residents, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady or Firewise Communities. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions.	• Radio or television spots • Websites with maps and information • Real estate disclosure • Presentations to school groups or neighborhood organizations • Mailings to residents in hazard-prone areas. • StormReady Certification • Firewise Communities
Mitigation Preparedness and Response	This is a State of Minnesota mitigation strategy with the intent of covering preparation and actions that protect life and property during a natural disaster.	• Emergency operations plan • Flood fight plans and preparedness • Dam emergency action plans • Warning • Backup power • Emergency capabilities

HMP Planning Team members work together with the Bois Forte Reservation emergency management director to assure that the hazards and mitigation actions included in this plan are accurate and address the needs of the reservation. Development of mitigation actions for the reservation was informed by a community's hazard and risk assessment; identification of local vulnerabilities, and review of capabilities in place to address mitigation. Bois Forte Emergency Management, tribal elected officials, tribal departmental staff, and other HMP planning team members actively participated in the development and review of the Bois Forte Reservation mitigation action chart for implementation through participation in planning team meetings (see Appendix F) and development of the Bois Forte Reservation Local Mitigation Survey (see Appendix C). Additional public feedback was incorporated following news releases inviting public input to the planning process (see Appendix G).

The Bois Forte Reservation risks and mitigation activities identified also incorporate the role of other entities participating in this plan.

See Mitigation Actions and provide ongoing feedback on the HMP website

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

Number (#)
Each mitigation action is identified by a number.

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

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

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

See Table 13 for a description of each mitigation strategy and related types of actions.

Mitigation Action
Each mitigation action provides a concise, action-oriented description of the action or project to be undertaken that will help to reduce or eliminate future risk, including in areas with existing or new development.

Status

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

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

Mitigation actions that have been completed or deleted from the 2018 Bois Forte Reservation Hazard Mitigation Plan are identified and reported on in Table 15. Completed and deleted mitigation actions are not carried over into the updated mitigation action chart.

Priority

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

Table 14. Criteria for Mitigation Action Priority Ranking

Ranking	Criteria
High Priority	• Methods for reducing risk from the hazard are technically reliable. • The jurisdiction has experience in implementing mitigation measures. • Mitigation measures are eligible under federal grant programs. • There are multiple mitigation measures for the hazard. • The mitigation measure(s) are known to be cost-effective. • The mitigation measures protect lives and property for a long period or are permanent risk reduction solutions.
Moderate Priority	• Mitigation methods are established. • The jurisdiction has limited experience with the types of measures that may be appropriate to mitigate the hazard. • Some mitigation measures are eligible for federal grants. • There is a limited range of effective mitigation measures for the hazard. • Mitigation measures are cost-effective only in limited circumstances. • Mitigation measures are effective for a reasonable period.
Low Priority	• Methods for reducing risk from the hazard are not well-established, are not proven reliable, or are experimental. • The jurisdiction has little or no experience in implementing mitigation measures, and/or no technical knowledge of them. • Mitigation measures are ineligible under federal grant programs. • There is a very limited range of mitigation measures for the hazard, usually only one feasible alternative. • The mitigation measure(s) have not been proven cost-effective and are likely to be very expensive compared to the magnitude of the hazard. • The long-term effectiveness of the measure is not known or is known to be relatively poor.

Time frame
Each mitigation action identifies the anticipated timeframe for implementation within the next five-year planning cycle. If a mitigation action is considered an ongoing effort, the next five-year period in which the activity would occur is listed. If a mitigation activity has a defined period for implementation (i.e., a specific year), it will be noted.

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

Comments on Implementation & Integration
Each mitigation action provides a description of how the jurisdiction will work to implement the mitigation action and incorporate the activity into other existing planning mechanisms. This can include description of methods for public outreach, enforcement of policies, development of plans, and coordination of key staff and partnership efforts.

Possible Funding
Each mitigation action identifies potential funding sources to support implementation of the mitigation activity, such as existing tribal, state, or federal funding. Projects that may be eligible for future FEMA Hazard Mitigation Assistance grant funding are noted.

5.3.1 Tribal Funding Capabilities

This section discusses the capabilities of Bois Forte Reservation to implement hazard mitigation projects through current and potential sources of tribal, federal, or private funding.

Current Mitigation Funding

Current hazard mitigation activities on Bois Forte Reservation are primarily funded through the tribes general operating funds and separate departmental budgets.

The Bois Forte Emergency Management Program is funded from distributions from the Bois Forte Enterprise (general fund) which provides for the staffing of a full-time Bois Forte Emergency Preparedness Director. The Emergency Preparedness Director's responsibilities related to hazard mitigation for the Reservation include planning, project coordination with other tribal departments, public education, and coordination with neighboring county emergency managers.

The Bois Forte Department of Natural Resources and Land Management has utilized internal tribal funding for Forestry Division wildfire-related mitigation activities, including conducting prescribed burns and creating fire breaks. External funding sources have included Bureau of Indian Affairs, Environmental Protection Agency, and Department of Justice.

The Bois Forte Public Works Department has utilized internal tribal funding for roads and critical infrastructure maintenance and improvement projects that help address stormwater management and flood mitigation. External funding has also come from the Bureau of Indian Affairs, Indian Health Service, Environmental Protection Agency, US Department of Agriculture (for Infrastructure bonds), and charges for services.

Additional mitigation efforts to monitor and reduce risk to the tribe's cultural and natural resources (e.g., Wild Rice) and critical facilities (e.g., casinos, museum, and tribal government buildings) to hazards such as high winds and flooding are funded internally by Bois Forte Reservation government.

Potential Mitigation Funding

The Bois Forte Reservation five-year Mitigation Action Chart (Table 15) identifies possible funding sources for each of the mitigation actions listed, which would be investigated further in the process of project development. Potential sources of funding identified during the planning process include:

- Bois Forte Reservation General Operating Funds
- Bois Forte Departmental budgets (Emergency Management Program, Planning & Community Development, Public Works, Public Health, and Natural Resources/Forestry).
- National Weather Service
- FEMA Hazard Mitigation Grant Program (HMGP) Funding: The Bois Forte Band will be eligible to apply for FEMA HMA mitigation funds either directly to FEMA or as a sub-grantee through the State of Minnesota upon final approval by FEMA that the plan meets requirements 44CFR 201.7.
- Utility Company Providers (Lake Country Power)
- Community Wildfire Defense Grant (CDWG)
- MN Department of Natural Resource (MN DNR)
- Bureau of Indian Affairs (BIA) Roads Program

5.3.2 Bois Forte Reservation Mitigation Action Chart

The Bois Forte Reservation Mitigation Action Chart is provided on the next page in Table 15 and on the HMP website. A report on the status of mitigation actions related to natural hazards included in the 2018 plan update can be found in Appendix E.

See Mitigation Actions and provide feedback on the HMP website

Table 15. Bois Forte Reservation Mitigation Action Chart, 2026–2031

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Utilize effective methods to share information with the community about severe weather, extreme temperatures, and personal preparedness.	Existing High 2026-2031	Bois Forte Emergency Management (BFEM)	Bois Forte Tribal Government shares weather notifications and emergency preparedness on our instant alert system, Bois Forte website and Facebook page, as well as via email. We also use in-person "word of mouth" to share information with people in our community. We utilize outdoor warning sirens when needed. We will seek to expand out methods of sharing emergency information, such as using our tribal newsletter, posting flyers, and sharing information at special events.	Internal: BF EM Program, BF General funds
2	All-Hazards	Education & Awareness Programs	Conduct outreach to encourage residents to opt-in for the tribe's emergency notification system.	Existing High 2026-2031	BFEM	Bois Forte uses the ReGroup Emergency Notification System. We distribute information at different meetings and events. We are working to get a link put up on the BF website.	Internal: BF EM Program
3	All-Hazards	Local Planning & Regulations	Enforce tribal regulations governing new construction to prevent damage to buildings and infrastructure from severe weather events.	Existing Moderate 2026-2031	Bois Forte Planning & Community Development, BFEM	When public buildings are constructed on the Bois Forte Reservation, they tend to follow MN state building codes very closely. However, Bois Forte has not and is not required to adopt the Minnesota Building Code. Private buildings are required to go through a permit process where they are reviewed and approved on a case-by-case basis depending on their location and what codes would be reasonable to follow.	Internal: Bois Forte Planning & Community Development

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
4	All-Hazards	Local Planning & Regulations	Implement existing plans and policies in place that help to mitigate against the impacts of flooding and other natural hazards to future development.	Existing High 2026-2031	Bois Forte Planning & Community Development Department, BFEM	Bois Forte Reservation Planning & Community Development Department is working to update our current Land Use Plan. The Bois Forte Public Works Department also maintains a transportation improvement plan for projects as needed. Burning permits are issued through the Bois Forte Forestry Department. The Forestry dept also maintains a Spatial Fire Management Plan. The Bois Forte Planning Department is also working with Bois Forte DNR/Realty Dept. on updating our Land Use plan.	Internal: BF Planning & Community Development
5	All-Hazards	Local Planning & Regulations	Utilize departmental staff and elected officials to work together to accomplish identified mitigation efforts.	Existing High 2026-2031	BFEM in coord with other tribal depts.	Bois Forte has tribal government and departments that work on related planning and projects that help to address hazard mitigation: BF Tribal Council, BF Emergency Management, BF Department of Resource Management, BF Public Works Dept., and BF Planning and Community Development.	Internal: BF Cross-departmental funding
6	All-Hazards	Local Planning & Regulations	Develop and sustain partnerships with outside agencies, organizations, businesses, and neighboring jurisdictions to accomplish mitigation efforts.	Existing High 2026-2031	BFEM in coord with other tribal depts.	The Bois Forte Dept of Resource Management works in coordination with the MN DNR. Bois Forte Emergency Management also partners with other HSEM Region 2 Emergency Managers on regional training and planning efforts as part of the Arrowhead Regional Emergency Management Agency (AREMA).	Internal: BF Cross-departmental funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
7	All-Hazards	Mitigation Preparedness & Response Support	Ensure the Bois Forte Reservation Emergency Operations Plan (EOP) is updated and addresses policies & procedures needed to support EM functions prior to, during, and following a disaster.	Existing High 2026-2031	BFEM	Bois Forte Reservation Emergency Management maintains an all-hazards Emergency Operations Plan (EOP) which lays out concepts and operating guidelines for all incident management and support functions that may be needed to ensure life safety, incident stabilization, and property preservation during an incident and the transition to recovery.	Internal: BF EM
8	All-Hazards	Mitigation Preparedness & Response Support	Purchase and install backup generators for critical community-service facilities on the Bois Forte Reservation, specifically including the Nett Lake Clinic, Vermilion Community Center, and Vermilion Wellness Center.	Existing High 2026-2031	BFEM, BF Public Works in coord with other tribal depts.	This is an ongoing effort under BF Emergency Management in coordination with Bois Forte Public Works and other tribal departments. The tribe will purchase generators as funding is available. FEMA HMGP grant funding may be a possible source for applying for funding for generators for critical facilities.	Internal: BF EM, BF Public Works, BF General Fund External: FEMA HMGP grant
9	All-Hazards	Mitigation Preparedness & Response Support	Ensure that plans, procedures, and designated facilities are in place to provide temporary sheltering due to a severe weather or other disaster event.	Existing High 2026-2031	BFEM, BF Public Health	In the event of a disaster where temporary sheltering is needed, Bois Forte Reservation Emergency Management works in coordination with Bois Forte Reservation Public Health, as well as the American Red Cross if necessary.	Internal: BF General Fund, BF Public Health External: Red Cross
10	All-Hazards	Mitigation Preparedness & Response Support	Encourage BF tribal schools and other tribal facilities that house seniors or other vulnerable populations to have emergency plans in place to deal with severe weather, extreme temperatures, and extended power outages.	Existing Moderate 2026-2031	BFEM, BF Public Health	BFEM and BF Public Health work with the Nett Lake Elementary School and Bois Forte Head Start & Early Head Start to ensure emergency plans are in place for severe weather.	Bois Forte Reservation, Schools, LTC Facilities

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
11	All-Hazards	Local Planning & Regulations	Identify and work to secure internal as well as external funding (grant or loan sources) to help accomplish mitigation activities on the Bois Forte Reservation.	Existing Moderate 2026-2031	BFEM, Bois Forte Planning & Community Development	BFEM and Bois Forte Planning & Community Development continue to research funding opportunities for accomplishing mitigation activities, which may include Federal, State, BIA, and private grants. FEMA HMGP grant funding may be applied for particular projects in the future. Bois Forte Planning & Community Development has a Grants Manager that can help to investigate potential external grant funding.	Internal: BF General Fund External: FEMA HMGP
12	Flooding	Local Planning & Regulations / Structure & Infrastructure Projects	Plan for and implement measures to address flood risk reduction projects for roads, bridges, and culverts on reservation roads.	Existing High 2026-2031	BF Public Works Dept., BFEM	The Bois Forte Public Works Department maintains a transportation improvement plan for projects as needed for roads managed by Bois Forte.	Internal: BF Public Works Dept. funding External: BIA Roads funding
13	Flooding	Local Planning & Regulations / Structure & Infrastructure Projects	Upgrade the Whiskey Point lift station to be prepared to better handle high rain events.	Existing High 2026-2031	BF Public Works, BFEM	The design of the lift station on Whiskey Point needs to be redone or grinder pumps installed at individual residents that are prone to sewer back up along that road.	Internal: BF PW Dept. Budget
14	Severe Winter Storms	Local Planning & Regulations	Implement snow removal and ice control to ensure the safety of reservation roads impacted by winter storms.	Existing High 2026-2031	BF Public Works, BFEM	The Bois Forte Reservation Public Works conducts winter road maintenance on tribal roads to address snow removal and ice control treatments. Information on the BF plowing policy is provided on the BF website. All Elders on the reservation have their driveways plowed first.	Internal: BF PW Dept. Budget

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
15	Severe Summer Storms	Education & Awareness Programs	Participate in Skywarn Storm Spotter training with the National Weather Service.	New High 2026-2031	BFEM in coord with NWS	This effort will fall under the program of BF Emergency Management. BFEM will seek to coordinate a training on the reservation with the National Weather Service.	External: National Weather Service
16	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure outdoor warning sirens are located where needed and functioning properly.	Existing High 2026-2031	BFEM in coord with local jurisdictions	Outdoor warning sirens are located on the reservation and are tested monthly.	Bois Forte Reservation
17	Severe Summer Storms	Natural Systems Protection / Public Education & Awareness Programs	Continue to implement restoration work to Nett Lake to remove nuisance floating bog and debris that can affect the wild rice crop after a storm. Put out public information on other areas to harvest when the wild rice crop has been damaged.	Existing High 2026-2031	BF Natural Resources Division, BFEM	BF Natural Resources Division continues to oversee monitoring and resource management for our Wild Rice lakes. Information is shared with tribal reservation members when there is critical information to share about damage to the wild rice harvest.	Internal: BF NR Division
18	Severe Summer Storms	Structure & Infrastructure Projects	Address the need for the construction of storm shelters or tornado safe rooms in areas where residents or visitors are vulnerable to high wind events, such as mobile home parks and campgrounds.	Existing High Ongoing	BFEM in coord with local jurisdictions	BFEM will work with residents to assess and address the need for construction of a storm shelter or tornado safe room in different areas of the reservation. Grant funding may be available for tornado safe rooms from FEMA Hazard Mitigation Assistance (HMA) grant program funding, based on application approval.	Internal: BF EM, BF Public Works Dept. External: FEMA HMGP Safe Room grant
19	Severe Winter & Summer Storms	Structure & Infrastructure Projects	Work with Lake Country Power Cooperative to implement feasible and cost-effective mitigation measures to reduce the risk of power outages for overhead power lines along Highway 65.	Existing High Ongoing	BFEM, BF Public Works in coord with Lake Country Power	BFEM Public Works Dept. works with Lake Country Power on this effort as needed. FEMA HMGP grant funding may be a source for powerline infrastructure retrofits that Lake Country Power can apply for.	Electric Coops, FEMA HMA

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
20	Severe Winter & Summer Storms	Natural Systems Protection	Manage trees and other vegetation along roads from severe storm events to reduce risk to powerlines and passing motorists.	Existing Moderate Ongoing	BF Public Works, Lake Country Power, BFEM	Bois Forte Reservation Public Works Dept. regularly conducts vegetation management along reservation roads to reduce the risk of downed trees or branches resulting from severe spring and summer storm events. Lake Country Power also works to manage vegetation near power lines to reduce the risk of downed lines and power outages.	Internal: BF Public Works funding External: Lake Country Power Coop
21	Extreme Cold	Education & Awareness Programs	Provide outreach and education to the public on personal safety measures to take during periods of extreme cold.	In-Progress High 2024	BFEM & Public Health	BFEM and BF Public Health work to share information with reservation residents about the dangers of extreme cold and measures to take to stay safe, especially for those who are considered more highly vulnerable such as elders.	Internal: BF EM and BF PH funding
22	Extreme Cold	Mitigation Preparedness & Response Support	Plan for temporary warming facilities and promote their use for those that are vulnerable to extremely cold temperatures.	Existing High 2025-2030	BFEM in coord with BF PH	BF Emergency Management works with BF Public Health to ensure the tribe is ready with facilities and resources to provide emergency sheltering to those vulnerable and affected during extreme temperature events, especially coupled with an extended power outage.	Internal: BF EM and BF PH funding
23	Drought	Local Planning & Regulations	Raise public awareness of water conservation measures during periods of severe drought.	Existing High Ongoing	BFEM in coord with MN DNR	During periods of extreme drought, Bois Forte Emergency Management and Public Health will use our website and tribal newsletter to promote drought awareness to residents on limiting non-essential water usage. We will also promote awareness of the heightened risks of wildfire during periods of drought.	Internal: BF EM, BF PH, BF Forestry Dept. fundin

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
24	Wildfire	Local Planning & Regulations	Develop and implement wildfire management plans for the BF Reservation to reduce the risk of wildland fire.	New High 2026-2031	BF Natural Resources – Forestry, BFEM	Bois Forte Natural Resources – Forestry has a Wildland Fire Management Plan in place and has a supporting cooperative agreement with the BIA/Bois Forte for wildland fire. The Forestry dept also maintains a Spatial Fire Management Plan. Bois Forte Forestry manages mitigation programs related to wildfire.	Internal: BF Forestry funding External: BIA funding, Community Wildfire Defense Grant funding
25	Wildfire	Natural Systems Protection	Implement practices that reduce wildland fuels in high-risk wildfire areas of the Bois Forte Reservation.	Existing High 2026-2031	BF Natural Resources – Forestry, BFEM	Bois Forte Forestry works to remove flammable brush around residential areas so that if a fire does start, losses will be minimal. Fuel reduction also includes cutting fire breaks to stop forest fires and removal of dead and dying trees due to the vegetative invasive species such as the spruce budworm. BF Forestry also conducts prescribed fires as an efficient way to reduce fuels.	Internal: BF Forestry funding External: Community Wildfire Defense Grant funding
26	Wildfire	Local Planning & Regulations	Enforce burning permit requirements during periods of high risk for wildfire.	Existing High 2026-2031	BF Natural Resources – Forestry, BFEM	Burning permits are issued through the Bois Forte Forestry Department.	Internal: BF Forestry funding
27	Wildfire	Education & Awareness Programs	Conduct public outreach and education on wildfire risk and prevention during periods of high risk for wildfire.	Existing High 2026-2031	BF Natural Resources – Forestry, BFEM	In event of wildfire, Bois Forte Reservation Emergency Management works with local law enforcement, local fire departments, the NWS, and the MN DNR to get the word out on the risk of the level of fire danger and any burning restrictions to help keep the public informed and protected.	Internal: BF Forestry funding External: MN DNR Forestry, NWS

Section 6 – Plan Maintenance

6.1 Monitoring, Evaluation, and Updating the Plan

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

The Bois Forte Reservation emergency management director (EMD) is the individual responsible for leading all efforts to monitor, evaluate, and update the HMP within the five-year window. Throughout the five-year planning cycle, the Bois Forte Reservation EMD will work with a tribal emergency preparedness group to help monitor, review, evaluate, and update the HMP. The group will include tribal government and departmental representatives from the Bois Forte Reservation. Representatives from agencies or organizations that are involved with related mitigation work in Bois Forte Reservation as well as those that work with underserved communities or socially vulnerable populations may also be invited to participate in the group. The Bois Forte Reservation EMD will conduct quarterly outreach to and communicate with the group on emergency management matters regarding severe weather awareness, local preparedness, mitigation, and response & recovery as needed. Additional stakeholders will be added based on need or in response to severe weather events.

If necessary, the Bois Forte Reservation EMD will convene the group to meet more regularly to monitor plan implementation progress and reassess needs and opportunities. This could be done in response to funding cycles of programs that provide resources for hazard mitigation activities. If there is a need for a special meeting due to new developments or a declared disaster occurring in Bois Forte Reservation, the group will meet to update pertinent mitigation strategies. Depending on Bois Forte Reservation 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 Bois Forte Reservation. In addition, tribal, 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 FEMA for approval. The plan will be updated via written changes, submissions as the group deems appropriate and necessary, and as approved by Tribal Council.

During the five-year plan period, the EMD will require all relevant tribal departments to report on the status of their mitigation actions using the worksheets provided in Appendix H. This information will be used to track progress for the next plan update. Additionally, the EMD will establish and implement

an HMP maintenance schedule. Forms for these purposes are drawn from FEMA's 2023 Local Mitigation Planning Handbook and can be found in Appendix H (FEMA, 2023a).

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

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

6.2 Implementation

Bois Forte Reservation and its partner stakeholders share a common HMP and work together closely to develop, revise, and implement it. This HMP provides a comprehensive chart of mitigation actions for Bois Forte Reservation (see Section 5.3). Bois Forte Reservation identified the specific mitigation strategies that tribal government and departments would seek to implement across the Bois Forte Reservation tribal communities during the five-year planning cycle. These mitigation actions are provided in Table 15.

Over the five-year planning cycle, mitigation measures and project closeouts will be monitored by the Bois Forte Reservation Emergency Manager in coordination with other tribal departments as needed. In cases where projects are incorporated into existing Bois Forte Reservation programs and implemented using local tribal funds (e.g., Forestry Division fuel reduction practices), the respective division director or designated staff will be responsible for tracking and reporting on project status, closeout, and costs as per Bois Forte Reservation policy. For mitigation projects implemented with outside grant funding (such as BIA, USDA, or FEMA), the Bois Forte Reservation Emergency Manager or other tribal department staff will follow the monitoring and reporting requirements of the respective grant program. Commonly applied grant management processes and procedures include submission of quarterly reports that detail project progress, documentation of local match (cash or in-kind), maintaining records of costs incurred, spending plans, and reporting updates to the Reservation Business Committee.

Several implementation tools are available to address hazards. The strategies to use will be part of an ongoing discussion as Bois Forte Reservation 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 tribal departments, in coordination with neighboring 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: Neighboring county and city jurisdictions 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 between Bois Forte Reservation and neighboring counties could also help in lobbying for certain funding priorities that address concerns relating to challenges in service delivery in rural tribal areas. Organizations such as FEMA Region 5 and the Minnesota Division of Homeland Security and Emergency Management (HSEM) through the Regional Program Coordinator can offer tools and resources to assist in these cooperative efforts.

Regulation: Regulation is an important mitigation tool for Bois Forte Reservation. Regulation plays a vital role in land use, access to structures, and the protection of water resources and public health.

6.3 Continued Public Involvement

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

- The Bois Forte Reservation HMP website link will be posted on the Bois Forte Reservation 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 reservation-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, Bois Forte Reservation 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.
- Tribal representatives participating in the plan will be responsible to report on the status of mitigation actions to the Bois Forte Reservation EMD. (see Section 5.3 or the Bois Forte Reservation HMP website).
- Bois Forte Reservation 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 within the Bois Forte Reservation. Outreach methods may include presentations at community meetings, sharing information at special events, working with tribal schools and partner organizations, and posting information in areas that are used to communicate with the public (tribal newsletter, bulletin boards, websites, and social media). As mitigation projects are implemented, Bois Forte Reservation will work to keep the public updated and engaged in those local efforts.
- To ensure an equitable outreach strategy continues after the plan is adopted, the planning team will continue to seek to engage with underserved and vulnerable populations during the next five years. Methods of engagement will include those listed above, as well as working with partner agencies, local organizations, facilities, or neighboring jurisdictions to conduct more targeted outreach or presentations to share information on hazard mitigation and solicit feedback on concerns and ideas.

Appendices

Appendix A – References

Appendix B – Adopting Resolutions

Appendix C – Local Mitigation Survey Report

Appendix D – Plans & Programs in Place

Appendix E – Past Mitigation Action Review Status Report

Appendix F – Planning Team Meetings

Appendix G – Public Outreach & Engagement Documentation

Appendix H – Plan Maintenance & Monitoring Worksheets

Appendix A – References

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Appendix B – Adopting Resolutions

Appendix C – Local Mitigation Survey Report

Bois Forte Reservation
LOCAL MITIGATION SURVEY

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

Jurisdictions to Complete LMS:

This form is to be completed by representatives from **Bois Forte Reservation Emergency Management, Tribal Government, and related tribal department heads and staff**.

Additional stakeholders on the Bois Forte HMP contact list are also invited to provide feedback to this form in the designated areas. (See "Other Stakeholders" section with each question).

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

Bois Forte Reservation	Teresa Isham, Bois Forte Emergency Preparedness Specialist tisham@boisforte-nsn.gov Carol Burr, Planning & Community Development cburr@boisforte-nsn.gov
OTHER STAKEHOLDERS	Josh Brinkman, St. Louis County Emergency Management Coordinator, brinkmanj@stlouiscountymn.gov

Review: Prioritization of Hazards

During the Bois Forte Reservation HMP Planning Team Meeting #1, participants determined the following natural hazards below to be of high, moderate, or low priority as they relate at a reservation-wide level. Hazards noted as high or moderate priority are considered to be of greatest risk and concern, reflecting the frequency of past events, the probability of future events, and the severity of impacts that can occur. Hazards listed as a low priority are considered to be of lower risk and concern, reflecting an infrequency of past events and/or occurring without significant impacts to local vulnerabilities.

Prioritization of Hazards for 2025 Bois Forte Reservation Update

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

Dam/Levee Failure	Low

SURVEY QUESTIONS (1-15)

#1 - HAZARD IDENTIFICATION **Does the priority level listed for any of the hazards in the table above differ for your jurisdiction? If so, please describe how.**	
Bois Forte Reservation	No changes. These are the hazard priorities we determined during our first planning team meeting.
OTHER STAKEHOLDERS	St. Louis County: Winter storms rank as a Moderate when averaging the entire county. Flooding would rank as a High, there has been flooding with a disaster declaration in different parts of the county for the past 3 years.

#2 - LOCAL VULNERABILITIES **Describe any <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from natural hazard events in your jurisdiction.** Consider how recent severe storms or other natural hazard events have caused damages or threatened life safety to people in your community. Please list the natural hazards and related local vulnerabilities separately.	
Bois Forte Reservation	Winter Storms, Extreme Cold: Severe winter weather including ice storms, blizzards, and extreme cold can cause hardship on the community in regards to travel and oftentimes loss of electricity which may then contribute to heat loss or refrigeration or freezer loss. Our generators are in poor unmaintained condition. New generators need to be obtained for emergency backup power. Flooding: Flooding could cause damage to any homes on the reservation. The design of the lift station on Whiskey Point needs to be redone or grinder pumps installed at individual residences that are prone to sewer back up along that road. Wildfire: Wildfire could be detrimental to the reservation properties because we are surrounded by forests.
OTHER STAKEHOLDERS	St. Louis County: Flooding - Yearly flooding causes damage to private and public infrastructure. Limited river gauges in key areas make forecasting of downstream flooding difficult. Wildfire - St. Louis County (as a whole) ranks among the highest wildfire risk for anywhere within the Midwest, specifically north SLC where tree density, species and tree disease increase the risk. Windstorms/Tornadoes - Many parts of the county have limited cell coverage making warning and notification of wind events difficult. This is

	especially true with tourists to the area that are oftentimes hunting, fishing, camping or hiking in remote areas.

#3 - REDUCTION IN VULNERABILITY **In the last 5 years, has your jurisdiction taken any actions to <u>reduce</u> vulnerability against future severe weather or disaster events? Please describe.**	
Bois Forte Reservation	The Bois Forte Forestry Dept., Public Works Dept. and other outside agencies have worked to keep the forest and ditches cleared. The Bois Forte Public Works Department strives to keep roads accessible for travel in and out of the reservation. The Bois Forte Tribal Government opens its doors for those in need of electricity, water and shelter if needed. The Bois Forte Planning Department continues to work on safety plans and look for funding to remedy any of the hazards/issues addressed in the plans. We have also upgraded the dam to save the Wild Rice.
OTHER STAKEHOLDERS	St. Louis County - St. Louis County Public Works has raised road beds and upsized culverts in areas with repetitive flooding. Through the Firewise program we have obtained grant funding to educate the public in wildfires and to reduce fire fuels throughout the county. We are currently seeking funding to purchase deployable river gauges.

#4 – INCREASE IN VULNERABILITY **In the last 5 years, has your jurisdiction experienced an <u>increase</u> in new development? Has this new development created new vulnerabilities to natural hazards in your community? Please describe.**	
Bois Forte Reservation	We have added some buildings in the community, but most importantly upgraded the dam to save the rice. No increase in vulnerability.
OTHER STAKEHOLDERS	

#5 - PUBLIC OUTREACH **How does your jurisdiction share information with community members about severe weather events and personal preparedness? If this is not something that is currently done, how could it be done in the future?**	
Bois Forte Reservation	The Bois Forte Tribal Government shares weather notifications and emergency preparedness on our instant alert system, social media and email. We also use in-person "word of mouth" to share information with people in our community. Warning Sirens. (some repair has been done in past 2 years)
OTHER STAKEHOLDERS	St. Louis County - In cooperation with the Firewise program, we hold public events to educate the public on homeowner responsibility with wildfires. We will start holding booths at county fairs in the near future.

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

Bois Forte Reservation	Yes, Bois Forte has this information on the website and there is a form to fill out to get the notices. This is available to all residents of the reservation.
OTHER STAKEHOLDERS	St. Louis County: We encourage all residents to sign up for Northland Alerts, which is a notification system operated with Everbridge. We have sent mailers, and work with all jurisdictions to encourage their populations to sign up as well.

#7 - BUILDING CODES **Has your jurisdiction adopted the Minnesota State Building Code? Please clearly answer yes or no and provide supporting detail. IF YES, please describe how it is enforced. IF NO, please describe if there are other building codes or permitting processes in place to reduce the risk to future development.**	
Bois Forte Reservation	Bois Forte has not and is not required to adopt the Minnesota Building Code. When public buildings are constructed on the Bois Forte Reservation, they tend to follow MN state building codes very closely. Private buildings are required to go through a permit process where they are reviewed and approved on a case-by-case basis depending on their location and what codes would be reasonable to follow.
OTHER STAKEHOLDERS	

#8 - OTHER PLANS AND POLICIES **What other plans or policies does your jurisdiction have in place to help mitigate against the impacts of flooding and other natural hazards to future development? Please describe.**	
Bois Forte Reservation	Bois Forte Reservation Planning & Community Development Department is working to update our current Land Use Plan. The Bois Forte Public Works Department also maintains a transportation improvement plan for projects as needed. Burning permits are issued through the Bois Forte Forestry Department. The Forestry dept also maintains a Spatial Fire Management Plan. The Bois Forte Planning Department is also working with Bois Forte DNR/Realty Dept. on updating our Land Use plan.
OTHER STAKEHOLDERS	St. Louis County: We have received the updated FEMA Flood maps and it is used in locations that the county administers permits for structures. We are also actively working on community wildfire planning in the county.

#9 - ORGANIZATIONAL CAPACITY **What departmental staff or elected officials in your jurisdictional help to accomplish hazard mitigation in your community? Please describe.**	
Bois Forte Reservation	Bois Forte has tribal government and departments that work on related planning and projects that help to address hazard mitigation: BF Tribal Council, BF Emergency Management, BF Department of Resource Management, BF Public Works Dept., and BF Planning and Community Development.
OTHER STAKEHOLDERS	St. Louis County: The following departments have staff that work towards mitigation efforts - Emergency Management, Public Works, Public Health, Land and Minerals, GIS

#10 – PARTNERSHIPS Are there any agencies, organizations, or businesses that your jurisdiction has worked with to address mitigation efforts in your community? Please describe.	
Bois Forte Reservation	The Bois Forte Dept of Resource Management is the tribal equivalent to the MN DNR on the reservation. We do work together. Bois Forte Emergency Management also partners with other Region 2 County Emergency Managers on regional training and planning efforts as part of the Arrowhead Regional Emergency Management Agency (AREMA).
OTHER STAKEHOLDERS	St. Louis County: We have worked with tribes, cities, and townships to help with locating funding sources and subject matter experts to address specific mitigation projects.

#11 - PROGRAMS IN PLACE What sort of programs does your jurisdiction participate in to help raise awareness and reduce risk from natural hazards in your community?	
Bois Forte Reservation	Bois Forte Forestry manages mitigation programs related to wildfire. We do several activities to prevent destructive fires from occurring at Nett Lake. Some of the actions that we do to control fires are: Fuel Reduction We remove brush around residential areas so that if a fire does start, losses will be minimal. Flammable brush such as balsam fir or young jack pine is sometimes considered more of a risk around residential areas than deciduous brush. Fuel reduction also includes cutting fire breaks to stop forest fires. Fire Prevention We are present at many events to raise awareness so that residents are careful not to let fires get out of control. We also issue burn permits, as controlled, prescribed fires are an efficient way to reduce fuels. Fire Suppression If a fire escapes control, we have equipment to directly suppress fire. We have several vehicles capable of carrying hundreds of gallons of water even to off-road sites, fully equipped with pressurized hoses to drench a fire with water and foam. We have a water storage tank that enables quick refilling, and we also have tools such as pulaskies and fire rakes to suppress fires if water is not available. We staff based on fire weather to act as responders.
OTHER STAKEHOLDERS	

#12 - FUNDING & OTHER RESOURCES What funding sources are available to help your jurisdiction to accomplish implementation of mitigation activities? Please describe. Include internal local government funding as well as external funding sources (grant or loan sources from local, state, or federal agencies).	
Bois Forte Reservation	Bois Forte Planning & Community Development continues to research funding opportunities for accomplishing mitigation activities. Federal, State

	and Private grants. Of recent CARES Act and APRA funds from various sources but those programs are now done.
OTHER STAKEHOLDERS	St. Louis County: We utilize grants secured by our Firewise contractor, EMPG, as well as internal funding from the SLC Sheriff's Office budget to work on mitigation projects.

#13 - LOCAL MITIGATION PROJECTS **Please describe what mitigation actions would help to reduce risk to your community from future natural hazard events. Please include mitigation activities that address local vulnerabilities that were identified in Question #2. Please be as specific as possible in your responses. The mitigation actions you identify will be used to develop your local mitigation action charts. If you have any mitigation projects you are aware that your jurisdiction will be seeking to apply for FEMA HMA Grant Program funding for, please make note of that.**	
Bois Forte Reservation	Wildfire - Work to implement wildfire mitigation activities outlined in our Bois Forte wildfire plan. Work to promote residents to sign up for our emergency notification system and provide assistance as needed. Participate in the NWS Severe Weather Awareness Weeks. Create new ways to do public outreach and education for Bois Forte residents on severe weather and personal preparedness (use of BF website, tribal newsletter, posting information in public places, and sharing information at other events) Ensure the tribe is ready with facilities and resources to provide emergency sheltering to those vulnerable and affected during extreme temperature events, especially coupled with an extended power outage. Obtain backup generators for any critical facilities or infrastructure.
OTHER STAKEHOLDERS	

#14 - GAPS OR DEFICIENCIES **Please describe any specific gaps or deficiencies that are a barrier to implementing local mitigation measures.**	
Bois Forte Reservation	Bois Forte is a reservation of 3 sections spread several miles apart with limited funds. Bois Forte Planning & Community Development has had challenges in obtaining funding available to repair/correct/etc. damage done by any flooding.
OTHER STAKEHOLDERS	St. Louis County: The county is geographically very large in size with many jurisdictions within and bordering the county. This makes it difficult to identify high-impact projects that will benefit large population groups. Without dedicated mitigation staff we often are needing to focus time and effort into preparedness, response and recovery instead of mitigation.

#15 - SURVEY PARTICIPANTS **Please list the names & titles of all persons that contributed information to this survey. Participant information is important to ensure good jurisdictional participation, and each person's time will count towards the 25% in-kind match requirement for the HMP update.**	
Bois Forte Reservation	Teresa Isham, EM Preparedness Specialist Vonda Carr, 477 Director Carol Burr, Planning & Community Development Kim Greiner, CFO
OTHER STAKEHOLDERS	Josh Brinkman, St. Louis County Emergency Management Coordinator

Appendix D – Plans & Programs in Place

Bois Forte Reservation

HMP Plans & Programs in Place Form

EMERGENCY PLANNING CAPABILITIES	*Yes/No*	*Comments*
Emergency Notification System (please specify, i.e., CodeRED, Smart911, Everbridge, etc)	Yes	Bois Forte uses the ReGroup Emergency Notification System
Outdoor Warning Sirens (please note locations and # per jurisdiction)	Yes	1 Nett Lake, 1 Indian Point, 1 Vermilion, 1 in Palmquist
Emergency Operations Plan (EOP)	Yes	EOP is updated annually
Mass Care Sheltering Plan / List of Shelter Facilities	Yes	Addressed in EOP and in coordination with BF Public Health
Tornado Safe Rooms / Storm Shelters (please list any existing specific locations)	No	Addressed in coordination with Nett Lake School District
NWS Weather Ready Nation / StormReady Certification	No	
Coordination with Schools	Yes	Nett Lake - Tornado Drills, other trainings
Coordination with Neighboring Jurisdictions	Yes	Annual regional planning and training; statewide AMEM conference
Coordination with Local and Regional Agencies involved in mitigation	Yes	SWCD, MN DNR, MnDOT, Rural and Municipal Electric Cooperatives, Watershed Districts, Wildland Fire Management Plan w/ supporting cooperative agreement with BIA/Bois Forte for wildland fire.
Coordination with organizations or agencies addressing disaster related issues and vulnerable populations, emergency preparedness, access and functional needs populations (List as applicable)	Yes	Public Health, American Red Cross, Salvation Army
Past storm hazard data and information	Yes	Damage information is kept on file from past storm events and disaster declarations

Other (please describe)		Public Health has preparedness plans in place

PLANNING & REGULATORY CAPABILITIES	*Yes/No*	*Comments*
Comprehensive/Land Use Plan	Yes	Bois Forte Reservation Tribal Government Comprehensive Plan 2010. We are working to update the current Land Use Plan – Under BF Planning & Community Development
Capital Improvements Plan	No	Need to create this plan
Economic Development Plan	No	Need to create this plan
Climate Adaptation Plan	No	
Continuity of Operations Plan (COOP)	No	
Transportation Plan	Yes	Bois Forte Public Works Dept.
Stormwater Management Plan / Drainage Plan	Yes	
Burning Permits/Restrictions (i.e., identify if issued through Sheriff's Office or MN DNR)	Yes	Bois Forte Forestry
Comprehensive Local Water Management Plan	Yes	IHS
Watershed Plan (One Watershed, One Plan)	No	We are just starting to get involved with
Wellhead Protection Plan		Municipal level plans are done in coordination with MDH
Forest Management Plan	Yes	Bois Forte Forestry
Community Wildfire Protection Plan (CWPP)	Yes	Spatial fire management plan
Participation in MN DNR Firewise Program	Yes	Laura Murphy
Database of Dry Hydrants/Well Access	Yes	Brian Whiteman @ Public Works
Other (please describe)		

LOCAL POLICY / PROGRAM CAPABILITIES	*Yes/No*	*Comments*
Land Use, Planning, & Zoning Ordinance	Yes	Needs to updated.
Subdivision Ordinance	No	We have no subdivisions
MN State Building Code Enforcement	No	

Participation in the National Flood Insurance Program (NFIP)	No	
Adoption of Digital Flood Insurance Rate Maps	No	
Floodplain Ordinance	No	No, but we review those conditions per federal guidelines and laws on all NEPA compliance reviews when we are using federal money on construction projects
Shoreland Ordinance	No	No, but we review those conditions per federal guidelines and laws on all NEPA compliance reviews when we are using federal money on construction projects
Minnesota Buffer Law / Soil Erosion Ordinance	No	No, but we review those conditions per federal guidelines and laws on all NEPA compliance reviews when we are using federal money on construction projects
Home Buyouts for flood or erosion mitigation	No	
Other natural hazard specific ordinances (i.e., stormwater, steep slope, wildfire)	No	
Maintenance programs to reduce risk	Yes	Highway Dept. ROW maintenance and drainage systems
Other (please describe)		

ADMINISTRATIVE/TECHNICAL CAPABILITIES	***Yes/No***	***Comments***
Emergency Management Director	Yes	Teresa Isham, EMD
Sheriff/Police Department	Yes	BIA
Floodplain Management Administrator	Yes	Chris Holm
Chief Building Official	Yes	Executive Director
Highway Engineer	No	
Mapping Specialist (GIS)	No	
Public Health Coordinator/Department	Yes	Teri Morrison
Planning Commission	Yes	Carol Burr

Coordination with Soil and Water Conservation District	No	
Coordination with Minnesota Department of Natural Resources	Yes	Dept of Resource Management is the tribal equivalent to the MN DNR on the reservation. We do work together.
Mitigation Planning Committee	Yes	2025 HMP Update Planning Team of Stakeholders
Mutual Aid Agreements in place	Yes	Regional; MAA's also existing between local fire departments
Other (please describe)		

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

Appendix E – Past Mitigation Action Review Status Report

Bois Forte Reservation

Past Mitigation Action Review Status Report

Following is a report on the status of mitigation actions related to natural hazards included in the Bois Forte Reservation **2018** Hazard Mitigation Plan. This report covers the mitigation actions that were listed for implementation by Bois Forte Reservation and by city jurisdictions or partner agencies, as applicable. The status of mitigation actions is defined as the following:

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

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

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

#	Hazard	Mitigation Action	2025 Status	Comments
1	All- Hazards	Fully establish Everbridge as the new emergency mass- notification system for the Bois Forte Reservation and train key personnel to be authorized users.	Ongoing	BF has the ReGroup Emergency Notification System. We distribute information at different meetings and events. We are working to get a link put up on the BF website.
2	All- Hazards	Promote all tribal Band members and community members to sign-up for the Everbridge system and provide individual technical assistance to sign-up as needed.	Ongoing	This is an ongoing effort.
3	All- Hazards	Identify and map Bois Forte cultural and sacred sites and consider mitigation measures as appropriate for those areas that may be at risk due to the impact of hazard events such as flooding, wildfire, or severe storms.	Ongoing	Ongoing as needed.
4	All- Hazards	Update the 2010 Bois Forte Land Use Comprehensive Plan to include considerations for natural hazards and mitigation through policy and ordinances that direct future land use decisions and/or development on the reservation.	Ongoing	BF Planning Director and DNR are continuing to work on this
5	All- Hazards	Update the Bois Forte Tribal Emergency Operations Plan on an annual basis to be in alignment with HSEM “MNWALK” standards for EOP development.	Ongoing	Ongoing by BF Emergency Management.

#	Hazard	Mitigation Action	2025 Status	Comments
6	All- Hazards	Provide ICS and EOC training for all essential Tribal Government Staff and Emergency Personnel to understand their roles and responsibilities and support preparedness to respond to a disaster.	Ongoing	This has not occurred under the new tribal EM Specialist, but will work to incorporate trainings into our EM program.
7	All- Hazards	Plan for and implement emergency management exercises for Bois Forte essential Tribal Government Staff and Emergency Personnel to test capabilities. Participate in exercises with other city & county jurisdictions and key organizations/agencies as applicable in either Bois Forte or outside exercises.	Ongoing	Same as above. Bois Forte does participate in regional planning and exercises with other HSEM Region 2 EM's.
8	Severe Winter & Summer Storms	Purchase and install backup generators for critical community-service facilities on the Reservation, specifically including the Nett Lake Clinic, Vermilion Community Center, and Vermilion Wellness Center.	Ongoing	Not completed yet. We are still searching for grant funding for the purchase of generators.
9	Severe Winter & Summer Storms	Work with CenturyLink to install backup generator power to the CenturyLink communications equipment that serves phone and cellular service to the Nett Lake and Palmquist areas.	No	No Longer Valid, Bois Forte has implemented its own fiber to the home network that is backed up by generator power. The existing telecom tower for cell service at Black Lock trail has generator backup on it as well
10	Severe Winter & Summer Storms	Work with Lake Country Power Cooperative to implement feasible and cost-effective mitigation measures to reduce the risk of power outages for overhead power lines along Highway 65. Recommended project by Lake Country Power is to build a new 0.5 mile tie line to connect the east-west portion of the Hwy. 65 overhead line with the underground line coming from the east along Palmquist Rd.	Ongoing	The burial of Power lines throughout highway 65 has been approved with a service line agreement and is scheduled to be installed this summer.
11	Severe Winter & Summer Storms	Promote individual and family emergency preparedness for safety and survival during periods of severe winter and spring/summer weather.	Ongoing	We use the BF website and Facebook to promote winter and spring/summer emergency preparedness.

#	Hazard	Mitigation Action	2025 Status	Comments
12	Severe Winter & Summer Storms	Participate in and promote the National Weather Service (NWS) Severe Weather Awareness Week (held annually in April) and Winter Awareness Week (held annually in November) to provide education and awareness on the hazards of extreme weather and safety & preparedness measures to take.	Ongoing	This will be incorporated under the new BF EM Program.
13	Severe Winter & Summer Storms	Install NOAA weather radios in Tribal Government Buildings and train staff in their use to monitor severe weather. Also promote the use of NOAA weather radios to tribal residents.	Ongoing	Same as above.
14	Extreme Temps (Heat/Cold)	Provide education and awareness to homeowners on the dangers of carbon monoxide (CO) poisoning in winter and preventative measures to take for home safety. Enforce use of CO detectors as per Bois Forte Housing Authority standards.	Ongoing	This is part of our winter safety outreach.
15	Extreme Temps (Heat/Cold)	Educate Bois Forte residents on the dangers of extreme heat or extreme cold and how to take personal safety measures during periods of extreme temperatures.	Ongoing	This is part of our summer safety outreach.
16	Severe Summer Storms	Carry USDA crop insurance for losses to Wild Rice harvest on Nett Lake due to destruction from flooding, wind and hail.	No	There is no longer a USDA rice insurance program. USDA cancelled all native rice insurance.
17	Severe Summer Storms	Continue to implement restoration work to Nett Lake to remove nuisance floating bog and debris that can affect the wild rice crop after a storm. Put out public information on other areas to harvest when the wild rice crop has been damaged.	Ongoing	BF Natural Resources Division continues to oversee monitoring and resource management for our Wild Rice lakes.

#	Hazard	Mitigation Action	2025 Status	Comments
18	Severe Summer Storms	Identify and map locations on the Bois Forte Reservation where it may be cost-effective and feasible to construct or retrofit community safe rooms to protect for life safety during high wind or tornado events. Particular areas of vulnerability include residential areas (Nett Lake, Vermilion, Palmquist, Indian Point, and Sugar Bush communities) where homes do not have basements.	Ongoing	This is an ongoing effort under the new BF EM Program.
19	Severe Summer Storms	Implement construction or retrofit projects for safe rooms in identified vulnerable locations on the Bois Forte Reservation.	Ongoing	Same as above - to be addressed as deemed appropriate.
20	Flooding	Provide education on sump pump maintenance to Bois Forte homeowners to mitigate in-home flooding due to sump pump failure.	Delete	We do not do education or outreach on this.
21	Flooding	Install permanent backup generators for all critical lift stations on the Reservation that do not currently have backup power and may be susceptible to failure during power outages due to flooding.	Ongoing	BF Public Works addresses maintenance of lift stations and will obtain backup power as they see necessary.
22	Flooding	Identify and implement prioritized flood mitigation measures for roads, bridges, culverts, and drainage systems on the Bois Forte Reservation.	Ongoing	Ongoing by BF Public Works as necessary on an annual basis.
23	Flooding/ Erosion	Identify and work to protect culturally sensitive sites that have been impacted by flooding and erosion through measures such as planting of native plant species in vulnerable areas.	Ongoing	This is an ongoing effort as necessary by Public Works and/or Natural Resources depts.
24	Flooding	Implement localized flood control measures through stormwater management activities such as the installation or modification of culverts and use of ditches and wetland areas to hold water.	Ongoing	Ongoing by BF Public Works as necessary on an annual basis.
25	Flooding	Work with FEMA and the MN DNR to conduct National Flood Insurance Flood Mapping for the Reservation.	Ongoing	Ongoing by DNR

#	Hazard	Mitigation Action	2025 Status	Comments
26	Wildfire	Construct a 100' hazard fuel break for the 4-Corner Area to mitigate at-risk structures and protect lives through fuels reduction and increase of defensible space.	Ongoing	This falls under our Bois Forte Forestry Program. Efforts will be ongoing as deemed necessary.
27	Wildfire	Assess existing structures in Bois Forte residential communities that are at-risk to wildfire for mitigation measures such as creation of defensible space, hazardous fuels reduction, or retrofit construction utilizing fire resistant building materials, such as metal roofs.	Ongoing	This falls under our Bois Forte Forestry Program. Efforts will be ongoing as deemed necessary.
28	Wildfire	Assess Bois Forte Government and Commercial buildings for exterior fire protection needs, which may include actions such as upgrade to new fire-resistant materials such as metal roofs or exterior landscaping to increase defensible space.	Ongoing	This falls under our Bois Forte Forestry Program. Efforts will be ongoing as deemed necessary.
29	Wildfire	Develop or update zoning and building code ordinances for new construction to include integration of Firewise principles for wildfire mitigation (i.e., creation of defensible space, use ignition-resistant building materials).	Ongoing	This falls under our Bois Forte Forestry Program. Efforts will be ongoing as deemed necessary.
30	Wildfire	Integrate Firewise principles into the Bois Forte Housing Department's rental unit lease contracts.	Ongoing	This falls under our Bois Forte Forestry Program. Efforts will be ongoing as deemed necessary.
31	Wildfire	Promote defensible space education and provide training for property owners that have properties at-risk for wildfire so they can minimize risk to wildfire.	Ongoing	This falls under our Bois Forte Forestry Program. Efforts will be ongoing as deemed necessary.
32	Wildfire	Install a 20,000 gallon underground water tank at the Palmquist community to serve as a dry hydrant for structural and wildland firefighting. In addition, assess potential to install underground water tanks for the 4-Corner area and implement as deemed feasible.	Ongoing	This falls under our Bois Forte Forestry Program. Efforts will be ongoing as deemed necessary.

#	Hazard	Mitigation Action	2025 Status	Comments
33	Wildfire	Develop an Evacuation Plan as part of the Bois Forte Emergency Operations Plan (EOP), including identification of wildfire “safety zones” for residents to gather in the event that evacuation routes are impassable.	ongoing	part of this info exists in Spatial Fire Management plan
34	Wildfire	Perform a comprehensive evaluation of evacuation routes for the Bois Reservation and complete project to construct an additional transportation route out of Nett Lake.	ongoing	Bois Forte is engaging in this activity now
35	Wildfire	Raise public awareness of wildfire danger during periods of high-risk such as dry periods and high winds.	ongoing	Bois Forte Forestry hands out fire prevention info and items throughout the year.
36	Wildfire	Maintain mutual aid agreements for wildland fire response with Littlefork and Tower DNR (Cook, Orr) Offices and the Greenwood Township Fire Department.	ongoing	Mutual aid agreements and MOUS are current
37	Wildfire	Enforce the Bois Forte requirement for burning permits and restrictions.	ongoing	Bois Forte Forestry actively sends out burn restriction notices and provides burning permits
38	Drought	Monitor residential wells and regular precipitation to gauge condition of water table levels and impacts to Nett Lake’s wild rice crop and forests.	NO	We don’t monitor residential drinking water wells for static water level. Most users are on community GW system, so there are no wells to drop a static line. If GW for static water levels was wanted (which it typically isn’t except in certain cases like the flooded cemetery) because over recent years we are typically dealing with too much water, not too little) we would need to install dedicated monitoring wells. There is a plan for digital level monitoring specific for lake levels which has been grant-funded but needs to be implemented-working on that.

#	Hazard	Mitigation Action	2025 Status	Comments
39	Drought	During periods of drought, monitor and manage Nett Lake for invasive species that may pose risk to future growth of wild rice.	ongoing	Invasive species transfer related to NL are monitored by conservation law enforcement during open water use times of the year.
40	Dam Failure	~~Work with the MN DNR to~~ Monitor condition of the Nett River Dam for potential failure during high rain events and danger to recreational users downstream.	Ongoing (revised)	We don't work with MN DNR for anything Nett River dam related, as it is located on trust lands of the Band. We report on dam functionality one time per year to the BIA -safety of dams program. Long established hydrologically that there is little potential impact to people downstream, since there is no people until Littlefork. By time water gets to Littlefork from Nett River, overland wetland seepage and drainage into wetlands has alleviated any potential impact. This coincidentally also makes it difficult to get funding for maintenance, because no human impact is posed if something goes wrong.

Appendix F – Planning Team Meetings

Bois Forte Reservation HMP Planning Team Meeting #1
2/13/25 Meeting Summary & Documentation

Synopsis: On February 13, 2025 Bois Forte Reservation 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 Bois Forte Reservation Hazard Mitigation Plan (HMP). The meeting was held via Zoom webinar video conference and was facilitated by Stacey Stark and Bonnie Hundrieser of the U-Spatial@UMD project team.

The purpose of the meeting was to present on the update of the Bois Forte Reservation HMP update and gather stakeholder feedback on several key discussion items, including:

1) Prioritization of the natural hazards to be profiled in the plan,

2) Identification of local vulnerabilities (i.e., infrastructure and populations),

3) Ideas for local mitigation actions for implementation, and

4) Review of FEMA Hazard Mitigation Assistance grant funding opportunities.

Stakeholder Invitations: Bois Forte Reservation Emergency Management invited all stakeholders included on the county's HMP Update Jurisdictional Contact List, which includes the key County Contacts, City Contacts, Township Contacts, Other Stakeholder Contacts, and Neighboring Jurisdiction Contacts identified to be invited to participate in the plan update process. Contacts were encouraged to engage additional staff or to send someone in their stead if they could not attend.

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

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

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

To submit comments or questions regarding this meeting summary, please contact:
Teresa Isham, Bois Forte Reservation Emergency Management Director
tisham@boisforte-nsn.gov

Meeting Participants

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

	Name	Organization	Job Title
1	Teresa Isham	Bois Forte Emergency Management	Emergency Management Specialist
2	Teri Morrison	Bois Forte HHS	Community Health Programs Manager
3	George Strong	KBFT 89.9FM Bois Forte Tribal Community Radio	General Manager
4	Randy Long	Bois Forte Tribal Government	IT Director
5	Tony Yeley	Fortune Bay Resort Casino	Risk Manager
6	Jaime	Law Enforcement	Chief of Police
7	Miranda Lilya	Bois Forte Reservation Tribal Government	Executive Director
8	Brady Boutto	Bois Forte	Forestry Tech/ Wildland Firefighter
9	Dan Rabideaux	Bois Forte Health and Human Services	Chief Executive Officer
10	Cody Swanson	Bois Forte Natural Resources	Forestry Program Manager
11	Carol Burr	Bois Forte RTG	Planning & Community Development Director
12	Lois Roskoski	Greenwood Township	Chair, Greenwood Board of Supervisors
13	Lance Hill	Bois Forte RTG	Realty Manager
14	Frank Villebrun	Bois Forte Environmental Services	Environmental Services Program Coordinator
15	Alex Jaye	St. Louis County Sheriff's Office	Emergency Management Specialist
16	Kelvin McCuskey	MN HSEM	Region 2 Regional Program Coordinator
17	Derek Howe	Lake Country Power	COO

Discussion Polls

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

POLL #1 (Slide 9, Who Participates)

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

Lois Roskoski	Hold a public information meeting within the community
Miranda Lilya	Community Meetings, Pow-wows
Carol Burr	Have a community meeting, have games and food.

Dan Rabideaux	Hold a community night out, even with food.
George Strong	Community meetings, site meetings, home visits to elderly and handicap,
Derek Howe	Meet them where it's most convenient to them
Alex Jaye	Assisting with exercises in my experience has been a great way to involve residents. It can highlight the issues, identify gaps, and spark great conversation and buy-in from residents.
Brady Boutto	Mailed pamphlets?
Cody Swanson	In-person events located at tribal offices
Lance Hill	You can send out flyer that targets uninsured homeowners.
Teri Morrison	Community meetings, posted for public comment

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

Carol Burr	Elders, School
Dan Rabideaux	For community-based things like this, I believe the Council needs to be leading their constituents.
Brady Boutto	I would involve BIA FMO Cory Berg
Cody Swanson	BIA Forestry and Wildland Fire Management, MNA Office located in Bemidji
Teri Morrison	Fire, EMS, DNR, Conservation, PD

POLL #2, Slide 13 (Plan Content – Vulnerability Analysis)

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

Lois Roskoski	Drought in past few years	Greenwood Township
Miranda Lilya	Aging infrastructure,	Nett Lake Village
Carol Burr	Several new government buildings will be constructed - Dept. of Natural Resources Facility, Big Woods Transit Facility, Public Works/Food Shelf Facility, Deep Winter Green House	Bois Forte - Both Nett Lake and Vermilion sectors
George Strong	Other than weather extremes associated with ?global warming?. Heat and cold	
Derek Howe	Vegetative invasive species such as the spruce budworm leaving 1,000s of dead and dying trees.	
Alex Jaye	Increased potential for permafrost levels to last into spring, increasing the hazard for flooding if there is substantial rainfall.	
Cody Swanson	Climate change resulting in increased duration of fire seasons	Nett Lake village, Palmquist Housing
Lance Hill	Climate change, employee turnover of key personnel, outdated policy.	

Teri Morrison	Frequent power outages, new buildings going in-Vermilion and two new ones in Nett Lake to come. Fortune Bay	Nett Lake

Question 2 - Are there specific areas of concern in your community that you would consider to be more highly vulnerable to damages or danger resulting from future natural hazard events? (please identify community)

Lois Roskoski	Significant loss of firefighters within the Greenwood Fire Department in past few years.	Greenwood Township
Miranda Lilya	Only one road in/out. No alternate route of evacuation.	Nett Lake Village
Tony Yeley	The Pike River Dam was built in 1912- has anyone ever considered the impact of its failure to Lake Vermilion?	
Dan Rabideaux	Wild rice on Nett Lake subject to fires, drought - this is a critical food supply and has cultural significance.	
Derek Howe	Remote access sites	
Alex Jaye	all of NE MN.	
Cody Swanson	Nett Lake village, Palmquist Housing	
Teri Morrison	Frequent power outages, then the cell phones and phone systems go out when the power is out	Nett Lake

POLL #3 (Slide 17) Bois Forte Reservation 2025 Update of Hazard Prioritization

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

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

Wildfire	10
Winter Storms	7
Windstorms	7
Flood	4
Extreme Cold	5
Drought	4
Hail Storms	3
Tornadoes	2
Dam/Levee Failure	2
Extreme Heat	0
Lightning	0
Landslides (n/a)	0
Land Subsidence	0

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

Flood	1
Winter Storms	0
Windstorms	0
Tornadoes	3
Hail Storms	1
Lightning	3
Extreme Cold	1
Extreme Heat	1
Drought	2
Wildfire	0
Landslides	4
Land Subsidence (n/a)	5
Dam/Levee Failure	3

Bois Forte Reservation 2025 Prioritization of Hazards

The chart below reflects the planning team's updated prioritization of hazards that will be included in the Bois Forte Reservation 2025 HMP Update.

HAZARD	Bois Forte Reservation 2025
Wildfire	High
Winter Storms	High
Windstorms	High
Flooding	Moderate
Extreme Cold	Moderate
Drought	Moderate
Tornadoes	Low
Hail	Low
Lightning	Low
Extreme Heat	Low
Landslides	Low
Dam/Levee Failure	Low

Other Comments or Questions

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

- Cody Swanson - Regarding Risk Assessment Resources - The Forest Service and DNR may not have accurate records of wildfires in Tribal jurisdiction This would be held with BIA. / He has contacts to provide.

- Kelvin McCuskey - Josh Estes is the Regional Emergency Manager for the BIA. Joshua.estes@bia.gov

- Derek Howe – Regarding mitigation projects: Not easy to bury power lines with all the ledge rock. / We could make a lot of progress with mitigating wildfires and windstorms if it was easier to get permission to cut the trees.

FEMA HMA Grant Funding:

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

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

BOIS FORTE RESERVATION HMP JURISDICTIONAL CONTACT LIST

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

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

REPRESENTATION	NAME	TITLE
Bois Forte Emergency Management	Teresa Isham	Emergency Management Specialist
Bois Forte Reservation Admin	Miranda Lilya	Executive Director
Bois Forte Reservation Tribal Council	Cathy Chavers	Tribal Chairwoman
Bois Forte Reservation Tribal Council	Tara Geshick	Secretary Treasurer
Bois Forte Reservation Tribal Council	Perry Drift	District I Representative S1
Bois Forte Reservation Tribal Council	Shane Drift	District I Representative S2
Bois Forte Reservation Tribal Council	Robert Moyer	District II Representative
Bois Forte Reservation Natural Resources	Lance Hill	Leasing/Land Management Program Coordinator
Bois Forte Reservation Natural Resources	Brady Boutto	Forestry Program Manager
Bois Forte Reservation Natural Resources	Cody Swanson	Forestry Coordinator
Bois Forte Reservation Natural Resources	Tony Mason	Conservation Officer
Bois Forte Reservation Natural Resources	Chris Holm	Ecological Resources Program Manager
Bois Forte Reservation Natural Resources	William Isham	Water Quality Technician

Bois Forte Reservation Education Dept.	Leanne Hoffman	Education Program Technician
Bois Forte Reservation Planning & Community Development	Carol Burr	Grants
Bois Forte Reservation Public Works	Brian Whiteman	Public Works Director
Bois Forte Reservation Housing Director	Jeneal Googleye	Housing Director
Bois Forte Reservation Health & Human Services	Daniel Rabideaux	Director of Health & Human Services
Bois Forte Reservation Transit	Toni Wakemup	Big Woods Transit Coordinator
Bois Forte Reservation Ambulance & Fire	Nikki Irving	Bois Forte Ambulance Coordinator
Nett Lake Police Department	Jamie Burdick	NLPD Chief of Police
Bois Forte IT	Randy Long	IT Director
Nett Lake School District	Peter Hardy	Superintendent
LOCAL & REGIONAL AGENCIES INVOLVED IN HAZARD MITIGATION		
MN HSEM	Kelvin McCuskey	Region 2 Regional Program Coordinator
National Weather Service - Duluth Office	Joseph Moore	Meteorologist
Bureau of Indian Affairs (BIA)	Josh Estes	Regional Emergency Manager
MN DNR Firewise Program	Laura Murphy	NE MN MN Firewise Specialist
BUSINESSES, ACADEMIA, AND OTHER PRIVATE ORGS.		
Lake Country Power	Derek Howe	Chief Operating Officer
Fortune Bay Casino	Drew Ebert	Chief Executive Officer
Fortune Bay Casino	Elizabeth Deegan	Interm General Manager
NONPROFIT ORGS/COMMUNITY-BASED ORGS THAT WORK WITH UNDERSERVED COMMUNITIES AND SOCIALLY VULNERABLE POPULATIONS		
American Red Cross	Owen Fifield	Disaster Services Manager
Salvation Army Northern Division (MN/ND)	Major Michelle Heaver	Area Contact
NEIGHBORING JURISDICTIONS		
St. Louis County Emergency Management	Dewey Johnson	EM Deputy Director
St. Louis County Emergency Management	Josh Brinkman	EM St. Louis County
Koochiching County Emergency Management	Willi Kostiuk	EM Coordinator
Itasca County Emergency Management	John Linder	EM Coordinator
Greenwood Township	Lois Roskoski	Greenwood Township Chair

From:	Teresa Isham
To:	Miranda Lilya; Cathy Chavers; Tara Geshick; Perry Drift; Shane Drift; Robert Moyer; Brady Boutto; Cody Swanson; Tony Mason; Chris Holm; Bill JR. Isham; Leanne Hoffman; Carol Burr; Brian Whiteman; Jeneal Goggleye; Daniel Rabideaux; Nikki Irving; Burdick, Jamie; Randy Long; Peter Hardy; kelvin.mccuskey@state.mn.us; Murphy, Laura (DNR); Derek Howe; debert@boisforte-nsn.gov; Elizabeth Deegan; Owen Fifield (owen.fifield@redcross.org); Michele.heaver@usc.salvationarmy.org; Teri Morrison; George Strong; Duane Johnson; Joshua Brinkman; willi.kostiuk@co.koochiching.mn.us; John Linder (John.Linder@CO.ITASCA.mn.us); lois.roskoski@greenwoodtownshipmn.com
Cc:	Bonnie K Hundrieser
Subject:	Bois Forte Reservation Hazard Mitigation Plan - Meeting Invitation
Date:	Wednesday, December 18, 2024 12:50:16 PM

BOIS FORTE RESERVATION
HAZARD MITIGATION PLAN UPDATE – MEETING INVITATION

Greetings,

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

We will be holding the meeting virtually using Zoom conferencing:

Date: Thursday, February 13, 2025
Time: 2:00-3:30 PM
RSVP: https://umn-private.zoom.us/webinar/register/WN_mcM0JeG-TGuoC9PFx1vIaw

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

About the Hazard Mitigation Plan
In order to maintain eligibility for FEMA Hazard Mitigation Assistance (HMA) Grant Program funding, the tribe's hazard mitigation plan must be updated every 5 years. Our last plan is due for an update and our planning is currently underway. The plan addresses the natural hazards that face the Bois Forte Reservation and will result in the identification of mitigation actions that will help to reduce or eliminate the impact of future hazard events.

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

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

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

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

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

Thank you,

Teresa Isham
Bois Forte Emergency Preparedness Specialist

Bois Forte Reservation
Tribal Hazard Mitigation Plan Update 2025
Planning Team Meeting #1

FEBRUARY 13, 2025

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
HM Planning Specialist
Hundrieser Consulting LLC

Bois Forte Reservation Project Lead

- Teresa Isham, Emergency Management Director

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

PRESENTER: STACEY STARK

Meeting Participation

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

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

USE CHAT:

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

ASK TO SPEAK:

PRESENTER: STACEY STARK

Meeting Purpose & Agenda

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

Agenda

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

PRESENTER: STACEY STARK

Overview of HMP Key Points

BOIS FORTE RESERVATION 2025 HMP UPDATE

PRESENTER: BONNIE HUNDRIESER

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 provide an opportunity for neighboring communities, tribal, and regional agencies to be involved
- Must be approved by FEMA for meeting all federal requirements.

Bois Forte Reservation HMP Update 2025

- Last plan was adopted in 2018.
- The updated plan will cover a 5-year window for implementation and grant program eligibility (**2026-2031**)
- Tribal government must formally adopt the final plan by resolution.

PRESENTER: BONNIE HUNDRIESER

Plan Purpose

The purpose of the HMP is to:

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

Who the Plan Covers

This is a **tribal hazard mitigation plan** that covers all of the Bois Forte Reservation.

The plan also takes into consideration the concerns of other partner stakeholders invited to participate who are involved in hazard mitigation (i.e., rural electric utility providers, watershed districts) or that provide services to vulnerable populations within the tribal planning area.

Who Participates

Key Stakeholders

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

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

The Public

The public must have an opportunity to learn about and provide input to the plan update.

- Use of news releases, social media, local bulletin boards, and public meetings or events.
- Must document local-level concerns and mitigation ideas
- The plan must describe how the tribal government defined "public".

POLL #1

Overview of Plan Content

BOIS FORTE RESERVATION 2025 HMP UPDATE

Plan Content
Hazard Identification

- The HMP addresses the **natural hazards** that can affect the tribal planning area.
- 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.
- Hazards deemed moderate to high priority will be addressed.

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

Plan Content
Risk Assessment

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

Plan Content
Vulnerability Analysis



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

POLL #2

Timeframe for development & Plan Format

Timeframe:

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

- The Bois Forte Reservation Plan will be completed in **2025**.

Format:

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

Example HMP website

Hazard Prioritization

REVIEW OF THE HAZARD RISK PRIORITIES FOR BOIS FORTE RESERVATION

Bois Forte Reservation Past Prioritization of Hazards

HAZARD	Bois Forte 2018
Flooding	High
Winter Storms	High
Windstorms	High
Tornadoes	High
Hail	High
Lightning	High
Extreme Cold	Moderate
Extreme Heat	Moderate
Drought	Moderate
Wildfire	High
Landslides	Low
Land Subsidence	n/a
Dam/Levee Failure	Low

Bois Forte Reservation 2025 Update of Hazard Prioritization

Considerations:

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

POLL #3

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

Hazard Prioritization Poll results and discussion

Are there any hazards that differ geographically across the tribal planning area?

Comments or Questions?

PRESENTER : STACEY STARK

Overview of Mitigation Actions & FEMA grants

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

PRESENTER: BONNIE HUNDRIESER

Mitigation Action Charts

The end resulting mitigation action chart will reflect the tribal government's plan of action to reduce the impacts of future natural hazard events.

- **Must** address hazards of moderate to high priority.
- **Must** address identified local vulnerabilities.
- **Must** identify priority, status, timeframe, responsibility, how incorporation/implementation will occur, and possible funding.
  - ★ Eligible FEMA HMA grant activities **must** be identified in the risk assessment and plan of action.

PRESENTER: BONNIE HUNDRIESER

FOND DU LAC RESERVATION — **Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Severe Summer Storms	Structure & Infrastructure Projects	Identify locations where warning sirens should be located to effectively cover the FDL Reservation and obtain funding for installation of sirens.	New High TBD	FDL EMD in coord with St. Louis County and Carlton County EMD's	FDL Emergency Management will work with St. Louis & Carlton County emergency managers on this effort. Supportive grant funding may be sought from the USDA Community Facilities Grant Program which funds sirens.	FDL, USDA CF Grant Program
7	Wildfire	Structure & Infrastructure Projects	Continue to address installation of water resources through dry hydrants or in-ground water tanks to support wildland fire fighting.	Existing Moderate Ongoing	FDL EMD in coord with FDL Forestry Division	The new filling station near Brookston is complete and FDL EMD will continue to monitor the progress of the proposed water facility.	FDL, Other (TBD)
8	Wildfire	Natural Systems Protection	Continue to address fuel reduction measures in high-risk areas of the Reservation.	Existing Moderate Ongoing	FDL Forestry	FDL Forestry works to regularly employ fuel reduction measures in areas adjacent to residential homes and other building structures in high-risk areas.	FDL
9	Flooding	Structure & Infrastructure Projects	Address risk of flood damage to existing roads that have experienced flood damage or may be at future risk by implementing mitigation measures to reduce or avoid flood damage.	Existing Moderate Ongoing	FDL Operations Division in coord with St. Louis & Carlton County Hwy. Depts.	The Fond du Lac Band Highway Department works in collaboration with Carlton and St. Louis County transportation departments to address problem areas on these roads and will continue to do so.	FDL / County
10	Flooding	Natural Systems Protection	Monitor and manage water levels on the lakes that produce Wild Rice for the FDL Reservation, applying measures to mitigate against the loss of wild rice harvest in the event of a flood event.	Existing Moderate Ongoing	FDL Resource Management Division	This is an ongoing part of FDL Resource Management Division's program for the management of Wild Rice.	FDL
11	Flooding	Local Planning & Regulations	Maintain annual dam inspection program for the four dams under FDL direction to ensure dams are structurally sound, maintained, and functioning properly.	Existing Low Ongoing	FDL Resource Management Division	This is an ongoing part of FDL Resource Management Division's program for the management of dams under FDL direction.	FDL

PRESENTER: BONNIE HUNDRIESER

WHITE EARTH RESERVATION — **Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
15	Severe Summer Storms	Structure & Infrastructure Projects	Install new warnings sirens where needed on the White Earth Reservation.	New High TBD	WE Emergency Management	Warning siren upgrades are needed for the sirens near the City of Mahnomen. The area where the upgrade is needed is associated with the White Earth Tribal and Community College and Riverland Apartments which are associated with the WERRC. Another area that needs an upgrade is in the Roy Lake area. Warning sirens will be purchased and installed as WE funding allows. Outside grant funding may be sought from the USDA Community Facilities Grant Program.	WER, USDA CF Grant Program
16	Severe Summer Storms	Structure & Infrastructure Projects	Construct storm shelters or tornado safe rooms for campgrounds or tribal facilities as needed.	Existing High Ongoing	WE Emergency Management	A storm shelter or safe room is needed at Little Elbow Lake Park, which is located in South Eastern Mahnomen County on the White Earth Indian Reservation. The campground does not have an official storm shelter or tornado safe room. Child care facilities also need a safe place for storm evacuation. The Riverland Apartments and WETCC should also be evaluated for construction projects. WER will work obtain funding to construct a storm shelter or tornado safe room for the park and other locations.	WER FEMA HMA, Other (TBD)
17	Wildfire	Local Planning & Regulations	Work with the MN DNR Firewise Program to address update of the White Earth Reservation Community Wildfire Protection Plan (CWPP).	New Moderate 2025	WE Emergency Management in coord with WE Forestry and MN DNR	Mahnomen County has a CWPP in place, last updated in 2015. The CWPP covers portions of the White Earth Reservation. WE EM will work with the MN DNR Firewise Coordinator for NE MN to proceed with a plan update to identify necessary wildfire mitigation activities. The plan is fairly recent and likely will not need an update until near 2025. The WE Emergency Management Director (EMD) is also the EMD for Mahnomen County so both the county & tribe will be engaged in this effort.	County, MN DNR Firewise Grant

FEMA HMA Grant Funding

FEMA

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

Example eligible grant activities:

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

PRESENTER: BONNIE HUNDRIESER

Overview of Mitigation Strategies

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

LOCAL PLANNING & REGULATIONS

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

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

PRESENTER: BONNIE HUNDRIESER

STRUCTURE & INFRASTRUCTURE PROJECTS

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

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

PRESENTER: BONNIE HUNDRIESER

NATURAL SYSTEMS PROTECTION

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

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

PRESENTER: BONNIE HUNDRIESER

EDUCATION & AWARENESS PROGRAMS

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

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

CodeRED®

PRESENTER: BONNIE HUNDRIESER

MITIGATION PREPAREDNESS & &RESPONSE SUPPORT

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

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

MnWARN

PRESENTER: BONNIE HUNDRIESER

Comments or Questions?

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

PRESENTER: BONNIE HUNDRIESER

Following Planning Team Meeting #1

COMPLETION OF TRIBAL LOCAL MITIGATION SURVEY FORM

Representatives from Bois Forte Reservation emergency management, tribal government, and departmental staff will help to participate in filling out a Local Mitigation Survey form. This form includes:

- Local hazard identification & risk prioritization.
- Local vulnerabilities (critical infrastructure, populations or assets)
- Local-level capabilities (programs, polices, staff, funding)
- Review past mitigation actions/identify new 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

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University of Minnesota Duluth
Driven to Discover

HUNDRIESER CONSULTING LLC

PRESENTER: STACEY STARK

Bois Forte Reservation HMP Planning Team Meeting #2
9/16/25 Meeting Summary & Documentation

Summary: On September 16, 2025, Bois Forte Reservation Emergency Management convened tribal governmental and departmental representatives, as well as neighboring jurisdictions and other stakeholders to participate in the 2nd and final Planning Team Meeting for the update of the Bois Forte Reservation Hazard Mitigation Plan (HMP). The purpose of the meeting was to formally convene the Bois Forte Reservation HMP Planning Team for a presentation on the draft plan and discussion of key items prior to public review and submission of the plan to HSEM and FEMA. The meeting was held via Zoom webinar video conference and was facilitated by Jane Lindelof and Bonnie Hundrieser of the U-Spatial@UMD project team.

Stakeholder Invitations: Bois Forte Reservation Emergency Management invited all stakeholders included on the tribe's HMP Update Jurisdictional Contact List (JCL), which includes Bois Forte Tribal Government and departmental contacts, along with other related agencies, organizations, and neighboring Jurisdictions 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 Bois Forte HMP Jurisdictional Contact List is included with this meeting summary.

Meeting Participants: A total of **13** people attended the meeting. Representation included tribal elected officials and departmental staff from Bois Forte Reservation and other stakeholders, including neighboring jurisdictions. A participant list is provided below:

1 Teresa Isham, Bois Forte Reservation, Emergency Management Director
2 Miranda Lilya, Bois Forte Tribal Government, Executive Director
3 Carol Burr, Bois Forte Planning & Community Planning Dept., Director
4 Vondalee Carr, Bois Forte Tribal Government, 477 Director
5 Robbie Goggleye, Bois Forte Tribal Government, Maintenance Director
6 Carlos Hernandez, Bois Forte Reservation Tribal Government, Chairman
7 Tara Grshick, Bois Forte Reservation Tribal Government, Secretary Treasurer
8 Robert Moyer, Bois Forte Reservation Tribal Government, District 2 representative
9 Jeneal Goggleye, Bois Forte Band of Chippewa-MCT, Housing Director
10 Jaime Burdick, BIA/OJS, Chief of Police
11 Donna Hoffer, BIA, LEA
12 Nathan Lynum, National Weather Service Duluth, Meteorologist
13 Michael Palmer, Minnesota DNR, Regional Firewise Specialist

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 Bois Forte tribal Mitigation Action Chart. This discussion period offered a facilitated opportunity for participants to consider any changes or new additions of mitigation actions prior to completion of the draft plan for public review.

BOIS FORTE RESERVATION HMP PLANNING TEAM MEETING #2 DISCUSSION NOTES

Carlos Hernandez, Chairman for Bois Forte - I have a question for the Mitigation Plan about the Incident Command, do we have a plan on who would be backup for the Chair, Vice Chair, and so on. Also defining the roles of council in these events.

Response from Teresa Isham - Carlos, when we have the incident command training coming up we will address those issues.

Regarding Mitigation Actions and possible FEMA HMA or other grant funding, Teresa Isham noted that Shelter Trailers, Generators, Drones, Radios, cyber security.... these are additional items that could help us.

Regarding Wildfire Risk and Evacuation Planning – Teresa Isham noted there is only one road in and out at both Nett Lake and Vermilon.

Meeting Conclusion: The meeting concluded with an overview and timeline of the upcoming next steps for public review and submission of the draft plan to HSEM and FEMA for final review and approval.

Included with this meeting summary are the following:

- Bois Forte Reservation HMP Jurisdictional Contact List
- Meeting Invitation to Stakeholders
- PowerPoint Presentation Slides

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

BOIS FORTE RESERVATION HMP JURISDICTIONAL CONTACT LIST

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

REPRESENTATION	NAME	TITLE
Bois Forte Emergency Management	Teresa Isham	Emergency Management Specialist
Bois Forte Reservation Admin	Miranda Lilya	Executive Director
Bois Forte Reservation Tribal Council	Carlos Hernandez	Tribal Chairman
Bois Forte Reservation Tribal Council	Tara Geshick	Secretary Treasurer
Bois Forte Reservation Tribal Council	Perry Drift	District I Representative S1
Bois Forte Reservation Tribal Council	Shane Drift	District I Representative S2
Bois Forte Reservation Tribal Council	Robert Moyer	District II Representative
Bois Forte Reservation Natural Resources	Lance Hill	Leasing/Land Management Program Coordinator
Bois Forte Reservation Natural Resources	Brady Boutto	Forestry Program Manager
Bois Forte Reservation Natural Resources	Cody Swanson	Forestry Coordinator
Bois Forte Reservation Natural Resources	Tony Mason	Conservation Officer
Bois Forte Reservation Natural Resources	Chris Holm	Ecological Resources Program Manager
Bois Forte Reservation Natural Resources	William Isham	Water Quality Technician
Bois Forte Reservation Education Dept.	Leanne Hoffman	Education Program Technician
Bois Forte Reservation Planning & Community Development	Carol Burr	Grants
Bois Forte Reservation Public Works	Brian Whiteman	Public Works Director
Bois Forte Reservation Housing Director	Jeneal Googleye	Housing Director
Bois Forte Reservation Health & Human Services	Daniel Rabideaux	Director of Health & Human Services
Bois Forte Reservation Transit	Tom Spears	Big Woods Transit Coordinator
Bois Forte Reservation Ambulance & Fire	Nikki Irving	Bois Forte Ambulance Coordinator
Nett Lake Police Department	Jamie Burdick	NLPD Chief of Police
Bois Forte IT	Randy Long	IT Director
Nett Lake School District	Peter Hardy	Superintendent
Bois Forte Public Health	Teri Morrison	Manager
Bois Forte Public Health Emergency Prepardness	Terry Defoe	Community Wellness Program Manager
Bois Forte Fire	Robbie Goggleye	Chief
Bois Forte Energy	Amy Mason	Director

Bois Forte 477 Program	Vonda Carr	Director
LOCAL & REGIONAL AGENCIES INVOLVED IN HAZARD MITIGATION		
MN HSEM	Kelvin McCuskey	Region 2 Regional Program Coordinator
National Weather Service - Duluth Office	Joseph Moore	Meteorologist
Bureau of Indian Affairs (BIA)	Josh Estes	Regional Emergency Manager
MN DNR Firewise Program	Laura Murphy	NE MN MN Firewise Specialist
BUSINESSES, ACADEMIA, AND OTHER PRIVATE ORGS.		
Lake Country Power	Derek Howe	Chief Operating Officer
Fortune Bay Casino	Drew Ebert	Chief Executive Officer
Fortune Bay Casino	Elizabeth Deegan	Interm General Manager
NONPROFIT ORGS/COMMUNITY-BASED ORGS THAT WORK WITH UNDERSERVED COMMUNITIES AND SOCIALLY VULNERABLE POPULATIONS		
American Red Cross	Owen Fifield	Disaster Services Manager
Salvation Army Northern Division (MN/ND)	Major Michelle Heaver	Area Contact
NEIGHBORING JURISDICTIONS		
St. Louis County Emergency Management	Dewey Johnson	EM Deputy Director
St. Louis County Emergency Management	Josh Brinkman	EM St. Louis County
Koochiching County Emergency Management	Willi Kostiuk	EM Coordinator
Itasca County Emergency Management	John Linder	EM Coordinator
Greenwood Township	Lois Roskoski	Greenwood Township Chair

From:	Teresa Isham
To:	Miranda Lilya; Carlos Hernandez; Tara Geshick; Perry Drift; Shane Drift; Robert Moyer; Lance Hill; Brady Boutto; Cody Swanson; Tony Mason; Chris Holm; Bill JR. Isham; Leanne Hoffman; Carol Burr; Brian Whiteman; Jeneal Goggleye; Daniel Rabideaux; Tom Spears; Nikki Irving; Burdick, Jamie; Randy Long; Peter Hardy; Teri Morrison; Terry Defoe; Robbie Goggleye; Amy Mason; Jennie Rowland; Vondalee Carr; Kevin Strong; Jaylen Strong; Kim Greiner; Leah Masucci; Hoffer, Donna M; Kelvin McCuskey; Joseph Moore - NOAA Federal; Estes, Joshua D; Murphy, Laura (DNR); Derek Howe; debert@boisforte-nsn.gov; Elizabeth Deegan; Fifield, Owen; Michele.heaver@usc.salvationarmy.org; Duane Johnson; Joshua Brinkman; Willi Kostiuk; John Linder (John.Linder@CO.ITASCA.mn.us); lois.roskoski@greenwoodtownshipmn.com
Cc:	Bonnie K Hundrieser; Regina Howe; Nikki Irving
Subject:	HAZARD MITIGATION PLAN UPDATE – MEETING INVITATION
Date:	Tuesday, August 12, 2025 1:32:35 PM

BOIS FORTE RESERVATION

HAZARD MITIGATION PLAN UPDATE – MEETING INVITATION

Greetings,

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

We will be holding the meeting virtually using Zoom webinar:

Date: Tuesday, September 16, 2025
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 reservation. We will also discuss the Mitigation Action Chart that will be specific to the Bois Forte Reservation, 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 Bois Forte Reservation 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,
Teresa Isham

Bois Forte Reservation
Hazard Mitigation Plan Update 2025
Planning Team Meeting #2

September 16, 2025

U-SPATIAL
UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover℠

Welcome & Introductions

U-Spatial@UMD Project Leads

Stacey Stark
Project Manager
U-Spatial

Jane Lindelof
Project Coordinator, U-Spatial

Bonnie Hundrieser
HM Planning Specialist
Hundrieser Consulting LLC

Bois Forte Reservation Project Lead

- Teresa Isham, Emergency Management Director

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

PRESENTER: JANE LINDELOF

Zoom Logistics

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

USE CHAT:

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

ASK TO SPEAK:

PRESENTER: JANE LINDELOF

Meeting Purpose & Agenda

This meeting formally convenes the Bois Forte Reservation HMP Planning Team for a presentation on the draft plan and discussion of key items prior to public review and submission of the plan to HSEM and FEMA.

Agenda

- Recap of Key HMP Points
- Preview of Deliverables
- Review of Risk Assessment & Vulnerability Analysis in Website
- Overview of FEMA HMA Funding and Mitigation Action Chart
- Review & Feedback
- Next Steps

PRESENTER: JANE LINDELOF

Overview of Plan Update

Bois Forte Reservation 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 **2018.**

The purpose of the plan is to identify & assess natural hazards that pose risk to the Bois Forte Reservation 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 **tribal hazard mitigation plan** that covers all of the Bois Forte Reservation.

The plan also takes into consideration the concerns of other stakeholders invited to participate who are involved in hazard mitigation (i.e., rural electric providers, NWS, MN DNR, neighboring jurisdictions) or that provide services to vulnerable populations within the tribal planning area.

PRESENTER: BONNIE HUNDRIESER

Stakeholder Involvement

Planning Team

- Tribal government and departments, as well as related agencies, organizations, and neighboring jurisdictions.
- Participation in planning team meetings, public outreach, local mitigation survey, provision of spatial or other data, and review of draft plan.

The Public

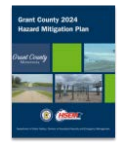
- Opportunity to learn about the plan and provide feedback on local-level concerns, mitigation ideas, and review of draft plan.

PRESENTER: BONNIE HUNDRIESER

Deliverables

PDF document:

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



- Risk and vulnerability of each hazard
- Mitigation actions!

Both formats

Website companion:

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

PRESENTER: JANE LINDELOF

Prioritization of Hazards for Bois Forte Reservation

NATURAL HAZARDS

- Probability and Severity of natural hazard events (risk)
- Observed increase or decrease in risk since last plan
- Consider vulnerabilities: (critical infrastructure, cultural, and natural resources; vulnerable populations, or changes in development)

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

PRESENTER: JANE LINDELOF

Hazards Risk Assessment

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

PRESENTER: JANE LINDELOF

Website Demo

Example:
z.umn.edu/GrantHMP

Comments and Questions?

Overview of Mitigation Action Charts

Mitigation Action Charts are the end product of the HMP.

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

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

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

BOIS FORTE RESERVATION — **Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
14	Severe Winter Storms	Local Planning & Regulations	WINTER ROAD MAINTENANCE Implement snow removal and ice control to ensure the safety of reservation roads impacted by winter storms.	Existing High 2026-2031	BF Public Works, BFEM	The Bois Forte Reservation Public Works conducts winter road maintenance on tribal roads to address snow removal and ice control treatments. Information on the BF plowing policy is provided on the BF website. All Elders on the reservation have their driveways plowed first.	Internal: BF PW Dept. Budget
15	Severe Summer Storms	Education & Awareness Programs	SKYWARN TRAINING Participate in Skywarn Storm Spotter training with the National Weather Service.	New High 2026-2031	BFEM in coord with NWS	This effort will fall under the program of BF Emergency Management. BFEM will seek to coordinate a training on the reservation with the National Weather Service.	External: National Weather Service
16	Severe Summer Storms	Mitigation Preparedness & Response Support	OUTDOOR WARNING SIRENS Ensure outdoor warning sirens are located where needed and functioning properly.	Existing High 2026-2031	BFEM in coord with local jurisdictions	Outdoor warning sirens are located on the reservation and are tested monthly.	Bois Forte Reservation & local jurisdictions
17	Severe Summer Storms	Natural Systems Protection / Public Education & Awareness Programs	WILD RICE MONITORING Continue to implement restoration work to Nett Lake to remove nuisance floating bog and debris that can affect the wild rice crop after a storm. Put out public information on other areas to harvest when the wild rice crop has been damaged.	Existing High 2026-2031	BF Natural Resources Division, BFEM	BF Natural Resources Division continues to oversee monitoring and resource management for our Wild Rice lakes. Information is shared with tribal reservation members when there is critical information to share about damage to the wild rice harvest.	Internal: BF NR Division

FEMA Mitigation Grant Funding

FEMA

Section 406
Available *after* a disaster occurs. Focuses on mitigation measures for facilities that have actually been damaged in a particular disaster.

Section 404
Requires an approved & adopted HMP. Funds mitigation projects for both damaged and non-damaged facilities. Several different grant programs.

Example Section 404 activities:

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

Local Planning & Regulations

Bois Forte Reservation Examples:

- Update of BF Land Use Plan
- BF Public Works Transportation Improvement Plan
- BF Forestry Spatial Fire Management Plan and Issuing of Burning Permits
- Wild Rice Monitoring
- Tribal EOP and Sheltering Plans
- Climate Change Planning - Bois Forte is a participant in the Climate Change Vulnerability Assessment and Adaptation Plan for the 1854 Ceded Territory, which includes Bois Forte, Grand Portage, and Fond du Lac.

Structure & Infrastructure Projects

Bois Forte Reservation Examples:

- Installation of new outdoor warning sirens
- Construction of tornado safe rooms
- Power line retrofit projects
- Conducting property buyouts for flooding
- Stormwater management improvements (culvert replacements), Road & Bridge projects, Whiskey Point Lift Station

Other examples: Wildfire Mitigation – Metal Roofing, Installation of External Wildfire Sprinkler Systems

Natural Systems Protection

Bois Forte Reservation Examples:

- BF Public Works – Vegetation management on reservation roads
- BF Forestry – Prescribed burns, cutting fire breaks, removal of dead and dying trees
- Management of forestry roads to access hunting lands, medicinal plants, berries, and other cultural important items. (BF April, 2025 Safety Action Plan)

Other examples:

- Planting Living Snow Fences to reduce snow drifting
- Installing Rain Gardens to reduce impacts of high rain events

Education & Awareness Programs

Bois Forte Reservation Examples:

- Promoting sign-up for the tribe's emergency notification system.
- Encouraging residents to be aware of and prepared for severe weather events, extreme temperatures, and extended power outages.
- Sharing information across platforms – Bois Forte Tribal Website, Community Bulletin Boards, Bois Forte News, Pow Wow, or other in-person events.

PRESENTER: BONNIE HUNDRIESER

Mitigation Preparedness & Response Support

Bois Forte Reservation Examples:

- Obtaining generators for backup power
- Planning for Sheltering / Warming Centers
- Severe Weather Plans with Nett Lake Elementary School & Early Head Start
- Testing of outdoor warning sirens
- Participation in regional EM planning, training, and exercising

PRESENTER: BONNIE HUNDRIESER

Comments and Questions?

PRESENTER: BONNIE HUNDRIESER

October, 2025

Next Steps

Review of Draft Plan and Public Review & Comment Period

Following Planning Team Mtg. #2

- Tribal review of draft plan + Mitigation Action Chart
- Description of "Previous Integration of Past HMP"
- Public review & comment period (News Release #2) – documentation of local postings

PRESENTER: BONNIE HUNDRIESER

Nov-Dec, 2025

Next Steps

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.
- **Bois Forte Tribal Council Adopting Resolution** (can submit with draft plan or after FEMA APA letter)
- Review period typically 1-2 months.
- **Final approval letter**

PRESENTER: BONNIE HUNDRIESER

Questions?

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

PRESENTER: JANE LINDELOF

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PRESENTER: JANE LINDELOF

Appendix G – Public Outreach & Engagement Documentation

Bois Forte Reservation HMP News Release #1
Record of Public Input & Incorporation

Overview: On September 24, 2024 Bois Forte Reservation Emergency Management put out a news release titled "**Public Input Wanted as Bois Forte Reservation Updates Hazard Mitigation Plan"** to announce the start of the tribe'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. Bois Forte Reservation used the news release to gather feedback from residents and businesses from across the reservation to incorporate into the plan, inviting feedback to the following:

- **What are the natural hazards you feel pose the greatest risk to the Bois Forte Reservation?**
- **Are there specific populations or assets (including natural or cultural resources) within the reservation that you feel are more vulnerable to future storm events?**
- **What concerns do you have, and what sorts of actions do you feel would help to reduce damages of future hazard events in your area or the reservation as a whole?**

The public was strongly encouraged contact Bois Forte Reservation 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 Facebook sites where the news release was posted.

Distribution: The news release was sent via email to Bois Forte Reservation 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 tribal government and departmental 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 Bois Forte Reservation, 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.

10/2/24 Email from Lake Country Power
Hello Teresa, I am grateful for the opportunity to participate in your Hazard Mitigation Plan review. We try to participate with all 8 counties we serve as well as the Bois Forte, Fond-Du-Lac, Leach Lake, and

Mille Lacs bands. I would be happy to attend a meeting or draft something more formal or elaborate, but simply put, these are the main issues we see:

- We would like to utilize herbicide spraying for the ROWs (Right-Of-Way). It does a much better job of controlling the vegetative growth and allowing desired plants in our ROW, like berry bushes. When we mow in those areas instead of spraying, the root systems have a significant amount of stored energy, and they generate a lot more vegetative growth than what we saw initially. This growth is a fire hazard, impedes our ability to restore power timelier, and causes unnecessary nuisance blinks on the line when it makes contact. Having a fire break along our ROWs can provide some essential safeguards to minimize the spread of wildfires.

- Similarly, the removal of Danger Trees (DTs), which are dead or dying trees that are outside of our ROW easements but are still able to impact the lines. Their removal is essential to minimizing the risk of wildfires and outages. These trees require member approval for removal since they are not a part of the easements for our lines. If we could obtain some blanket agreements with the band or anything the band is willing to do to help us more easily deal with these DTs would be greatly appreciated.

- Finally, transitioning our overhead (OH) poles and lines to underground (UG) would help reduce outages and wildfire risks. The problem is that the rocky terrain is usually not conducive to UG. This is still a worthwhile option to explore where we are able to do so.

I have cc'd Brian Grondahl, the area supervisor for your area, Syver Kolden, our Manager of Forestry Services, and Jennifer Otten, our Compliance and Environmental Affairs Manager. Please feel free to reach out to any of us, we would be happy to help you and work with you.

Derek

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10/3/24 EM response
Hello Derek,

Thank you for providing your input from Lake Country Power for our hazard mitigation plan update. The information you provided is extremely helpful as we will be working to identify important mitigation actions to include that will help to reduce risk. We have documented your input and will be sure to

incorporate it. When we announce our first planning team meeting (via Zoom) we hope you or another of your LCP colleagues will be available to join us.

Thank you,
Teresa Knife Chief
Bois Forte Emergency Preparedness Specialist

Incorporation: The input from Lake Country Power will be incorporated into the Bois Forte risk assessment and development of targeted mitigation actions.

From:	Teresa Knife Chief
To:	Luke Warnsholz; Cathy Chavers; Tara Geshick; Perry Drift; Shane Drift; Robert Moyer; Brady Boutto; Cody Swanson; Tony Mason; Chris Holm; Bill JR. Isham; Leanne Hoffman; Carol Burr; Brian Whiteman; Jeneal Goggleye; Daniel Rabideaux; Toni wakemup; Nikki Irving; Burdick, Jamie; Randy Long; Peter Hardy; kelvin.mccuskey@state.mn.us; Murphy, Laura (DNR); Derek Howe; debert@boisforte-nsn.gov; Elizabeth Deegan; Owen Fifield (owen.fifield@redcross.org); Michele.heaver@usc.salvationarmy.org; Duane Johnson; Joshua Brinkman; willi.kostiuk@co.koochiching.mn.us; John Linder (John.Linder@CO.ITASCA.mn.us); lois.roskoski@greenwoodtownshipmn.com
Cc:	Bonnie K Hundrieser
Subject:	News Release
Date:	Monday, September 30, 2024 2:34:43 PM
Attachments:	News release MITIGATION plan 24.pdf

Hello all,

Please see attached News Release regarding Bois Forte's Mitigation Plan. Please call with questions.

Thank you,

Teresa Knife Chief

From: Brian K. Anderson
To: Teresa Knife Chief
Cc: Bonnie K Hundrieser; Luke Warnsholz
Subject: Re: [EXT] Newsrelease
Date: Tuesday, September 24, 2024 1:19:15 PM

Yes, thank you Teresa!

BRIAN K. ANDERSON
DIRECTOR OF PUBLIC RELATIONS
Fortune Bay Resort Casino
1430 Bois Forte Rd.
Tower, MN 55790
Toll-Free: 1.800.555.1714 ext. 7882
Direct: 218.753.7882
Email: bkanderson@fortunebay.com
Website: www.fortunebay.com

From: Teresa Knife Chief <tknifechief@boisforte-nsn.gov>
Date: Tuesday, September 24, 2024 at 9:22 AM
To: Brian K. Anderson <bkanderson@fortunebay.com>
Cc: Bonnie K Hundrieser <hundrieserconsulting@outlook.com>, Luke Warnsholz <lwarnsholz@boisforte-nsn.gov>
Subject: [EXT] Newsrelease

Hello Brian,

Can you please put this in the next Bois Forte News?

Thank y0u!

Bois Forte
TRIBAL GOVERNMENT

BOIS FORTE RESERVATION NEWS RELEASE
September 24, 2024

Public Input Wanted as Bois Forte Reservation Updates Hazard Mitigation Plan

Bois Forte Reservation 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 Bois Forte Reservation Office of Emergency Management is working with U-Spatial at the University of Minnesota Duluth to update the tribe's Hazard Mitigation Plan (HMP). The plan assesses the natural hazards that pose risk to the reservation, 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 tribe works to update the plan, it wants to hear from the public.

The Bois Forte Reservation Hazard Mitigation Plan is a plan that covers all of Bois Forte Reservation, and includes considerations for other stakeholders within the tribal planning area. The plan will be updated by a planning team made up of representatives from tribal government and departments in partnership with neighboring jurisdictions and related agencies or organizations. 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 Teresa Knife Chief, Bois Forte Reservation Emergency Preparedness Specialist. "Understanding the kinds of hazards that can cause serious impact to our residents, natural and cultural resources, economy, and identifying how to take action to reduce future impacts 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 within the reservation."

Examples of hazard mitigation include:

- Conducting public outreach on severe weather awareness and preparedness
- Improving stormwater management systems to better handle high-rain events
- Removing existing buildings from flood or erosion prone hazard areas
- Increasing defensible space around homes in high-risk wildfire areas
- Constructing tornado safe rooms in vulnerable areas such as mobile home parks
- Burying overhead powerlines that may fail due to heavy snow, ice, or windstorms

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

5344 Lakeshore Drive | Nett Lake, MN 55772 | 218-757-3261 | 800-221-8129 | FAX 218-757-3312

Public input is an essential part of the plan update. As part of the planning process, Bois Forte Reservation is seeking feedback from residents and businesses to incorporate into the plan. Your input will be recorded and incorporated into the planning process:

- **What are the natural hazards you feel pose the greatest risk to the Bois Forte Reservation?**
- **Are there specific populations or assets (including natural or cultural resources) within the reservation that you feel are more vulnerable to future storm events?**
- **What concerns do you have, and what sorts of actions do you feel would help to reduce damages of future hazard events in your area or the reservation as a whole?**

Your feedback is wanted. Comments, concerns, or questions regarding natural disasters and your ideas for mitigation projects should be submitted to Bois Forte Reservation Emergency Management by phone, email, or in person.

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
Teresa Knife Chief
Bois Forte Reservation Emergency Preparedness Specialist
218-750-7632
tknifechief@boisforte-nsn.gov

Bois Forte Reservation HMP News Release #1 (9/30/24)
Chart Documentation of News Release Postings

Jurisdiction or Agency	Posting Representative (name and title)	Date & Location of News Release Posting
Bois Forte Reservation	Teresa Knife Chief	9/30/24, The news release was sent to the Bois Forte HMP group of stakeholders as well as the internal Bois Forte email list serve. Hard copies of the news release were additionally posted on bulletin boards at area businesses on the reservation.
Bois Forte News (tribal community newspaper)	Brian K. Anderson, Director of Public Relations, Fortune Bay Resort Casino	October, 2024 Bois Forte News carried the news release story.

Appendix H – Plan Maintenance & Monitoring Worksheets

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

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

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

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

- Are there any new representatives from jurisdictions, agencies, or organizations that you feel should be included in our stakeholder outreach?

- Do you feel your community has any new vulnerabilities that may be impacted by hazard events? (critical infrastructure, systems, or populations)

- Has your community identified any new mitigation activities that would help reduce risk to future hazard events?

- Are there any funding opportunities or other resources that may be available to help implement local mitigation activities?

- How is your community integrating information from the mitigation plan into other planning mechanisms (such as plans, policies, or partnerships)?