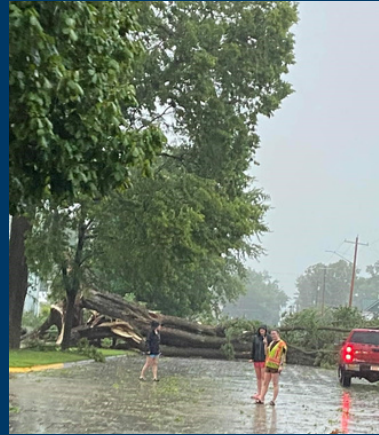
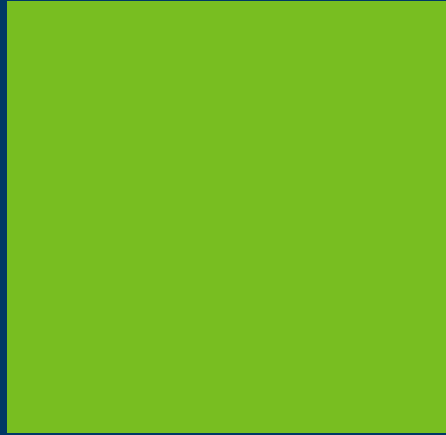


Houston County 2024 Hazard Mitigation Plan



HOUSTON COUNTY
MINNESOTA



Houston County Minnesota

2024 Hazard Mitigation Plan

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Section 1 – Introduction

1.1 Hazard Mitigation Planning in Minnesota

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

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

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

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

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

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

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

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

[*Houston County HMP Website*](#)

1.1.1 Scope

U-Spatial, University of Minnesota, was contracted by Minnesota Homeland Security and Emergency Management using FEMA Pre-Disaster Mitigation (PDM) grant funds to work with Houston County Emergency Management to facilitate an update to the 2015 Houston County HMP. U-Spatial brings extensive geographic data analysis skills and hazard risk assessment expertise to the process. U-Spatial also employed the services of Hundrieser Consulting LLC for county and stakeholder outreach as well as mitigation action development related to this plan.

This HMP evaluates and prioritizes the major natural hazards affecting Houston County as determined by frequency of event, economic impact, deaths, and injuries. Mitigation recommendations are based on input from state and local agencies, the public, and national best practices.

This is a multi-jurisdictional plan that covers Houston County, including the cities of Brownsville, Caledonia, Eitzen, Hokah, Houston, La Crescent, and Spring Grove. The Houston County mitigation activities identified in this plan also incorporate the concerns and needs of townships, school districts, and other participating entities.

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

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

- Include more recent data documenting the critical infrastructure and hazards faced by Houston County.
- Reformat and reorganize the plan to reflect definitions of hazards as expressed in the 2024 Minnesota State Hazard Mitigation Plan.
- Reflect current hazard mitigation priorities in Houston County.
- Encourage recipients and sub-recipients of hazard mitigation grants to consider climate change adaptation, resiliency, and equity in their planning efforts.

1.1.2 Hazard Mitigation Definition

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

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

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

1.2 State Administration of Mitigation Grants

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

Section 2 – Public Planning Process

2.1 Planning Team Information

The Houston County HMP planning team is headed by the Houston County emergency manager, who is the primary point of contact. Planning team members include representatives from public and governmental sectors. Table 1 identifies the planning team individuals and organizations that participated in virtual planning team meetings during the plan update process. Note: Table 1 is not an exhaustive list of stakeholder participation in the Houston County HMP update. Additional areas of documented participation by jurisdictional and other agency representatives can be found in Table 3 of this section, as well as in Section 3.4, Appendix C, and Appendix G.

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

Table 1. Hazard Mitigation Planning (HMP) Team

Name	Agency/Organization	Participant Title
Mark Olson	Houston County Emergency Management	Emergency Management Director
Martin Herrick	Houston County Environmental Services	Environmental Services Director
Theresa Arrick-Kruger	Houston County Human Resources / Facilities Management	Human Resources Director/Facilities Manager
Justin Conway	Houston County Highway Dept.	Engineering Supervisor
Jordan Goeden	Houston County Highway Dept.	Highway Maintenance Foreman
Jordan Knoke	Houston County Public Health and Human Services	Public Health Supervisor
Bri Ceaser	Houston County Public Health	Public Health Educator/PHEP Coordinator
Polly Heberlein	Houston County	Interim Auditor-Treasurer
Eric Johnson	Houston County	County Commissioner District 2
Robert Burns	Houston County	County Commissioner District 3
Steve Schuldt	City of Brownsville & City of Eitzen	City Clerk, both cities
Jean Meyer	City of Brownsville	Mayor
Jake Dickson	City of Caledonia	City Clerk/Administrator
Lindsey Martell	City of Hokah	City Clerk
Bob Schuldt	City of Hokah Police Dept. / Houston County Commission	Police Chief/EM & County Commissioner, District 4
Michelle Quinn	City of Houston	Clerk/Administrator
Brett Hurley	City of Houston Police Dept.	Chief of Police
Bill Waller	City of La Crescent	City Administrator
Luke Ahlschlager	City of La Crescent Police Dept.	Chief of Police
Tyler Benish	City of La Crescent	Public Works Director
Jana Elton	City of Spring Grove	Administrator
Sandra Solum	City of Spring Grove	Mayor
Andy Melbostad	City of Spring Grove Fire Dept.	Assistant Chief
Donise Heiller-Becker	Caledonia Township	Supervisor

Name	Agency/Organization	Participant Title
Delayne Vogel	Hokah Township	Clerk
Pam Snodgrass	Jefferson Township	Treasurer
David Winnes	Crooked Creek Township	Township Board Chair
Andy Moen	Crooked Creek Township	Clerk
Colleen Tracy	Mound Prairie Township	Clerk
Daniel Fuchsel	Mound Prairie Township	Supervisor
Elizabeth Wiste	Black Hammer Township	Clerk
Erin Hammell	Mayville Township	Clerk
Craig Ihrke	Caledonia Area Public Schools	Superintendent
Kathryn Garfin	La Crescent Montessori	Head of School
Rachel Udstuen	Spring Grove School District	Superintendent
Alexa Michaels	Houston High School	Assistant Principle
Nicole Lehman	MN DNR	Area Hydrologist
Ryan Hytry	NRCS	District Conservationist
Dave Walter	Root River Soil & Water Conservation District	District Manager
Jean Meiners	Crooked Creek Watershed District/ Root River SWCD	Administrator/Technician
Paul Fruechte	Crooked Creek Watershed District	Manager
Brad Felten	Crooked Creek Watershed District	Manager
Arlyn Pohlman	Crooked Creek Watershed District	Manager
Chad Hanson	MN DOT	Emergency Management Coordinator
Kristoffer Langlie	MnDOT	District Water Resources Engineer
Don Kullot	Fillmore County, MN Emergency Management	Emergency Management Director
Jason Harmening	Fillmore County Emergency Management	Emergency Management Director
Ben Klinger	Winona County Emergency Management	Emergency Management Director
Morgan Simpson	Winona County Emergency Management/ Public Health	Public Health Project Specialist
Tracy Hameau	La Crosse County, WI Emergency Management	Emergency Management Director
Brandon Larson	Vernon County, WI Emergency Management	Emergency Management Director

2.2 Review of Existing Plans, Capabilities & Vulnerabilities

Houston County and its local communities utilized a variety of planning documents to direct plan development. These documents included a Comprehensive/Master Plan, Emergency Operations Plan, Transportation Plan, etc. (see Section 5.1.3 and Appendix D). The planning process also incorporated the existing natural hazard mitigation elements from previous planning efforts. In addition, the 2024 Minnesota All-Hazard Mitigation Plan was consulted.

In the development of the Houston County HMP, U-Spatial consultants reviewed and incorporated a variety of planning documents that direct community development and influence land use decisions for the county and its jurisdictions. In addition, U-Spatial consultants worked closely with the Houston County emergency management director, other key county staff, and local city officials to collect

feedback on local mitigation capabilities and vulnerabilities that either support or hinder the ability to mitigate against natural hazards countywide and at the local level. Following is a summary of the assessment tools used to gather information on local capabilities and vulnerabilities during the planning process:

Capabilities Assessment (hazard-specific): In this assessment, detailed information was collected from Houston County on current plans and programs in place (i.e., existing programs, plans, or policies) as well as program gaps or deficiencies that currently exist to mitigate against damages caused by each natural hazard addressed in the plan. Section 4 identifies current gaps and deficiencies for mitigation and Section 5.3 describes the mitigation capabilities that are in place by Houston County to support mitigation.

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

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

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

2.3 Planning Process Timeline and Steps

In order to update the 2015 Houston County HMP, U-Spatial consultants worked in coordination with Houston County Emergency Management and members of the planning team. The updated plan includes new data documenting the types of hazards faced by Houston County residents and emergency planning officials as well as new thinking on how to address these hazards.

2.3.1 Houston County Stakeholder Coordination

Two planning team meetings took place via Zoom video conference hosted by U-Spatial. Meeting participants included representatives from Houston County, city and township governments, neighboring jurisdictions, and other key stakeholders. Appendix F provides documentation of stakeholder outreach and participation in the plan update

[Survey forms to acquire mitigation ideas and feedback remain available on the HMP website](#)

To provide the opportunity for public input, Houston County issued two news releases announcing the plan update and inviting public review and feedback on the draft plan. The news release provided information on where to view the plan and submit comments. The County HMP website, hosted by U-Spatial, and the feedback and mitigation action ideas survey will remain available through the five-year planning period to foster public engagement. Table 2 documents dates of Hazard Mitigation

update meetings and public outreach. The public feedback period for the draft plan was open from 11/11/24 to 11/25/24, for a period of 15 days. Appendix G provides documentation of the public outreach for feedback on the draft plan by Houston County and jurisdictions.

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

Event	Date	Appendix
Kickoff Webinar	4/28/23	Appendix F, Planning Team Meetings
News Release #1	6/5/23	Appendix G, Public Outreach & Engagement Documentation
Planning Team Meeting #1	11/30/23	Appendix F, Planning Team Meetings
Planning Team Meeting #2	10/23/24	Appendix F, Planning Team Meetings
News Release #2	11/11/24	Appendix G, Public Outreach & Engagement Documentation

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

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

2.3.2 Overview of Jurisdictional Participation

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

U-Spatial and Houston County actively used the following methods to engage jurisdictions in the HMP plan update process:

- **Zoom Video Conferencing:** Planning team meetings were conducted via Zoom video conferencing hosted by U-Spatial. Virtual meetings proved to be a beneficial addition to the planning process, resulting in a high turnout from jurisdictional representatives and other stakeholders, as well as providing the ability for presenters to collect, respond to, and document feedback from participants through Zoom functions such as surveys, chat, and Q&A.
- **Email Correspondence:** Email was a primary tool used to communicate with representatives from Houston County, municipal governments, and other stakeholders. Emails were used to distribute news releases for public outreach, to invite participation in meetings and to share meeting summaries, as well as to request local information and final review of the draft plan. Email proved to be an effective tool that resulted in increased jurisdictional participation and collection of locally specific information. Email was also used by the public to submit feedback to Houston County following news releases on the HMP.
- **Phone Calls:** Phone calls were frequently used to conduct direct outreach or follow-up to jurisdictions to ensure participation or to collect information via one-on-one interviews. Phone calls proved to be an effective tool that resulted in increased jurisdictional participation and collection of quality information. Phone calls were especially useful in engaging very small communities that had limited staff or technological capabilities.

Cities participating in Houston County HMP update varied by population and associated government resources to participate in the planning process (e.g., personnel, time, and technology). Rural communities with smaller populations (under 500) typically had part-time elected officials, limited-to-no city staff, and reduced city hall hours in which to conduct business. Houston County and U-Spatial were sensitive to these local challenges and worked to help these local governments to participate using the methods that worked best to accommodate them, such as phone interviews to complete local mitigation survey forms (see Appendix C).

Table 3 provides an overview of each city's participation in the Houston County HMP update planning process and a reference to supporting documentation.

Table 3. Jurisdictional participation in planning process

Jurisdiction (2022 Est. Population, Esri)	News Release #1	Planning Team Mtg. #1	Local Mitigation Survey	Mitigation Action Charts	Planning Team Mtg. #2	News Release #2 & Plan Review
Supporting Documentation	App. G	App. F	App. C	Sec. 5.3 App. H	App. F	App. G
Houston County (18,708)	X	X	X	X	X	X
City of Brownsville (562)	X	X	X	X	X	X
City of Caledonia (2,824)	X		X	X	X	X
City of Eitzen (281)	X	X	X	X		X
City of Hokah (549)	X	X	X	X		X
City of Houston (990)	X	X	X	X	X	X
City of La Crescent (5,234)	X	X	X	X	X	X
City of Spring Grove (1,248)	X	X	X	X	X	
Neighboring Jurisdictions:						
Winona County					X	
Fillmore County		X			X	
Vernon County, WI		X				
La Crosse County, WI		X				
Allamakee County, IA						
Winneshiek County, IA						X

Section 3 – Risk Assessment and Vulnerability Analysis

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

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

3.1 Natural Hazard Identification

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

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

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

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

3.1.1 Hazard Prioritization

As part of the plan update process, the planning team reviewed, updated, and prioritized the hazards faced by residents of Houston County, updated the existing mitigation actions published in the 2015 HMP, and proposed new mitigation actions.

The team examined the hazards identified in the 2015 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 Houston County HMP Update (Table 4) was based upon group review and discussion of the natural hazards that pose risk to the county during the HMP Planning Team Meeting #1. In the review of each hazard, the group was asked to consider if the risk to severe natural hazards had increased or decreased since the last plan, and if this affected their priority level to mitigate against that hazard. Appendix F provides the discussion notes from the meeting.

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

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

3.1.2 FEMA- and Minnesota-Declared Disasters and Assistance

Another historical perspective is derived from FEMA-declared disasters. Between 1957 and July 2024, 27 federal disasters and three emergencies were declared in Houston County; see details on the [Houston County HMP website](#).

Minnesota Statutes Chapter 12A established a framework for state agencies to help communities recover from disaster. In 2014, Governor Mark Dayton signed legislation establishing the state's Disaster Assistance Contingency Account to assist local communities after a natural disaster when federal aid is not available. Damage required to declare a disaster is half the threshold of the federal/FEMA public assistance (only) program threshold (MN HSEM, 2019). Houston County has been included in 11 State Disaster Declarations.

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

Table 5. Historical hazard mitigation funding awarded in Houston County

Project Identifier	Sub-Grantee	Project Type	Project Total	Federal Share
DR-1370-0018-R	La Crescent	401.1: Water and Sanitary Sewer System Protective Measures	\$30,256.00	\$22,692.00

Project Identifier	Sub-Grantee	Project Type	Project Total	Federal Share
DR-1717-0029-R	Houston County	103.1: Feasibility, Engineering and Design Studies	\$103,531.00	\$77,648.00
DR-1283-0010-R	Houston County	200.1: Acquisition of Private Real Property (Structures and Land) - Riverine	\$69,500.00	\$50,301.00
DR-1717-0038	Houston County	405.1: Other Minor Flood Control	\$70,000.00	
DR-1717-0001-P	Houston County	91.1: Local Multihazard Mitigation Plan	\$85,060.00	\$63,793.00
DR-1717-0034-R	Tri-County Electric Cooperative	400.1: Utility Protective Measures (Electric, Gas, etc.)	\$599,300.00	\$449,475.00
DR-4131-0008-P	Houston County	91.1: Local Multihazard Mitigation Plan	\$33,695.00	\$24,485.00
DR-1283-0016-R	Caledonia	400.1: Utility Protective Measures (Electric, Gas, etc.)	\$238,000.00	\$178,500.00

SOURCE: (FEMA, 2023c)

3.2 Community Vulnerability

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

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

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

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

3.3 Climate Change

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

Rising global temperatures and the resulting increases in atmospheric moisture from evaporation of ocean waters have allowed Minnesota to become warmer, wetter, and more humid during the past several decades. The ten combined warmest and wettest years between 1895 and 2022 all occurred

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

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

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

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

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

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

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

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

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

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

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

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

3.3.1 Climate Change Impacts and Resilience Planning

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

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

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

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

3.3.2 Health Impacts of Climate Change in Minnesota

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

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

Heat

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

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

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

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

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

Air Pollution

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

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

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

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

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

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

Those most at risk include:

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

Extreme Precipitation, Floods, Drought

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

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

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

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

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

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

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

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

Zoonotic Diseases

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

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

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

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

Harmful Algal Blooms

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

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

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

Mental Health

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

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

3.4 Jurisdictional Change in Risk or Vulnerability Assessment

Jurisdictions in Houston County have varying vulnerabilities to and concerns about impacts to their communities. Interviews with jurisdictional representatives in addition to the Local Mitigation Survey resulted in some specific concerns (see Appendix C). Participants were asked to provide feedback on how their community's vulnerability to natural hazards had either increased (due to changes such as development) or decreased (due to local mitigation efforts) over the past five years.

At the local jurisdictional level, several communities did note an increase in development over the last five years as a factor for an increase in vulnerability to severe weather or disaster events.

3.4.1 Jurisdictional Responses

As part of the Local Mitigation Survey form, Houston County Emergency Management and each city jurisdiction were asked to provide a vulnerability assessment that described what structures, systems,

populations, or other community assets were susceptible to damage and loss from specific hazard events. This information was used to help tie local vulnerability back to the exposure of people, buildings, infrastructure, and the environment to the natural hazards listed in Table 4 and to assist local governments in development of related local mitigation actions to reduce risk.

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

Houston County

Flooding: In the city of La Crescent, the Shore Acres area is prone to flooding when the Mississippi River levels are high. Homes in this area rely on sewage pumps to remove wastewater. When the river floods these pumps are often unable to function because the electricity powering them is underwater.

Windstorms, Tornadoes, Flooding: Houston County has a long history of county and township roadways and bridges being washed out or damaged during high wind events.

Windstorms, Tornadoes, Blizzards, Ice Storms: A large amount of Houston County's electrical service consists of overhead power lines and electrical poles. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches.

City of Brownsville

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

Flooding: We have several lift stations that are prone to flooding during high rain events. Residents, boathouses and businesses are also vulnerable to flooding and have been damaged in the past. There are annual flooding issues at Harbor Lights and local access roads to boathouses north and south of Brownsville, a new culvert is needed and has been attempted but the railroad is causing delays. Sandbags are also getting old and we have issues tying them shut; new sandbags will be needed in the next year.

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

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

have an outdoor warning siren installed. Current warning sirens are at the ballpark (to the west) and the wastewater treatment plant (to the East). We have experienced power outages from strong wind events that brought down power lines.

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

Extreme cold causes water lines and water supplies to freeze making firefighting problematic.

City of Caledonia

Flooding: We need to keep maintaining and expanding our stormwater infrastructure.

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

Windstorms, Tornadoes: We have 3 mobile home parks within the city that have insufficient storm shelters for their residents.

Extreme Cold: We have experienced frozen water service lines and water main breaks.

Lightning: Overhead powerlines, trees, communications water, wastewater, and all city infrastructure can be vulnerable to lightning.

Wildfire: Our city is surrounded by cropland and trees that are susceptible to wildfire.

City of Eitzen

All Hazards: We need to obtain a portable generator for Community Center that serves as our local shelter if people are displaced from a severe storm event or extended power outage.

Ice Storms, Blizzards: Municipal electrical service consists of overhead power lines and electrical poles susceptible to snow load and high winds.

Windstorms, Tornadoes: Windstorms have caused property damage in the past both private and municipal.

Extreme Cold: In the past we have experienced frozen water services and some residential homes experienced burst pipes from extended extreme cold. The city has experienced damages to water lines due to extreme cold.

City of Hokah

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

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

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

Windstorms, Tornadoes: We have 1 mobile home park within the city that does not have a storm shelter and residents are vulnerable to high wind and tornado events. We have experienced power outages from strong wind events that brought down power lines.

City of Houston

No local vulnerabilities to report.

City of La Crescent

All Hazard: The city needs to obtain a generator for our Fire Station/community building and City Hall/Police department.

Flooding: The city experiences localized flooding from increased intensity during rain event. Flooding of the Mississippi River along shore Acres Rd. has led to disaster declarations, the city will need outside funding to mitigate further damage.

Ice Storms, Blizzards: The city has experienced power outages from falling branches and trees from snow and ice, The city does not own the power utility.

Windstorms, Tornadoes: The city has 2 mobile home parks, 1 has a storm shelter on-site and 1 does not.

Lightning: The city's water system has experienced communication outages due to lightning strikes.

City of Spring Grove

All Hazards: We need to obtain a portable generator for our City Hall and Community Center that serves as our local shelter if people are displaced from a severe storm event or extended

power outage. A generator for our wells would also be of need so during certain events residents can still receive water. We also have a large population of senior citizens that do not use cell phones to receive emergency notifications.

Flooding: Storm drains will sometimes flood if debris is caught in them. Due to a flood or a storm, sometimes the lift station will flood due to power outage.

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

3.4.2 Future Development

Because Houston County is vulnerable to a variety of natural hazards, the county government—in partnership with the state government—must make a commitment to prepare for the management of these events. Houston County is committed to ensuring that county elected and appointed officials become informed leaders regarding community hazards so that they are better prepared to set and direct policies for emergency management and county response.

As part of the vulnerability assessment conducted for the Houston County HMP update, jurisdictions were asked to describe if there were any factors related to population growth, zoning, or development they felt have increased their community's vulnerability to future severe weather or disaster events. The following is a compilation of common responses taken directly from jurisdictional representatives as preserved in Appendix C: Part A. Responses here are edited only for clarity.

Houston County

Houston County has experienced an increased number of severe storms over the past decade resulting in increased damage to roadways and infrastructure.

City of Brownsville

9 more residences were added on Brook St. which could potentially be vulnerable to landslides off the hill.

Residents are continuing to dig into the hillside of 2nd St. to Mississippi St. and they are clearing the vegetation which could lead to an increase in landslides.

There is continued growth in Harbor Lights adds more residences and population.

City of Caledonia

Nothing to report.

City of Eitzen

Nothing to report.

City of Hokah

Nothing to report.

City of Houston

The city has minimal growth resulting from new housing. The increased vulnerabilities facing the community are changing weather conditions resulting in more severe weather events.

City of La Crescent

Between 2020 and 2024 Horse Track Meadows has developed approximately 60 new home sites with another 15 sites to be developed. Approximately ½ of the homes are slab-on-grade. Those homes will not have use of a basement as an emergency area during high wind or tornado events.

City of Spring Grove

Nothing to report.

In the development of local mitigation actions, all jurisdictions were encouraged to consider hazard mitigation strategies that would reduce risk in relation to future development, such as the update of local comprehensive plans, enforcement of ordinances, and incorporation of infrastructure improvements to reduce local vulnerabilities (see Appendix H).

The Houston County emergency management director will work to keep the jurisdictions covered by the HMP engaged and informed during the plan's cycle. By keeping jurisdictional leaders involved in the monitoring, evaluation, and update of the HMP, they will keep their local governments aware of the hazards that face their communities and how to mitigate those hazards through planning and project implementation.

Section 6 of this plan further outlines the process by which Houston County will address the maintenance of this plan, including monitoring, evaluation, and update of the plan, as well as implementation and continued public involvement.

Section 4 – Hazards

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

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

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

4.1 Flooding

Flooding is the most significant and costly natural hazard in Minnesota. Eight of the 20 federal disaster declarations in Houston County were primarily a flooding event. Another five of eleven state disaster declarations were primarily due to flooding events.

After several years of drought and exceptionally mild winter, the first half of 2024 was extremely wet with frequent, heavy precipitation causing widespread flooding throughout Minnesota, resulting in a Federal Disaster Declaration affecting Houston County and 32 other counties (FEMA, 2024).

The NOAA storm events database reports that significant rainfall throughout June of 2024 pushed the Mississippi River at La Crescent into flood stage. The Root River and the Mississippi River both remained in flood stage into July 2024.

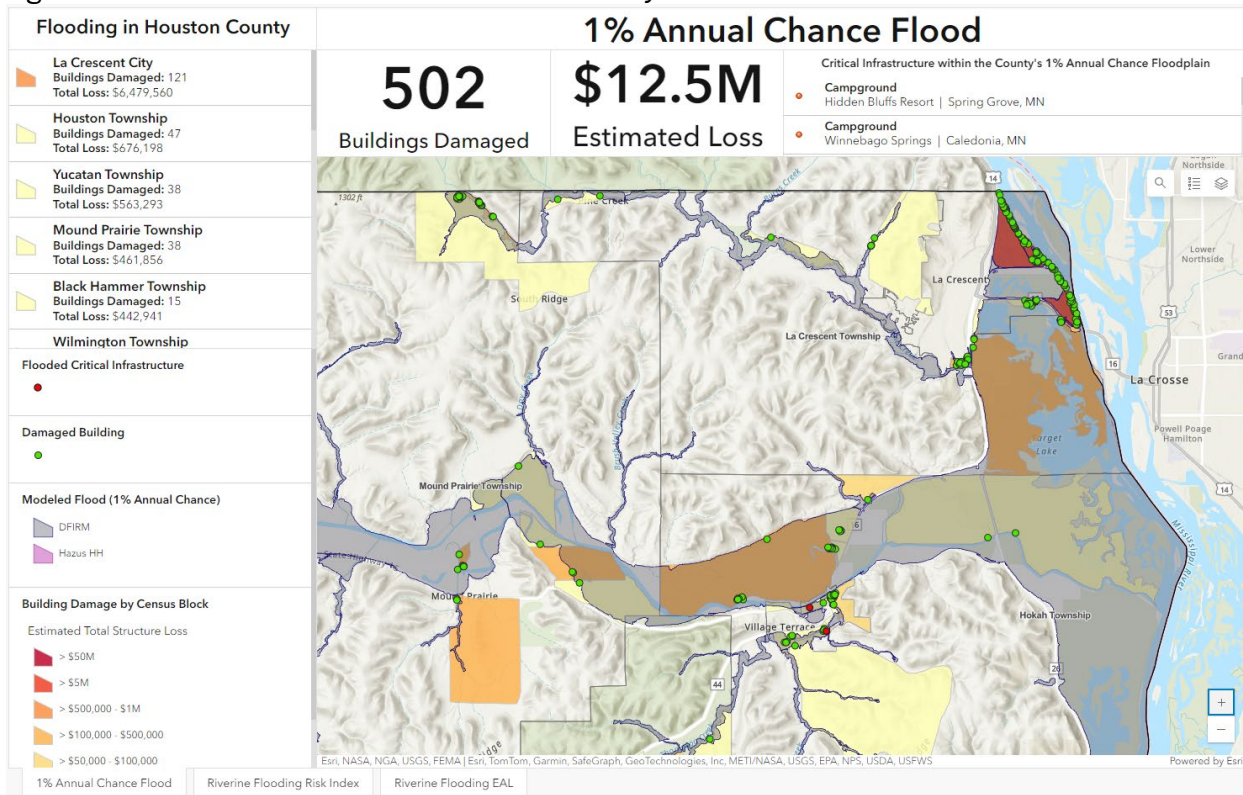
4.1.1 Probability of Occurrence

From 1997 through February 2024, the NCEI Storm Events Database has recorded 44 flood and flash flood events. Houston County has experienced one flash flood event every 1.2 years and one riverine flood event every 1.3 years on average during this period.

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

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

Figure 1. 1% Annual chance flood in Houston County



4.1.2 Vulnerability

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

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

Hazus reports the percent damage of each building in the floodplain, defined by the centroid of each building footprint. After formatting the tax and spatial data, 24,335 points were used as input to Hazus to represent buildings with a total estimated building plus contents value of \$2.7 billion. Approximately 84% of the buildings (and 81% of the building value) are associated with residential structures. The estimated loss by occupancy class for the entire county is shown in Table 8.

Table 8. Summary of 1% annual chance flood loss estimation by occupancy class

General Occupancy	County Total Buildings	County Building and Contents Value	Floodplain Total Buildings	Floodplain Building + Contents Value	Buildings with damage	Building + Contents Loss
Residential	20,405	\$2,226,961,560	518	\$62,400,900	360	\$5,769,913
Commercial	675	\$167,220,630	35	\$3,446,600	32	\$8,937
Other	3,255	\$354,152,552	114	\$7,373,400	110	\$1,002,651
Totals	24,335	\$2,748,334,742	667	\$73,220,900	502	\$6,781,501

SOURCE: (FEMA, 2023A)

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

Hazus Critical Infrastructure Loss Analysis

Critical facilities and infrastructure are vital to the public and their incapacitation or destruction would have a significant negative impact on the community. These facilities and infrastructure were identified on the [HMP website](#) and verified by Houston County.

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

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

It is important to identify any critical infrastructure within the 1% annual chance floodplain, given the higher risk of incapacitation or destruction during a flood. In Houston County, The Hokah wastewater treatment facility was found to be at risk in the 1% annual chance flood. No other information is available.

Community Vulnerability

Potential economic losses were estimated by Census Minor Civil Division. La Crescent City would suffer significant estimated losses in the 1% annual chance flood, with 121 structures identified to be in the 1% annual chance flood boundary. Yucatan and Mound Prairie Townships also are projected to have significant estimated losses. All jurisdictions with buildings identified in the 1% annual chance flood zone can also be viewed on the Houston County HMP website.

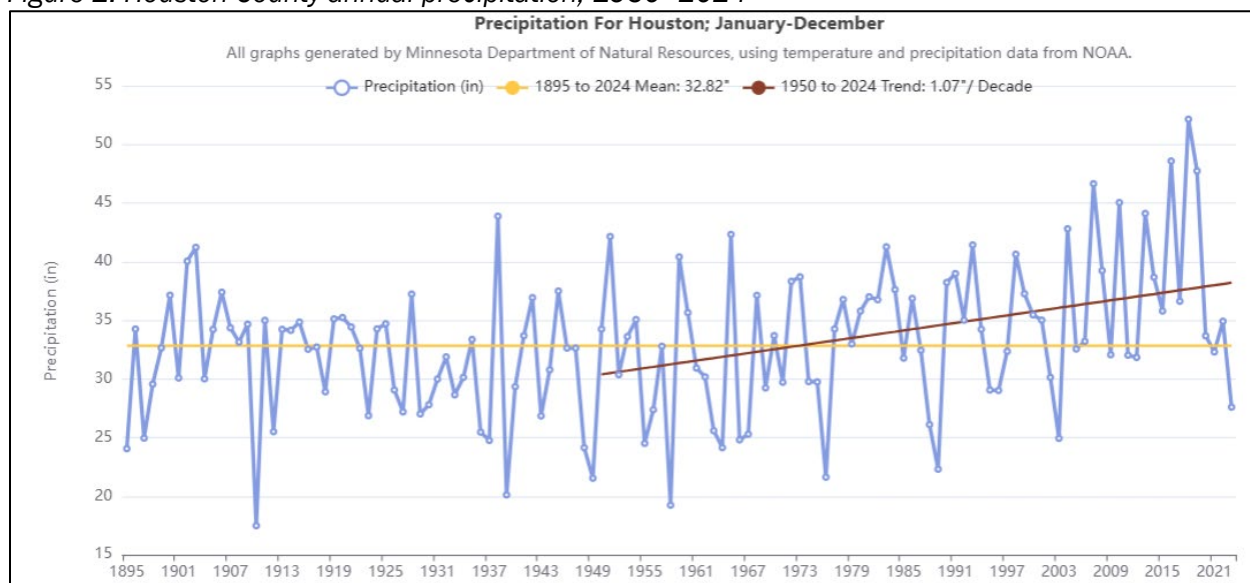
The status of jurisdictional participation in the National Flood Insurance Program and any repetitive loss properties are detailed in Section 5.1.1. National Flood Insurance Program (NFIP).

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

4.1.3 Flooding and Climate Change

Higher temperatures globally have evaporated more surface and ocean water into the atmosphere, which, in turn, has provided more potential moisture for precipitating weather systems. In Houston County, the result has been increased precipitation, with annual totals increasing at an average rate of just over an inch per decade since 1950 (see Figure 2).

Figure 2. Houston County annual precipitation, 1950–2024



SOURCE:(MN DNR, 2024B)

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

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

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

4.1.4 Program Gaps and Deficiencies

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

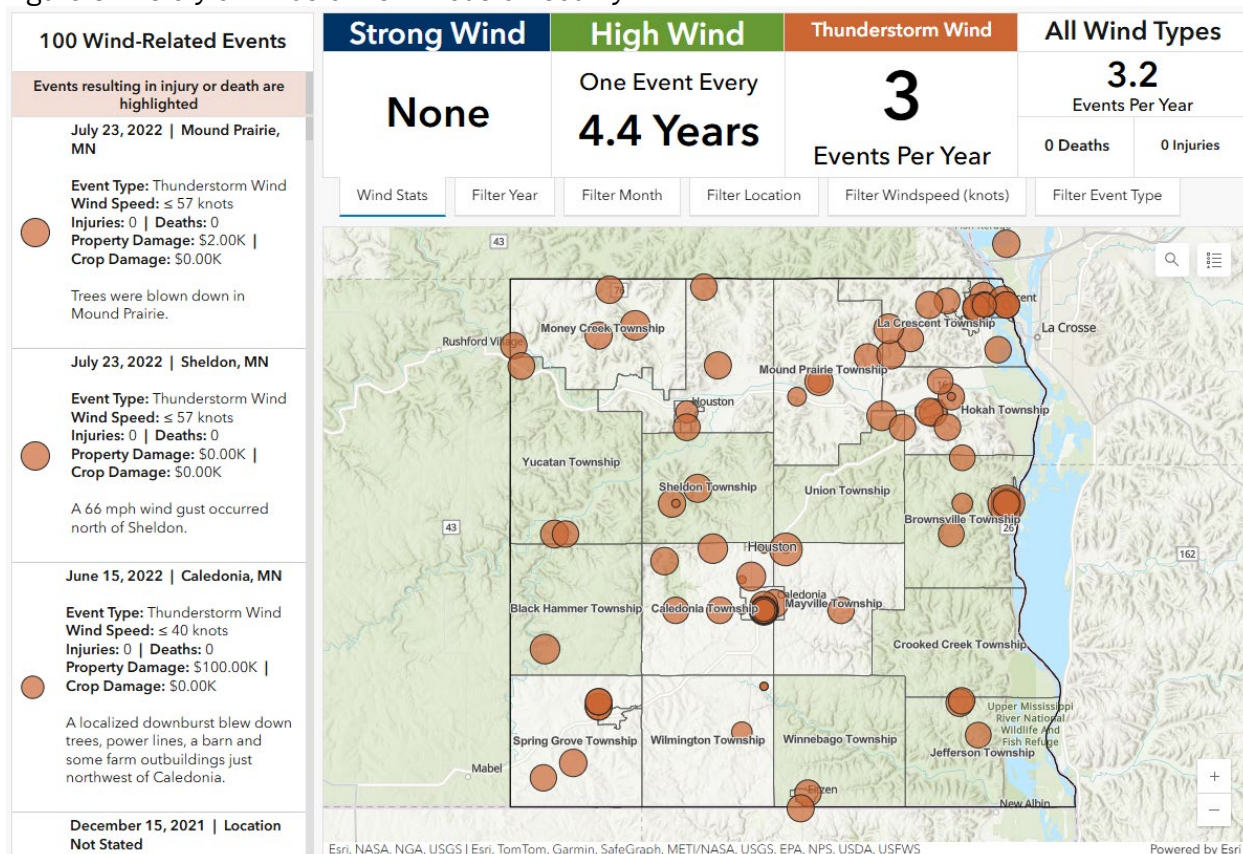
Road Infrastructure: Flood mitigation for county and township roads (e.g., culvert replacements, road repair) is an ongoing need. The county and many of our townships have limited funding for road infrastructure. Houston County continues to provide assistance on road infrastructure mitigation projects to reduce the impacts of localized flooding.

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

4.2 Windstorms

A windstorm is a wind strong enough to cause damage to trees and buildings and typically exceeding 34 mph (Pielke, 2012). Windstorm events encompass a variety of types of damaging wind. The history of windstorms in Houston County is shown in Figure 3; an interactive version of this map can be found on the Houston County HMP website.

Figure 3. History of windstorms in Houston County



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

4.2.1 Probability of Occurrence

To determine the probability of future wind-related events in Houston County, records of previous wind-related events (strong wind, high wind, and thunderstorm wind) in Houston County were examined since 1996, the period of record all wind events have in common. The relative frequency of all wind-related events from January 1996 to February 2024 is 3.2 per year. These relative frequencies can infer the probability of these events occurring in the future.

4.2.2 Vulnerability

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

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

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

4.2.3 Windstorms and Climate Change

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

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

4.2.4 Program Gaps and Deficiencies

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

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

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

Houston County and local jurisdictions also need to continue to encourage residents to be aware of and ready for severe storm events that can lead to long-term power outages.

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

4.3 Tornadoes

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

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

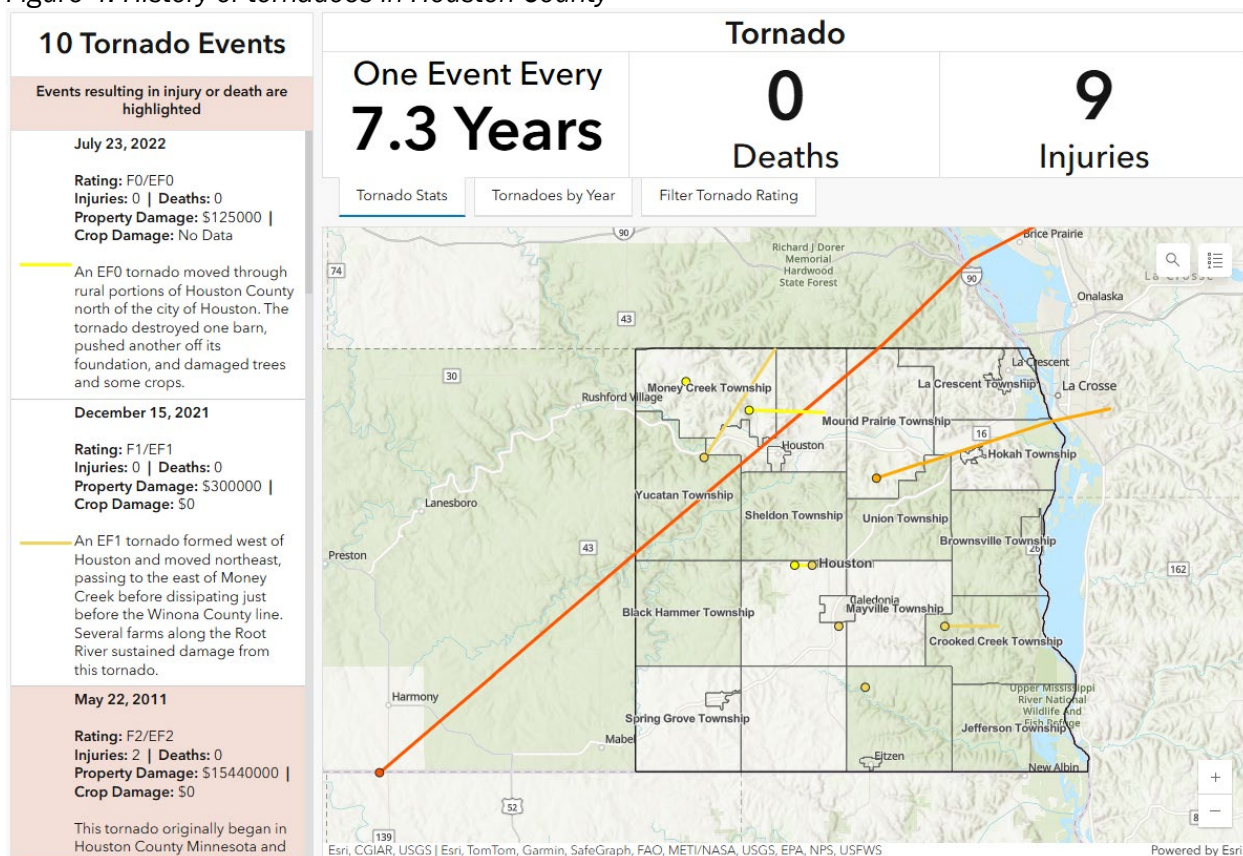
4.3.1 Probability of Occurrence

Estimating the probability of future tornadoes in Houston County was done using two methods. The first method summed the total number of tornadoes that either touched down in or traveled through the county. This sum was divided by the number of years tornado data was recorded, resulting in the annual relative frequency of tornado occurrences in the county. Based on records in the NCEI Storm Events Database through January 2024, there has been one tornado every 7.3 years in Houston County. These 25 tornadic events occurred in 18 of the 72 years on record.

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

For any location in Houston County, there was an annual frequency of <1–2 tornadoes within a 50-mile radius. The historical frequency was only slightly higher in the east than the west. These relative frequencies can be used to infer the probability of these events occurring in the future.

Figure 4. History of tornadoes in Houston County



4.3.2 Vulnerability

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

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

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

4.3.3 Tornadoes and Climate Change

Minnesota's climate is undergoing distinct changes, but as reported by the MN DNR State Climatology Office, these changes are only weakly connected to increases in tornadoes or severe convective storms. Minnesota, like all parts of the U.S., has seen increases in the weakest class of tornadoes (rated F-0 or EF-0), but these increases are known to be linked to improved spotting, detection, and verification procedures within the National Weather Service.

When examining tornadoes that cause significant structural damage and are rated EF-2 or above, Minnesota has seen no recent trends towards increasing frequencies—whether measured as raw counts, or as days with one or more of these tornadoes (MN DNR, 2019).

The tornado trends in Minnesota match those found nationally. NCA5 states that while the average annual number of tornadoes appears to have remained relatively constant, there is evidence that tornado outbreaks have become more frequent, tornado seasons are extending into later in the fall, and that tornado strength has increased (Marvel et al., 2023). An October 10, 2021 tornado in the Boundary Waters Canoe Area Wilderness became the latest on record so far north in the state. Then, on December 15, 2021, an outbreak of destructive thunderstorm winds and over 20 tornadoes struck the southeastern parts of the state, producing the latest tornadoes on record by 29 days (Blumenfeld, K. Minnesota State Climatology Office, personal communication, December 21, 2023).

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

However, climate scientists are unclear about whether the recent statistical behavior of these severe convective storm events has any relationship with the changing climate. This uncertainty results from the fact that tornadoes and their parent thunderstorms operate on smaller scales and more localized processes than the global climate. There has been some indication that, on a national basis, tornadoes are being clustered into fewer days, suggesting a greater tendency towards outbreaks. Scientific modelling studies indicate that the meteorological conditions supportive of severe thunderstorms should increase in the future, but it is unclear whether the specific conditions required for the formation of tornadoes, and particularly significant tornadoes, will increase (Kossin, 2017). Until more studies are completed, the Minnesota State Climatology Office recommends assuming that tornadoes will remain an important and dangerous part of Minnesota's climate, even if they do not increase in frequency or severity in response to changing climatic conditions.

4.3.4 Program Gaps and Deficiencies

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

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

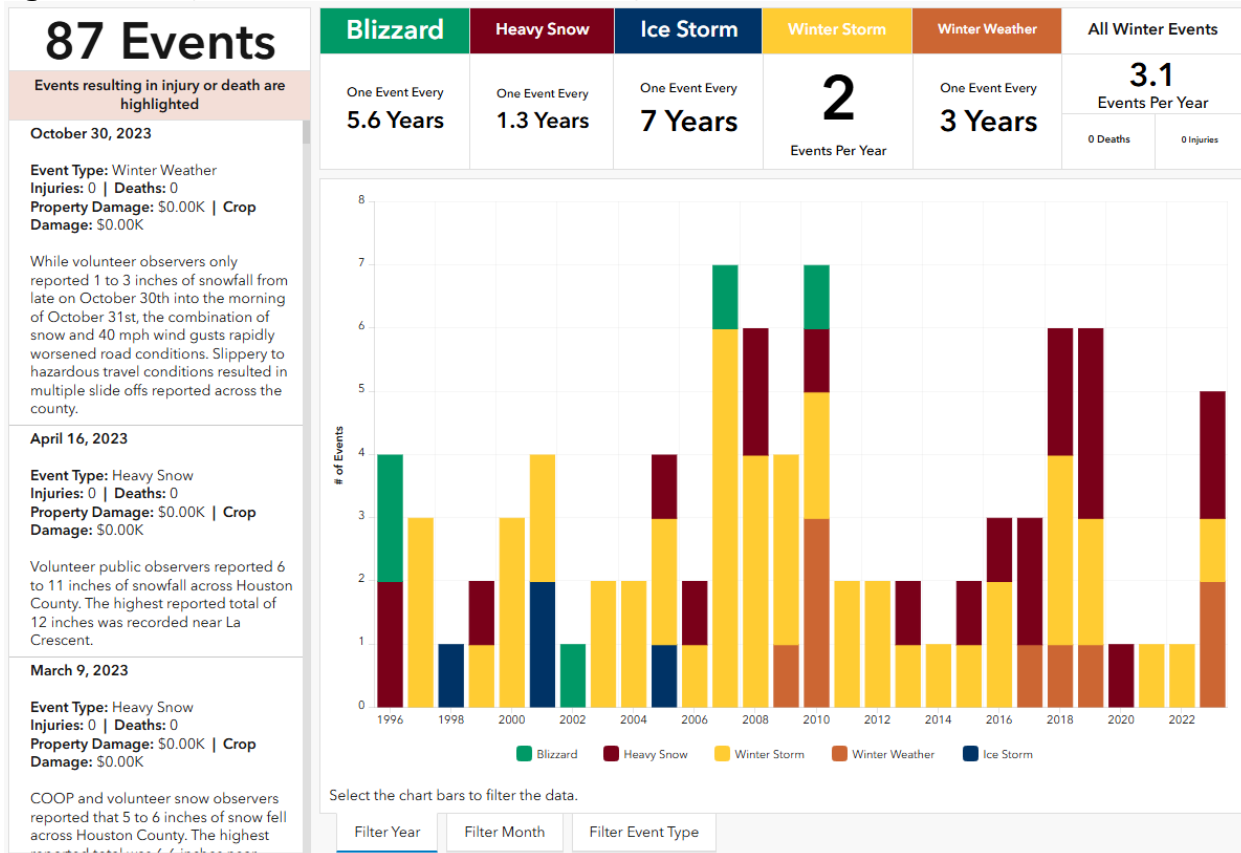
Public Education: Ongoing public education is needed during tornado season to inform the public about what a tornado watch/warning is and what to do when outdoor warning sirens are activated. Houston County and local jurisdictions also need to continue to encourage residents to be aware of and ready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

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

4.4 Winter Storms

Winter storms encompass a number of winter weather events that 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 Houston County is shown in Figure 5; an interactive version of this chart can be found on the Houston County HMP website.

Figure 5. History of winter storms in Houston County



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

4.4.1 Probability of Occurrence

To determine the probability of future winter-related storm events in Houston County, records of previous events (blizzards, heavy snows, ice storms, winter storms, and winter weather) were summed and divided by the dataset's period of record, resulting in the annual relative frequency of winter-related storms. Based on records in the NCEI Storm Events Database through January 2024, the relative frequency of winter-related storm events in Houston County is 3.1 per year. 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 county. These events do not vary geographically within the county; all jurisdictions are equally vulnerable. While it is highly likely these events will continue occurring annually, the amount of snow and ice and number of winter-related storm events to occur each year are unpredictable. Citizens living in climates such as these must always be prepared for situations that put their lives or property at risk. It is important that extra consideration be given to the vulnerable populations discussed in Section 3.2. Section 3.4 provides jurisdictional responses to localized vulnerabilities to specific hazards.

4.4.3 Winter Storms and Climate Change

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

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

4.4.4 Program Gaps and Deficiencies

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

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

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

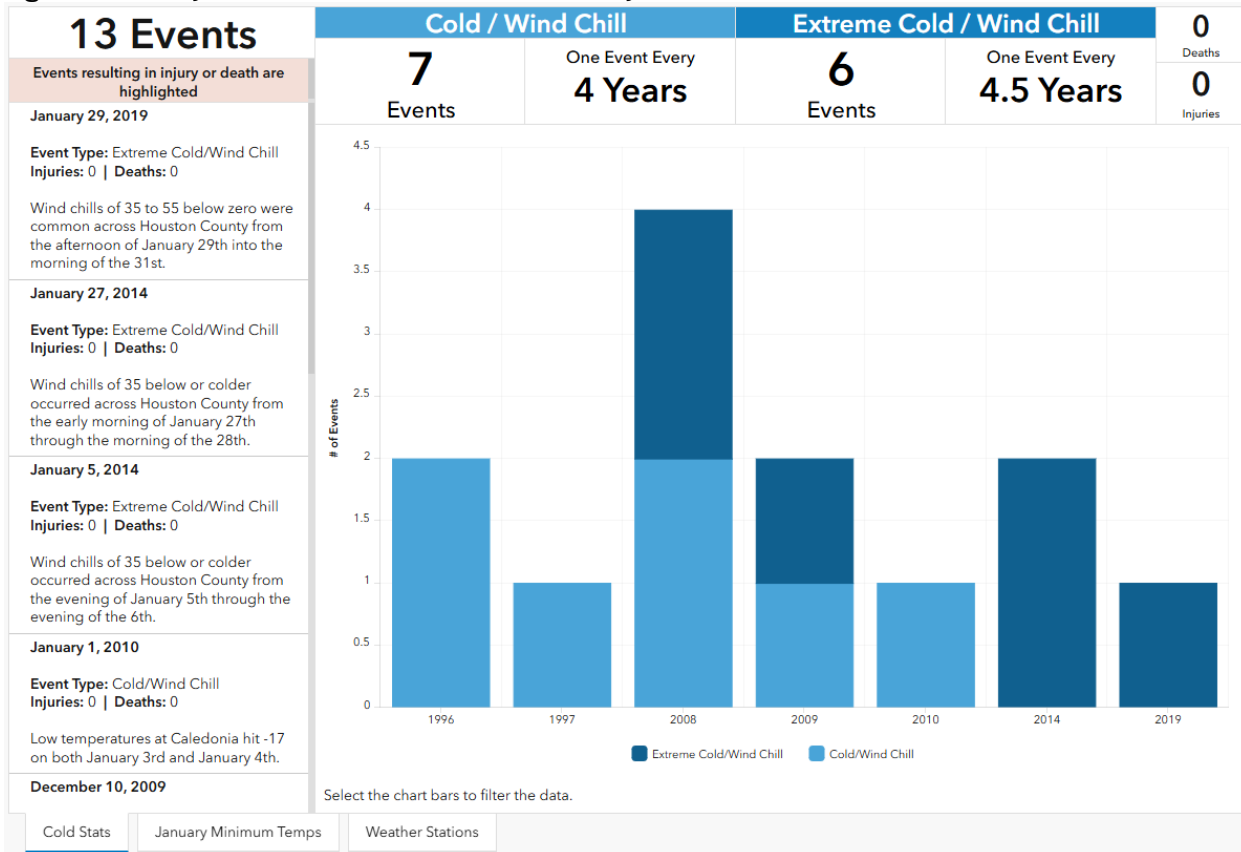
Backup Power: Not all designated shelter facilities have generator back-up power to provide the ability to care for residents if displaced during a severe winter event coupled with an extended power outage.

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

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

Figure 6. History of extreme cold in Houston County



4.5.1 Probability of Occurrence

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

County is one every 4.5 years. (NCEI, 2023). This relative frequency can infer the probability of these events occurring in the future.

4.5.2 Vulnerability

The risk of extreme cold does not vary geographically within the county. Citizens living in climates such as these must always be prepared for situations that put their lives or property at risk. The youngest and more elderly residents, homeless persons, individuals with chronic medical conditions, and those who are working or recreating outdoors are most at risk for frostbite and hypothermia (MDH, 2021).

View at-risk populations in Houston County

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

The CDC publication “Extreme Cold: A Prevention Guide to Promote Your Personal Health and Safety” outlines preparation measures that individuals can take to reduce their vulnerability to extreme cold. Highlights in this document include advice about travel preparations, securing your home water supply, and safety during recreation (CDC, 2021). Section 3.4 provides jurisdictional responses to localized vulnerabilities to extreme cold.

4.5.3 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

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

Generators for Backup Power to Critical Facilities & Shelters: Not all healthcare and other critical facilities utilized for the care of residents & visitors, including designated severe weather/emergency

shelters (schools, churches, etc.) have backup power to run heating systems in the event of a power outage. Houston County Highway Department shop areas are heated to 50 degrees and have waterlines throughout the area that would be jeopardized in the event of a power outage with extreme cold temp. The office area contains data on servers for not just the highway department, but also other county facilities.

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

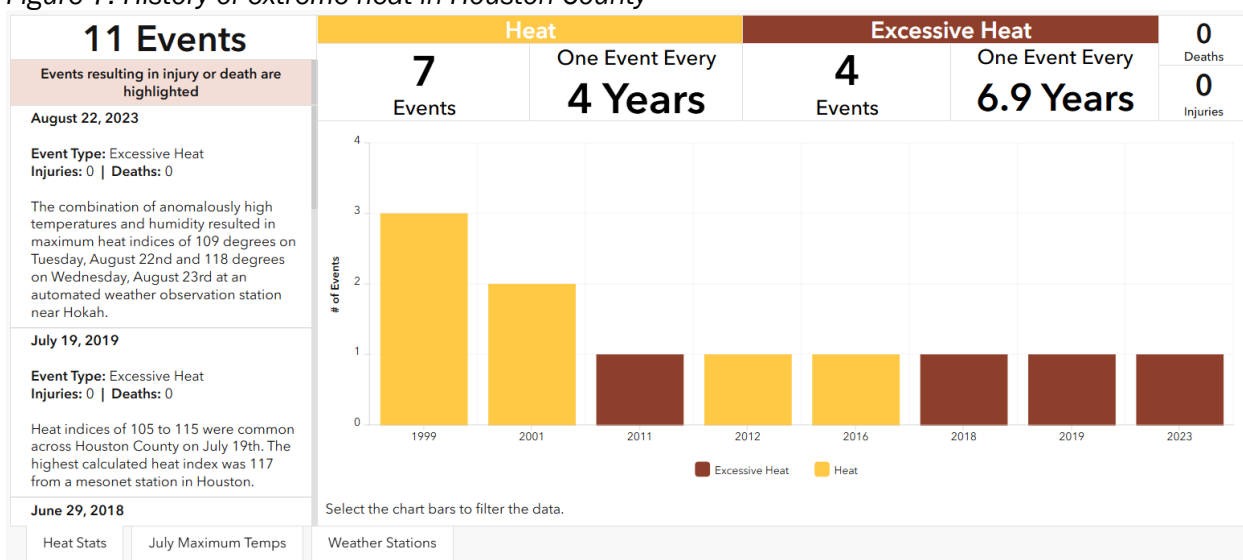
4.6 Extreme Heat

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

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

Data from the Spatial Hazard Events and Losses Database (SHELDUS) for the United States was examined to identify the county’s monetary losses due to heat damage to crops. Ranking 70th among Minnesota counties in crop indemnity payments, heat-related losses for Houston County totaled over \$285,274.59 (2021 ADJ) for the period of record spanning 1989 to 2022 (CEMHS, 2023).

Figure 7. History of extreme heat in Houston County



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

4.6.1 Probability of Occurrence

To determine the probability of future heat-related events in Houston County records of previous heat and excessive heat events were summed and divided by the dataset's period of record, resulting in the annual relative frequency of heat-related events. Based on records in the NCEI Storm Events Database through January 2024, the relative frequency of extreme heat events in the county is one event every 6.9 years. This relative frequency can infer the probability of these events occurring in the future.

4.6.2 Vulnerability

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

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

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

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

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

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

4.6.3 Extreme Heat and Climate Change

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

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

The average number of days per year with temperatures over 95 °F under a high carbon emissions (SSP 585), mid-century (2040–2059) scenario is illustrated in the [Climate Dashboard](#) on the Plan website

On average, by mid-century (2040–2059), under a high emissions (SSP 585) scenario, Houston County may reach 15.27 days/year of temperature greater than 95 °F, an increase in 7.10 more days to the historical (1995–2014) simulations average of 8.16 days/year (Liess, S. et al., 2023).

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

4.6.4 Program Gaps and Deficiencies

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

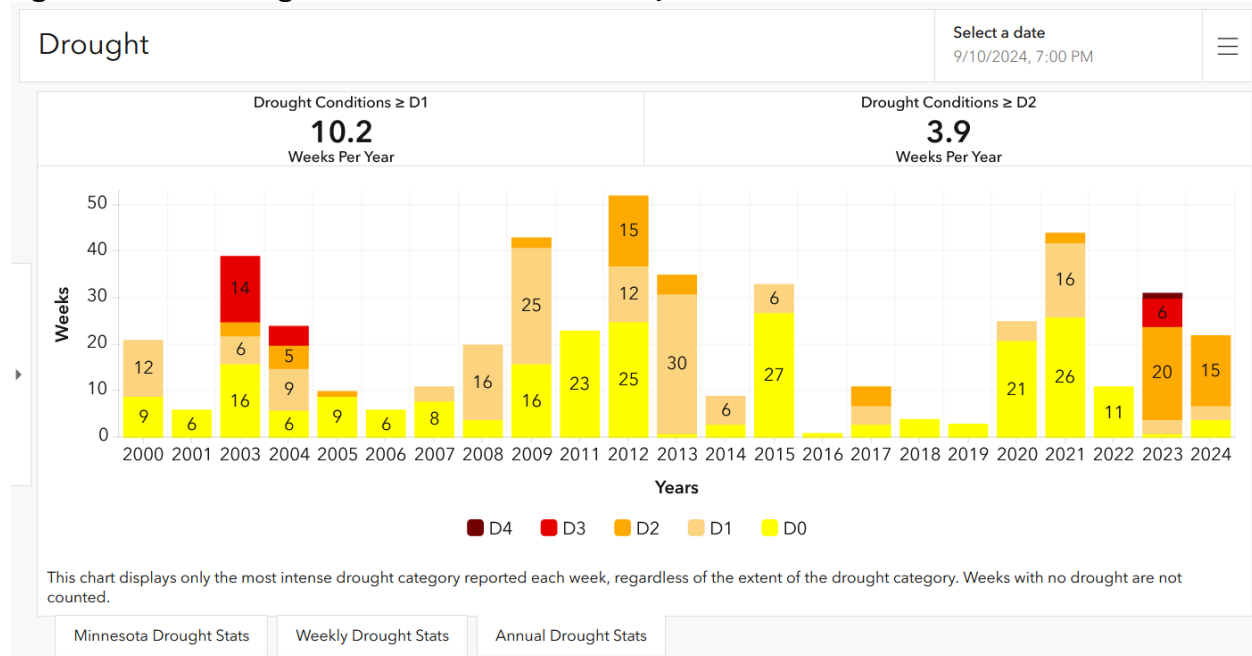
Generators for Backup Power to Critical Facilities & Shelters: Not all healthcare and other critical facilities utilized for the care of residents & visitors, including designated severe weather/emergency shelters (schools, churches, etc.) have backup power to run cooling systems in the event of a power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

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 Houston County HMP website.

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

Figure 8. Annual drought statistics in Houston County since 2000



4.7.1 Probability of Occurrence

To determine the probability of future droughts in Houston County, records of previous droughts were summed and divided by the dataset's period of record, resulting in the annual relative frequency of droughts. The USDM database was examined from January 2000–September 10, 2024 for any occurrence of drought \geq D1 in Houston County, regardless of the duration of the drought. According to the weekly reported data, the relative frequency of the county experiencing drought conditions \geq D1 is 10.2 weeks per year, and the relative frequency of drought conditions \geq D2 is 3.9 weeks per year (NDMC, 2024b). The relative frequency of past droughts can be used to infer the probability of similar droughts occurring in the future.

4.7.2 Vulnerability

One way to identify county assets vulnerable to drought is by examining the impacts of previous droughts. Overseen by the National Drought Mitigation Center (NDMC), the Drought Impact Reporter (DIR) is a comprehensive database that gathers drought-related reports from a variety of sources and identifies the sector(s) impacted by each drought. The NDMC (NDMC, 2024b) defines a drought impact

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

DIR records show three reported drought incidents in Houston County between 2000 and 2023, impacting four sectors with greatest impacts to agriculture (NDMC, 2024a). Since droughts are regional in nature, jurisdictions within Houston County do not vary in their vulnerability to drought; however, the impact from droughts are not equal.

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

According to the DIR, Houston County’s agriculture sector has been impacted by drought more than once, and with 22% of Houston County’s land devoted to cultivated crops, the county’s agriculture community is also vulnerable to the economic impact a drought may have on crops. From 1989–2022, Houston County received \$7,880,397.81 (2021 ADJ) in crop indemnity payments due to drought, placing it as the 72nd-highest-paid county in Minnesota (CEMHS, 2023).

Section 3.4 provides jurisdictional 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

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

4.9 Landslides

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

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

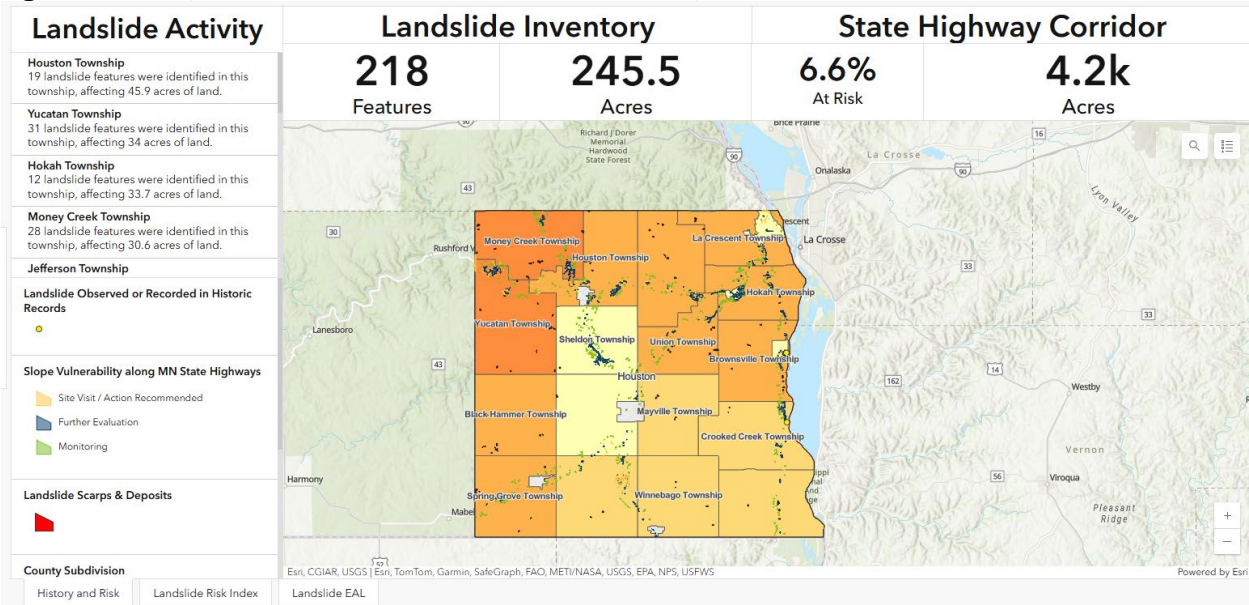
Streambank erosion is a natural process, but acceleration of this natural process leads to land loss, stream channel instability, increased sediment, habitat loss, and other adverse effects. Bank erosion takes place by two processes, channel migration and channel widening. Widening of channels can be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

Researchers from eight colleges and universities across Minnesota examined the prevalence of landslides across the state and compiled an inventory of geological activity. This historical landslide inventory was published by USGS (DeLong, et al., 2022). The inventory includes all evidence of historical slides. Houston County has 218 features in the USGS landslide inventory.

The history of landslides in Houston County is shown in Figure 9; an interactive version of this map can be found on the Houston County HMP website.

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

Figure 9. History and risk of landslides in Houston County



4.9.1 Probability of Occurrence

To determine the frequency of landslides in Houston County, we require records of previous landslides and the period in which they occurred. Comprehensive data for historical landslide events are not available. The historical data we do have, does not include dates of the slope failure associated. Statewide and national maps suggest that landslide risk in Houston County is relatively low; however, anecdotal evidence does indicate that there is a risk of landslides in bluff areas and steep bedrock slopes. There is a documented increase in frequency of the heaviest 1% of extreme precipitation events (NOAA Climate Adaptation Partnerships, 2022). These extreme rain events are the most likely to cause landslides. Although the risk to infrastructure and property in Houston County is low, landslides remain a concern to Houston County Emergency Management.

4.9.2 Vulnerability

In southeastern Minnesota, which was not glaciated in the most recent glacial period, rivers have eroded through older glacial sediment and bedrock, resulting in steep bedrock slopes prone to landslides that incorporate bedrock debris (DeLong, et al., 2022).

The USGS historical research found that over half of Houston County cities and townships are susceptible to landslides. Houston, Yucatan, Hokah, and Money Creek Townships all have landscape features affecting over 30 acres of land. The total landslide activity in Houston County amounts to 218 features and 245.5 acres inventoried.

The Minnesota Department of Transportation (MnDOT) provided spatial data from a slope vulnerability assessment completed statewide in 2019. This assessment sought to identify slope failure risks along

state trunk highways in several MnDOT districts. Then using GIS modeling, researchers mapped and ranked slopes along highways according to failure vulnerability and then developed a method for MnDOT to quantify failure risk for asset and emergency management planning. The assessment resulted in a statewide map shown the Landslide Risk Dashboard classifying potential risks areas into four categories: high risk—a site visit or action is recommended; moderate risk—further evaluation is required, low risk—the area should be monitored, or no action is required. In Houston County, 4200 acres of highway corridor at moderate or high risk for slope failure, 6.6% of the total highway corridor.

4.9.3 Landslides and Climate Change

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

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

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

4.9.4 Program Gaps and Deficiencies

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

4.10 Dam Failure

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

Dam Inventory: The National Dam Inventory reports that there are 27 dams in Houston County. Dams are mapped on the [MN State 2024 HMP website](#). Houston County had no dams classified as High Hazard Dams, five dams classified as Significant Hazard Dams, and 22 dams classified as Low Hazard Dams. No dams have been removed.

4.10.1 Probability of Occurrence

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

4.10.2 Vulnerability

Although dam regulatory authorities differ between various federal and state agencies, all authorities attempt to classify dams according to the potential impacts from a dam failure or mis-operation. In response to the numerous classification systems, FEMA’s Interagency Committee on Dam Safety created a downstream hazard potential classification system that is adaptable to any agency’s current system. Table 9 provides an overview of the main criteria agencies consider when determining a dam’s downstream hazard potential. This classification system does not imply that the dam is unsafe, but rather categorizes dams based on the probable loss of human life and the impacts on economic, environmental, and lifeline interests (FEMA, 2004).

Table 9. Downstream hazard potential classification criteria

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

SOURCE: (USACE, 2008)

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

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

4.10.3 Dam Failure and Climate Change

Dams are designed based on assumptions about a river’s annual flow behavior that will determine the volume of water behind the dam and flowing through the dam at any one time. Changes in weather patterns due to climate change may change the hydrograph or expected flow pattern. Spillways are put in place on dams as a safety measure in the event of the reservoir filling too quickly. Spillway overflow events are mechanisms that also result in increased discharges downstream. It is

conceivable that bigger rainfalls at earlier times in the year could threaten a dam's designed margin of safety, causing dam operators to release greater volumes of water earlier in a storm cycle in order to maintain the required margins of safety. Such early releases of increased volumes can increase flood potential downstream.

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

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

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

4.10.4 Program Gaps and Deficiencies

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

Section 5 – Mitigation Strategy

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

5.1 Community Capability Assessments

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

- Appendix D: Lists the plans and programs in place in Houston County as related to hazard mitigation.
- Appendix C: As part of the Houston County HMP update, the county and city governments were asked to participate in filling out a “Local Mitigation Survey” (LMS) form to report on their current mitigation capabilities and program gaps. Appendix C provides the LMS reports gathered for Houston County.

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

5.1.1 National Flood Insurance Program (NFIP)

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

Table 10 lists and describes jurisdictional participation in the National Flood Insurance Program (NFIP).

Table 10. NFIP participation in Houston County

FEMA Plan Requirements Plan Review Tool, Section C2		Description
Name of Community	Houston County	
Participation in the NFIP	Participating – Entry date 01/06/1982	
FEMA Map	FEMA-mapped high-risk areas	
Current Effective Map Date	12/07/2018	
Potential Buildings Damaged in Floodplain (including all townships and cities)	502	
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 11/20/2018	
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	12/07/2018	
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	Houston County enforces requirements of the NFIP through the county's floodplain ordinance (Houston County Zoning Ordinance (November, 2018, Section 21, Flood Plain District), adopted 11/20/2018 and made effective 11/25/2018 (date of publication). This ordinance establishes the floodplain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts of Name County. The Houston County Planning & Zoning Office maintains and enforces the floodplain management ordinance for the county.	
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Martin Herrick, Houston County Planning & Zoning Administrator	
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the county would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The county would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.	
Name of Community	City of Brownsville	
Participation in the NFIP	Participating – Entry date 02/15/1984	
FEMA Map	FEMA-mapped high-risk areas	
Current Effective Map Date	12/07/2018	
Potential Buildings Damaged in Floodplain	8	

FEMA Plan Requirements Plan Review Tool, Section C2	Description
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 10/3/2018
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	10/3/2018
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Brownsville enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 10/3/2018 and made effective 10/3/2018 (date of publication). This ordinance regulates development in the flood hazard areas of the city.
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Steve Schuldt, City Clerk
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.
Name of Community	City of Caledonia
Participation in the NFIP	Participating – Entry date 12/07/2018
FEMA Map	FEMA-mapped high-risk areas
Current Effective Map Date	12/07/2018
Potential Buildings Damaged in Floodplain	0
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 10/22/2018
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	10/22/2018
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Caledonia enforces requirements of the NFIP through the city's current floodplain ordinance, adopted 10/22/2018 and made effective 11/21/2018 (date of publication). This ordinance regulates development in the flood hazard areas of the city.
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Casey Klug, Public Works & Zoning Director

FEMA Plan Requirements Plan Review Tool, Section C2	Description
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.
Name of Community	City of Hokah
Participation in the NFIP	Participating – Entry date 03/15/1982
FEMA Map	FEMA-mapped high-risk areas
Current Effective Map Date	12/07/2018
Potential Buildings Damaged in Floodplain	27
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 11/26/2018
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	11/26/2018
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Hokah enforces requirements of the NFIP through the city’s current floodplain ordinance, adopted 11/26/2018 and made effective 11/30/2018 (date of publication). This ordinance regulates development in the flood hazard areas of the city.
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Lindsey Martell, City Clerk-Treasurer
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.
Name of Community	City of Houston
Participation in the NFIP	Participating – Entry date 07/16/1979
FEMA Map	FEMA-mapped high-risk areas
Current Effective Map Date	12/07/2018
Potential Buildings Damaged in Floodplain	0

FEMA Plan Requirements Plan Review Tool, Section C2	Description
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 10/9/2018
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	10/9/2018
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of Houston enforces requirements of the NFIP through the city’s current floodplain ordinance, adopted 10/9/2018 and made effective 11/1/2018 (date of publication). This ordinance regulates development in the flood hazard areas of the city.
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Michelle Quinn, City Clerk-Administrator
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.
Name of Community	City of LaCrescent
Participation in the NFIP	Participating – Entry date 07/20/1973
FEMA Map	FEMA-mapped high-risk areas
Current Effective Map Date	12/07/2018
Potential Buildings Damaged in Floodplain	121
1. Adoption of NFIP minimum floodplain management criteria via local regulation	Adoption of current floodplain ordinance: 11/13/2018
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable	11/13/2018
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs	The city of La Crescent enforces requirements of the NFIP through the city’s current floodplain ordinance (La Crescent, MN Code of Ordinances, Chapter 151: Flood Damage Prevention and Shoreland Management) adopted 11/13/2018 and made effective 11/16/2018 (date of publication). This ordinance regulates development in the flood hazard areas of the city.
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP	Floodplain Administrator: Bill Waller, City Administrator

FEMA Plan Requirements Plan Review Tool, Section C2	Description
5. Description of how participant implements the substantial improvement / substantial damage provisions of their floodplain management regulations after an event.	Following a flood event, the city would work with the MN DNR to use a form to track cumulative improvements and repetitive losses in the floodplain. The city would also review the MN DNR Minnesota Post-Flood Substantial Damage Playbook for Local Officials.
Name of Community	City of Eitzen
Participation in the NFIP	NOT Participating
FEMA Map	No FEMA-mapped high-risk areas 12/7/2018 NSFHA (No Special Flood Hazard Area)
Name of Community	City of Spring Grove
Participation in the NFIP	NOT Participating
FEMA Map	No FEMA-mapped high-risk areas 12/7/2018 NSFHA (No Special Flood Hazard Area)

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

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

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

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

Houston County has five RL properties and one SRL property. All six properties are single-family homes in La Crescent with first loss dates ranging from 2001–2023.

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

5.1.2 Plans and Ordinances

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

5.1.3 Plans and Programs in Place to Address Natural Hazards

Houston County has numerous plans and programs in place to address natural hazards. Some of these programs are specific to a hazard and others address impacts and human safety for many types of events (“All-Hazards”). For the purpose of grouping related natural hazards, “Summer Storms” encompasses Tornadoes, Windstorms, Lightning, and Hail. Following is a description of the plans and programs in place by Houston County to support mitigation for the hazards addressed in this plan.

All Hazards

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

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

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

Preparedness Outreach & Public Education: Houston County Emergency Management utilizes the Houston County website, Houston County EM Facebook page, and local news media to communicate with residents, visitors, schools, and long-term care facilities on emergency preparedness, severe weather, and other hazard conditions throughout the year. The Houston County Emergency Management website page provides emergency preparedness information and resource links for the public.

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

Health, the American Red Cross, and local governments/Fire & EMS to provide mass care services as needed. The county EOP includes plans, procedures, and resources available for mass care sheltering.

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

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

Backup Power: Houston County works to ensure the continuity of operations of county government services and critical infrastructure in the event of an extended power outage. County facilities with backup generators include the Houston County Law Enforcement Center, the Houston County Highway Department, and the Houston County Community Services Building.

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

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

Severe Winter Storms

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

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

Snow Removal & Ice Control: The Houston County Transportation Department conducts winter road maintenance on county roads in accordance with the Houston County Snow & Ice Control Policy. Houston County Transportation Department also removes snow from the County Airport, CHU, located south of Caledonia. Other road jurisdictions conduct winter road maintenance on their respective road systems in accordance with each of their established policy and/or practice.

Severe Summer Storms

Severe Weather Statements (Watch, Advisory, Warning, etc.): Houston County works to relay severe spring and summer weather statements (such as for thunderstorms, windstorms, or tornadoes) received from the NWS to help alert residents and visitors to hazardous conditions. In the event of severe weather, all campgrounds in Houston County are to be called by phone and/or a CodeRed message sent to them by dispatch.

Outdoor Warning Sirens: Outdoor warning sirens are located throughout the county and are tested monthly by the Houston County Sheriff's Office in coordination with local jurisdictions. Warning sirens are owned and maintained by the cities where they are located. Houston County Emergency Management has a program to monitor the system status of these 10 sirens. Some cities have older sirens that are still in operation but are not compatible with the newer ones for monitoring.

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

Severe Weather Awareness Week: Houston County participates in the Severe Weather Awareness Week campaign sponsored by MN HSEM and the NWS each April. The week-long effort provides specific information each day covering the topics of severe weather alerts and warnings, lightning, hail, floods, tornadoes (with statewide drills), and extreme heat. Each topic covered includes factsheets, checklists, data, and other resources. Houston County Emergency Management promotes and shares information during the week via social media with communities, schools, churches or other civic programs are encouraged to share locally.

Vegetation Management: The Houston County Transportation Department regularly conducts vegetation management along county roads to reduce the risk of downed trees or branches

resulting from severe spring and summer storm events. Local utility providers also work to manage vegetation near power lines to reduce the risk of downed lines and power outages.

Extreme Cold

Emergency Notifications: Extreme cold temperature warnings are issued by the National Weather Service. Houston County Emergency Management works to relay extreme cold temperature warnings from the NWS to help alert residents and visitors to hazardous conditions. The Houston County Emergency Management Office also encourages residents to follow local news or NWS weather applications to receive severe weather and extreme temperature notifications.

Extreme Cold Safety Awareness: Houston County Emergency Management and Houston County Public Health promote public awareness of personal safety measure to take during periods of extreme cold, such as sharing information via Facebook posts.

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

Extreme Heat

Emergency Notifications: Extreme cold temperature warnings are issued by the National Weather Service. Houston County Emergency Management works to relay extreme cold temperature warnings from the NWS to help alert residents and visitors to hazardous conditions. The Houston County Emergency Management Office also encourages residents to follow local news or NWS weather applications to receive severe weather and extreme temperature notifications.

Public Education and Awareness: Houston County Emergency Management and Houston County Health & Human Services promote public awareness of personal safety measure to take during periods of extreme heat, such as sharing information via Facebook posts.

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

Drought

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

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

Landslides

Bluff Land Protection Ordinance: Houston County Zoning Ordinance Section 29.17 prohibits the placement of structures and accessory facilities within bluff impact zones, establishes setback limitations from the top of a bluff and toe of a bluff; establishes that roads, driveways and parking areas must not be located with bluff impact zones, and restricts the removal of natural vegetation within bluff impact zones to prevent soil erosion.

Flooding

National Flood Insurance Program (NFIP): Houston County has FEMA Mapped High Risk Areas and participates in the NFIP. Initial entry date into the program was 01/06/1982.

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

Floodplain Ordinance: Houston County Zoning Ordinance, Section 21, Flood Plain District establishes the flood plain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts. The Houston County Zoning Office maintains and enforces the floodplain management ordinance for the county. The ordinance is adopted to comply with the rules and regulations of the National Flood Insurance Program codified as 44 Code of Federal Regulations Parts 59 -78, as amended, so as to maintain the community's eligibility in the National Flood Insurance Program.

Floodplain Mapping: Houston County's current effective FEMA flood map date is 12/07/2018. The county's Zoning Office is the repository for the floodplain maps for the county. The Zoning Office assists county residents in determining whether their property is affected by an officially mapped flood area.

Shoreland Ordinance: Houston County Zoning Ordinance, Section 22, Shoreland Zoning District establishes allowable uses and development standards in shoreland areas designated within the county. In addition to establishing setback requirements, the ordinance specifies that local shoreland controls must regulate placement of structures in relation to high water elevation for flood protection.

Transportation Plan: The Houston County Highway Department updates our capital improvement plan annually. The current plan has projects for years 2024–2028. Slated construction projects are also provided on the Highway Dept. website page.

Minnesota Buffer Law: The Houston SWCD administers the state Buffer Law and provides technical assistance on buffer compliance by landowners. Buffers benefit bank stabilization and reduced erosion and sedimentation into ditches, streams, rivers, and lakes.

One-Watershed One Plan (1w1P): Houston County has participated in the Root River 1W1P and Winona/La Crescent 1W1P. Both plans address regional watershed planning which include measures for flood mitigation.

Dam/Levee Failure

No noted plans or programs in place.

5.2 Mitigation Goals

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

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

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

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

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

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

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

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

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

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

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

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

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

5.3 Mitigation Action and Project Strategies

The mitigation actions in this plan are summarized into four main strategy types, as described in the FEMA publications *Local Mitigation Planning Handbook* (2013) and *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards* (2013). A fifth strategy type was determined by Minnesota HSEM for use within the state: Mitigation Preparedness and Response. The strategies and example actions are listed in Table 11.

Table 11. Mitigation strategies and action types

Mitigation Strategy	Description	Example Mitigation Actions
Local Plans and Regulations	These actions include government authorities, policies, or codes, that influence the way land and buildings are developed and built.	<ul style="list-style-type: none"> • Comprehensive plans • Land use ordinances • Planning and zoning • Building codes and enforcement • Floodplain ordinances • NFIP Community Rating System • Capital improvement programs • Open space preservation • Shoreline codes • Stormwater management regulations and master plans
Structure and Infrastructure Projects	<p>These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure.</p> <p>This type of action also involves projects to construct manmade structures to reduce the impact of hazards.</p> <p>Many of these types of actions are projects eligible for funding through the FEMA Hazard Mitigation Assistance program.</p>	<ul style="list-style-type: none"> • Acquisitions and elevations of structures in flood prone areas • Utility undergrounding • Structural retrofits • Floodwalls and retaining walls • Detention and retention structures • Culverts • Safe rooms
Natural Systems Protection	These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.	<ul style="list-style-type: none"> • Sediment and erosion control • Stream corridor restoration • Forest management • Conservation easements • Wetland restoration and preservation
Education and Awareness Programs	These are actions to inform and educate residents, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady or Firewise Communities. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A	<ul style="list-style-type: none"> • Radio or television spots • Websites with maps and information • Real estate disclosure • Presentations to school groups or neighborhood organizations • Mailings to residents in hazard-prone areas.

<p>Mitigation Preparedness and Response</p>	<p>greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions.</p> <p>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.</p>	<ul style="list-style-type: none"> • StormReady Certification • Firewise Communities • Emergency operations plan • Flood fight plans and preparedness • Dam emergency action plans • Warning • Backup power • Emergency capabilities
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Local leaders work together with the Houston County emergency management director to assure that the hazards and mitigation actions included in this plan are accurate and addressed in their jurisdictions. Development of mitigation actions for the county and each city was informed by a community’s hazard and risk assessment; identification of local vulnerabilities, and review of capabilities in place to address mitigation. Planning team members, local elected officials and staff from Houston County and each city actively participated in the development and review of mitigation action charts for implementation through participation in planning team meetings (see Appendix F) and development of Local Mitigation Surveys (see Appendix C). Additional jurisdictional and public feedback was incorporated following news releases inviting public input to the planning process (see Appendix G).

The Houston County risks and mitigation activities identified also incorporate the concerns and needs of townships, school districts, and other entities participating in this plan. Appendix H contains the jurisdictional mitigation action charts for the cities of Brownsville, Caledonia, Eitzen, Hokah, Houston, La Crescent, and Spring Grove.

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

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

Number (#)

Each mitigation action is identified by a number.

Hazard

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

Mitigation Strategy

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

- Local Planning and Regulations
- Structure and Infrastructure Projects

- Natural Systems Protection
- Education and Awareness Programs
- Mitigation Preparedness and Response Support

See Table 11 for a description of each mitigation strategy and related types of actions.

Mitigation Action

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

Status

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

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

Mitigation actions that have been completed or deleted from the 2015 Houston County Hazard Mitigation Plan are identified and reported on in Appendix H. Completed and deleted mitigation actions are not carried over into the updated mitigation action chart.

Priority

In the review and discussion of selected mitigation strategies and actions, the planning team ranked mitigation actions by priority for implementation. Table 12 provides criteria that were taken into consideration in the process.

Table 12. Criteria for Mitigation Action Priority Ranking

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

Ranking	Criteria
	<ul style="list-style-type: none"> • There is a very limited range of mitigation measures for the hazard, usually only one feasible alternative. • The mitigation measure(s) have not been proven cost effective and are likely to be very expensive compared to the magnitude of the hazard. • The long-term effectiveness of the measure is not known or is known to be relatively poor.

Time frame

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

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

Responsibility

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

Comments on Implementation & Integration

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

Possible Funding

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

5.3.1 Houston County Mitigation Action Chart

The Houston County Mitigation Action Chart is provided in Table 13. Appendix H provides the mitigation action charts developed for each city participating in the HMP update.

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

Table 13. Houston County Mitigation Action Chart (2024–2028)

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

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
3	All Hazards	Mitigation Preparedness & Response Support	EOP PLANNING Ensure the county's Emergency Operations Plan (EOP) is updated and addresses policies & procedures needed to support EM functions prior to, during, and following a disaster.	Existing High Ongoing	HCEM	Houston County Emergency Management maintains an all-hazards Emergency Operations Plan (EOP) which lays out concepts and operating guidelines for all incident management and support functions that may be needed to ensure life safety, incident stabilization, and property preservation during an incident and the transition to recovery.	County Funding
4	All Hazards	Local Planning & Regulations	FUTURE DEVELOPMENT Incorporate mitigation strategies across county and local government plans and policies that address future growth and new development.	Existing High 2025-2030	HC Envr. Services in coord with local communities	Houston County continues to work closely with surrounding communities to address planning for increased growth and development that will affect emergency response services as well as an increase in vulnerable systems and infrastructure. Houston County uses its Floodplain Ordinance, Shoreland Ordinance, and Transportation plan to address long-term planning for future development.	County Funding
5	All Hazards	Mitigation Preparedness & Response Support	VULNERABLE POPULATIONS Work with county departments, partner agencies, facilities, and local jurisdictions to address planning and outreach efforts for those considered to be more vulnerable to severe weather events.	Existing High Ongoing	HCEM, HC Public Health, Local Jurisdictions	HCEM, GCPH, and local jurisdictions provide outreach to and emergency planning assistance as needed to facilities such as schools and long-term care facilities and mobile home parks. Schools throughout the county participate annually in tornado drills annually. We work in coordination with agencies such as the Red Cross and Salvation Army. HCEM works with Houston County Human Services / Public Health Department and our GIS department to maintain information on the location of key facilities such as hospitals, nursing homes, and day cares.	County Funding other agencies & organizations

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	All Hazards	Mitigation Preparedness & Response Support	<p>GENERATOR BACKUP POWER</p> <p>Install generators at key county facilities to ensure continuity of operations and services in the event of loss of power.</p>	Existing High Ongoing	HCEM, GC Public Works	HCEM and HC Highway Dept continue to work to obtain back up generators as deemed necessary. HCEM encourages local jurisdictions to evaluate and address where backup power is needed.	County Funding
7	All Hazards	Mitigation Preparedness & Response Support	<p>MASS CARE SHELTERING</p> <p>Ensure that plans and designated facilities are in place in order to provide temporary sheltering due to a severe weather or other disaster event.</p>	Existing High 2025-2030	HCEM, HCHS	Houston County Emergency Management works in coordination with HC Human Services, the American Red Cross, and local governments/Fire & EMS to provide mass care services as needed. The county EOP includes plans, procedures, and resources available for mass care sheltering. HCEM is available to provide assistance to local governments on their plans for sheltering.	County Funding
8	Extreme Cold/Heat Temps	Education & Awareness Programs	<p>EXTREME TEMPS PUBLIC OUTREACH</p> <p>Provide outreach and education to the public on personal safety measures to take during periods of extreme cold or extreme heat.</p>	In-Progress High 2024	HCEM, HCHS	HCEM works to share the information received from the La Crosse, WI National Weather Service (NWS) Forecast Office when periods of extreme cold and heat are forecast and occurring. Public education regarding extreme temperatures also occurs during the two NWS Severe Weather Awareness weeks that occur in April and Winter Weather Awareness in November each year.	County Funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
9	Extreme Cold/Heat Temps	Mitigation Preparedness & Response Support	WARMING/COOLING CENTERS Work with local communities to develop plans for operating warming or cooling centers for those who are vulnerable during extreme temperature events.	New High 2025-2030	HCEM in coord with local communities	This is an ongoing part of HCEM’s program in developing greater capacity within communities to deal with extreme temperature or other severe weather events. Communities are encouraged to have plans in place for a local facility (i.e., school, church, community center, Fire Hall) to be designated to operate for temporary sheltering and prepared with backup power and other supplies. HCEM is available to assist communities in this planning as needed.	County and Local Gov’t Funding
10	Severe Winter Storms	Local Planning & Regulations	SNOW & ICE CONTROL Implement snow removal and ice control to ensure the safety of county roads impacted by winter storms.	Existing High 2025-2030	HC Highway Dept.	Houston County Highway Dept. completes its snow removal process in accordance with the Houston County Snow & Ice Control Policy. Other road jurisdictions conduct winter road maintenance on their respective road systems in accordance with each of their established policy and/or practice.	County Funding
11	Severe Summer Storms	Education & Awareness Programs	SKYWARN TRAINING Work with the National Weather Service (NWS) to provide SkyWarn training and develop a network of trained Storm Spotters throughout the county.	Existing High 2025-2030	HCEM in coord with NWS and local communities	HCEM works with the NWS and local communities to offer this training on an annual basis to local fire and law enforcement departments and local residents that wish to be trained as spotters.	National Weather Service

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
12	Severe Summer Storms	Mitigation Preparedness & Response Support	OUTDOOR WARNING SIRENS Ensure outdoor warning sirens are located where needed and functioning properly.	Existing High 2025-2030	HCEM in coord with local jurisdictions	There are outdoor warning sirens located throughout the county. All sirens are tested monthly by the Houston County Sheriff's Office in coordination with local jurisdictions. Warning sirens are owned and maintained by the cities where they are located. HCEM is available to provide assistance to local governments who are looking to update their warning sirens.	County Funding & local jurisdictions
13	Severe Summer Storms	Structure & Infrastructure Projects	STORM SHELTERS / TORNADO SAFE ROOMS Address the need for the construction of storm shelters or tornado safe rooms in areas where residents or visitors are vulnerable to high wind events, such as mobile home parks and campgrounds.	Existing High 2025-2030	HCEM in coord with local jurisdictions	HCEM will assist any mobile home park or community in their effort to assess and address the need for construction of a storm shelter or tornado safe room. Grant funding may be available for tornado safe rooms from FEMA Hazard Mitigation grant program funding.	County Funding, Local Gov't, Possible FEMA Grant Funding
14	Severe Winter & Summer Storms	Structure & Infrastructure Projects	POWERLINE RETROFITS Encourage municipal and rural electric coops to address burying powerlines or strengthening power poles to avoid power outages from high wind events and storms.	Existing High 2025-2030	HCEM, local jurisdictions in coord with electric utility providers	HCEM works with our utility coops and local governments on these efforts as needed. FEMA HMA grant funding may be a source for powerline infrastructure retrofits that eligible rural and municipal electric coops can apply for.	Electric Coops, FEMA HMA

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

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
17	Flooding	Local Planning & Regulations	NATIONAL FLOOD INSURANCE PROGRAM Participate in the National Flood Insurance Program and enforce policies that address development in high-risk flood areas.	Existing High 2025-2030	HC Floodplain Administrator	Houston County Zoning Ordinance, Section 21, Flood Plain District establishes the flood plain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts. The Houston County Zoning Office maintains and enforces the floodplain management ordinance for the county. The ordinance is adopted to comply with the rules and regulations of the National Flood Insurance Program codified as 44 Code of Federal Regulations Parts 59 -78, as amended, so as to maintain the community's eligibility in the National Flood Insurance Program.	County Funding
18	Flooding	Local Planning & Regulations	FLOODPLAIN MAPPING & RISK ASSESSMENT Assess current risk of damages to structures in newly mapped floodplain areas.	Existing High 2025-2030	HC Floodplain Administrator	Houston County's current effective FEMA flood map date is 12/07/2018. The county's Environmental Services Office is the repository for the floodplain maps for the county. The ES Office assists county residents in determining whether their property is affected by an officially mapped flood area.	County Funding
19	Flooding	Local Planning & Regulations / Structure & Infrastructure Projects	LOCALIZED FLOOD RISK REDUCTION Continue to work with communities that experience localized flood damages to address improvements to reduce flood risk.	Existing High 2025-2030	HC Highway Dept. in coord with SWCD	The Houston County Highway Department continues to work with communities to address projects as needed to reduce vulnerability as needed. Examples include construction of storm water basins, instillation of concrete overflow sections along roadways, slope and ditch protection using rip rap, increasing culvert size to handle more storm water runoff, tree removal measures to reduce the amount of trees falling onto roadways.	County, State, and Federal Funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
20	Flooding	Local Planning & Regulations	WATERSHED PLANNING Work with area watershed organizations to address mitigation plans and projects that address risk reduction for localized flooding and erosion.	Existing Moderate 2025-2030	HCEM in coord with SWCD	Houston County has participated in the Root River 1W1P and Winona/La Crescent 1W1P. Both plans address regional watershed planning which include measures for flood mitigation.	SWCD, Watershed District funding
21	Flooding	Local Planning & Regulations	PROPERTY BUYOUTS Conduct property buyouts to acquire homes affected by repetitive flooding and physically relocate or remove those homes to eliminate future flood damages.	Existing Moderate 2025-2030	HCEM	There are currently no potential property buyout projects identified by Houston County. Houston County has not done any past buyouts, but the cities of Cannon Falls, Zumbrota, and Pine Island have conducted property buyouts independently in the past. The county will continue to evaluate and assist with potential future property acquisition projects and application to FEMA or MN DNR for grant funding to conduct buyouts.	Houston County, Possible FEMA Grant Funding
22	Flooding	Structure & Infrastructure Projects	MOUND PRAIRIE TOWNSHIP ROAD IMPROVEMENTS Plan for and implement drainage solutions and other infrastructure improvements to steep roads within the township that are subject to substantial washout, undermining, and erosion from heavy rains.	New High 2025-2030	Mound Prairie Township Board	Mound Prairie Township would like to seek potential FEMA HMA grant funding to help address localized flood risk reduction measures for several steep roads that suffer from high rain events. The township will seek to consult with Houston County Emergency Management about FEMA grant opportunities that we may apply for. We may also seek possible funding from the MN DNR flood hazard mitigation grant program.	Township funding, FEMA HMA grant funding, MN DNR Flood Hazard Mitigation grant funding

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
23	Landslides	Local Planning & Regulations / Natural Systems Protection	SLOPE PROTECTION Continue to monitor and address any areas at risk for slope failure adjacent to vulnerable county-owned roadways.	Existing Moderate 2025-2030	HC Highway Dept.	Houston County Highway Department continues to evaluate and address areas that may have a higher risk of slope failure.	Houston County, Possible FEMA Grant Funding
24	Landslides	Local Planning & Regulations	BLUFFLAND PROTECTION Enforce the Houston County Bluff Land Protection Ordinance to reduce the risk of erosion due to development in sensitive areas.	Existing Moderate 2025-2030	HC Envir. Services	Houston County Zoning Ordinance Section 29.17 prohibits the placement of structures and accessory facilities within bluff impact zones, establishes setback limitations from the top of a bluff and toe of a bluff; establishes that roads, driveways and parking areas must not be located with bluff impact zones, and restricts the removal of natural vegetation within bluff impact zones to prevent soil erosion.	Houston County Funding
25	Drought	Education & Awareness Programs	DROUGHT OUTREACH & EDUCATION Provide outreach and education to residents to be aware of watering restrictions, water conservation tips, and fire safety during periods of severe drought.	Existing High 2025-2030	HCEM	HCEM continues to provide public outreach and education during heightened drought periods using the county website and social media platforms. HCEM encourages city and townships to promote drought awareness to residents at the local level.	Houston County Funding
26	Drought	Local Planning & Regulations	WATERING RESTRICTIONS Implement watering restrictions during periods of drought as per MN DNR guidance.	Existing High 2025-2030	HCEM in coord with MN DNR and local jurisdictions	Houston County and local jurisdictions will establish and enforce watering restrictions as per MN DNR guidelines during periods of severe drought.	County Funding, Local Gov'ts

Section 6 – Plan Maintenance

6.1 Monitoring, Evaluation, and Updating the Plan

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

The Houston County emergency management director (EMD) is the individual responsible for leading all efforts to monitor, evaluate, and update the hazard mitigation plan within the five-year window. Throughout the five-year planning cycle, the Houston County EMD will work with an emergency managers group to help monitor, review, evaluate, and update the HMP. The group will include township representatives and designated city emergency managers from the cities of Brownsville, Caledonia, Eitzen, Hokah, Houston, La Crescent, and Spring Grove, and include other city elected officials or staff as needed. Representatives from agencies or organizations that are involved with related mitigation work in the county as well as those that work with underserved communities or socially vulnerable populations will also be invited to participate in the group. The Houston County EMD will conduct outreach to and communicate with the group on a quarterly basis on emergency management matters regarding severe weather awareness, local preparedness, mitigation, and response & recovery as needed. Additional stakeholders will be added based on need or in response to severe weather events.

If necessary, the Houston County EMD will convene the group to meet on a more regular basis to monitor plan implementation progress and reassess needs and opportunities. This could be done in response to funding cycles of programs that provide resources for hazard mitigation activities. If there is a need for a special meeting due to new developments or a declared disaster occurring in the county, the group will meet to update pertinent mitigation strategies. Depending on Houston County opportunities and fiscal resources, mitigation projects may be implemented independently by individual communities or through local partnerships.

The group will continue to review the HMP goals and objectives to determine their relevance to changing situations in Houston County. In addition, state and federal policies will be reviewed to ensure they are addressing current and expected conditions. The group will also review the risk assessment portion of the plan to determine if this information should be updated or modified. The parties responsible for the various implementation actions will report on the status of their projects, and will include which implementation processes worked well, any difficulties encountered, how coordination efforts are proceeding, and which strategies should be revised.

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

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

6.2 Implementation

Houston County and its included municipalities share a common HMP and work together closely to develop, revise, and implement it. This HMP provides a comprehensive chart of mitigation actions for Houston County and its jurisdictions (see Appendix H and Section 5.3). The cities of Brownsville, Caledonia, Eitzen, Hokah, Houston, La Crescent, and Spring Grove participated in the HMP planning process and identified the specific mitigation strategies that they would seek to implement in their communities during the five-year planning cycle. These mitigation actions are provided in Appendix H.

Several implementation tools are available to address hazards. The strategies to use will be part of an ongoing discussion as Houston County looks for opportunities for plan implementation. The following tools will be considered:

Education: In many cases, education of residents has been identified as one of the most effective mitigation strategies.

Capital Investments: Capital investments such as fire and ambulance equipment, sprinkler systems, and dry hydrants are tools that can limit risks and impacts of natural and manmade hazards.

Data Collection and Needs Assessments: Data collection and needs assessments can aid in gaining a better understanding of threats and allow planning for mitigation strategies accordingly. As resources are limited for this part of the planning process, additional data collection is likely to be an ongoing activity as resources become available.

Coordination: Responsibilities for mitigation strategies run across various county departments, local fire and ambulance departments, city and township governments, and a host of state and federal agencies. Ongoing coordination is an important tool to ensure resources are used efficiently. Coordination can also avoid duplication of efforts or prevent gaps that are created because of unclear roles and responsibilities. The mitigation plan review process can function as a tool to have an ongoing discussion of roles, responsibilities, and opportunities for coordination.

Regional Cooperation: Counties and public safety services providers throughout the region often share similar challenges and concerns. In some cases, a regional approach may be warranted as a mitigation strategy in order to save resources. Mutual aid agreements are a tool already in use for a number of services. Needs assessments for fire and ambulance services and development of assistance for volunteer recruiting, training, and retention could benefit from a regional approach. Cooperation among counties could also help in lobbying for certain funding priorities that address concerns relating to challenges in service delivery in rural areas. Organizations such as FEMA Region 5 and the Minnesota Division of Homeland Security and Emergency Management (HSEM) through the Regional Program Director can offer tools and resources to assist in these cooperative efforts.

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

6.3 Continued Public Involvement

Continued public involvement is critical to the successful implementation of the Hazard Mitigation Plan. The Houston County Emergency Management Director and the emergency managers group will continue to engage new public stakeholders in planning discussions and project implementation during the five-year cycle of this plan.

The Houston County HMP website provides opportunities for continued public involvement and feedback

To seek continued public participation after the plan has been approved and during the five-year window of implementation for this plan, Houston County will take the following measures:

- The Houston County HMP website link will be posted on the Houston County Emergency Management website. The website provides a PDF of the plan for download and an interactive experience for the public to understand the planning process, where county-specific vulnerabilities lie, national best practices, as well as a chance to submit feedback. Collected feedback will be reviewed during the five-year plan cycle and will be noted for future update of the plan or addressed as necessary.
- Following any major storms or natural disasters, Houston County Emergency Management will seek to gather concerns and new ideas for mitigation from local residents to include in the next update of the plan. This may be done through public meetings, outreach via social media, or news releases via local media.
- Each community participating in the plan will be responsible for keeping their local government, schools, and community members updated and engaged in the implementation of their respective mitigation action charts (see Appendix H or the Houston County HMP website). Each respective jurisdiction will be required to report on the status of mitigation actions in their charts to the Houston County EMD.
- Houston County and its jurisdictions will use numerous means of public outreach to engage new public stakeholders in providing input on mitigation concerns, including those from underserved communities or socially vulnerable populations. Outreach methods may include presentations at city council or township board meetings, sharing information at special events, working with local schools and partner organizations, and posting information in areas that are used to communicate with the public (bulletin boards, websites, social media, and local media sources that communities use to inform and engage the public). As mitigation projects are implemented, jurisdictions will work to keep the public updated and engaged in those local efforts.

Appendices

Appendix A – References

Appendix B – Adopting Resolutions

Appendix C – Local Mitigation Survey Report

Appendix E – Past Mitigation Action Review Status Report

Appendix F – Planning Team Meetings

Appendix G – Public Outreach & Engagement Documentation

Appendix H – Mitigation Actions by Jurisdiction

Appendix A – References

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Appendix B – Adopting Resolutions

Appendix C – Local Mitigation Survey Report



HOUSTON COUNTY

MINNESOTA

Houston County Local Mitigation Survey Report

Overview

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

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

LMS Forms

Houston County	Yes
City of Brownsville	Yes
City of Caledonia	Yes
City of Eitzen	Yes
City of Hokah	Yes
City of Houston	Yes
City of La Crescent	Yes
City of Spring Grove	Yes

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

Houston County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: HOUSTON COUNTY

Point of Contact:

Name: Mark Olson
 Job Title: Emergency Management Director
 Phone: (507) 725-5834
 Email: mark.olson@co.houston.mn.us

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

On December 15, 2021 Houston County experienced extensive damage from a severe storm with high winds that included a tornado.

On July 23, 2022 Houston County was impacted by severe storms with high winds, heavy rains, and a tornado causing extensive damage to the public infrastructure.

On August 24, 2022 Houston County was impacted by severe storms with heavy rains and flooding causing extensive damage to the public infrastructure.

Beginning on April 17, 2023 Houston County experienced extensive damage from spring time Mississippi River floodwaters.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
Flooding	The City of La Crescent, Shore Acres area is prone to flooding when the Mississippi River levels are high. Homes in this area rely on sewage pumps to remove waste water. When the river floods these pumps are often unable to function because the electricity powering them is underwater.
Windstorms, Tornadoes, Flooding	Houston County has a long history of county and township roadways and bridges being washed out or damaged during high wind events.
Windstorms, Tornadoes, Blizzards, and Ice Storms	A large amount of Houston County’s electrical service consists of overhead power lines and electrical poles. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches.

4. REDUCTION IN VULNERABILITY

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

Houston County encourages businesses, residents, childcare providers, event center owners, campground and resorts, and area nursing homes to enroll in the county’s emergency notification system so they will be aware of dangerous storm events.

The county has also increased use of its website and Facebook page to communicate with residents on emergency preparedness.

The county highway department has added slope protection to reduce the risk of slope failures to buildings and roadways.

The Houston County Highway Department done multiple projects over the past decade to reduce vulnerability such as construction of storm water basins, instillation of concrete overflow sections along roadways, slope and ditch protection using rip rap, increasing culvert size to handle more storm water runoff, tree removal measures to reduce the amount of trees falling onto roadways.

5. INCREASE IN VULNERABILITY

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

Houston County has experienced and increased number of severe storms over the past decade resulting in increased damage to roadways and infrastructure.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

Houston County Emergency Management utilizes the Houston County website, Houston County EM Facebook page, and local news media to communicate with residents, visitors, schools, and long-term care facilities on emergency preparedness, severe weather, and other hazard conditions throughout the year. The Houston County Emergency Management website page provides emergency preparedness information and resource links for the public.

2. EMERGENCY NOTIFICATION SYSTEM

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

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

3. LOCAL PLANS & POLICIES

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

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

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

Snow Removal & Ice Control: The Houston County Transportation Department conducts winter road maintenance on county roads in accordance with the Houston County Snow & Ice Control Policy.

Bluff Land Protection Ordinance: Houston County Zoning Ordinance Section 29.17 prohibits the placement of structures and accessory facilities within bluff impact zones, establishes setback limitations from the top of a bluff and toe of a bluff; establishes that roads, driveways and parking areas must not be located with bluff impact zones, and restricts the removal of natural vegetation within bluff impact zones to prevent soil erosion.

Floodplain Ordinance: Houston County Zoning Ordinance, Section 21, Flood Plain District establishes the flood plain district and zoning regulations and conditional uses permitted within the floodway, flood fringe, and general floodplain districts. The Houston County Zoning Office maintains and enforces the floodplain management ordinance for the county. The ordinance is adopted to comply with the rules and regulations of the National Flood Insurance Program codified as 44 Code of Federal Regulations Parts 59 -78, as amended, so as to maintain the community's eligibility in the National Flood Insurance Program.

Shoreland Ordinance: Houston County Zoning Ordinance, Section 22, Shoreland Zoning District establishes allowable uses and development standards in shoreland areas designated within the county. In addition to establishing setback requirements, the ordinance specifies that local shoreland controls must regulate placement of structures in relation to high water elevation for flood protection.

Transportation Plan: The Houston County Highway Department maintains update of the county's Transportation Plan (2023 – 2026). Slated construction projects are also provided on the Highway Dept. website page.

Minnesota Buffer Law: The Houston SWCD administers the state Buffer Law and provides technical assistance on buffer compliance by landowners. Buffers benefit bank stabilization and reduced erosion and sedimentation into ditches, streams, rivers, and lakes.

One-Watershed One Plan (1w1P): Houston County has participated in the Root River 1W1P and Winona/La Crescent 1W1P. Both plans address regional watershed planning which include measures for flood mitigation.

4. STAFF & PARTNERSHIPS

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

Houston County departments work together to accomplish mitigation goals through integrated policies and programs. Key departments include Houston County Emergency Management, Houston County Sheriff's Office, Houston County Highway Department, Houston County Environmental Services/Planning & Zoning, Houston County Human Services/Public Health, Houston County Administration, and the Root River Soil and Water Conservation District.

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

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

Houston County Emergency Management coordinates with local school districts as needed on related emergency planning and preparedness, including support for specific trainings, exercises, equipment, and relay of county-level emergency notifications.

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

Houston County, in particular the Highway and Zoning Departments, along with the Root River SWCD, works closely with State and Federal agencies, such as the United State Army Corps of Engineers, MPCA, MNDNR, and MNDOT in reviewing and planning proposed projects.

5. PROGRAMS IN PLACE

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

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

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

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

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

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

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

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

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

6. FUNDING & OTHER RESOURCES

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

Local funding has been used for mitigation along roadways for culvert replacement and enhancing drainage through ditching efforts. Local, State (Local Bridge Replacement Program & GO Bond funds) and Federal (Bridge Off-System and STIP) funds have been used to replace bridge structures with larger structures to improve drainage caused by restrictions with undersized bridges. Local, State and Federal funding has also been used in the construction of detention and retention basins within the county.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

Landslides – Houston County Highway Department continues to evaluate and address areas that may need slope protection to reduce the risk of slope failures to buildings and roadways.

Windstorms/Tornadoes – Work with local jurisdictions to address areas that are in need of outdoor warning sirens.

All-Hazards – Continue to promote residents to sign up for CodeRed and to be prepared for severe storm events. Work with local jurisdictions to obtain generator backup power for critical facilities where needed.

Flooding – Continue to work with communities that experience localized flood damages (such as La Crescent) to address improvements to reduce flood risk. The Houston County Highway Department continues to address projects as needed to reduce vulnerability such as construction of storm water

basins, instillation of concrete overflow sections along roadways, slope and ditch protection using rip rap, increasing culvert size to handle more storm water runoff, tree removal measures to reduce the amount of trees falling onto roadways.

The city of La Crescent is working with the state and FEMA from a flood event from last spring. They have mentioned some interest in mitigation projects for the affected area such as raising the roadway and work to the sewer system.

2. GAPS OR DEFICIENCIES

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

Large portions of our county are not covered by outdoor warning sirens. Along with this, a large number of citizens across the county are not signed up for emergency notifications through CodeRed.

Backup Power: Not all county, city, and other support facilities (e.g., public safety/emergency services stations, etc.) have generator backup power in the event of extended power outages. County and local government funding to purchase generators is limited.

Project Funding: Finding funding for the implementation of mitigation projects is a barrier. The county, townships, and cities have limited funding for mitigation activities.

PART D: SURVEY PARTICIPANTS

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

Mark Olson, Houston County Emergency Management Director
Brian Pogodzinski, Houston County Engineer

Houston County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF BROWNSVILLE

Point of Contact:

Name: Jean Meyer
 Job Title: Mayor
 Phone: 507-450-6038
 Email: jeanm@acegroup.cc

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

Natural Hazard	Use an "X" to select the hazards that pose the greatest risk to your jurisdiction.	Please indicate if the hazard is of high, moderate, or low priority.	Do feel that this hazard has increased, decreased, or had no change?
Flooding	X	High	No change, seasonally dependent on Mississippi River levels
Winter Storms		Low	No Change
Tornadoes		Low	No Change
Windstorms		Low	No Change
Lightning		Low	No Change
Hail		Low	No Change
Extreme Cold	X	Moderate	More polar vortexes are creating more dangerously low temperatures and attempt to fight fires with water in extreme cold is problematic.
Extreme Heat		Low	No Change
Drought		Low	No Change
Wildfire	X	Moderate	As climate changes to be warmer and drier this is increasing.

Landslides	X	Moderate	No change. 2 nd St. and Mississippi St. west hillside specifically. Seasonally dependent on amount of moisture.
Dam/Levee Failure			No Change

2. RECENT HAZARD EVENTS

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

2022 Tornado went through and put many trees down over the road and power lines.

2021 & 2023 Mississippi River flooding had the fire department filling sand bags to help local residents and businesses near the river attempt to dam and mitigate rising flood waters.

2023 Rising river waters caused a rat infestation in town.

2019 Wild land fire at the brush dump that was moving towards the city waste water treatment plant.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
All Hazards	We need to obtain a portable generator for our City Hall and Community Center that serves as our local shelter if people are displaced from a severe storm event or extended power outage. We also have a large population of senior citizens that do not use cell phones to receive emergency notifications.
Flooding	We have several city lift station that is prone to flooding during high rain events. Residents, boathouses and businesses are vulnerable to flooding and have been damaged in the past. There are annual flooding issues at Harbor Lights and local access roads to boathouses north and south of Brownsville, a new culvert is needed and has been attempted but the railroad is causing delays. Sandbags are getting old and we have issues tying them shut, new sandbags will be needed in the next year.
Ice Storms	Much of the city's municipal electrical service consists of overhead power lines and electrical poles. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches.
Windstorms and Tornadoes	We have 1 mobile home park within the city that does not have a storm shelter and residents are vulnerable to high wind and tornado events. Our county campground is active during summer and fall months with RVs and campers and does not have a storm shelter. We also have new development in the west end of the city that should have an outdoor warning siren installed. Current warning sirens are at the ballpark (to the west) and the waste water treatment plant (to the East). We have

	experienced power outages from strong wind events that brought down power lines.
Extreme Cold	We have a high population of senior citizens and also low-income residents who are more vulnerable during periods of extreme cold with power outages. In the past we have experienced frozen water services and some residential homes experienced burst pipes from extended extreme cold. The city has experienced damages to roads from spring frost heaves, frozen culverts that cause localized flooding. Extreme cold causes water lines and water supplies to freeze making fire fighting problematic. People also get more “creative” about heating homes and residences in the

4. REDUCTION IN VULNERABILITY

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

Since the last survey we have not completed any projects reducing the vulnerabilities listed above.

5. INCREASE IN VULNERABILITY

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

9 more residences were added on Brook St. which could potentially be vulnerable to landslides off the hill.

Residents are continuing to dig into the hillside of 2nd St. to Mississippi St. and they are clearing the vegetation which could lead to an increase in landslides.

There is continued growth in Harbor Lights adds more residences and population.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

We post information on our city website and Facebook page. We also post information on bulletin boards at the Senior Center, Community Center/City Hall and at the Post Office. We make announcements at City Council meetings and post flyers on our community bulletin board outside of City Hall. We also work with the county to use their emergency alert system to communicate digitally with residents. The local Fire & Rescue department trains and has protocols about going door to door to alert residents of hazardous situations.

2. EMERGENCY NOTIFICATION SYSTEM

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

We have a plan in place to add fliers to our announcements boards and the web page to have people go to the county's link to the county's sign-up page. We include information on emergency notification sign-ups twice annually in utility bills. Our city does not do this currently, but we plan to post a flyer on it at City Hall, the Senior Center, and put a link our city website and utility bills. The siren system is in place to warn people of emergencies.

3. LOCAL PLANS & POLICIES

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

Discussions have begun on developing a comprehensive survey for the residents but currently 3 of the 5 council members do not see value in moving forward with this project at this time. There are hopes to bring this issue back to the council again in 2024.

The city has started in 2023 to refer to and enforce the ordinance on the flood plan (harbor lights) and the bluff lands (Hillside facing east of the Mississippi).

4. STAFF & PARTNERSHIPS

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

The fire and rescue department has standing aid agreements with local neighboring fire and rescue departments to provide aid to each other during emergencies.

The maintenance department will respond to emergencies working with the local fire & rescue departments.

The fire and rescue department has standing aid agreements with the MN State DNR for responding to wild land fire emergencies.

The city has been working with the MN DOT on the stabilization of the banks along Hwy 26.

We would like to work with the county emergency manager on any other type of mitigation related projects.

5. PROGRAMS IN PLACE

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

The fire & rescue department completes prescribed burnings. The fire & rescue department trains on evacuation of residents.

6. FUNDING & OTHER RESOURCES

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

The city primarily uses its own budget to address mitigation projects, such as replacement of culverts.

Local donations, federal grant money, state grant money and county grant money has helped the fire and rescue department update emergency equipment and provide training to department members.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

Windstorms/Tornadoes - Work with the local mobile home park owner to construct a storm shelter or tornado safe room. We need to develop an evacuation and sheltering plan with the mobile home park.

Flooding – Plan for new storm sewer upgrades as construction projects and purchase additional pumps in the event of flooding. Work with the city and county engineer on local flood reduction measures.

Drought – Establish and enforce watering use restrictions when in periods of severe drought. Follow state burn regulations.

Severe Winter / Summer Storms – Post information on the city’s website and local bulletin boards to encourage residents to sign up for the county’s emergency notification system. Participate in the National Weather Service’s – Severe Weather Awareness Weeks. Research acquiring a portable generator for our Community Center, which is our designated community mass care shelter.

Extreme Cold – Encourage residents to be prepared for periods of extreme cold and potential power outages. Use our city website and utility bills to notify residents to avoid freezing pipes during sub-zero weather.

Landslides: Continued enforcement of mitigation of the bluff land system.

Wildfire: Work to increase public awareness of State burning conditions and understanding when it’s not safe to burn. Continued training and equipment with our fire department to address the need for water resources outside of the municipal water system.

2. GAPS OR DEFICIENCIES

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

Not all our residents are signed up for the county's emergency notification system. Not all residents have cell phones or access to internet.

The city needs significant funding to mitigate from losses to flooding and landslides.

We need to create and implement a city's Comprehensive Plan to address considerations for future hazard events.

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

PART D: SURVEY PARTICIPANTS

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

Jean Meyer, Mayor

Brandon Frank, Fire & Rescue Dept.

Dean Twite, Maintenance Supervisor

Houston County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF CALEDONIA

Point of Contact:

Name: Jake Dickson
 Job Title: City Administrator
 Phone: 507-725-3450
 Email: jdickson@caledoniamn.gov

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

In June 2022 the City experienced damages from a severe thunderstorm and fallen trees, presenting danger to motorists and homes.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
All Hazards	We are maintaining our Fire and Ambulance fleet.
Flooding	Maintaining and expanding stormwater infrastructure.
Ice Storms, Blizzards	Much of the city's municipal electrical service consists of overhead power lines and electrical poles. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches.
Windstorms and Tornadoes	3 mobile home parks with insufficient storm shelters throughout town
Extreme Cold	We have experienced frozen water service lines, water main breaks
Lightning	Overhead powerlines, trees, communications water, wastewater and all city infrastructure.
Hail	Any and all structures
Wildfire	Our City is surrounded by cropland and trees that are susceptible to wildfire.

4. REDUCTION IN VULNERABILITY

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

Cutting trees away from powerlines annually and improving stormwater infrastructure and frequent waterway projects.

5. INCREASE IN VULNERABILITY

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

Changes in weather patterns

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

We utilize City website, Facebook, and local newspaper.

2. EMERGENCY NOTIFICATION SYSTEM

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

No.

3. LOCAL PLANS & POLICIES

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

We enforce local zoning regulations and carry out our comprehensive plan with regards to the environment. We use MN Fire Code for fire safety.

4. STAFF & PARTNERSHIPS

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

The City public works departments perform their own mitigation work year round. We partner with conservation districts to fund waterway and water conservation projects.

5. PROGRAMS IN PLACE

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

Each year the Electric Department contracts tree cutting for large trees near power lines and performs its own tree trimming year round. Other organization within Caledonia like the School District perform their own emergency drills and programs.

6. FUNDING & OTHER RESOURCES

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

The city primarily uses its own budget to maintain storm water infrastructure but has partnered with conservation districts for waterway project funding.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

Flooding- continue to work with MN DNR and Root River soil and water

Ice storms and blizzards- bury powerlines as major street projects happen.

Windstorms and Tornadoes-

Lightning-NA

Hail- NA

Wildfire-recommend developing vacant land to mitigate fire risk

Drought- enforcing our emergency water use restrictions

2. GAPS OR DEFICIENCIES

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

We are a small city with limited reserves and no funding for major disaster contingencies.

PART D: SURVEY PARTICIPANTS

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

Jake Dickson, City Clerk/Administrator
Casey Klug, Public Works/Zoning Director

Houston County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF EITZEN

Point of Contact:

Name: Steve Schuldt
 Job Title: City Clerk
 Phone: 507-495-3017
 Email: eitzen@acegroup.cc

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

Extreme winter cold weather that resulted in frozen water lines.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
All Hazards	We need to obtain a portable generator for Community Center that serves as our local shelter if people are displaced from a severe storm event or extended power outage.
Ice Storms, Blizzards	Municipal electrical service consists of overhead power lines and electrical poles susceptible to snow load and high winds.
Windstorms and Tornadoes	Windstorms have caused property damage in the past both private and municipal.
Extreme Cold	In the past we have experienced frozen water services and some residential homes experienced burst pipes from extended extreme cold. The city has experienced damages to water lines due to extreme cold.

4. REDUCTION IN VULNERABILITY

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

No pending improvements.

5. INCREASE IN VULNERABILITY

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

No increased vulnerability.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

We post information on our city website. We also post information on bulletin boards at the Post Office.

2. EMERGENCY NOTIFICATION SYSTEM

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

No, our city does not do this currently, but we could post a flyer on it at the Post Office and put a link our city website.

3. LOCAL PLANS & POLICIES

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

The city enforces a building ordinance. There is no provision for climate change.

4. STAFF & PARTNERSHIPS

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

Our Fire Chief is the city's designated Emergency Manager. Our City Council includes a Public Safety Committee. We have a city engineer and a public works director that address road maintenance issues for flooding (culverts, repetitive flooding). We have our own municipal utility that is responsible for mitigating against power outages. We have worked with the SWCD to address stormwater issues. We have worked with the county emergency manager to address upgrade of our outdoor warning siren.

5. PROGRAMS IN PLACE

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

Our city works with the county to participate in the National Weather Service's annual Severe Winter/Spring Weather Awareness Week by posting severe weather awareness.

6. FUNDING & OTHER RESOURCES

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

The city primarily uses its own budget to address mitigation projects, such as replacement of culverts. We have also worked closely with the county highway engineer on local flood mitigation projects for roads and the county zoning department.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

Windstorms/Tornadoes – No upgrades needed.

Drought – Establish and enforce watering use restrictions when in periods of severe drought.

Severe Winter / Summer Storms – Post information on the city’s website and local bulletin boards to encourage residents to sign up for the county’s emergency notification system. Acquire a portable generator for our Community Center, which is our designated community mass care shelter.

Extreme Cold – Encourage residents to be prepared for periods of extreme cold and potential power outages. Use our city website and utility bills to notify residents to avoid freezing pipes during sub-zero weather.

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

2. GAPS OR DEFICIENCIES

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

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

PART D: SURVEY PARTICIPANTS

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

Steve Schuldt, City Clerk

Houston County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF HOKAH

Point of Contact:

Name: Lindsey Martell
 Job Title: City Clerk
 Phone: 507-894-4990
 Email: cityclerk@acegroup.cc

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

In August, 2018, the city had severe thunderstorms and we received 8 inches of rain in a short period of time. The storm water runoff caused rivers, creeks and ditches to exceed capacity and cause damage to several areas in town. The damage included erosion, damage to equipment and fences, damage to

treatment plant equipment, waterfall hillside to fall out. In July, 2019, the City had a large rainfall which flooded our Como Falls Park. The path, dirt and lawn were washed out. We also had a sewer line in one of the alleys sink away. In July, 2023 we had severe thunderstorms produce large hail and damaging winds with heavy rainfall. This caused trees to fall and leave debris throughout the city streets and park.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
All Hazards	We need to obtain a portable generator for our City Hall and Community Center that serves as our local shelter if people are displaced from a severe storm event or extended power outage. We also have a large population of senior citizens that do not use cell phones to receive emergency notifications.
Flooding	We have a city lift station that is prone to flooding during high rain events. The city park is vulnerable to flooding and park equipment has been damaged in the past.
Ice Storms, Blizzards	Much of the city’s municipal electrical service consists of overhead power lines and electrical poles. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches.
Windstorms and Tornadoes	We have 1 mobile home park within the city that does not have a storm shelter and residents are vulnerable to high wind and tornado events. We have experienced power outages from strong wind events that brought down power lines.

4. REDUCTION IN VULNERABILITY

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

The City Staff continue to evaluate trees in town that need trimming to prevent limbs that might be hazardous.

5. INCREASE IN VULNERABILITY

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

NA

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

We post information on our city website and Facebook page and on our bulletin boards at the City Center Office and Post Office. We also have a digital sign located in front of our Fire Station. We make announcements at City Council meetings and post flyers on our community bulletin boards.

2. EMERGENCY NOTIFICATION SYSTEM

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

The County provides emergency notification systems. We need to update the information to encourage the community to sign up.

3. LOCAL PLANS & POLICIES

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

We do not have plans in place as described above.

4. STAFF & PARTNERSHIPS

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

Our Police Chief is the designated Emergency manager, and our part time police officer has also completed the emergency management training. We have worked with the county emergency manager to address upgrades of our warning siren.

5. PROGRAMS IN PLACE

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

We do not have plans in place as described above.

6. FUNDING & OTHER RESOURCES

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

The city primarily uses its own budget to address mitigation projects. The city has worked with HSEM to request funding for the Natural Hazard Emergency events.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

Flooding: Implement new storm sewer upgrades in the event of a storm. Work with the city and county engineer on local flood reduction measures.

Severe Winter/Summer Storms: Post information to encourage residents to sign up for the County's emergency notification systems. Acquire a portable generator for our City Center space.

Drought: Establish watering use restrictions when in periods of severe drought.

2. GAPS OR DEFICIENCIES

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

We are a small city with limited financial and staff resources. Not all of our residents are signed up for the county's emergency notification system. The city needs to update our Comprehensive plan to address future hazard events such as flooding.

PART D: SURVEY PARTICIPANTS

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

Lee Tippery, Mayor

Lindsey Martell, City Clerk/Treasurer

Bob Schuldt, Police Chief/Emergency Manager

Houston County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF HOUSTON

Point of Contact:

Name: Michelle Quinn
 Job Title: Clerk/Administrator
 Phone: 507-896-4033
 Email: mquinn@houstonmn.us

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

Natural Hazard	Use an “X” to select the hazards that pose the greatest risk to your jurisdiction.	Please indicate if the hazard is of high, moderate, or low priority.	Do feel that this hazard has increased, decreased, or had no change?
Flooding	x	high	Increased with changing weather patterns
Winter Storms	x	Moderate	No change
Tornadoes	x	Moderate	No change
Windstorms	x	High/moderate	Increased due to recent experience with a windstorm in July 2022
Lightning	x	Moderate	No change
Hail	x	moderate	No change
Extreme Cold	x	moderate	No change
Extreme Heat	x	high	No change
Drought	x	low	Increased due to low moisture levels experienced in 2023
Wildfire	x	Low	Increased due to low moisture levels experienced in 2023
Landslides	x	low	No change

Dam/Levee Failure	x	high	No change but always of significant concern due to fact the town is protected by a levee system
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2. RECENT HAZARD EVENTS

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

On Saturday, July 23, 2022, the City of Houston experienced a weather event resulting in high winds and heavy rains causing significant damage to the urban tree canopy. The widespread damage across Houston County resulted in the state issuing a disaster declaration due to severe thunderstorms with damaging winds, heavy rains, and flooding.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
	No local vulnerabilities to report.

4. REDUCTION IN VULNERABILITY

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

Currently, the city is in the final stages of recertifying the levee which protects the community to ensure it meets the needs. In addition, the city public works actively maintains the structure through monitoring, maintenance to ensure all gates, pumps etc are in proper condition and working order. The FD assists with annual burning to mitigate woody plant growth which may impact the levee integrity and to allow for inspection for damage due to burrowing animals. Sewer upgrades help reduce the high flows at the wastewater treatment plant during heavy rain events.

The city is also in the process of lining the sewer main along Cedar Street which will mitigate I & I requiring processing through the wastewater treatment plant. They are also planning for improvements to CSAH 13/Spruce Street in the city boundary which will further mitigate I & I once complete.

5. INCREASE IN VULNERABILITY

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

The city has minimal growth resulting from new housing. The increased vulnerabilities facing the community are changing weather conditions resulting in more severe weather events.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

We post information to our city website and Facebook page, public boards at both City Hall and the Public Library.

2. EMERGENCY NOTIFICATION SYSTEM

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

The city is part of the county storm siren infrastructure. The county regularly tests the storm sirens on the first Wednesday of each month. The city does not actively promote residents to sign up for the county's emergency notification system however, it is something that could be done.

3. LOCAL PLANS & POLICIES

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

The city adopted and enforces the MN State Building Code and City code zoning requirements. It also contracts with CMS for building inspector services to ensure compliance. The city has a comprehensive plan which is due for update and a long term infrastructure plan.

4. STAFF & PARTNERSHIPS

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

Our Chief of Police is the city's designated Emergency Manager. The City Emergency Operations Plan was recently updated. The city partners with the US Army Corp of Engineer's to ensure levee integrity. The structure underwent an inspection by the Corp in summer 2023. The city works with the county emergency management office. The city works with its engineer to continually review projects and the potential impact on interior drainage and to ensure projects meet needs of changing weather patterns.

5. PROGRAMS IN PLACE

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

This is an area the city could do better in. Street projects do include structure for sump pump drainage from laterals into the appropriate infrastructure. The city maintenance actively sweeps streets to ensure leaf litter does not clog storm catch basins.

6. FUNDING & OTHER RESOURCES

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

The city primarily uses its own budget to address mitigation projects.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

- The city is in the process of lining the sewer main along Cedar Street which will mitigate I & I requiring processing through the wastewater treatment plant. They are also planning for improvements to CSAH 13/Spruce Street in the city boundary which will further mitigate I & I once complete.
- The city does make the community center available for residents for warming/cooling during extreme cold/heat.
- The city follows rural water resources recommendations during periods of low precipitation and shares tips with residents via water bills notes, city website and Facebook.
- The city has a tree board and tree inspector. The tree inspector routinely inspects the urban canopy to ensure trees which remain are healthy in hopes they are able to withstand winds.

2. GAPS OR DEFICIENCIES

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

These have been included in above narratives throughout.

PART D: SURVEY PARTICIPANTS

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

Michelle Quinn, Clerk/Administrator
Brett Hurley, Chief of Police/City Emergency Manager
Randy Thesing & Josh Hongerholt, Public Works/Maintenance Staff

Houston County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF LA CRESCENT

Point of Contact:

Name: Tyler Benish
 Job Title: Public Works Director
 Phone: 507-895-4971
 Email: TBenish@cityoflacrescent-mn.gov

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

Spring 2023: Flooding of the Mississippi River causing damage to low pressure sewer pumps, bike path and minor road damage. Declared disaster number DR4722MN.

Spring 2019: Flooding of the Mississippi River causing damage to low pressure sewer pumps, and road damage. Declared disaster number DR4442MN.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
All Hazard	The city needs to obtain a generator for our Fire Station/community building and City Hall/Police department.
Flooding	The city experiences localized flooding from increased intensity during rain event. Flooding of the Mississippi River along shore Acres Rd. has led to disaster declarations, the city will need outside funding to mitigate further damage.
Ice Storms, Blizzards	The city has experienced power outages from falling branches and trees from snow and ice, The city does not own the power utility.
Windstorms and Tornadoes	The city has 2 mobile home parks, 1 has a storm shelter on-site and 1 does not.
Lightning	The city's water system has experienced communication outages due to lightning strikes.

4. REDUCTION IN VULNERABILITY

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

The city council has approved the purchase and installation of an emergency siren to better serve the north end of La Crescent.

The city was awarded a climate resiliency grant to study and identify vulnerabilities due to changing climate.

The development of Horse Track Meadows has extended the municipal water system farther west, the extension will support the Fire department with availability of water along an area not previously served.

5. INCREASE IN VULNERABILITY

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

Between 2020 and 2024 Horse Track Meadows has developed approximately 60 with another 15 sites to be developed. Approximately ½ of the homes are slab-on-grade, those homes will not have an emergency area during high wind or tornado events.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

The city posts information on it's website, the City, Police and Fire department post information on each of the department Facebook accounts. The city sends out a newsletter 2 times a year.

2. EMERGENCY NOTIFICATION SYSTEM

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

The city has a link on our website to Houston county's emergency management website. The city could hand out flyers at awareness events instructing how to sign up for notifications.

3. LOCAL PLANS & POLICIES

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

The City has adopted Comprehensive plan (2016), Bluff land plan (2017), Park and Recreation plan (2022). The City is a member of the La Crosse Area Planning Committee which has a Metropolitan Transportation Plan (2020). The Building and Zoning Department enforce the MN State Building Code, city ordinances and construction stormwater. The City has a Sustainability Coordinator that manages the City's stormwater outreach and education plan. The city also was awarded a climate resiliency grant to study and identify vulnerabilities due to changing climate.

4. STAFF & PARTNERSHIPS

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

The Police Chief is the city's designated Emergency Director. The city has worked with Houston county's Emergency Management Director, leading up to disasters and during emergencies. The city has a grant through MPCA for our engineer to study climate resiliency to address localized flooding due to changing storm patterns.

5. PROGRAMS IN PLACE

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

Our Fire, Police and City social media accounts post awareness information related to Fire prevention, severe weather and other hazards. The Fire department does fire prevention presentations in local schools as well as host an open house to raise awareness. Our local schools participate in tornado and fire drills annually.

6. FUNDING & OTHER RESOURCES

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

The city has primarily used its own budget to address mitigation projects. Mitigation efforts are coordinated with other improvement projects. The City of La Crescent has approved funds from PSA to purchase a new emergency siren. The City of La Crescent has received a climate resiliency grant to identify mitigation needs.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

- Windstorms/ Tornadoes - Work with mobile home park owner to construct an emergency shelter, and develop an evacuation plan.
- Flooding - Shore Acres Road and sewer pumps along Shore Acres Rd. need to be raised to eliminate future disasters. Improve the stormwater conveyance system to reduce localized flooding.
- Drought - Encourage residents to use low flow water fixtures to reduce demand on the municipal water system.
- Severe winter/Summer storms - Acquire a generator for the community building and fire department to provide an emergency operation center and shelter in the event of extended power outages.
- Extreme Cold - Increase notifications to residents that may be affected by extreme cold events.

2. GAPS OR DEFICIENCIES

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

The City of La Crescent has limited funds to do large mitigation projects. Not all residents know about the county emergency notifications.

PART D: SURVEY PARTICIPANTS

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

Luke Ahlschlager, Chief of Police/ Emergency Director

Tyler Benish, Public Works Director

Houston County

LOCAL MITIGATION SURVEY

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

Name of Jurisdiction: CITY OF SPRING GROVE

Point of Contact:

Name: Jana Elton
 Job Title: City Administrator
 Phone: 507-498-5221
 Email: Jana@springgrovemn.com

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. HAZARD IDENTIFICATION

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

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

2. RECENT HAZARD EVENTS

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

December 22, 2022 the City of Spring Grove suffered a fire to the downtown business district resulting in displacing 12 residents out of their homes and losing our hardware store building and business. All

property was declared a total loss along with an adjacent building that also suffered damage. That building was also torn down.

3. LOCAL VULNERABILITIES

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

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets (infrastructure, systems, or populations) that are susceptible to damage or loss from hazard events.
All Hazards	We need to obtain a portable generator for our City Hall and Community Center that serves as our local shelter if people are displaced from a severe storm event or extended power outage. A generator for our wells would also be of need so during certain events residents can still receive water. We also have a large population of senior citizens that do not use cell phones to receive emergency notifications.
Flooding	Storm drains will sometimes flood if debris is caught in it. Due to a flood or a storm, sometimes the lift station will flood due to power outage.
Ice Storms, Blizzards	Much of the city’s municipal electrical service consists of overhead power lines and electrical poles. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches.

4. REDUCTION IN VULNERABILITY

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

The city started a street project in 2023 and will be completed in 2024 which replaced a street including new water, sewer, streets, curb and gutters. This should help with water drainage and any other issues relating to infrastructure along that street.

5. INCREASE IN VULNERABILITY

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

Nothing new to add.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. PUBLIC OUTREACH

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

When the city had the fire downtown, the city had Spring Grove Communications text each cell phone within our city for updates. The city was also in tandem updating the Facebook page. There were

volunteers taking quadrants within the city to go knock on doors of the elderly to see if they needed any assistance who may not have the means to receive electronic emergency notifications.

2. EMERGENCY NOTIFICATION SYSTEM

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

We did have an event where we did give out the County emergency notification information. We have not done so since, which this prompts me to promote this further.

3. LOCAL PLANS & POLICIES

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

The city's Planning and Zoning Department enforces the City Code zoning requirements for new developments and updating for old developments. We have a recently updated Comprehensive Plan that is designed to plan for the future physical growth of the city and appropriate land uses.

4. STAFF & PARTNERSHIPS

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

Our Fire Chief is the city's designated Emergency Manager. We have a city engineer and public works director that address road maintenance issues for flooding. Our utilities department is responsible for mitigating against power outages.

5. PROGRAMS IN PLACE

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

Our city spreads information through our Facebook page for outreach in all concerning topics related to home care than can reduce the risk of power outages.

6. FUNDING & OTHER RESOURCES

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

The city uses its own budget to address mitigation projects and is continually looking for grants to help with projects.

PART C: LOCAL MITIGATION PROJECTS

1. LOCAL MITIGATION PROJECTS

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

The city will continue to reach out via Facebook during emergencies. The city will also encourage to sign up for the Houston County Emergency Management notifications.

The city started a street project in 2023 and will be completed in 2024 which replaced a street including new water, sewer, streets, curb and gutters. This should help with water drainage and any other issues relating to infrastructure along that street.

Continue to enforce the City Code zoning requirements for new developments and updating for old developments.

2. GAPS OR DEFICIENCIES

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

The city no longer has a local newspaper and the biggest complaint that we do receive is lack of communication. Not all receive the newspaper. We are looking at creating a newsletter to send to residents to try and get more information out that may not have social media. We do have a Facebook page, a website, and a designated newspaper but not all receive it.

PART D: SURVEY PARTICIPANTS

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

Jana Elton, Spring Grove City Administrator

Appendix D – Plans & Programs in Place

Houston County

HMP Plans & Programs in Place Form

EMERGENCY PLANNING CAPABILITIES	Yes/No	Comments
Emergency Mass Notification System	Yes	CodeRED
Outdoor Warning Sirens (#'s and location)	Yes	Brownsville – 1 Caledonia – 1 Eitzen – 1 Hokah – 1 Houston – 1 La Crescent – 1 Spring Grove – 2 Money Creek Twsp – 1 LaCrescent Twsp – 1
Emergency Operations Plan (EOP)	Yes	County EOP is updated annually
Mass Care Sheltering Plan / List of Shelter Facilities	Yes	Addressed in EOP and in coordination with local jurisdictions
Tornado Safe Rooms / Storm Shelters	No	Addressed in coordination with schools & local jurisdictions with local vulnerabilities
NWS Weather Ready Nation / StormReady Certification	Yes	Weather Ready Ambassador with the NWS
Coordination with Schools	Yes	Tornado Drills, other trainings
Coordination with Neighboring County/Tribal Jurisdictions	Yes	Annual regional planning and training; statewide AMEM conference
Coordination with Local / Regional Agencies involved in mitigation	Yes	SWCD, MN DNR, MnDOT, Rural and Municipal Electric Cooperatives, Watershed Districts
Coordination with organizations or agencies addressing disaster related issues and vulnerable populations, emergency preparedness, access and functional needs populations	Yes	Public Health, American Red Cross, Salvation Army
Hazard data and information	Yes	Damage information is kept on file from past storm events and disaster declarations

<i>Other (please describe)</i>	Yes	PH has preparedness plans in place
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PLANNING & REGULATORY CAPABILITIES	Yes/No	Comments
Comprehensive/Land Use Plan	Yes	Houston County 2040 Comprehensive Land Use Plan Update, adopted 07/25/2023
Capital Improvements Plan	No	
Economic Development Plan	No	
Climate Adaptation Plan	No	
Continuity of Operations Plan (COOP)	Yes	This falls under Houston County Emergency Management
Transportation Plan (Roads, Bridges, Culverts, Ditches)	Yes	Houston County Transportation Dept. 2023 – 2026 construction projects online
Stormwater Management Plan / Drainage Plan	Yes	Houston County Zoning Ordinance, Section 26, Preservation of Natural Drainage Ways
Burning Permits/Restrictions (Sheriff's Office or MN DNR)	Yes	MN DNR
Comprehensive Local Water Management Plan	Yes	Houston County Comprehensive Water Plan for the Upper Mississippi – La Crescent Watershed, 2007-2022, Amendment Oct. 2017
Watershed Plan (One Watershed, One Plan)	Yes	Root River 1W1P, Winona/La Crescent 1W1P
Wellhead Protection Plan		Municipal level plans are done in coordination with MDH
Forest Management Plan	No	
Community Wildfire Protection Plan (CWPP)	No	
Participation in MN DNR Firewise Program	No	
Database of Dry Hydrants/Well Access	No	
<i>Other (please describe)</i>		

LOCAL POLICY / PROGRAM CAPABILITIES	Yes/No	Comments
Land Use, Planning, & Zoning Ordinance	Yes	Houston County Ordinance #6, Zoning Ordinance, November 2018
Subdivision Ordinance	No	
Building Codes	No	Houston County Planning & Zoning does permitting for new development
National Flood Insurance Program (NFIP)	Yes	Houston County NFIP entry date 01/06/82
Flood insurance rate maps	Yes	Current effective map date 12/07/18
Floodplain Ordinance	Yes	Houston County Zoning Ordinance, Section 21, Flood Plain District
Shoreland Ordinance	Yes	Houston County Zoning Ordinance, Section 22, Shoreland Zoning District
Minnesota Buffer Law / Soil Erosion Ordinance	Yes	Houston SWCD - Buffer Law compliance tracking. Houston County Zoning Ordinance, Section 25 Soil Erosion and Sedimentation Control
Home Buyouts for flood or erosion mitigation	No	
Other natural hazard specific ordinance (i.e., stormwater, steep slope, wildfire)	Yes	Erosion Control Permit Application and Erosion Control Plan required by Houston County Planning & Zoning for associated projects
Maintenance programs to reduce risk	Yes	Highway Dept. ROW maintenance and drainage systems
<i>Other (please describe)</i>	Yes	Houston County Zoning Ordinance, Section 31.5, Manufactured Home Park

		Development Standards, Subdivision 6 -Emergency Shelters
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ADMINISTRATIVE/TECHNICAL CAPABILITIES	Yes/No	Comments
Emergency Management Director	Yes	Houston County Emergency Management Director
Sheriff/Police Department	Yes	Houston County Sheriff
Floodplain Administrator	Yes	Houston County Planning & Zoning Director
Chief Building Official	Yes	Houston County Planning & Zoning Director
County Engineer	Yes	Houston County Highway Department
Mapping Specialist (GIS)	Yes	Houston County Surveyor Department & Schneider Geospatial
Public Health Coordinator/Department	Yes	Houston County Public Health & Human Services
Planning Commission	Yes	Houston County Planning Commission
Soil and Water Conservation District	Yes	Houston SWCD and NRCS staff, also Root River SWCD
Minnesota Department of Natural Resources	Yes	
Mitigation Planning Committee	Yes	2023 HMP Update Planning Team
Mutual Aid Agreements	Yes	Regional
<i>Other (please describe)</i>	Yes	Houston County Economic Development Authority (EDA)

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

<i>Other (please describe)</i>	Yes	Houston County Emergency Management and Houst County Public Health website pages provide Emergency Preparedness information
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Appendix E – Past Mitigation Action Review Status Report

Houston County

Past Mitigation Action Review Status Report

Following is a report on the status of mitigation actions related to natural hazards included in the Houston County 2015 Hazard Mitigation Plan. This report identifies those actions that have been completed, are being deleted, or are considered as ongoing efforts. Mitigation actions that are noted as “ongoing” will be reviewed and revised as necessary for inclusion in the plan update. This report covers the mitigation actions that were listed for implementation by Houston County and by city jurisdictions, as applicable.

Hazard	Mitigation Action	Jurisdiction	Status	Comments
All-Hazards	Construct a storm shelter at Wildcat Park	Houston County Public Works	Ongoing	Houston County operates Wildcat Park and Landing in accordance to the Army Corps of Engineers guidelines. Development of a storm shelter would have to be approved by the ACOE. Wildcat Park currently features 62 campsites, 3 picnic shelters, 2 boat landings, and one fishing pier. Over 2/3 of the campsites include water and electricity.
Flood	Purchase a sandbag machine.	Houston County Public Works	Delete	Houston County PW does not have this in their current plans.
All-Hazards	Purchase portable electric generator	Houston County Public Works/ Emergency Services	Ongoing	The county currently has multiple portable generators to deploy as needed during an extended power outage but would like to purchase a larger trailer-mounted unit.
Flood	Re-construct a new county highway department building	Houston County Administration/ Public Works	Delete	Not a relevant mitigation action.
All-Hazards	Construct a backup Communications Center (current location is La Crescent Fire Department)	Houston County Admin/Emergency Services	Delete	Not a relevant mitigation action. This falls under other Houston County EM planning.

Hazard	Mitigation Action	Jurisdiction	Status	Comments
All-Hazards	Ensure that city infrastructure has redundancies in place in the case of power outages during a hazard event	All Cities	Ongoing	Cities continue to assess their needs for backup power and are responsible to obtain backup generator power as necessary to support critical infrastructure and government operations.
All-Hazards	Ensure infrastructure and procedures are in place to provide adequate warning of severe weather events to residents	All Cities	Ongoing	Outdoor warning sirens continue to be tested on a monthly basis to ensure their functionality. Houston County follows the guidance of the NWS and the Association of Emergency Managers on activation of warning sirens.
Flood	Hillside stabilization	Brownsville	Ongoing	Brownsville continues to address hillside stabilization as needed.
Flood	Re-routing or increasing the capacity of a storm drainage system on the west side of town	Caledonia	Ongoing	Caledonia continues to address stormwater infrastructure projects as funding allows.
Flood	Construct a larger culvert at Old Highway Drive and Highway 44	Caledonia	Ongoing	Same as above.
Flood	Construct larger culvert on Cabbage Ridge	Eitzen	Ongoing	Eitzen continues to address stormwater infrastructure projects as funding allows.
Flood	Construct larger culvert on Quarry Road	Eitzen	Ongoing	Same as above.
Flood	Construct larger culvert on Valentine Road	Eitzen	Ongoing	Same as above.
Flood	Increase existing levee height	Hokah	Ongoing	Same as above.
All-Hazards	Construct storm shelter	Hokah	Ongoing	Construction of a storm shelter is still considered for the city. Significant funding would be required.
All-Hazards	Upgrade siren system	Hokah	Ongoing	This may still be considered for the city. Significant funding would be required.
Flood	Remove the levee on the north side of Root River	Hokah	Ongoing	Hokah, Houston County, and SWCD collaboration
Flood	Acquire land for levee setbacks	Houston	Ongoing	Hokah, Houston County, and SWCD collaboration
Flood	Increase levee height	Houston	Ongoing	Hokah, Houston County, and SWCD collaboration

Hazard	Mitigation Action	Jurisdiction	Status	Comments
All-Hazards	Construct storm shelter on eastern part of city	Houston	Ongoing	Construction of a storm shelter is still considered for the city. Significant funding would be required.
Flood	Highway 9 grade raise	Houston	Ongoing	Houston Public Works has oversight of continued road projects
Flood	Increase the capacity of the Wastewater Treatment Facility	Houston	Ongoing	Houston has worked on improving WWTP capacity and continues to do so
All-Hazards	Construct new City Hall to also include a public storm shelter	La Crescent	Ongoing	Construction of a new City Hall and storm shelter is still considered for the city. Significant funding would be required.
All-Hazards	Construct and/or designate local public shelters	Spring Grove	Ongoing	Construction of a storm shelter is still considered for the city. Significant funding would be required.
All-Hazards	Storm proof public facilities	Spring Grove	Ongoing	Spring Grove continues to improve stormwater management systems for the city to reduce risk of flood damage to public facilities.
All-Hazards	Upgrade water treatment facility	Spring Grove	Ongoing	Spring Grove has worked on improving WWTP capacity and continues to do so

Appendix F – Planning Team Meetings

Houston County HMP Update

Appendix F – Kickoff Meeting Documentation

Overview:

On 4/28/23 U-Spatial@UMD hosted a kickoff meeting online that was attended by the Houston County Emergency Manager. The webinar included a project overview, U-Spatial@UMD's background, the roles and responsibilities of the Emergency Manager, the contents of the Hazard Mitigation Plan, the planning process, and the projected timeline of the project.

Attached Documentation:

- **Project Handout:** "Minnesota 2023-2024 Multi-Hazard Mitigation Plan Update Project Overview"
- **Webinar Slides:** "Minnesota 2023-2024 Multi-Hazard Mitigation Plan Update Project Kickoff Orientation Webinar"

Minnesota 2023-2024 Hazard Mitigation Plan Update Project Overview

During 2023-2024, U-Spatial at the University of Minnesota Duluth (U-Spatial@UMD) will be working to update Hazard Mitigation Plans (HMPs) for 14 counties. Our team consists of UMD staff who specialize in GIS applications and research and Hundrieser Consulting LLC, who specializes in stakeholder engagement and mitigation strategies.

Participating Jurisdictions

Becker, Chisago, Goodhue, Grant, Houston, Hubbard, Kanabec, Lake, Lyon, Mille Lacs, Olmsted, Pennington, Roseau, and Wabasha counties. Cities within each county are required to participate in the planning process.

Overview of Update Process

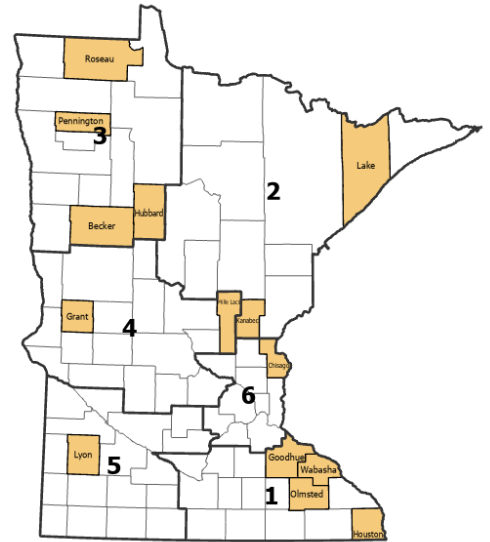
The U-Spatial@UMD team will coordinate with each Emergency Manager throughout the plan update process to engage participating jurisdictions and other stakeholders in the planning process. Following is an overview of key tasks that the U-Spatial@UMD team will facilitate to meet FEMA requirements in the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

- Conduct 2 planning team meetings
- Conduct public outreach & engagement
- Assess Plans & Programs in Place to address natural hazards
- Conduct a Past Mitigation Action Review from past plan
- Update prioritization of natural hazards that pose risk
- Complete jurisdictional Local Mitigation Surveys (hazards, vulnerabilities & capabilities)
- Conduct hazard risk assessment for 1% annual chance floods using the Hazus GIS tool
- Inventory critical infrastructure
- Develop hazard profiles for each natural hazard (description, incident history, geographic variability, future probability, relationship to changing climate trends and local vulnerabilities) and present data in an interactive website.
- Prepare a PDF document and interactive website that meets FEMA HMP plan requirements.
- Develop 5-year jurisdictional Mitigation Action Charts

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

Contact

Stacey Stark, U-Spatial Associate Director (MHMP Project Manager)
Phone: (218) 726-7438 / Email: slstark@d.umn.edu



Overview of the HMP Update Process

The U-Spatial@UMD team will coordinate with each Emergency Manager (EM), participating jurisdictions, and other stakeholders throughout the planning process. The plan update generally occurs over the course of 14-18 months from start to finish. Following is an overview of key tasks that will occur and the approximate timeline for completion. This list is not a complete list of what the plan update entails.

Stage 1 Tasks (4-5 months)

- HMP kickoff meeting/webinar with EM and U-Spatial@UMD
- Develop jurisdictional contact list for MHMP planning team
- Disseminate & document News Release #1 (plan update announcement)
- Complete Plans & Programs in Place Checklist
- Conduct a Past Mitigation Action Review from prior plan
- Complete Capabilities Assessment to address natural hazards
- Hold & document Planning Team Meeting #1
- Complete Local Mitigation Surveys (hazards, vulnerabilities & capabilities)
- Revisit prioritization of natural hazards that pose risk
- Assist U-Spatial@UMD with provision of key data
- Complete inventory of Critical Infrastructure

Stage 2 Tasks (5-7 months)

- Develop 5-year Jurisdictional Mitigation Action Charts
- Conduct hazard risk assessment for 1% annual chance floods using the Hazus GIS tool
- Develop hazard profiles for each natural hazard (description, incident history, geographic variability, future probability)
- Complete hazard profiles for each natural hazard
- Complete Plan Maintenance section of draft plan

Stage 3 Tasks (2-3 months)

- EM review of Draft Plan
- Hold & document Planning Team Meeting #2
- Finalize Mitigation Action Charts
- Disseminate & document News Release #2 (Public Review & Comment Period)
- EM coordination of plan review by local government(s) & other stakeholders

Stage 4 Tasks (2-3 months)

- Post-public review revisions made to plan (as necessary)
- Draft Plan sent to HSEM for review & approval
- Draft Plan sent to FEMA for review & approval
- Post FEMA review revisions made to plan (as necessary)
- FEMA to send letter stating "Approval Pending Adoption" to EM
- EM to facilitate MHMP jurisdictional adoptions (County/Tribe and cities)

Ongoing - Quarterly 25% Local Match Tracking Quarterly to HSEM

As part of the MHMP plan update, Emergency Managers are required to submit quarterly reports to HSEM on their local 25% match accrued through HMP activities during that quarter.

Minnesota 2023-2024 Multi-Hazard Mitigation Plan Update Project Kick-off Orientation Webinar



Webinar Purpose & Goals

The purpose of this webinar is to provide an orientation for Emergency Managers participating in 2023-2024 Multi-Hazard Mitigation Plan Updates.

- Introduce the U-Spatial@UMD Team and county contacts.
- Provide an overview of the project.
- Clarify roles and responsibilities.
- Outline the planning process, discuss key tasks and timelines.
- Discuss next steps and answer your questions.

Stacey Stark

Introductions

U-Spatial@UMD Project Team



Stacey Stark
Project Manager
U-Spatial@UMD



Bonnie Hundrieser
Emergency Management Planning Consultant
Hundrieser Consulting LLC



Zach Vavra
GIS Specialist and Researcher
U-Spatial@UMD



Steve Graham
Research Associate, Flood Modeling Specialist
U-Spatial@UMD



Jane Lindelof
Project Coordinator, Communications Specialist
U-Spatial@UMD

Emergency Managers:

- Name, Title, and Jurisdiction
- Past Experience with MHMP?

Minnesota HSEM:

Jennifer Davis, MN HSEM
State Hazard Mitigation Officer

Project Overview

14 Counties:

- Becker
- Chisago
- Goodhue
- Grant
- Houston
- Hubbard
- Kanabec
- Lake
- Lyon
- Mille Lacs
- Olmsted
- Pennington
- Roseau
- Wabasha



Why U-Spatial@UMD?

➤ Proven experience

Our updates of 40+ MHMPs, as well as the State MHMP, have been quickly approved by FEMA and adopted by counties.

➤ Advanced Capabilities

Expertise in the application of GIS, HAZUS, and research supports plan development and meeting all FEMA requirements.

➤ Ability to Expedite

A consistent and proven approach for multiple counties supports State & FEMA review of draft plans.

➤ Planning Team

Our project team includes advanced GIS students and Hundrieser Consulting.

Purpose

The Federal Disaster Mitigation Act of 2000 (DMA 2000) established programs and funding:

"to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters"

A local government plan is required in order to maintain eligibility for FEMA hazard mitigation grant programs.

MHMP's must be updated every 5 years.

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

Natural hazard categories for Minnesota MHMPs. Hazards may be omitted if low risk is demonstrated.

Overview of MHMP Update Process

Bonnie Hundrieser

U-Spatial@UMD Team Roles & Responsibilities

- Keep you informed about the progress of your plan.
- Facilitate & document jurisdictional engagement.
- Facilitate & document public outreach.
- Work with EM and planning team to complete key tasks.
- Keep up-to-date on FEMA requirements and Minnesota guidance.
- Produce a quality plan that FEMA will approve.
- Answer questions in a timely fashion.
- Support EM's in tracking your required local 25% match.
- Provide quarterly reports to HSEM on your plan progress.

EM Roles & Responsibilities

- Act as main Point of Contact. (EM / Deputy EM)
- Report to HSEM quarterly on required local 25% match.
- Coordinate engagement of MHMP Planning Team.
- Conduct & document public outreach.
- Participate in completion of key assignments for plan update.
- Coordinate with county staff & other key stakeholders to obtain information.
- Assist in timely review of draft document.
- Facilitate completion of local adoptions.

Local 25% Match

EM's will be responsible to track and submit local match documentation to HSEM on a quarterly basis.

Notes:

- EM's are provided with a "Master Match Tracking" Excel Workbook to document match MHMP activities, participants, and amount accrued.
- Bonnie will assist with local match tracking on several task items.
- Regular reminders & guidance will be provided on tracking match.

MHMP Planning Team

In addition to jurisdictional participation, the plan must provide documentation of an **opportunity for stakeholders to be involved** in the current planning process. The MHMP Planning Team should include:

1. Local & Regional Agencies involved in hazard mitigation
2. Agencies that have the authority to regulate development
3. Neighboring communities (counties, tribes)
4. Representatives of businesses, academia, and other private organizations
5. Representatives of nonprofit organizations, including community-based organizations that work with/provide support to underserved communities and socially vulnerable populations

Key Tasks

- Develop Jurisdictional Contact List.
- Hold & document Planning Team Meeting #1 & Meeting #2.

Public Outreach

The plan update must document how the public was given the opportunity to be involved in the planning process and how their feedback was incorporated into the plan.

- Collect feedback on local-level concerns & mitigation actions.
- Use of local/social media, websites & community bulletin boards.
- Other outreach (i.e., attendance at City Council mtgs)
- Must include underserved communities and vulnerable populations within the planning area.

Key Tasks

- Distribute & document News Release #1 (start of plan)
- Distribute & document News Release #2. (public review of plan)
- Conduct additional public outreach (i.e., County Fair, other events).

Hazard Risk Assessment and Vulnerability Analysis

The U-Spatial@UMD Team will work closely with each EM and key departments to provide information as needed.

Key Tasks

- Review and contribute to critical infrastructure inventory.
- Identify specific, local-level impacts and vulnerabilities.
- Identify if and how risk priorities have changed since the last plan.
- Identify any factors (i.e., new development) that may increase the community's vulnerability to natural hazard events.
- Review social vulnerability factors.

Key Task Assignments

Bonnie Hundrieser will coordinate with each EM and participating cities on key task assignments that will provide information required for the plan update.

Key Tasks

- Complete Plans in Place Checklist.
- Complete Capabilities Assessment for Mitigation.
- Conduct Past Mitigation Action Review.
- Coordinate Local Mitigation Survey (LMS) Forms.
- NFIP Status Information and documentation program compliance

Mitigation Action Charts

Bonnie Hundrieser will also coordinate development of draft 5-year jurisdictional Mitigation Action Charts (MACs) for the county and each participating city jurisdiction.

Key Tasks

- Conduct local-level development of MACs.
- Facilitate & document jurisdictional MAC review.
- Hold Planning Team Mtg. #2 for any additional feedback.
- Complete final MAC revisions.

Draft Plan Review

The U-Spatial@UMD Team will work with each EM to conduct a review of the draft MHMP and provide an opportunity for public review & comment on the plan.

Key Tasks

- EM review of initial draft plan > Revisions made as needed.
- Distribute News Release #2 - public review & comment period.
- EM coordination of review by county & key stakeholders.
- Posting of draft plan online with comment form.
- Documentation and incorporation of public feedback.

Plan Submission

The draft MHMP will be submitted to HSEM and FEMA for review & approval. Timing for review & approval is generally within 1-2 months.

Key Steps

- U-Spatial@UMD will submit the draft plan & Plan Review Tool (PRT) to HSEM.
- HSEM will submit the draft plan & PRT to FEMA reviewer.
- FEMA may respond with requests for revisions > U-Spatial@UMD to address revisions and resubmit plan.
- FEMA will send a letter of Approval Pending Adoption (APA status)

Plan Adoption

After FEMA has provided APA status, the county and all participating cities must formally adopt the plan.

Notes

- Good jurisdictional participation will facilitate local adoptions.
- Adoption of the plan is required for HMA grant program eligibility.
- Example adoption resolutions are provided for county and city adoption. Townships may elect to adopt (not required).
- Resolutions are incorporated into the final MHMP (PDF) by the Emergency Manager or included as hard copies.

Plan format and delivery

“Next Gen” - MN Hazard Mitigation Plans

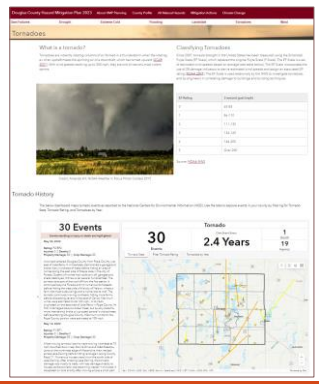
- Contains almost all required elements
- No mapping
- Community outreach/input remains the same
- Includes appendices with jurisdictional outreach

- Interactive maps and content
- Simple, concise explanations and highlights
- Multiple ways to navigate the content
- Links to PDF components and document
- Public input form on site

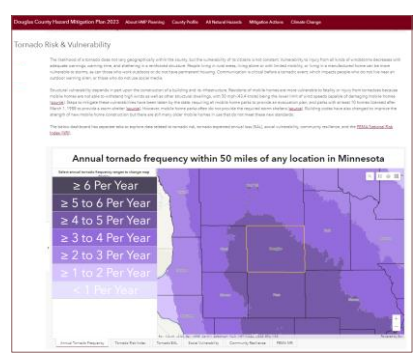
Stacey Stark



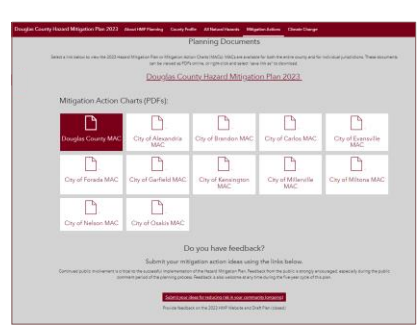
Example Web Site



Example Web Site



Example Web Site



Example Web Site

Timeline Overview

- 18-Month total timeline (April 2023 – October 2024)
- Most plans take 14-18 months.
- Staggering of plans will be required to complete update of risk assessments, research of hazard histories, etc. for each jurisdiction.
- Many tasks occur concurrently, others must be done in succession.
- Work is expedited at the pace by which Emergency Managers complete tasks with Bonnie Hundrieser.

Possible timeline for your plan		Red includes county action items
Stage 1 Tasks (4-5 months)	May – October 2023	HMP kickoff meeting/webinar with U-Spatial@UMD Develop jurisdictional contact list for MHMP planning team Disseminate & document News Release #1 Hold & document Planning Team Meeting #1 Complete Plans & Programs in Place Checklist Complete Capabilities Assessment to address natural hazards Conduct a Past Mitigation Action Review from prior plan Complete Local Mitigation Surveys Revisit prioritization of natural hazards that pose risk Assist U-Spatial@UMD with provision of key data Complete inventory of Critical Infrastructure
Stage 2 Tasks (4-6 months)	November 2023 – May 2024	Develop 5-year Jurisdictional Mitigation Action Charts Hazus hazard risk assessment for flooding Develop hazard profiles for each natural hazard Complete county profile sections and maps Complete Draft Plan
Stage 3 Tasks (2-3 months)	June – August 2024	EM review of Draft Plan Hold & document Planning Team Meeting #2 Finalize Mitigation Action Charts Disseminate & document News Release #2 EM coordination of plan review by stakeholders
Stage 4 Tasks (2-3 months)	September - November 2024	Post-public review revisions made to plan (as necessary) Draft Plan sent to HSEM for review & approval Draft Plan sent to FEMA for review & approval

Next Steps

U-Spatial@UMD Team members will coordinate each EM to commence work on several tasks that will take place over the next several months.

Notes:

- We are sensitive to the workloads of EM's.
- All information requests or assignments are in prepared form.
- Please communicate your availability to complete/not complete work.
- Plans most expired are priority; however, EM's with completed tasks move up in the que for plan development.

Questions?

What questions do you have for U-Spatial@UMD or HSEM about the MHMP update process?

Contact Information

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

Example Plans:

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

Houston County HMP Update

JURISDICTIONAL CONTACT LIST

COUNTY CONTACTS

Name	Title	Phone	Email
Mark Olson	Emergency Management Director	(507) 725-5834	mark.olson@co.houston.mn.us
Brian Swedberg	County Sheriff / Deputy EM Director	(507) 725-3379	brian.swedberg@co.houston.mn.us
Luke Onstad	County Assessor	507-725-5801	Lucas.Onstad@co.houston.mn.us
Polly Heberlein	County Auditor-Treasurer	507-725-5803	polly.heberlein@co.houston.mn.us
Martin Herrick	Environmental Services Director / Planning & Zoning Administrator	507-725-5800	martin.herrick@co.houston.mn.us
Tess Kruger	Facilities Manager	507-725-5822	theressa.arrick-kruger@co.houston.mn.us
Brian Pogodzinski	County Engineer, Highway Department	507-725-3925	brian.pogodzinski@co.houston.mn.us
John Pogleasa	Human Services / Public Health Department Director	507-725-5811	John.Pogleasa@co.houston.mn.us
Dewey Severson	District 1 Commissioner	(507) 500-1901	dewey.severson@co.houston.mn.us
Eric Johnson	District 2 Commissioner	(507) 500-1902	Eric.Johnson@co.houston.mn.us
Bob Burns	District 3 Commissioner	(507) 500-1903	Robert.Burns@co.houston.mn.us
Bob Schuldt	District 4 Commissioner	(507) 500-1904	Robert.Schuldt@co.houston.mn.us
Greg Myhre	District 5 Commissioner	(507) 500-1905	greg.myhre@co.houston.mn.us

CITY CONTACTS

CITY OF BROWNSVILLE (562)

Name	Title	Phone	Email
Jean Meyer	Mayor	507-482-6732	jeanm@acegroup.cc
Steve Schuldt	Clerk	507-482-6732	brownsvi@acegroup.cc
Ben Novak	Fire Chief	507-450-3347	justgiver121@hotmail.com

CITY OF CALEDONIA (2,824)

Name	Title	Phone	Email
DeWayne Schroeder	Mayor	507-725-3450	dschroeder@caledoniamn.gov
Jake Dickson	Clerk/Administrator	507-725-3450	jdickson@caledoniamn.gov
Kurt Zehnder	Police Chief	507-440-8315	kzehnder@caledoniamn.gov
Kevin Jacobson	Fire Chief	507-450-3433	oppie1405@gmail.com

CITY OF EITZEN (281)

Name	Title	Phone	Email
Jeff Adamson	Mayor	608-769-5551	jeff@wiebketradng.com

Emily Burrichter	Council member	563-379-4399	emily@eitzentruckshop.com
Steve Schuldt	Clerk	507-495-3017	eitzen@acegroup.cc
Doug Meyer	Fire Chief	319-389-2967	doug@acegroup.cc

CITY OF HOKAH (549)

Name	Title	Phone	Email
Lee Tippery	Mayor	608-317-6738	leetippery@outlook.com
Lindsey Martell	Clerk	507-894-4990	cityclerk@acegroup.cc
Bob Schuldt	Police Chief/EMD	608-799-2607	hokahpolice@cityofhokah-mn.gov
Lance Ross	Fire Chief	608-799-6260	hokahfiredept@yahoo.com

CITY OF HOUSTON (990)

Name	Title	Phone	Email
Scott Wallace	Mayor	507-884-1149	swallace@houstonmn.us
Michelle Quinn	Clerk/Administrator	507-896-4033	mquinn@houstonmn.us
Brett Hurley	Police Chief/EMD	507-313-9743	bhurley@houstonmn.us
Steve Skifton	Fire Chief	507-450-3039	skiffy71@hotmail.com

CITY OF LA CRESCENT (5,234)

Name	Title	Phone	Email
Mike Poellinger	Mayor	507-895-4356	mpoellinger@cityoflacsrescent-mn.gov
Bill Waller	Administrator	507-895-4668	bwaller@cityoflacsrescent-mn.gov
Angie Boettcher	Deputy Clerk	507-895-2595	aboettcher@cityoflacsrescent-mn.gov
Luke Ahlschlager	Police Chief/EMD	507-895-4414	lahlschlager@cityoflacsrescent-mn.gov
Tom Paulson	Fire Chief	507-459-9950	Tpaulson93@yahoo.com

CITY OF SPRING GROVE (1,248)

Name	Title	Phone	Email
Sandra Solum	Mayor	507-459-8433	mayor@springgrovemn.com
Jana Elton	Administrator	507-498-5221	jana@springgrovemn.com
Trent Turner	Fire Chief/EMD	507-450-9404	trentturner1300@gmail.com

TOWNSHIP CONTACTS

Name of Township	Name & Title	Phone	Email
Black Hammer Township	Liz Wiste, Clerk	563-419-3159	liztostenson1@gmail.com
Brownsville Township	Christine Novak, Clerk	507-459-0636	btownship@goacentek.net
Caledonia Township	Judy Massman, Clerk	507-458-3294	gjexp@acegroup.cc
Crooked Creek Township	Andy Moen, Clerk	507-429-6326	amoen@mid-citysteel.com
Hokah Township	Delayne Vogel, Clerk	608-397-6516	deevogel57@gmail.com
Houston Township	Brian Lee, Clerk	507-458-0760	leefarm@acegroup.cc
Jefferson Township	Anne Falken, Clerk	320-493-8629	falken@umn.edu
La Crescent Township	Karen Schuldt, Clerk	507-895-6055	kschuldt@lacsrescenttownship.com
Mayville Township	Erin Hammell, Clerk	608-225-1830	noldenerin@gmail.com
Money Creek Township	Adam Florin, Clerk	608-797-2515	amflorin@acegroup.cc
Mound Prairie Township	Colleen Tracy, Clerk	507-459-3573	mptclerk@gmail.com
Sheldon Township	Tom McPeak, Clerk	952-240-9752	sheldon.township@gmail.com

Spring Grove Township	Michael Wiste, Clerk	507-498-5618	jenniferwiste@gmail.com
Union Township	Kathleen Olson, Clerk	608-406-7869	uniontownmn@gmail.com
Wilmington Township	Melissa Schroeder, Clerk	608-780-3998	meljayschroeder@yahoo.com
Winnebago Township	Joyce Staggemeyer, Clerk	507-542-4637	lstagg@acegroup.cc
Yucatan Township	Debra Dewey, Clerk	507-896-3566	dewdrop@acegroup.cc

OTHER STAKEHOLDER CONTACTS

LOCAL & REGIONAL AGENCIES INVOLVED IN HAZARD MITIGATION

Name of Agency / Organization	Name & Title	Phone	Email
MN Homeland Security & Emergency Management	Mike Peterson, HSEM Region 1 Regional Program Coordinator	612-505-1819	Michael.R.Peterson@state.mn.us
Root River Soil & Water Conservation District (SWCD)	David Walter, District Manager	507-724-5261 ext 3	goosey10@hotmail.com
Crooked Creek Watershed District/Root River SWCD	Jean Meiners, Administrator / Technician		meinersja24@gmail.com
Natural Resources Conservation Service (NRCS)	Ryan Hytry, District Conservationist	(507) 724-5261 Ext. 109	ryan.hytry@usda.gov
USDA Rural Development Community Programs	Laurie Balata, Area Specialist	(507) 332-7418 x113	laurie.balata@usda.gov
MnDOT District 6	Chad Hanson, PE, District 6 Emergency Management Coordinator	(507) 286-7637	chad.hanson@state.mn.us
MN DNR Ecological and Water Resources Division	Nicole E. Lehman, Area Hydrologist	507-206-2854	nicole.lehman@state.mn.us
U.S. Fish & Wildlife Services	Dustin Schelling, Federal Wildlife Officer	608-779-2397	dustin_schelling@fws.gov

REPRESENTATIVES OF BUSINESSES, ACADEMIA, AND OTHER PRIVATE ORGANIZATIONS

Name of Agency / Organization	Name & Title	Phone	Email
Caledonia Public Schools	Craig Ihrke, Superintendent	507-421-2151	craig_ihrke@cps.k12.mn.us
St. John's School	Pastor Tom Schultz	507-725-2714	toschult@stjohnscal.org
St. Mary's School	Rebecca Stutzman, Principal	507-725-3355	office@stmaryschoolcal.org
St. Peter's School	Doug Harpenau, Principal	507-894-4375	principal@stpetershokah.org
Houston Public Schools	Mary Morem, Superintendent	507-896-5323	mary.morem@hsd294.us
LaCrescent Public Schools	Melinda Crowley, Superintendent	507-895-4484	melinda.crowley@isd300.k12.mn.us
LaCrescent Crucifixion School	Doug Harpenau, Principal	507-895-4402	dharpenu@crucifixionschool.org
LaCrescent Montessori & STEM School	Kate Garfin, Head of School	507-895-4054	kate@LaCrescentMontessori.com

Spring Grove Public Schools	Rachel Udstuen, Superintendent	507-498-3221	rachel.udstuen@springgrove.k12.mn.us
MiEnergy	Steve Oian, VP Operations	800-432-2285	soian@mienergy.coop
Dairyland Power	Shannon Duwe, Manager	608-787-1524	shannon.duwe@dairylandpower.com

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

Name of Agency / Organization	Name & Title	Phone	Email
Salvation Army Northern Division (MN/ND)	Major Michele Heaver	651-238-7783	michele.heaver@usc.salvationarmy.org
American Red Cross	Kris Ihrke, Regional Contact	507-884-7403	kris.ihrke@redcross.org
John Pugleasa	Houston County Human Services / Public Health Department Director	507-725-5811	John.Pugleasa@co.houston.mn.us

NEIGHBORING JURISDICTIONS

Name of Jurisdiction	Name & Title	Phone	Email
Winona County	Ben Klinger, EMD	(507) 457-6598	BKlinger@co.winona.mn.us
Fillmore County	Don Kullot, EMD	(507) 765-2830	dkullot@co.fillmore.mn.us
Vernon County, WI	Brandon Larson, EMD	608-637-5266	emerg@vernoncounty.org
Allamakee County, IA	Corey Snitker, Coordinator	563-568-4233	allamakeecountyema@allamakeecounty.iowa.gov
LaCrosse County, WI	Tracy Hameau, EMD	608-789-4811	thameau@lacrossecounty.org
Winneshiek County, IA	Sean Snyder, EMD	563-387-4095	ema@co.winneshiek.ia.us

LOCAL MEDIA CONTACTS

Name of Local Media	Media Contact	Phone	Email
Fillmore County Journal	Charlene Selbee	507-725-4444	news@fillmorecountyjournal.com
Houston County News	Todd Krysiak	608-791-8285	todd.krysiak@lee.net

Houston County HMP Planning Team Meeting #1 Presentation and Discussion 11/30/23 Meeting Summary & Documentation

Summary: On Thursday, November 30, 2023 Houston County Emergency Management convened key county, city, and township representatives, as well as neighboring jurisdictions and other stakeholders to participate in the 1st Planning Team Meeting for the update of the Houston County Hazard Mitigation Plan (HMP). The purpose of the meeting was to formally present information about the Houston County HMP update and to discuss key items that would inform plan development. The meeting was held via Zoom webinar video conference and was facilitated by Stacey Stark and Bonnie Hundrieser of the U-Spatial@UMD project team.

Stakeholder Invitations: Houston County Emergency Management invited all stakeholders included on the county’s HMP Update Jurisdictional Contact List (JCL), which includes the key County Contacts, City Contacts, Township Contacts, Other Stakeholder Contacts, and Neighboring Jurisdiction Contacts identified to be invited to participate in the plan update process. Contacts were encouraged to engage additional staff or to send someone in their stead if they could not attend. A copy of the county’s Jurisdictional Contact List is provided in *Appendix F Planning Team Meetings*.

Pre-Meeting Materials: Several days in advance of the meeting an email was sent out to the HMP stakeholder list with materials to review prior to the meeting. Materials included an HMP overview handout, a list of discussion questions that would be covered during the meeting, and a handout on the FEMA Hazard Mitigation Assistance Grant Program. Participants who were registered for the meeting were encouraged to review the questions and be ready to discuss them during the meeting. Stakeholders who were not attending the meeting were also encouraged to fill out and return the discussion question form.

Meeting Participants: A total of **40** people attended the meeting. Representation included elected officials and departmental staff from Houston County and the cities of Brownsville, Eitzen, Hokah, Houston, La Crescent, and Spring Grove. Representatives from the city of Caledonia were not able to attend. Other stakeholders, including neighboring jurisdictions, participated in the meeting. A participant list is provided below:

	Name	Organization	Job Title
1	Mark Olson	Houston County Emergency Management	Emergency Management Director
2	Martin Herrick	Houston County Environmental Services	Environmental Services Director
3	Theresa Arrick-Kruger	Houston County Human Resources / Facilities Management	Human Resources Director/Facilities Manager
4	Justin Conway	Houston County Highway Dept.	Engineering Supervisor
5	Jordan Goeden	Houston County Highway Dept.	Highway Maintenance Foreman
6	Jordan Knoke	Houston County Public Health and Human Services	Public Health Supervisor
7	Bri Ceaser	Houston County Public Health	Public Health Educator/ PHEP coordinator
8	Polly Heberlein	Houston County	Interim Auditor-Treasurer

9	Eric Johnson	Houston County	County Commissioner District 2
10	Robert Burns	Houston County	County Commissioner District 3
11	Steve Schuldt	City of Brownsville & City of Eitzen	City Clerk, both cities
12	Jean Meyer	City of Brownsville	Mayor
13	Lindsey Martell	City of Hokah	City Clerk
14	Bob Schuldt	City of Hokah Police Dept. / Houston County Commission	Police Chief/EM & County Commissioner, District 4
15	Michelle Quinn	City of Houston	Clerk/Administrator
16	Brett Hurley	City of Houston Police Dept.	Chief of Police
17	Bill Waller	City of La Crescent	City Administrator
18	Luke Ahlschlager	City of La Crescent Police Dept.	Chief of Police
19	Jana Elton	City of Spring Grove	Administrator
20	Sandra Solum	City of Spring Grove	Mayor
21	Andy Melbostad	City of Spring Grove Fire Dept.	Assistant Chief
22	Donise Heiller-Becker	Caledonia Township	Supervisor
23	Delayne Vogel	Hokah Township	Clerk
24	Pam Snodgrass	Jefferson Township	Treasurer
25	David Winnes	Crooked Creek Township	Township Board Chair
26	Andy Moen	Crooked Creek Township	Clerk
27	Colleen Tracy	Mound Prairie Township	Clerk
28	Daniel Fuchsel	Mound Prairie Township	Supervisor
29	Craig Ihrke	Caledonia Area Public Schools	Superintendent
30	Kathryn Garfin	La Crescent Montessori	Head of School
31	Rachel Udstuen	Spring Grove School District	Superintendent
32	Nicole Lehman	MN DNR	Area Hydrologist
33	Dave Walter	Root River Soil & Water Conservation District	District Manager
34	Jean Meiners	Crooked Creek Watershed District/ Root River SWCD	Administrator/Technician
35	Paul Fruechte	Crooked Creek Watershed District	Manager
36	Brad Felten	Crooked Creek Watershed District	Manager
37	Chad Hanson	MN DOT	Project Manager
38	Don Kullot	Fillmore County, MN Emergency Management	Emergency Management Director
39	Tracy Hameau	La Crosse County, WI Emergency Management	Emergency Management Director
40	Brandon Larson	Vernon County, WI Emergency Management	Emergency Management Director

Presentation Overview: The Power Point presentation covered the following items. A PDF of the presentation slides is included with this meeting summary.

- Welcome & Introductions
- Review of HMP Overview (*handout)
- Review of Past Hazard Risk Prioritization, Hazard Profiles, and New Priorities

- Overview of Mitigation Strategies, Actions
- Overview of FEMA HMA grant program
- Discuss local mitigation ideas
- Overview of Next Steps

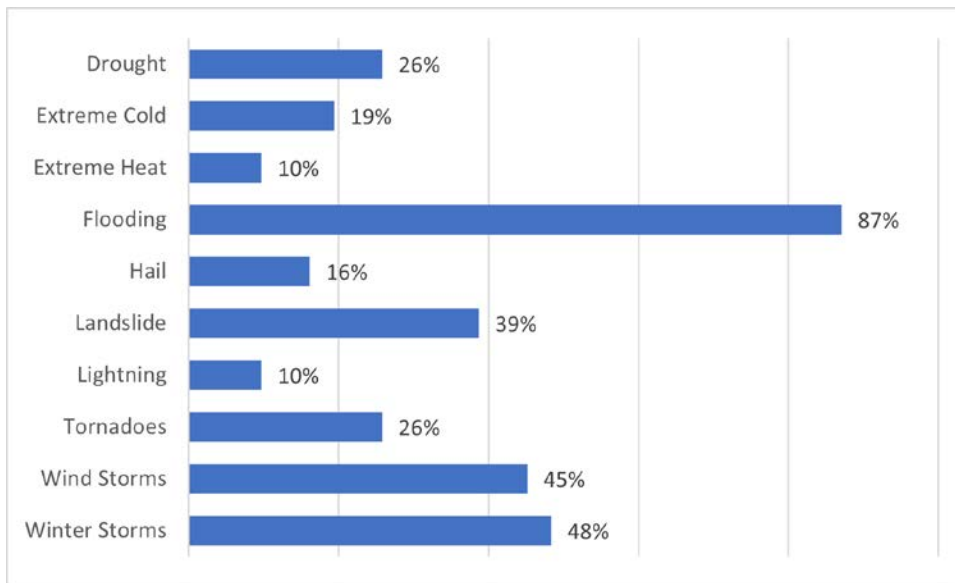
HOUSTON COUNTY HMP PLANNING TEAM MEETING #1 DISCUSSION NOTES

PARTICIPANT POLLS

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

POLL #1: TOP HAZARDS

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



31 out of 40 people participated in the poll, with the top 3 hazards noted as Flooding, Winter Storms, and Windstorms.

POLL #2: CHANGE IN PERCEIVED RISK

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

- No (13/27) 48%
- Yes (7/27) 26%
- Not Sure (7/27) 26%

What hazard risk has changed, and in what jurisdiction?

Participant	Comment
Theresa Arrick-Kruger, Houston County Human Resources Director / Facilities Management Manager	Believe that severity of storms and drought has changed.

Colleen Tracy, Mound Prairie Township Clerk	Increased flooding risk due to disaster-altered landscape
Bri Ceaser, Houston County Public Health Educator/ PHEP coordinator	Landslides, summer storms within the county. Landslides are moderate risks and summer storms are low risk as of recent years.
Craig Ihrke, Caledonia Area Public Schools Superintendent	It seems as though extreme weather events are more frequent than they were even five years ago.
Donise HeillerBecker, Caledonia Township Supervisor	Drought, rain, winter storms is cyclical
Bob Schuldt, City of Hokah Police Chief / Houston County Commissioner	Flooding
Rachel Udstuen, Spring Grove School District Superintendent	Drought - for our community.
Nicole Lehman, MN DNR Area Hydrologist	Increased precipitation events and flashier unpredictable floods county wide.
Tracy Hameau, La Crosse County, WI Emergency Management Director	Flooding
Jean Meyer, City of Brownsville Mayor	The risk or perceived risk has remained the same in the past 5 years

FOCUSED DISCUSSION QUESTIONS

During the presentation there were 3 key discussion questions (DQ's) that were presented to the planning team for feedback. Following are the questions and responses:

DQ #1: *Are there any vulnerable populations or underserved communities you would identify for Houston County or within your own local jurisdiction? If so, are there any best outreach methods to provide an opportunity to participate?*

- Eric Johnson, Houston County Commissioner: "Our remote rural areas."
- Craig Ihrke, Caledonia Area Public Schools Superintendent: "Low-income families and remote areas."
- Colleen Tracy, Mound Prairie Township Clerk: "Underserved by include populations without social media or internet access." / "Annual Township newsletter" (outreach method)
- Jean Meyer, City of Brownsville Mayor: "Persons that do not have transportation options and live in remote areas without access." / "1:1 outreach for those that are most remote and not access." (outreach method)
- Jana Elton, City of Spring Grove Administrator: "Mailers." (outreach method)

DQ#2: What do you feel should be recorded as the updated Hazard Prioritizations for the Houston County 2023 HMP? Why? Following are the updated hazard priorities noted by planning team members during the meeting and follow up discussion with the Houston County EMD:

Hazards	2023 Risk Priority (Low, Moderate, or High)	Notes
Flooding	High	Flooding remains as a high priority concern. It was noted by Commissioner Robert Burns that Crooked Creek mitigation has helped to reduce flooding impacts.
Windstorms	High	Windstorms was increased to a high priority because damaging windstorms are more common than tornadoes.
Tornadoes	Moderate	No change.
Hail	Low	Reduced to low; not felt to be a high risk for events that cause damage to structures or people.
Lightning	Low	Reduced to low; not felt to be a high risk for events that cause damage to structures or people.
Winter Storms (heavy snow, blizzards, ice storms)	Moderate	Mark Olson, EMD noted that winter storms are common and a priority, however there is not a lot to do for mitigation. Previously winter storms were ranked as high but were lowered to moderate.
Extreme Heat	Moderate	Extreme heat events were felt to be of moderate priority.
Extreme Cold	Moderate	Extreme cold events were felt to be of moderate priority.
Drought	Moderate	Mark Olson, EMD noted that drought has affected the county at different levels, however there is not a lot to do for mitigation. Previously drought was ranked as high but was lowered to moderate.
Wildfire	Low	Wildfire was previously ranked as high and it was grouped together with structure fires. Wildfire data does not reflect a high risk to Houston County. Mark Olson, EMD recommended to reduce it to low.
Landslides	Moderate	Landslides are a concern to the City of Brownsville and the rural Brownsville bluff areas – but is not a county-wide hazard of concern.
Land Subsidence	Low	In the previous plan, land subsidence was grouped in with landslides as high. For this plan update it was addressed separately and reduced to low. Data does not reflect land subsidence (sinkholes) as a risk for Houston County.
Dam/Levee Failure	Low	There are no High Hazard Potential Dams in the county.

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

- No feedback provided.

ADDITIONAL QUESTIONS/COMMENTS

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

- **Regarding Prioritization of Hazards:** Colleen Tracy, Mound Prairie Township Clerk: *Can we consider grouping the hazards?* / Stacey Stark response: We need to profile hazards separately within the plan, but many mitigation actions can address more than one natural hazard.
- **Regarding Overview of Community Resilience slide for Houston County:** David Winnes, Crooked Creek Township Board Chair: *How is "Community Resilience" defined?* / Stacey Stark response: That is a very good question. Community resilience data for Houston County was provided by FEMA, and is probably based on factors they review such as what planning mechanisms are in place or not. FEMA has a risk calculation they use for determining community resilience. / Stacey also provided additional information following the meeting to better answer this question:

When you look at the national data, Minnesota is ALL very high or relatively high on the community resilience scale. Factors include everything from insurance, food security, education, employment ... There are some governance type variables and community capacity variables too, but probably not planning documents as I suggested. Here is the primary source for the data:

https://www.sc.edu/study/colleges_schools/artsandsciences/centers_and_institutes/hvri/data_and_resources/bric/index.php.

And here is the FEMA NRI Index description: <https://hazards.fema.gov/nri/community-resilience> When you look at the national map, you can see that Houston County is in the 74th percentile of resilience. Because all of MN is so resilient and Houston County shows up in the 10th percentile in Minnesota, the legend is very deceiving.

- **Regarding Flooding:** Steve Schuldt, City of Brownsville - *The City of Brownsville has taken a much more pro-active approach to prevent flooding and possible landside by updating our building permit application requiring more information from applicants. Water mitigation has been take very seriously in city limits, seeing as though we do not have curb/gutter or storm sewer in Brownsville other than Co.3 & 18 which run thru town. Conservancy district areas within the city limits have been taken much more seriously the past year, water mitigation is a great concern in these areas to prevent future landslides! These seem to be the 2 largest concerns for the City of Brownsville at this time!* / Bonnie Hundrieser & Stacey Stark response: This is great input, thank you for sharing it. We will include this info. Sounds like some good work done to reduce flooding risk! We will be sure to capture this information and also any future flood mitigation actions you wish to identify for the city.
- **Regarding FEMA HMA Grant Funding:**
 - Eric Johnson, Houston County Commissioner asked if the county should look into a generator grant for our Highway shop, to see if it qualifies. He explained that the highway shop will be the command center for the county in the event of a disaster and backup power would be a necessity. / Bonnie Hundrieser responded that a FEMA HMA application for a generator could be possible, and she would work with the county to include this as a high priority mitigation action.

- Jana Elton, City of Spring Grove Administrator – Where do we get information to apply for grants? / Bonnie Hundrieser responded that the HMA grants handout should be reviewed for any possible mitigation activity that the city might be considering. We can talk about it and Bonnie can refer the city to HSEM for further discussion to explore if the activity may be eligible and if grant funding is available.
- Jean Meiners, Crooked Creek Watershed District Administrator/Root River SWCD Technician - The cost share amount - 25% can this be state cost share funds? / Stacey Stark responded: Yes, 25% can be state, just not federal.

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

MEETING DOCUMENTATION

Attached are additional documentation items for the Houston County HMP Mtg #1:

- Mtg #1 Email Invitation to RSVP
- Mtg #1 Pre-meeting Materials: Email, HMP Overview Handout, Discussion Questions Response Form, and HMA Grants Program Overview
- Mtg #1 Power Point Presentation Slides

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

From: [Mark Olson](#)
To: [Mark Olson](#); [Brian Swedberg](#); [Lucas Onstad](#); [Martin Herrick](#); [Theresa Arrick-Kruger](#); [Brian Pogodzinski](#); [John Pugleasa](#); [Dewey Severson](#); [Eric Johnson](#); [Robert Burns](#); [Robert Schuldt](#); [Greg Myhre](#); [jeanm@acegroup.cc](#); [brownsvi@acegroup.cc](#); [justgiver121@hotmail.com](#); [dschroeder@caledoniamn.gov](#); [jdickson@caledoniamn.gov](#); [kzehnder@caledoniamn.gov](#); [oppie1405@gmail.com](#); [jeff@wiebketrading.com](#); [emily@eitzentruckshop.com](#); [eitzen@acegroup.cc](#); [dougmn@acegroup.cc](#); [leetipperry@outlook.com](#); [cityclerk@acegroup.cc](#); [hokahpolice@cityofhokah-mn.gov](#); [hokahfiredept@yahoo.com](#); [swallace@houstonmn.us](#); [mqinn@houstonmn.us](#); [bhurley@houstonmn.us](#); [skiffy71@hotmail.com](#); [mpoellinger@cityoflacscent-mn.gov](#); [bwaller@cityoflacscent-mn.gov](#); [aboettcher@cityoflacscent-mn.gov](#); [lahlschlager@cityoflacscent-mn.gov](#); [Tpaulson93@yahoo.com](#); [mayor@springgrovemn.com](#); [jana@springgrovemn.com](#); [trentturner1300@gmail.com](#); [liztostenson1@gmail.com](#); [btownship@goacentek.net](#); [gjexp@acegroup.cc](#); [amoen@mid-citysteel.com](#); [deevogel57@gmail.com](#); [leefarm@acegroup.cc](#); [falken@umn.edu](#); [kschuldt@lacscenttownship.com](#); [noldenerin@gmail.com](#); [amflorin@acegroup.cc](#); [mptclerk@gmail.com](#); [sheldon.township@gmail.com](#); [jenniferwiste@gmail.com](#); [uniontownmn@gmail.com](#); [meljayschroeder@yahoo.com](#); [lstagg@acegroup.cc](#); [dewdrop@acegroup.cc](#); [Michael.R.Peterson@state.mn.us](#); [goosey10@hotmail.com](#); [ryan.hytry@usda.gov](#); [laurie.balata@usda.gov](#); [mark.schoenfelder@state.mn.us](#); [nicole.lehman@state.mn.us](#); [dustin_schelling@fws.gov](#); [michele.heaver@usc.salvationarmy.org](#); [kris.ihrke@redcross.org](#); [craig_ihrke@cps.k12.mn.us](#); [toschult@stjohnscal.org](#); [office@stmaryschoolcal.org](#); [principal@stpetershokah.org](#); [mary_moreem@hsd294.us](#); [melinda.crowley@isd300.k12.mn.us](#); [dharpenau@crucifixionschool.org](#); [kate@LaCrescentMontessori.com](#); [rachel.udstuen@springgrove.k12.mn.us](#); [soian@mienergy.coop](#); [shannon.duwe@dairylandpower.com](#); [BKlinger@co.winona.mn.us](#); [dkullot@co.fillmore.mn.us](#); [emerg@vernoncounty.org](#); [allamakeecountyema@allamakeecounty.iowa.gov](#); [thameau@lacrossecounty.org](#); [ema@co.winneshiek.ia.us](#); [Polly Heberlein](#)
Cc: [hundrieserconsulting@outlook.com](#); [slstark@d.umn.edu](#)
Subject: HOUSTON COUNTY HAZARD MITIGATION PLAN UPDATE – MEETING INVITATION
Date: Wednesday, October 11, 2023 11:55:40 AM

Greetings,

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

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

Date: Thursday, November 30, 2023

Time: 10:00 a.m. – 11:30 a.m.

Zoom Link: https://umn-private.zoom.us/webinar/register/WN_xep6KxBmRb-l-QBMQWAuHw

You must click on the link above to register. (Ctrl+Click to follow link) When you register, you will automatically be placed on an RSVP list and will be sent an email confirmation.

About the Plan

The update of the Houston County Hazard Mitigation Plan (HMP) is a requirement by the State of Minnesota Department of Homeland Security & Emergency Management (HSEM) as well as the Federal Emergency Management Agency (FEMA) every 5 years. Our last plan is due for an update and our planning is currently underway. The plan addresses the natural hazards that face Houston County and will result in the identification of mitigation actions and projects that will help to reduce or eliminate the impact of future hazard events, such as flooding and severe winter or summer storms.

Your participation in this plan update is important for several reasons:

1. You will help to identify critical mitigation actions to implement at the county / municipal level, and how they can be integrated with existing plans, policies, or project efforts.
2. Participating jurisdictions will be eligible to apply for FEMA hazard mitigation grant funding.
3. Mitigation planning is necessary to keep our communities resilient against future disasters and reduce the costs of recovery.
4. FEMA requires documentation of how local government and key stakeholders participated in the planning process.

During this meeting we will review and prioritize the natural hazards that pose risk to Houston County and individual communities and discuss a range of mitigation measures for local implementation. The meeting will be facilitated by personnel from U-Spatial at the University of MN Duluth who are working closely with us on this project.

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

Thank you,

Mark Olson

Emergency Management Director
PSAP Coordinator
Houston County Sheriff's Office
306 S. Marshall Street
Caledonia, MN 55921
(507) 725-5834
(507) 725-5249 fax
mark.olson@co.houston.mn.us

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Cc: [Stacey Stark](#)
Subject: Houston County HMP Planning Team Meeting Materials – Please Review
Date: Monday, November 27, 2023 8:23:00 AM
Attachments: [Houston County 2023 HMP Overview handout.pdf](#)
[Houston County HMP Mtg. #1 Discussion Questions.docx](#)
[HSEM HMA Grants Program Overview.pdf](#)

Greetings,

The Houston County Hazard Mitigation Plan (HMP) Update – Planning Team Meeting #1 will be held via Zoom on **Thursday, November 30, 2023 from 10:00 – 11:30 a.m.** This meeting is a critical step in the plan update process where we meet with county and local government officials, departmental staff, and other agency stakeholders to provide an overview of the plan update and gather important feedback.

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

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

If you have not registered yet but wish to do so, please click on the registration link in the email below.

https://umn-private.zoom.us/webinar/register/WN_xep6KxBmRb-l-QBMQWAuHw

We look forward to meeting with you! If you have any questions, please let me know.

Thank you,
Bonnie Hundrieser

Bonnie K. Hundrieser, CEM

Hazard Mitigation Planning Specialist

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

Hundrieser Consulting LLC

Phone: 218-343-3468



HOUSTON COUNTY

MINNESOTA

Houston County 2023-2024 Hazard Mitigation Plan Update Overview

During 2023-2024, U-Spatial at the University of Minnesota Duluth (U-Spatial@UMD) will be working to update the **Houston County Hazard Mitigation Plan (HMP)**. Our team consists of UMD staff who specialize in GIS applications and research and Hundrieser Consulting LLC, who specializes in stakeholder engagement and mitigation strategies.

Overview

Following are key points regarding the Houston County HMP Update:

Plan Requirement: It is a state and federal requirement that local governments develop and adopt an updated HMP every 5 years to be eligible for FEMA hazard mitigation assistance grant program funding. Plans must include a comprehensive risk assessment, engage a range of stakeholders and the public, and result in a plan of action to reduce risk from future natural hazard events.

Who the Plan Covers: The HMP is a multi-jurisdictional plan, covering all of Houston County, including all cities and townships within the county. The plan also takes into consideration the needs and concerns of other stakeholders such as schools, watershed districts, and agencies or organizations involved in mitigation or services to vulnerable populations within the county.

Who Participates: The HMP is developed in coordination with a local “planning team,” which includes county, city, and township government officials and departmental staff and other related key stakeholders. The team participates in two meetings, assists with public outreach, and provides information to help inform the plan update. Input is also sought from the larger public via news releases, social media, and public events. Planning team members and the public help to review and comment on the draft plan.

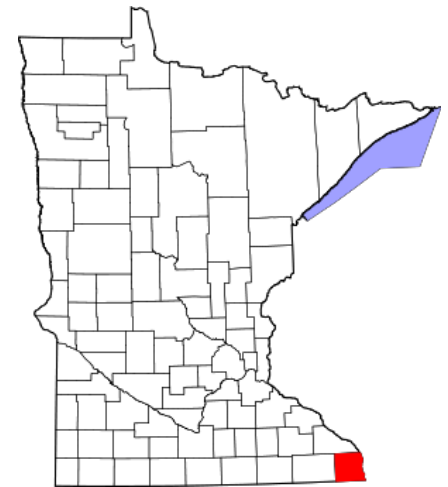
Plan Content: The HMP addresses the natural hazards that pose risk to Houston County, such as flooding, severe winter storms, windstorms, tornadoes, extreme temperatures, and drought. A hazard profile is developed for each hazard prioritized as moderate to high. Each profile includes a description, incident history, geographic variability, future probability, relationship to changing climate trends and local vulnerabilities, as well as a review of planning and program capabilities. The HMP results in a plan of action for implementation.

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

Final Product: The Houston County HMP will include a PDF plan and an accompanying interactive website.

Contact:

Stacey Stark, U-Spatial Associate Director (HMP Project Manager)
Phone: (218) 726-7438 / Email: slstark@d.umn.edu



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Houston County Hazard Mitigation Plan Update

Planning Team Meeting #1 Discussion Questions

As part of the Houston County 1st HMP Planning Team meeting, we will be covering several key discussion items. Your input is important to ensure the plan update reflects current concerns, priorities, and ideas for mitigation activities to reduce risk. Following are **3 discussion questions** where we will be seeking your feedback.

Meeting participants are encouraged to take down notes prior to the meeting using this form. You may also submit your form electronically if you wish to provide your written notes. Forms should be returned to: hundrieserconsulting@outlook.com

Please provide your contact information:

Name:

Jurisdiction/Agency:

Job Title:

Phone:

Email:

1. Outreach to Vulnerable Populations / Underserved Communities

As part of the planning process, FEMA specifically seeks to ensure that communities have addressed how vulnerable populations and underserved communities within the planning area were provided an opportunity to be involved. We are interested in what this means for your county and local community.

DISCUSSION QUESTION: Are there any vulnerable populations or underserved communities you would identify for Houston County or within your own local jurisdiction? If so, are there any best outreach methods to use to provide an opportunity to participate?

Type any comments

2. Review of Hazard Risk Prioritization

As part of the planning process, FEMA specifically seeks to ensure that participants have reviewed the natural hazards that pose risk to the county and its jurisdictions and consider how the priority of those hazards may have changed. Below are the natural hazards were addressed in the county's past hazard mitigation plan and the risk priorities that were noted for each.

HOUSTON COUNTY 2015 HAZARD MITIGATION PLAN

Hazards	Risk Priority
Flooding	High
Winter Storms	High
Drought	High
Land Subsidence/ Landslides/ Sinkholes	High
Fire (Structural/Wildfire)	High
Summer Storms	Moderate

Dam/Levee Failure	Moderate
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DISCUSSION QUESTION: What do you feel should be recorded as the updated hazard prioritizations for the Houston County 2023 HMP? Consider the probability of future events occurring (likelihood) and damaging impacts to local vulnerabilities (people, systems, and critical infrastructure). Please use the chart below to note your answers.

HOUSTON COUNTY 2023 HMP UPDATE - HAZARD RISK PRIORITIZATIONS

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

Type any additional comments

3. Identification of Mitigation Actions

The end-result of the Houston County HMP will be a set of jurisdictional mitigation action charts which will provide a course of action for the county and each city jurisdiction to reduce risk against future hazard events. The development of mitigation actions will be drawn from local-level hazard priorities, known vulnerabilities, and local capabilities to implement actions. The development of mitigation actions is guided by different types of strategies, including: Local Planning & Regulations, Structure & Infrastructure Projects, Natural Systems Protection, Education & Awareness Programs, and Mitigation Preparedness & Response Support. We are interested to know what ideas you may have for mitigation activities that can be incorporated into our planning as we move forward. Please be as specific as possible. For example, “Construct a tornado safe room for the City of X mobile home park.” “Increase the size of culverts on township roads to reduce over the road flooding and erosion from high rain events.”

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

Type any comments



State of Minnesota
Department of Public Safety
Division of Homeland Security and Emergency Management
445 Minnesota Street, Suite 223
St. Paul, MN 55101-6223

HAZARD MITIGATION ASSISTANCE

Hazard Mitigation Assistance (HMA) grant programs provide funding with the aim to reduce or eliminate risk to property and loss of life from future natural disasters. HMA programs are typically a 75%/25% cost share program. The federal share is 75% of total eligible project reimbursement costs. The local applicant is responsible for 25% of the project costs. The amount of HMGP funds availability is based on a percent of Public Assistance provided by Federal Emergency Management Agency (FEMA).

- Hazard Mitigation Grant Program (HMGP) funds assists in implementing long-term hazard mitigation measures following a Presidential major disaster declaration.
- Pre-Disaster Mitigation (PDM) provides funds for hazard mitigation planning and projects on an annual basis.
- Flood Mitigation Assistance (FMA) provides funds on an annual basis to reduce or eliminate risk of flood damage to buildings that are insured under the National Flood Insurance Program (NFIP).

Who is eligible for grant funding?

All applicants must have or be covered under an approved Hazard Mitigation Plan. Eligible applicants include: State and local governments; certain private non-profit organizations or institutions; and Tribal Communities

What types of projects can be funded?

All projects must be eligible, technically feasible, and cost-effective. All projects are subject to environmental and cultural resource review. Examples of projects include:

- **Advance Assistance** may be used to develop mitigation strategies and obtain data, including for environmental and historic preservation compliance considerations, and develop complete project applications in a timely manner.
- **Aquifer Storage and Recovery** (ASR) projects serve primarily as a drought management tool, but can also be used to reduce flood risk and restore aquifers that have been subject to overdraft. The concept is to capture water when there is an abundant supply, store the water in subsurface aquifers, and recover water from the storage aquifer when needed. Storing water underground can help protect it from pollutants, evaporation, and weather events.
- **Floodplain and stream restoration** (FSR) projects are used primarily to reduce flood risk and erosion by providing stable reaches, and may also mitigate drought impacts. FSR projects restore and enhance the floodplain, stream channel and riparian ecosystem's natural function. They provide base flow recharge, water supply augmentation, floodwater storage, terrestrial and aquatic wildlife habitat, and recreation opportunities by restoring the site's soil, hydrology and vegetation conditions that mimic pre-development channel flow and floodplain connectivity.
- **Flood Diversion and Storage** (FDS) projects often are used to reduce flood risk, but also can be used to mitigate drought and improve ecosystem services. These projects involve diverting floodwaters from a stream, river, or other body of water into a conduit such as a canal, pipe, or wetland and storing them in an above-ground storage facility. Water is then slowly released, reducing flood risk.

- **Green Infrastructure Methods** are a sustainable approach to natural landscape preservation and storm water management. Include in *eligible hazard mitigation activities* as well as provide additional ecosystem benefits. Ecosystem-based approach to replicate a site's pre-development, natural hydrologic function. Benefits include: Increase water supply, improved water quality, can be scaled to size and designed to fit site conditions.
- **Property Acquisition and Structure Demolition or Relocation** – The voluntary acquisition of an existing at-risk structure and the underlying land, and conversion of the land to open space through the demolition or relocation of the structure. The property must be deed-restricted in perpetuity to open space uses to restore and/or conserve the natural floodplain functions.
- **Retrofit Flood-Prone Residential Structures** are changes made to an existing structure to reduce or eliminate the possibility of damage to that structure from flooding, erosion, or other hazards. Examples of this mitigation are primarily elevation of structures above flood levels and floodwalls.
- **Safe Room Construction** - Safe room construction projects are designed to provide immediate life-safety protection for people in public and private structures from tornado and severe wind events. Includes retrofits of existing facilities or new safe room construction projects, and applies to both single and dual-use facilities
- **Minor Localized Flood Reduction Projects** - Projects to lessen the frequency or severity of flooding and decrease predicted flood damages, such as the installation or up-sizing of culverts, and stormwater management activities, such as creating retention and detention basins. These projects must not duplicate the flood prevention activities of other Federal agencies and may not constitute a section of a larger flood control system.
- **Infrastructure Retrofit** - Measures to reduce risk to existing utility systems, roads, and bridges.
- **Soil Stabilization** - Projects to reduce risk to structures or infrastructure from erosion and landslides, including installing geotextiles, stabilizing sod, installing vegetative buffer strips, preserving mature vegetation, decreasing slope angles, and stabilizing with rip rap and other means of slope anchoring. These projects must not duplicate the activities of other Federal agencies. *New tools for Bioengineered Shoreline Stabilization, Bioengineered Streambank Stabilization.*
- **Wildfire Mitigation** - Projects to mitigate at-risk structures and associated loss of life from the threat of future wildfire through: Defensible Space for Wildfire, Application of Ignition-resistant Construction and Hazardous Fuels Reduction. *New tool for Bioengineered Wildfire Mitigation.*
- **HMGP only - 5 Percent Initiative Projects** – These projects, which are only available pursuant to an HMGP disaster, provide an opportunity to fund mitigation actions that are consistent with the goals and objectives of approved mitigation plans and meet all HMGP program requirements, but for which it may be difficult to conduct a standard Benefit-Cost Analysis (BCA) to prove cost-effectiveness.

How do I apply?

Start by submitting a Notice of Interest, available on HSEMs website at:

<https://dps.mn.gov/divisions/hsem>

Where can I obtain further information?

For additional information about the HMA grant program, you can refer to the FEMA website:

<http://www.fema.gov/hazard-mitigation-assistance>

HOUSTON COUNTY Hazard Mitigation Plan Update 2023

Planning Team Meeting #1
Presentation & Discussion, 11/30/23



HOUSTON COUNTY
MINNESOTA

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Welcome & Introductions

U-Spatial@UMD Project Leads



Stacey Stark
Project Manager
U-Spatial@UMD

Houston County Project Lead

- Mark Olson, Houston County
Emergency Management Director



Bonnie Hurdrieser
HM Planning Specialist
Hurdrieser Consulting LLC



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

PRESENTER: STACEY STARK

Zoom Logistics

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

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

USE CHAT:

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



ASK TO SPEAK:



PRESENTER: STACEY STARK

Meeting Purpose & Agenda

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

AGENDA

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

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

PRESENTER: STACEY STARK

HMP OVERVIEW – KEY POINTS

HOUSTON COUNTY 2023 HMP UPDATE

Plan Requirement



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

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

Houston County HMP Update 2023

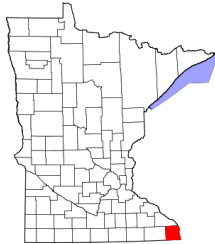
- Last plan was adopted in 2015.
- The updated plan will cover a 5-year window for implementation and grant program eligibility
- Participating jurisdictions must have documented engagement in the planning process and adopt the final plan.

PRESENTER: BONNIE HURDRIESER

Who the Plan Covers

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

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



PRESENTER: BONNIE HUNDRIESER

Who Participates



Planning Team

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

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

The Public

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

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

PRESENTER: BONNIE HUNDRIESER

Discussion Question #1:

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

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

PRESENTER: BONNIE HUNDRIESER

Plan Content

What Hazards are Addressed

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

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

Natural hazard categories as per the State Hazard Mitigation Plan

Poll #1

PRESENTER: BONNIE HUNDRIESER

Plan Content

Risk Assessment & Vulnerability Analysis

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

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



PRESENTER: STACEY STARK

Timeframe for development & Plan Format

Timeframe:

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

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

Format:

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



PRESENTER: STACEY STARK

Comments and Questions?

Hazard Prioritization

REVIEW OF THE HAZARD RISK PRIORITIES FOR HOUSTON COUNTY

Houston County 2015 HMP Risk Rankings

Flooding	High
Winter Storms	High
Drought	High
Land Subsidence/ Landslides/ Sinkholes	High
Fire (Structural/Wildfire)	High
Summer Storms	Moderate
Essential Services Failure (Dam/Levee Failure, Wastewater Treatment Failure, Water Supply Contamination)	Moderate

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

Please consider:

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

Poll #2

PRESENTER: STACEY STARK

Discussion Question #2

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

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

PRESENTER: STACEY STARK

Natural Hazards Assessment on Website- Demo

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

HOUSTON COUNTY HMP UPDATE Review of hazard prioritizations

Hazards	2023 Risk Priority (Low, Moderate, or High)
Flooding	
Windstorms	
Tornadoes	
Hail	
Lightning	
Winter Storms (heavy snow, blizzards, ice storms)	
Extreme Heat	
Extreme Cold	
Drought	
Wildfire	
Landslides	
Dam/Levee Failure	

Land Subsidence?

Comments and Questions?

Mitigation Strategies, Actions & FEMA HMA grants

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

PRESENTER: BONNIE HUNDRIESER

Overview of Mitigation Actions



Mitigation Action Charts are the end product of the HMP.

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

PRESENTER: BONNIE HUNDRIESER

FEMA HMA Grant Funding



Eligible Activities:

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

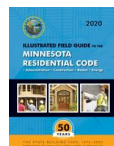
PRESENTER: BONNIE HUNDRIESER

Local Planning & Regulations



Examples:

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



PRESENTER: BONNIE HUNDRIESER

Structure & Infrastructure Projects

Examples:

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



PRESENTER: BONNIE HUNDRIESER

Natural Systems Protection



Examples:

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



PRESENTER: BONNIE HUNDRIESER

Education & Awareness Programs

Examples:

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



PRESENTER: BONNIE HUNDRIESER

Mitigation Preparedness & Response Support

Examples:

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



PRESENTER: BONNIE HUNDRIESER

Discussion Question #3

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

PRESENTER: STACEY STARK



Following Planning Team Meeting #1

Development of Local Mitigation Surveys

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

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

PRESENTER: BONNIE HUNDRIESER

Questions?

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

PRESENTER: STACEY STARK

Contact Information

Stacey Stark, MS, GISP

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slstark@d.umn.edu

218-726-7438

Bonnie Hundrieser, HM Planner

Hundrieser Consulting LLC

hundrieserconsulting@outlook.com

218-343-3468



PRESENTER: STACEY STARK

Houston County HMP Planning Team Meeting #2 10/23/25 Meeting Summary & Documentation

Summary: On Wednesday, October 23, 2024, Houston County Emergency Management convened key county, city, and township representatives, as well as neighboring jurisdictions and other stakeholders to participate in the 2nd and final Planning Team Meeting for the update of the Houston County Hazard Mitigation Plan (HMP). The purpose of the meeting was to formally convene the Houston County HMP Planning Team for a presentation on the draft plan and discussion of key items prior to public review and submission of the plan to HSEM and FEMA. The meeting was held via Zoom webinar video conference and was facilitated by Stacey Stark and Bonnie Hundrieser of the U-Spatial@UMD project team.

Stakeholder Invitations: Houston County Emergency Management invited all stakeholders included on the county’s HMP Update Jurisdictional Contact List (JCL), which includes the key County Contacts, City Contacts, Township Contacts, Other Stakeholder Contacts, and Neighboring Jurisdiction Contacts identified to be invited to participate in the plan update process. Contacts were encouraged to engage additional staff or to send someone in their stead if they could not attend. A copy of the county’s Jurisdictional Contact List is provided in *Appendix F Steering Committee Meetings*.

Meeting Participants: A total of 30 people attended the meeting. Representation included elected officials and departmental staff from Houston County and the cities of Brownsville, Caledonia, Houston, La Crescent, and Spring Grove. The cities of Eitzen and Hokah were not available to participate and were not in attendance. Other stakeholders, including neighboring jurisdictions, participated in the meeting. A participant list is provided below:

	Houston	Organization	Job Title
1	Mark Olson	Houston County Emergency Management	Emergency Management Director
2	Robert Burns	Houston County	Commissioner 3rd District
3	Jordan Goeden	Houston County Highway Department	Maintenance Supervisor
4	Bri Ceaser	Houston County Public Health	Health Educator
5	Jordan Knoke	Houston County Public Health	Public Health Supervisor
6	Polly Heberlein	Houston County	Interim Auditor-Treasurer
7	Jean Meyer	City of Brownsville	Mayor
8	Jake Dickson	City of Caledonia	City Clerk/Administrator
9	Michelle Quinn	City of Houston	Clerk/Administrator
10	Brett Hurley	City of Houston	Chief of Police
11	Tyler Benish	City of La Crescent	Public Works Director
12	Luke Ahlschlager	City of La Crescent Police Department	Chief of Police
13	Saundra Solum	City of Spring Grove	Mayor
14	Elizabeth Wiste	Black Hammer Township	Clerk
15	Delayne Vogel	Hokah Township	Clerk
16	Erin Hammell	Mayville Township	Clerk
17	Colleen Tracy	Mound Prairie Township	Clerk

18	Craig Ihrke	Caledonia Public Schools	Superintendent
19	Alexa Michaels	Houston High School	Assistant Principal
20	Rachel Udstuen	Spring Grove School District	Superintendent
21	Ryan Hytry	NRCS	District Conservationist
22	Jean Meiners	Root River SWCD/Crooked Creek Watershed District	Technician/Administrator
23	Paul Fruechte	Crooked Creek Watershed District	Manager
24	Arlyn Pohlman	Crooked Creek Watershed District	Manager
25	Brad Felten	Crooked Creek Watershed District	Manager
26	Kristoffer Langlie	MnDOT	District Water Resources Engineer
27	Chad Hanson	MnDOT	Emergency Management Coordinator
28	Jason Harmening	Fillmore County Sheriff's Office	Emergency Management Director
29	Ben Klinger	Winona County	Emergency Management Coordinator
30	Morgan Simpson	Winona County Emergency Management/Public Health	Public Health Project 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 county and local mitigation action charts. This discussion period offered a facilitated opportunity for participants to consider any changes or new additions to the MACs prior to completion of the draft plan for public review.

HOUSTON COUNTY HMP PLANNING TEAM MEETING #2 DISCUSSION NOTES

- Colleen Tracy, Mound Prairie Township – Asked if a township wants to possibly apply for FEMA grant funding for a project where should that be identified. Bonnie Hundrieser responded that it would need to be included in the Houston County mitigation action chart. Bonnie asked for Colleen to please follow up with additional information so it could be included if necessary.

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

Attached are the following documentation items for the Houston County HMP Meeting #2:

- Meeting Invitation to Stakeholders
- PowerPoint Presentation Slides
- Information Handouts

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

From: [Mark Olson](#)
To: [Mark Olson](#); [Brian Swedberg](#); [Lucas Onstad](#); [Polly Heberlein](#); [Martin Herrick](#); [Theresa Arrick-Kruger](#); [Brian Pogodzinski](#); [John Pugleasa](#); [Dewey Severson](#); [Eric Johnson](#); [Robert Burns](#); [Robert Schuldt](#); [Greg Myhre](#); [jeanm@acegroup.cc](#); [brownsvi@acegroup.cc](#); [justgiver121@hotmail.com](#); [dschroeder@caledoniamn.gov](#); [jdickson@caledoniamn.gov](#); [kzehnder@caledoniamn.gov](#); [oppie1405@gmail.com](#); [jeff@wiebketrading.com](#); [emily@eitzentruckshop.com](#); [eitzen@acegroup.cc](#); [dougma@acegroup.cc](#); [leetipperry@outlook.com](#); [cityclerk@acegroup.cc](#); [hokahpolice@cityofhokah-mn.gov](#); [hokahfiredept@yahoo.com](#); [swallace@houstonmn.us](#); [mquinn@houstonmn.us](#); [bhurley@houstonmn.us](#); [skiffy71@hotmail.com](#); [mpoellinger@cityoflacrescent-mn.gov](#); [bwaller@cityoflacrescent-mn.gov](#); [aboettcher@cityoflacrescent-mn.gov](#); [lahlschlager@cityoflacrescent-mn.gov](#); [Tpaulson93@yahoo.com](#); [mayor@springgrovemn.com](#); [jana@springgrovemn.com](#); [trentturner1300@gmail.com](#); [liztostenson1@gmail.com](#); [btownship@goacentek.net](#); [gjexp@acegroup.cc](#); [amoen@mid-citysteel.com](#); [deevogel57@gmail.com](#); [leefarm@acegroup.cc](#); [falken@umn.edu](#); [kschuldt@lacrescenttownship.com](#); [noldenerin@gmail.com](#); [amflorin@acegroup.cc](#); [mptclerk@gmail.com](#); [sheldon.township@gmail.com](#); [jenniferwiste@gmail.com](#); [uniontownmn@gmail.com](#); [meljayschroeder@yahoo.com](#); [lstagg@acegroup.cc](#); [dewdrop@acegroup.cc](#); [Michael.R.Peterson@state.mn.us](#); [goosey10@hotmail.com](#); [meinersja24@gmail.com](#); [ryan.hytry@usda.gov](#); [laurie.balata@usda.gov](#); [chad.hanson@state.mn.us](#); [nicole.lehman@state.mn.us](#); [dustin_schelling@fws.gov](#); [michele.heaver@usc.salvationarmy.org](#); [kris.ihrke@redcross.org](#); [craig_ihrke@cps.k12.mn.us](#); [toschult@stjohnscal.org](#); [office@stmaryschoolcal.org](#); [principal@stpetershokah.org](#); [mary_moreem@hsd294.us](#); [melinda.crowley@isd300.k12.mn.us](#); [dharpenau@crucifixionschool.org](#); [kate@LaCrescentMontessori.com](#); [rachel.udstuen@springgrove.k12.mn.us](#); [soian@mienergy.coop](#); [shannon.duwe@dairylandpower.com](#); [BKlinger@co.winona.mn.us](#); [dkullot@co.fillmore.mn.us](#); [emerg@vernoncounty.org](#); [allamakeecountyema@allamakeecounty.iowa.gov](#); [thameau@lacrossecounty.org](#); [ema@co.winneshiek.ia.us](#)
Cc: [hundrieserconsulting@outlook.com](#); [Stacey Stark](#)
Subject: HOUSTON COUNTY HAZARD MITIGATION PLAN UPDATE – MEETING INVITATION
Date: Monday, September 16, 2024 7:27:35 PM

Greetings,

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

We will be holding the meeting virtually using Zoom webinar:

Date: Wednesday, October 23, 2024

Time: 1:00 p.m. – 2:30 p.m.

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

The purpose of this meeting is to provide an overview of the plan and interactive website, including a review of the updated risk assessment for natural hazards that affect the county. We will also discuss the Mitigation Action Charts that will be specific to Houston County and each city, as well as funding opportunities available under the FEMA Hazard Mitigation Assistance grant programs.

Your participation in this meeting and feedback on the draft plan is important to us. The draft Houston County HMP is nearing completion and will be ready for review by planning team members and the public in the coming weeks.

When you register, you will automatically be placed on an RSVP list. If you are not able to attend, please consider sending another representative in your stead.

Thank you,

Mark Olson

Emergency Management Director

PSAP Coordinator

Houston County Sheriff's Office

306 S. Marshall Street

Caledonia, MN 55921

(507) 725-5834

(507) 725-5249 fax

mark.olson@co.houston.mn.us

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

October 23, 2024



HOUSTON COUNTY MINNESOTA

U-SPATIAL
UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover

Welcome & Introductions

U-Spatial@UMD Project Leads



Stacey Stark
Project Manager
U-Spatial@UMD



Bonnie Hundrieser
HMP Planning Specialist
Hundrieser Consulting LLC

Houston County Project Lead

- Mark Olson, Houston County Emergency Management Director



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

PRESENTER: STACEY STARK

Zoom Logistics

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

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

USE CHAT:



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

ASK TO SPEAK:



PRESENTER: STACEY STARK

Meeting Purpose & Agenda



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

Agenda

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

PRESENTER: STACEY STARK

Overview of Plan Update

Houston County is updating its **Hazard Mitigation Plan (HMP)** to fulfill a state & federal requirement. The plan must be updated every 5 years. The last plan was adopted in 2017.

The purpose of the plan is to identify & assess natural hazards that pose risk to the county and its jurisdictions and **develop long-term strategies and mitigation actions** that will help to reduce or eliminate the impact of future hazard or disaster events.



Hazard Mitigation is any action taken to reduce or eliminate long term risk to people and property from natural disasters.

PRESENTER: BONNIE HUNDRIESER

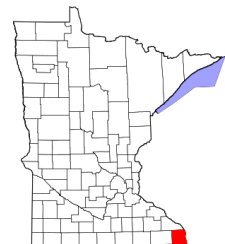
Who the Plan Covers



HOUSTON COUNTY MINNESOTA

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

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



PRESENTER: BONNIE HUNDRIESER

Stakeholder Involvement



Planning Team

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

The Public

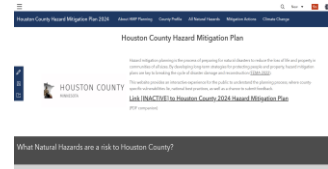
- Opportunity to learn about the plan and provide feedback on local-level concerns, mitigation ideas, and review of draft plan.

PRESENTER: BONNIE HUNDRIESER

HMP Deliverables

PDF document:

- Contains FEMA required elements
- Limited figures & Images
- Links to Website integrated
- Summary of Hazard Identification
- Local Mitigation Summary Report
- Plans & Programs in Place
- Past Mitigation Action Review
- Planning Team Meetings
- Public Outreach & Engagement Documentation
- Mitigation Actions by Jurisdiction



Website companion:

- Links to PDF components and document
- Interactive maps and context
- Simple, concise explanations
- Multiple ways to navigate the content
- Public input form on site

PRESENTER: STACEY STARK

Prioritization of Hazards for Houston County



Prioritization of hazards by the Houston County planning team included consideration of:

- Probability and Severity of natural hazard events (risk)
- Observed increase or decrease in risk since last plan
- Jurisdictional variations in risk (i.e., local vulnerabilities, changes in development)

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

PRESENTER: STACEY STARK

Hazards Risk Assessment

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



PRESENTER: STACEY STARK

Website Demo

z.umn.edu/HoustonHMP

Comments and Questions?

Overview of Mitigation Action Charts



Mitigation Action Charts are the end product of the HMP.

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

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

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

PRESENTER: BONNIE HUNDRIESER

FEMA Mitigation Grant Funding



Section 406

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

Section 404

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

Example Section 404 activities:

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

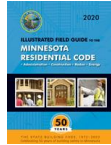
PRESENTER: BONNIE HUNDRIESER

Local Planning & Regulations



Houston County Examples:

- Enforcement of ordinances that reduce impacts of high rain events.
- Coordination of flood mitigation planning with, SWCD, area WD's, and MN DNR.
- Implementation of watering restrictions during periods of extreme drought.
- Bluff land development restrictions (Brownsville, Houston County)
- MN State Building Code for building safety



PRESENTER: BONNIE HUNDRIESER

Structure & Infrastructure Projects

Houston County Examples:

- Installation of new outdoor warning sirens
- Construction of storm shelters or tornado safe rooms (Brownsville, Caledonia, La Crescent)
- Burying powerlines to reduce power failure
- Conducting property buyouts for flooding
- Maintain & expand stormwater infrastructure upgrades to handle high rain events (Eitzen, Hokah, Houston)



PRESENTER: BONNIE HUNDRIESER

Natural Systems Protection

Houston County Examples:

- Conduct vegetation management along roads to reduce downed trees & branches
- Slope protection to reduce risk of landslides (Houston County, Brownsville)
- Other examples:
 - Planting Living Snow Fences to reduce snow drifting
 - Installing Rain Gardens to reduce impacts of high rain events



PRESENTER: BONNIE HUNDRIESER

Education & Awareness Programs

Houston County Examples:

- Promoting sign-up for CodeRED
- Warning Siren Education
- Awareness of how to avoid frozen pipes
- Encouraging residents to be prepared for severe weather events, extreme temperatures, and extended power outages.
- Special consideration for vulnerable populations

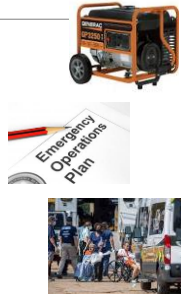


PRESENTER: BONNIE HUNDRIESER

Mitigation Preparedness & Response Support

Houston County Examples:

- Obtain generators for backup power (Eitzen, Hokah, La Crescent)
- Update of county EOP
- Establishing shelters / Warming & Cooling Centers
- Evacuation planning for vulnerable populations.
- Testing of outdoor warning sirens.
- Participate in regional EM planning, training, and exercising



PRESENTER: BONNIE HUNDRIESER

Comments and Questions?



Oct-Nov, 2024

Following Planning Team Mtg. #2

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



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

PRESENTER: BONNIE HUNDRIESER



Nov-Dec, 2024

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

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

PRESENTER: BONNIE HUNDRIESER

Questions?

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

PRESENTER: STACEY STARK

Contact Information

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

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



PRESENTER: STACEY STARK



State of Minnesota
Department of Public Safety
Division of Homeland Security and Emergency Management
445 Minnesota Street, Suite 223
St. Paul, MN 55101-6223

HAZARD MITIGATION ASSISTANCE

Hazard Mitigation Assistance (HMA) grant programs provide funding with the aim to reduce or eliminate risk to property and loss of life from future natural disasters. HMA programs are typically a 75%/25% cost share program. The federal share is 75% of total eligible project reimbursement costs. The local applicant is responsible for 25% of the project costs. The amount of HMGP funds availability is based on a percent of Public Assistance provided by Federal Emergency Management Agency (FEMA).

- Hazard Mitigation Grant Program (HMGP) funds assists in implementing long-term hazard mitigation measures following a Presidential major disaster declaration.
- Pre-Disaster Mitigation (PDM) provides funds for hazard mitigation planning and projects on an annual basis.
- Flood Mitigation Assistance (FMA) provides funds on an annual basis to reduce or eliminate risk of flood damage to buildings that are insured under the National Flood Insurance Program (NFIP).

Who is eligible for grant funding?

All applicants must have or be covered under an approved Hazard Mitigation Plan. Eligible applicants include: State and local governments; certain private non-profit organizations or institutions; and Tribal Communities

What types of projects can be funded?

All projects must be eligible, technically feasible, and cost-effective. All projects are subject to environmental and cultural resource review. Examples of projects include:

- **Advance Assistance** may be used to develop mitigation strategies and obtain data, including for environmental and historic preservation compliance considerations, and develop complete project applications in a timely manner.
- **Aquifer Storage and Recovery** (ASR) projects serve primarily as a drought management tool, but can also be used to reduce flood risk and restore aquifers that have been subject to overdraft. The concept is to capture water when there is an abundant supply, store the water in subsurface aquifers, and recover water from the storage aquifer when needed. Storing water underground can help protect it from pollutants, evaporation, and weather events.
- **Floodplain and stream restoration** (FSR) projects are used primarily to reduce flood risk and erosion by providing stable reaches, and may also mitigate drought impacts. FSR projects restore and enhance the floodplain, stream channel and riparian ecosystem's natural function. They provide base flow recharge, water supply augmentation, floodwater storage, terrestrial and aquatic wildlife habitat, and recreation opportunities by restoring the site's soil, hydrology and vegetation conditions that mimic pre-development channel flow and floodplain connectivity.
- **Flood Diversion and Storage** (FDS) projects often are used to reduce flood risk, but also can be used to mitigate drought and improve ecosystem services. These projects involve diverting floodwaters from a stream, river, or other body of water into a conduit such as a canal, pipe, or wetland and storing them in an above-ground storage facility. Water is then slowly released, reducing flood risk.

- **Green Infrastructure Methods** are a sustainable approach to natural landscape preservation and storm water management. Include in *eligible hazard mitigation activities* as well as provide additional ecosystem benefits. Ecosystem-based approach to replicate a site's pre-development, natural hydrologic function. Benefits include: Increase water supply, improved water quality, can be scaled to size and designed to fit site conditions.
- **Property Acquisition and Structure Demolition or Relocation** – The voluntary acquisition of an existing at-risk structure and the underlying land, and conversion of the land to open space through the demolition or relocation of the structure. The property must be deed-restricted in perpetuity to open space uses to restore and/or conserve the natural floodplain functions.
- **Retrofit Flood-Prone Residential Structures** are changes made to an existing structure to reduce or eliminate the possibility of damage to that structure from flooding, erosion, or other hazards. Examples of this mitigation are primarily elevation of structures above flood levels and floodwalls.
- **Safe Room Construction** - Safe room construction projects are designed to provide immediate life-safety protection for people in public and private structures from tornado and severe wind events. Includes retrofits of existing facilities or new safe room construction projects, and applies to both single and dual-use facilities
- **Minor Localized Flood Reduction Projects** - Projects to lessen the frequency or severity of flooding and decrease predicted flood damages, such as the installation or up-sizing of culverts, and stormwater management activities, such as creating retention and detention basins. These projects must not duplicate the flood prevention activities of other Federal agencies and may not constitute a section of a larger flood control system.
- **Infrastructure Retrofit** - Measures to reduce risk to existing utility systems, roads, and bridges.
- **Soil Stabilization** - Projects to reduce risk to structures or infrastructure from erosion and landslides, including installing geotextiles, stabilizing sod, installing vegetative buffer strips, preserving mature vegetation, decreasing slope angles, and stabilizing with rip rap and other means of slope anchoring. These projects must not duplicate the activities of other Federal agencies. *New tools for Bioengineered Shoreline Stabilization, Bioengineered Streambank Stabilization.*
- **Wildfire Mitigation** - Projects to mitigate at-risk structures and associated loss of life from the threat of future wildfire through: Defensible Space for Wildfire, Application of Ignition-resistant Construction and Hazardous Fuels Reduction. *New tool for Bioengineered Wildfire Mitigation.*
- **HMGP only - 5 Percent Initiative Projects** – These projects, which are only available pursuant to an HMGP disaster, provide an opportunity to fund mitigation actions that are consistent with the goals and objectives of approved mitigation plans and meet all HMGP program requirements, but for which it may be difficult to conduct a standard Benefit-Cost Analysis (BCA) to prove cost-effectiveness.

How do I apply?

Start by submitting a Notice of Interest, available on HSEMs website at:

<https://dps.mn.gov/divisions/hsem>

Where can I obtain further information?

For additional information about the HMA grant program, you can refer to the FEMA website:

<http://www.fema.gov/hazard-mitigation-assistance>

Mitigation Strategies & Action Types

Following are the five types of mitigation strategies that will be used in the update of the Multi-Hazard Mitigation Plan with examples of related mitigation actions. Minnesota HSEM recommends the use of these mitigation strategies to be in alignment with the State plan and those recommended by FEMA. The first four strategies listed are taken from the FEMA publications *Local Mitigation Planning Handbook* (2013) and *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards* (2013). The fifth strategy type was determined by Minnesota HSEM for use within the state.

These strategies will provide the framework for identification of new jurisdictional-level mitigation actions for implementation over the next 5-year planning cycle.

Mitigation Strategy	Description	Example Mitigation Actions
Local Planning and Regulations	These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.	<ul style="list-style-type: none"> • Comprehensive plans • Land use ordinances • Planning and zoning • Building codes and enforcement • Floodplain ordinances • NFIP Community Rating System • Capital improvement programs • Open space preservation • Shoreline codes • Stormwater management regulations and master plans • Mobile home park compliance for storm shelters
Structure and Infrastructure Projects	<p>These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure.</p> <p>This type of action also involves projects to construct manmade structures to reduce the impact of hazards.</p>	<ul style="list-style-type: none"> • Property Acquisitions and elevations of structures in flood prone areas • Utility undergrounding • Structural retrofits (i.e., metal roofs) • Floodwalls and retaining walls • Detention and retention structures • Culvert Installation/Modification • Roads & Bridge risk reduction • Safe Room (New construction or facility retrofit) • Green Infrastructure Methods <p><i>Many of these types of actions are projects eligible for funding through FEMA HMA grant programs.</i></p>

Mitigation Strategy	Description	Example Mitigation Actions
<p>Natural Systems Protection</p>	<p>These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.</p>	<ul style="list-style-type: none"> • Soil stabilization for sediment and erosion control • Floodplain and Stream corridor restoration • Slope management • Forest management (defensible space, fuels reduction, sprinkler systems) • Conservation easements • Wetland restoration and preservation • Aquifer Storage & Recovery • Flood Diversion and Storage <p><i>Many of these types of actions are projects eligible for funding through FEMA HMA grant programs.</i></p>
<p>Education and Awareness Programs</p>	<p>These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady or Firewise Communities. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions that support life safety and lessen property damage.</p>	<ul style="list-style-type: none"> • Radio or television spots • Websites with maps and information • Social media outreach • Promotion of sign-up for emergency warnings • Real estate disclosure • Promotion of NFIP insurance to property owners • Presentations to school groups or neighborhood organizations • Mailings to residents in hazard-prone areas. • NWS StormReady Program • Firewise Communities <p><i>Some of these types of actions may be projects eligible for funding through the FEMA HMA "5 Percent Initiative Program".</i></p>
<p>Mitigation Preparedness and Response Support</p>	<p>This is a State of Minnesota mitigation strategy with the intent of covering emergency preparedness actions that protect life and property prior to, during, and immediately after a disaster or hazard event. These activities are typically not considered mitigation, but support reduction of the effects of damaging events.</p>	<ul style="list-style-type: none"> • Emergency Operations Plan • Flood fight plans and preparedness measures • Dam emergency action plans • Emergency Warning Systems (i.e., CodeRed, warning sirens) • Generator backup power • NWS Storm Spotter Training • Training and education for local elected officials and key partners.

Appendix G – Public Outreach & Engagement Documentation

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

Overview: On **June 5, 2023**, Houston County Emergency Management put out a news release titled “**Public Input Wanted as County Updates Multi-Hazard Mitigation Plan**” to announce the start of the county’s Hazard Mitigation Plan. The news release provided information on the purpose and content of the plan, who the plan covers, stakeholders involved in the plan update and examples of hazard mitigation activities. Houston County used the news release to gather feedback from residents and businesses from across the county to incorporate into the plan, inviting feedback to the following:

- What are the natural hazards you feel pose the greatest risk to your community?
- What concerns do you have, and what sorts of mitigation actions or projects do you feel would help to reduce the damages of potential future events for your personal property, your community, or the County as a whole?

The public was strongly encouraged contact Houston County Emergency Management to submit comments, concerns, or questions regarding natural disasters and potential mitigation actions to be included into the plan update process. The public was also able to post comments electronically on county or city Facebook sites where the news release was posted.

Distribution: The news release was sent via email to the county’s HMP Jurisdictional Contact List, which includes the names, titles, phone numbers, and email addresses of key stakeholders to be engaged in the HMP update, including county, city, and township contacts; other related agency and organizational stakeholder contacts, and neighboring jurisdiction contacts. (A copy of the Jurisdictional Contact List can be found in Appendix F). The news release was additionally sent to local media contacts with a request to carry the news release.

Postings: Attached is documentation of the news release postings by Houston County, participating jurisdictions, local media, and other stakeholders. Cities and townships were encouraged to help share the news release locally by posting it on their websites, social media, or community bulletin boards.

Public Input & Incorporation:

Following is a record of public responses to the news release and how their input will be incorporated into the plan update, and if not relevant to be addressed, why.

Comment #1

**Email to Houston County Emergency Management Director
From John Radecki, 7 Rivers Mechanical LLC, La Crescent MN**

Mark, Everything I read in the flyer speaks towards natural disasters...Where is a train derailment with chemicals potentially happening in La Crescent on Sycamore St addressed?

Respectfully Submitted,

John Radecki
7 Rivers Mechanical LLC
29 Sycamore St
LaCrescent MN 55947
7RIVERSMECH.COM
507-895-2810 C608-799-5161
john@7riversmech.com

6/12/23 Response from Houston County EMD

Hello John,

Thank you for your time to respond to the Houston County news release on the update of the county's Hazard Mitigation Plan. You are correct, the plan does only address natural hazards – this is by FEMA requirements. Emergency response planning for hazardous materials train derailments are addressed by Houston County Emergency Management under our Emergency Operations Plan in coordination with MN Homeland Security and Emergency Management and area fire departments. In the event of a derailment we would work closely with the railway hazmat team as well as local government to address public information and public safety.

Thank you,

Mark Olson

Emergency Management Director
PSAP Coordinator
Houston County Sheriff's Office

306 S. Marshall Street
Caledonia, MN 55921
(507) 725-5834
(507) 725-5249 fax
mark.olson@co.houston.mn.us

Incorporation: Not incorporated. Hazardous materials train derailments are not a natural hazard and are not included under the Houston County HMP update.

COMMENT #2

6/11/23 email to Houston County Emergency Management Director

Hello Mark,

Thank you for reaching out to the community seeking their input on erosion spots. I truly appreciate it! Please forgive me if this isn't quite what you were requesting, as I wasn't sure.

For years I've had serious concerns about the erosion rates of Houston's Root River landing area.

About 18 years ago one used to be able to walk out into the river with water to their mid-calf. It is now over 20-feet deep in the middle.

It's no longer a safe docking location for river sports or swimming, as the beach isn't usable due to remaining clay at the river's edge. Folks' feet sink in nearly a foot at some spots while trying to exit or enter the river.

Due to the signs warning them the beach area is off limits, most tourists try the adjacent 'boat landing', but find it is also impassable for most humans, let alone for canoes and kayaks.

This amount of erosion means big changes for the river, both upstream and down.

I fear the trajectory of erosion could pose much greater flooding risk for the city of Houston and our Eastern neighbors if current erosion rates remain steady.

When mining, dislodged particle deposits like silt end up downstream, changing the depth and shape of the river, while deposits upstream redeposit downstream to fill in mining trenches, further weakening river banks and changing the shape upriver. The pace of the river also quickens at the trenching site, affecting how the river behaves during storms, also increasing flood risk.

Long ago people used boats on the Root River to transport goods, but even innertubes get landed on the short river bottom with the great changes today.

In addition, river sand mining can increase the amount of nitrogen in local wells significantly. Many local wells are spiking with Nitrogen already and don't need the increase. Mining will have to go deeper each time they dig for sand, further affecting well water quality.

Could we consider other options for supplying Houston County with sand for the roads, perhaps replace it with a beet-pulp mixture or use another mine or sand mining location in county?

Would it be possible to run a fluvial geomorphology assessment on current and projected erosion rates of the Root River at Houston?

Below is a bit of Info about possible risks, if you'd like more info.

Thank you very kindly for reading and your consideration.

*Best Regards,
Krisha Saxon
'99 UWRF grad - B.S.-Agriculture & Animal Science*

6/12/23 Response from Houston County EMD

Hello Krishna,

Thank you for your time to respond to the news release on the Houston County Hazard Mitigation Plan update and sharing all of your input and pictures. We have made note of your concerns regarding erosion in the river and will share this with other agency stakeholders involved in the plan update to see how it might be addressed through mitigation measures to reduce risk for increased flooding.

Thank you,

Mark Olson

Emergency Management Director

PSAP Coordinator

Houston County Sheriff's Office

306 S. Marshall Street

Caledonia, MN 55921

(507) 725-5834

(507) 725-5249 fax

mark.olson@co.houston.mn.us

Incorporation: The Houston County HMP planning team includes agency stakeholders that address planning and projects for flooding and erosion. Their input will be sought on ways to address mitigation for these hazards as they relate to risk-reduction for the county and local jurisdictions.

From: [Mark Olson](#)
To: [Mark Olson](#); [Brian Swedberg](#); [Lucas Onstad](#); [Donna Trehus](#); [Martin Herrick](#); [Theresa Arrick-Kruger](#); [Brian Pogodzinski](#); [John Pugleasa](#); [Dewey Severson](#); [Eric Johnson](#); [Robert Burns](#); [Robert Schuldt](#); [Greg Myhre](#); [jeanm@acegroup.cc](#); [brownsvi@acegroup.cc](#); [justgiver121@hotmail.com](#); [dschroeder@caledoniamn.gov](#); [jdickson@caledoniamn.gov](#); [kzehnder@caledoniamn.gov](#); [oppie1405@gmail.com](#); [jeff@wiebketrading.com](#); [emily@eitzentruckshop.com](#); [eitzen@acegroup.cc](#); [dougma@acegroup.cc](#); [leetipperry@outlook.com](#); [cityclerk@acegroup.cc](#); [hokahpolice@cityofhokah-mn.gov](#); [hokahfiredept@yahoo.com](#); [swallace@houstonmn.us](#); [mqinn@houstonmn.us](#); [bhurley@houstonmn.us](#); [skiffy71@hotmail.com](#); [mpoellinger@cityoflacrescent-mn.gov](#); [bwaller@cityoflacrescent-mn.gov](#); [aboettcher@cityoflacrescent-mn.gov](#); [lahlschlager@cityoflacrescent-mn.gov](#); [Tpaulson93@yahoo.com](#); [mayor@springgrovemn.com](#); [jana@springgrovemn.com](#); [trentturner1300@gmail.com](#); [liztostenson1@gmail.com](#); [btownship@goacentek.net](#); [gjexp@acegroup.cc](#); [amoen@mid-citysteel.com](#); [deevogel57@gmail.com](#); [leefarm@acegroup.cc](#); [falken@umn.edu](#); [kschuldt@lacrescenttownship.com](#); [noldenerin@gmail.com](#); [amflorin@acegroup.cc](#); [mptclerk@gmail.com](#); [sheldon.township@gmail.com](#); [jenniferwiste@gmail.com](#); [uniontownmn@gmail.com](#); [meljayschroeder@yahoo.com](#); [lstagg@acegroup.cc](#); [dewdrop@acegroup.cc](#); [Michael.R.Peterson@state.mn.us](#); [goosey10@hotmail.com](#); [ryan.hytry@usda.gov](#); [laurie.balata@usda.gov](#); [mark.schoenfelder@state.mn.us](#); [craig.wills@state.mn.us](#); [dustin_schelling@fws.gov](#); [michele.heaver@usc.salvationarmy.org](#); [kris.ihrke@redcross.org](#); [craig_ihrke@cps.k12.mn.us](#); [toschult@stjohnscal.org](#); [office@stmaryschoolcal.org](#); [principal@stpetershokah.org](#); [mary.more@hdsd294.us](#); [melinda.crowley@isd300.k12.mn.us](#); [dharpenau@crucifixionschool.org](#); [kate@LaCrescentMontessori.com](#); [rachel.udstuen@springgrove.k12.mn.us](#); [soian@mienergy.coop](#); [shannon.duwe@dairylandpower.com](#); [BKlinger@co.winona.mn.us](#); [dkullot@co.fillmore.mn.us](#); [emerg@vernoncounty.org](#); [allamakeecountyema@allamakeecounty.iowa.gov](#); [thameau@lacrossecounty.org](#); [ema@co.winneshiek.ia.us](#)
Cc: [Bonnie K Hundrieser](#)
Subject: Houston County Hazard Mitigation News Release
Date: Monday, June 5, 2023 3:09:16 PM
Attachments: [Houston County Hazard Mitigation Plan News Release #1.pdf](#)

Greetings,

Houston County Emergency Management is commencing work on the update of the Houston County Hazard Mitigation Plan (HMP). Attached is a news release for your information.

Your assistance is requested to post this news release to help notify the public about the plan update and to have an opportunity to provide feedback. If you have a website and/or Facebook page we encourage you to post the news release electronically to those places. You may also post a hardcopy of the news release in locations such as City Hall, the Post Office, or other common area. We welcome as many of ways of posting that you can cover. As part of the plan update we must document the public outreach that was conducted. Please send me an email with information on your posting as follows:

- **Websites/Facebook Postings:** Please send me an email detailing the date, location, and link of the posting. We will need to get a screenshot of the posting online.
- **Hardcopy Postings:** Please send me an email detailing the date and location of where the news release was posted (i.e., City Hall bulletin board).

-
All city governments within the county are requested to participate in order to meet FEMA requirements. Townships, businesses, and other agencies or organizations are also strongly encouraged to participate.

If you receive any return public feedback, please notify me so we may document this and

incorporate this feedback into the plan update.

The timely return of your posting documentation is appreciated. We will be working to wrap this up before the end of June.

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

If you have any questions, please let me know.

Thank you,

Mark Olson

Emergency Management Director

PSAP Coordinator

Houston County Sheriff's Office

306 S. Marshall Street

Caledonia, MN 55921

(507) 725-5834

(507) 725-5249 fax

mark.olson@co.houston.mn.us

From: [Mark Olson](#)
To: bob.heisse@lee.net
Cc: [Bonnie K Hundrieser](#)
Subject: Houston County Hazard Mitigation News Release
Date: Monday, June 5, 2023 2:55:13 PM
Attachments: [Houston County Hazard Mitigation Plan News Release #1.pdf](#)

Please publish the attached news release in the Houston County News.

If you have any question let me know.

Mark Olson

Emergency Management Director
PSAP Coordinator
Houston County Sheriff's Office
306 S. Marshall Street
Caledonia, MN 55921
(507) 725-5834
(507) 725-5249 fax
mark.olson@co.houston.mn.us

From: [Mark Olson](#)
To: news@fillmorecountyjournal.com
Cc: [Bonnie K Hundrieser](#)
Subject: Houston County Hazard Mitigation News Release
Date: Monday, June 5, 2023 2:55:24 PM
Attachments: [Houston County Hazard Mitigation Plan News Release #1.pdf](#)

Please publish the attached news release in the Fillmore County Journal.

If you have any question let me know.

Mark Olson

Emergency Management Director
PSAP Coordinator
Houston County Sheriff's Office
306 S. Marshall Street
Caledonia, MN 55921
(507) 725-5834
(507) 725-5249 fax
mark.olson@co.houston.mn.us

From: [Mark Olson](#)
To: todd.krysiak@lee.net
Cc: [Bonnie K Hundrieser](#)
Subject: Houston County Hazard Mitigation News Release
Date: Monday, June 5, 2023 3:02:24 PM
Attachments: [Houston County Hazard Mitigation Plan News Release #1.pdf](#)

Please publish the attached news release in the Houston County News.

If you have any questions let me know.

Mark Olson

Emergency Management Director
PSAP Coordinator
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306 South Marshall Street Suite 1100 Caledonia MN 55921

Brian L. Swedberg - SHERIFF



HOUSTON COUNTY NEWS RELEASE

June 5, 2023

Public Input Wanted as County Updates Hazard Mitigation Plan

Houston County residents, community leaders, business owners, area agencies and organizations now have an opportunity to share how severe weather events impact their property and lives. There is also an opportunity to share their ideas on how to reduce local impacts in the future.

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

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

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



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Brian L. Swedberg - SHERIFF



Examples of hazard mitigation include:

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

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

Public input is an essential part of the plan update. As part of the planning process, Houston County is seeking feedback from residents and businesses from across the county to incorporate into the plan:

- What are the natural hazards you feel pose the greatest risk to your community?
- What concerns do you have, and what sorts of actions do you feel would help to reduce damages of future hazard events in your community or the county as a whole?

Comments, concerns, or questions regarding natural disasters and potential mitigation actions to be included into the plan update should be submitted to Houston County Emergency Management by phone, email, or by posting a comment via a social media posting of this article.

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

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

Contact

Mark Olson
Houston County Emergency Management Director
Phone: (507) 725-5834
Email: mark.olson@co.houston.mn.us

Houston County HMP News Release #1 – June 5, 2023
Chart Documentation of News Release Postings

Jurisdiction or Agency	Posting Representative	Date & Location of News Release Posting
Houston County	Mark Olson, Houston County EMD, Shane Loken, Houston County IT	6/5/23, Houston County website, Emergency Management Facebook page, and County Facebook page,
City of Brownsville	Jenna Knight, Treasurer	6/6/23, City website, City Hall, Community Center, and Post Office bulletin boards.
City of Caledonia	Jake Dickinson, City Clerk/Administrator,	6/5/23, City Facebook page
City of Eitzen	Steve Schuldt, City Clerk	6/20/23, City Hall and Post Office bulletin boards.
City of Hokah	Lindsey Martell, City Clerk and Bob Schuldt, Chief of Police	6/5/23, City website and City Hall bulletin board
City of Houston	Michelle Quinn, City Clerk and Steve Skifton, Fire Chief	6/8/23, City Facebook page, Fire & Rescue Facebook page,
City of La Crescent	Luke M. Ahlschlager, Chief of Police	6/7/23, City website, City Hall bulletin board, Police Department Facebook page
City of Spring Grove	Jana Elton, Clerk/Administrator	6/12/23, City Hall and Post Office message boards, City Facebook page
Hokah Township	Delayne Vogel, Township Clerk	6/5/23, Township website and township Fire Hall bulletin board
Union Township	Kathleen Olson, Township Clerk	6/5/23, Town Hall message center bulletin board
Crooked Creek Township	Andy Moen, Township Clerk	6/5/23, Town Hall bulletin board and Reno mailbox posting
Wilmington Township	Melissa Schroeder, Township Clerk	6/5/23, Township office building message board.
Spring Grove Schools	Rachel Udstuen, Superintendent	6/19/23, School Facebook page

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

Overview: On November 12, 2024 Houston County Emergency Management put out a news release titled “**Public Comment Sought for County’s Hazard Mitigation Plan**” to announce the completion of the draft Houston County Hazard Mitigation Plan and invitation for public review and comment. The news release informed jurisdictional stakeholders and the public that a copy of the draft plan, interactive website, and comment form for public feedback was available online with a website link. The public review period for the draft plan was open from 11/12/24 – 11/26/24 for a total of 15 days.

Distribution: The news release was sent via email to the county’s HMP Jurisdictional Contact List, which includes the names, titles, phone numbers, and email addresses of key stakeholders to be engaged in the HMP update, including County Contacts, City Contacts, Township Contacts, Other Stakeholder Contacts, and Neighboring Jurisdiction Contacts. (A copy of the Jurisdictional Contact List can be found in Appendix F). The news release was additionally sent to local media contacts such as area newspapers, radio and television channels with a request to carry the news release.

Postings: Attached is documentation of the news release postings by Houston County, participating jurisdictions, and local media. Cities and townships were encouraged to help share the news release locally by posting it on their websites, social media, or community bulletin boards.

Public Input & Incorporation:

Following is a record of public responses to the Houston County news release and how the input will be incorporated into the plan update, and if not relevant to be addressed, why.

- **No public input was received via the online feedback form, directly by Houston County or local jurisdictions.**

From: [Mark Olson](#)
To: [Brian Swedberg](#); [Lucas Onstad](#); [Martin Herrick](#); [Brian Pogodzinski](#); [John Pugleasa](#); [Dewey Severson](#); [Eric Johnson](#); [Robert Burns](#); [Robert Schuldt](#); [Greg Myhre](#); [jeanm@acegroup.cc](#); [brownsvi@acegroup.cc](#); [justgiver121@hotmail.com](#); [dschroeder@caledoniamn.gov](#); [jdickson@caledoniamn.gov](#); [kzehnder@caledoniamn.gov](#); [oppie1405@gmail.com](#); [jeff@wiebketrading.com](#); [emily@eitzentruckshop.com](#); [eitzen@acegroup.cc](#); [dougmn@acegroup.cc](#); [leetippery@outlook.com](#); [cityclerk@acegroup.cc](#); [hokahpolice@cityofhokah-mn.gov](#); [hokahfiredept@yahoo.com](#); [swallace@houstonmn.us](#); [mquinn@houstonmn.us](#); [bhurley@houstonmn.us](#); [skiffy71@hotmail.com](#); [mpoellinger@cityoflacrescent-mn.gov](#); [bwaller@cityoflacrescent-mn.gov](#); [aboettcher@cityoflacrescent-mn.gov](#); [lahlschiager@cityoflacrescent-mn.gov](#); [Tpaulson93@yahoo.com](#); [mayor@springgrovemn.com](#); [jana@springgrovemn.com](#); [trentturner1300@gmail.com](#); [liztostenson1@gmail.com](#); [btownship@goacentek.net](#); [gjexp@acegroup.cc](#); [amoen@mid-citysteel.com](#); [deevogel57@gmail.com](#); [leefarm@acegroup.cc](#); [falken@umn.edu](#); [kschuldt@lacrescenttownship.com](#); [noldenerin@gmail.com](#); [amflorin@acegroup.cc](#); [mptclerk@gmail.com](#); [sheldon.township@gmail.com](#); [jenniferwiste@gmail.com](#); [uniontownmn@gmail.com](#); [meljayschroeder@yahoo.com](#); [lstaggs@acegroup.cc](#); [dewdrop@acegroup.cc](#); [Michael.R.Peterson@state.mn.us](#); [goosey10@hotmail.com](#); [ryan.hytry@usda.gov](#); [laurie.balata@usda.gov](#); [mark.schoenfelder@state.mn.us](#); [craig.wills@state.mn.us](#); [dustin_schelling@fws.gov](#); [michele.heaver@usc.salvationarmy.org](#); [kris.ihrke@redcross.org](#); [craig_ihrke@cps.k12.mn.us](#); [toschult@stjohnscal.org](#); [office@stmaryschoolcal.org](#); [principal@stpetershokah.org](#); [mary.more@hdsd294.us](#); [melinda.crowley@isd300.k12.mn.us](#); [dharpenau@crucifixionschool.org](#); [kate@LaCrescentMontessori.com](#); [rachel.udstuen@springgrove.k12.mn.us](#); [soian@mienergy.coop](#); [shannon.duwe@dairylandpower.com](#); [BKlinger@co.winona.mn.us](#); [dkullot@co.fillmore.mn.us](#); [emerg@vernoncounty.org](#); [allamakeecountyema@allamakeecounty.iowa.gov](#); [thameau@lacrossecounty.org](#); [ema@co.winneshiek.ia.us](#); [Polly Heberlein](#); [Carol Lapham](#)
Cc: [Bonnie K Hundrieser](#)
Subject: Houston County HMP News Release #2 - Public Review Period
Date: Tuesday, November 12, 2024 11:39:37 AM
Attachments: [Houston County News Release HMP Public Review \(11-12-24\).pdf](#)

Greetings,

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

The public review period will run from **November 12 to November 26**, prior to submission of the plan to FEMA.

The cities of Brownsville, Caledonia, Eitzen, Hokah, Houston, La Crescent, and Spring Grove are requested to please post this locally. Townships and other related stakeholders involved in the plan update are also encouraged to share the news release. Please post the news release to areas such as your website, Facebook page, bulletin boards, or other locations.

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

Please email me to let me know the date and location(s) of where the news release was posted. Your prompt attention to this is appreciated. Please respond no later than November 26th.

Thank you for your assistance on conducting this public outreach.

Thank you,

Mark Olson

Emergency Management Director

PSAP Coordinator

Houston County Sheriff's Office

306 S. Marshall Street

Caledonia, MN 55921

(507) 725-5834

(507) 725-5249 fax

mark.olson@co.houston.mn.us

From: [Mark Olson](#)
To: todd.krysiak@lee.net
Cc: hundrieserconsulting@outlook.com
Subject: Houston County HMP News Release #2 - Public Review Period
Date: Tuesday, November 12, 2024 11:23:54 AM
Attachments: [Houston County News Release HMP Public Review \(11-12-24\).pdf](#)

Please publish the attached news release in the Houston County News.

If you have any questions let me know.

Mark Olson

Emergency Management Director
PSAP Coordinator
Houston County Sheriff's Office
306 S. Marshall Street
Caledonia, MN 55921
(507) 725-5834
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306 South Marshall Street Suite 1100 Caledonia MN 55921

Brian L. Swedberg - SHERIFF



HOUSTON COUNTY NEWS RELEASE

November 12, 2024

Public Comment Sought for Houston County's Hazard Mitigation Plan

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

All county residents, as well as other interested agency or organizational stakeholders are strongly encouraged to review and offer feedback on the interactive website, PDF of the draft plan, and proposed local mitigation actions. The review and comment period is open for a period of 15 days through November 26, 2024. The public can access the plan using the following hyperlinks:

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

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

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

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



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Brian L. Swedberg - SHERIFF



Hazard mitigation planning helps Houston County and other jurisdictions protect their residents. Working with local communities through the process helps identify vulnerabilities and develop strategies to reduce or eliminate the effects of a potential hazard. In addition, increasing public awareness of natural disasters and encouraging personal preparedness helps to create a community that is resilient to disaster, and breaks the cycle of response and recovery. Updating the plan further allows Houston County and its jurisdictions to be eligible to apply for future FEMA Hazard Mitigation Assistance grant program funding for projects that help to reduce or eliminate the impacts of future natural hazard events.

Community feedback is vital to the success of the plan. Houston County invites public review and feedback of the draft plan prior to submitting it to the State of Minnesota and the Federal Emergency Management Agency (FEMA) for review. Feedback may be provided via the online comment forms or directly to Houston County Emergency Management.

Contact:

Mark Olson
Houston County Emergency Management Director
Phone: (507) 725-5834
Email: mark.olson@co.houston.mn.us

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



Houston County HMP News Release #2 (11/12/24)
Chart Documentation of News Release Postings

Jurisdiction or Agency	Posting Representative	Date & Location of News Release Posting
Houston County	Mark Olson, Houston County EMD Shane Loken, Houston County IT	11/13/24, Posted to the Houston County Sheriff's Office & Emergency Management Facebook pages. Also posted to the Houston County website.
City of Brownsville	Jenna Knight, Treasurer	11/12/24, Posted at the Brownsville community center, post office, and on the city website
City of Caledonia	Jake Dickinson, City Clerk/Administrator	11/12/24, Posted at City Hall to bulletin board
City of Eitzen	Steve Schuldt, City Clerk	11/18/24 city bulletin board and post office
City of Hokah	Lindsey Martell, City Clerk & Bob Schuldt, Chief of Police	11/13/24 Hokah city website
City of Houston	Michelle Quinn, City Clerk & Steve Skifton, Fire Chief	11/12/24, Posted at City Hall on the community bulletin board
City of La Crescent	Luke M. Ahlschlager, Chief of Police	11/13/24, Posted to the Police Dept. and City of La Crescent Facebook pages, City Hall info board, and to the city website
City of Spring Grove		
Yucatan Township	Deb Dewey, Clerk	11/13/24, Posted at Yucatan town hall
Union Township	Kathleen Olson, Clerk	11/13/24., Posted at Union town hall

Appendix H – Mitigation Actions by Jurisdiction

CITY OF BROWNSVILLE

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	We post information on our city website and Facebook page. We also post information on bulletin boards at the Senior Center, Community Center/City Hall and at the Post Office. We make announcements at City Council meetings and post flyers on our community bulletin board outside of City Hall. We also work with the county to use their emergency alert system to communicate digitally with residents. We will work with Houston County Emergency Management to participate in the National Weather Service's – Severe Weather Awareness Weeks.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	New High 2025-2030	City Admin / City EM	We have a plan in place to add fliers to our announcements boards and the web page to have people go to the county's link to the county's sign-up page. We include information on emergency notification sign-ups twice annually in utility bills. Our city does not do this currently, but we plan to post a flyer on it at City Hall, the Senior Center, and put a link our city website and utility bills.	City Funding
3	All-Hazards	Local Planning & Regulations	We need to create and implement a city's Comprehensive Plan to address considerations for future hazard events.	New Moderate 2025-2030	City Admin	When the city is ready to update our comprehensive plan, we will work to incorporate mitigation considerations for future land use planning.	City Funding
4	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Obtain a portable generator for our City Hall and Community Center.	New Moderate 2025-2030	City Admin, City Public Works	Our City Hall and Community Center serves as our local shelter if people are displaced from a severe storm event or extended power outage. The city will purchase a new generator as funding is available.	City Funding

CITY OF BROWNSVILLE

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	Severe Summer Storms	Local Planning & Regulations / Structure & Infrastructure Projects	Work with the local mobile home park owner to develop an evacuation plan and construct a storm shelter or tornado safe room.	New High 2025-2030	City EM in coord with HCEM	The city will work with the MHP owner and Houston County Emergency Management to develop a local evacuation plan for MHP residents during high wind events. We will also look into construction of a storm shelter or tornado safe room. FEMA grant funding may be a funding source that we would pursue.	City Funding, FEMA grant funding
6	Flooding	Structure & Infrastructure Projects	Plan for new storm sewer upgrades as construction projects are identified. Also purchase additional pumps in the event of flooding.	Existing Moderate 2025-2030	City Public Works in coor with City / County Engineers	The city primarily uses its own budget to address mitigation projects, such as replacement of culverts. We work with the city and county engineer on local flood reduction measures. We will purchase additional pumps as funding is available.	City Funding
7	Extreme Cold	Education & Awareness Programs	Encourage residents to be prepared for periods of extreme cold and potential power outages.	Existing High 2025-2030	City EM, City Admin / PW	We continue to use our city website and utility bills to notify residents to avoid freezing pipes during sub-zero weather.	City Funding
8	Landslides	Local Planning & Regulations	Continue to enforce building restrictions within sensitive bluff land areas.	Existing Moderate 2025-2030	City Admin	The city continues to monitor and enforce building restrictions in areas that may be sensitive to bluff land erosion. 9 more residences were added on Brook St. which could potentially be vulnerable to landslides off the hill.	City funding
9	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will to enforce emergency water use restrictions when needed as per direction from the MN DNR. The city will also do outreach to help make residents aware of limitations on non-essential water use.	City Funding
10	Wildfire	Education & Awareness Programs	Work to increase public awareness of state burning conditions and understanding when it's not safe to burn.	Existing Moderate 2025-2030	City EM / City Fire Dept.	This is an ongoing effort by the city Emergency Management and Fire Dept.	City Funding

CITY OF BROWNSVILLE**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
11	Wildfire	Mitigation Preparedness & Response Support	Continue training and equipment with our fire department to address the need for water resources outside of the municipal water system.	Existing Moderate 2025-2030	City Fire Dept.	This is an ongoing effort of the city Fire Dept. We will coordinate with neighboring jurisdictions and MN DNR as needed when it comes to addressing water for wildland firefighting outside of the city's waters system	City Funding

CITY OF CALEDONIA

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	We utilize our city website, Facebook, and local newspaper to provide information to our residents.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	New High 2025-2030	City Admin / City EM	This is something we have not done in the past, but we will work to use our website and FB page to direct residents to sign up on the county website.	City Funding
3	Severe Summer Storms	Structure & Infrastructure Projects	Work with our mobile home parks to improve storm shelter capabilities.	New High 2025-2030	City Admin / City EM	We have 3 mobile home parks in town that have insufficient storm shelters. We will work with the MHP operators to see how we can address an evacuation plan to a different facility or to encourage them to work towards construction of a new storm shelter. If a tornado safe room is desired, the city may work with the county on a grant application to FEMA in the future.	City, MHP funding, possible FEMA grant funding
4	Extreme Cold	Education & Awareness Programs	Encourage residents to take action during periods of extreme cold to avoid frozen water lines.	Existing High 2025-2030	City Admin / City EM	We have experienced frozen water service lines and water main breaks during periods of extreme cold. We will work to increase our public outreach to remind homeowners to run a stream of hot water to avoid frozen pipes.	City Funding
5	Flooding	Local Planning & Regulations	Maintain and expand the city's stormwater infrastructure.	Existing Moderate 2025-2030	City PW	The city public works department performs their own mitigation work year-round.	City Funding
6	Flooding	Local Planning & Regulations	Continue to work with MN DNR and Root River SWCD on flood mitigation projects as needed.	Existing Moderate 2025-2030	City EM, City PW	We continue to partner with the DNR and the SWCD to fund waterway and water conservation projects.	City funding, MN DNR Flood grants, SWCD cost share funding

CITY OF CALEDONIA**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
7	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will to enforce emergency water use restrictions when needed as per direction from the MN DNR. The city will also do outreach to help make residents aware of limitations on non-essential water use.	City Funding

CITY OF EITZEN

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	We post information on our city website. We also post information on bulletin boards at the Post Office.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	New High 2025-2030	City Admin / City EM	Our city does not do this currently, but we could post a flyer on it at the Post Office and put a link our city website.	City Funding
3	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Obtain a portable generator for our Community Center that serves as our local shelter if people are displaced from a severe storm event or extended power outage.	Existing Moderate 2025-2030	City Admin / City EM	The city will work on purchasing a generator as funding is available.	City Funding
4	Extreme Cold	Education & Awareness Programs	Encourage residents to be prepared for periods of extreme cold and potential power outages and to avoid freezing pipes during sub-zero weather.	Existing High 2025-2030	City Admin / City EM	The city uses our city website and utility bills to notify residents to avoid freezing pipes during sub-zero weather. We also encourage residents to be prepared for extended power outages.	City Funding
5	Flooding	Local Planning & Regulations	Maintain and expand the city's stormwater infrastructure.	Existing Moderate 2025-2030	City PW	The city primarily uses its own budget to address mitigation projects, such as replacement of culverts. We have also worked closely with the county highway engineer on local flood mitigation projects for roads and the county zoning department.	City Funding
6	Wildfire	Education & Awareness Programs	Work to increase public awareness of creating defensible space in woodland areas that are experiencing new development.	New	City Admin, City Fire Dept.	This is an ongoing effort of city admin and the city Fire Dept.	City Funding
7	Wildfire	Mitigation Preparedness & Response Support	Work with our fire department to address the need for water resources outside of the municipal water system.	Existing Moderate 2025-2030	City Fire Dept.	This is an ongoing effort of the city Fire Dept. We will coordinate with neighboring jurisdictions and MN DNR as needed when it comes to addressing water for wildland firefighting outside of the city's waters system.	City Funding

CITY OF EITZEN**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
8	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will to enforce emergency water use restrictions when needed as per direction from the MN DNR. The city will also do outreach to help make residents aware of limitations on non-essential water use.	City Funding

CITY OF HOKAH

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	We post information on our city website and Facebook page and on our bulletin boards at the City Center Office and Post Office. We also have a digital sign located in front of our Fire Station. We make announcements at City Council meetings and post flyers on our community bulletin boards.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	New High 2025-2030	City Admin / City EM	We will work with the Houston County EM to get a link to include our city website. The link will lead people to the Houston County website page for sign up for CodeRED.	City Funding
3	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Acquire a portable generator for our City Center space.	New Moderate 2025-2030	City Admin / City EM	The city will work to purchase a generator as funding is available.	City Funding
4	Flooding	Structure & Infrastructure Projects	Implement new storm sewer upgrades in the event of a storm. Work with the city and county engineer on local flood reduction measures.	Existing High 2025-2030	City Admin, City Public Works	Our city public works department continues to work in coordination with our city engineer and the Houston County engineer on targeted flood mitigation projects for the city of Hokah. The city primarily uses its own budget to address mitigation projects.	City Funding
5	Flooding	Local Planning & Regulations	Update the city's comprehensive plan to better address flooding.	New Moderate 2025-2030	City Admin	When we update the city's comp plan, we will work to incorporate additional considerations related to flooding and future development / land use planning.	City Funding
6	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will to enforce emergency water use restrictions when needed as per direction from the MN DNR. The city will also do outreach to help make residents aware of limitations on non-essential water use.	City Funding

CITY OF HOUSTON

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	We post information to our city website and Facebook page, public boards at both City Hall and the Public Library.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	We will work with Houston County Emergency Management to provide us with a link we can put on our website for residents to sign up for the county's CodeRED system. We will also seek to post a flyer at our public locations (City Hall and the library).	City Funding
3	All-Hazards	Local Planning & Regulations	Incorporate hazard mitigation planning into development codes and city planning for future growth.	New Moderate 2025-2030	City Admin	The city adopted and enforces the MN State Building Code and City code zoning requirements. It also contracts with CMS for building inspector services to ensure compliance. The city has a comprehensive plan which is due for update and a long term infrastructure plan.	City Funding
4	Extreme Heat/Cold Temps	Mitigation Preparedness & Response Support	Ensure plans are in place for providing a heating/cooling center to vulnerable residents in the event of an extreme temperature event.	Existing High 2025-2030	City EM	The city of Houston makes our Community Center available for residents for warming/cooling during extreme cold/heat.	City Funding
5	Severe Summer Storms	Natural System Protection	Practice vegetation management to reduce the risk of downed trees and branches due to severe winter or summer storms.	Existing Moderate 2025-2030	City Tree Board & Inspector	The city has a tree board and tree inspector. The tree inspector routinely inspects the urban canopy to ensure trees which remain are healthy in hopes they are able to withstand winds.	City Funding

CITY OF HOUSTON**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Flooding	Structure & Infrastructure Projects	Continue to implement stormwater system improvements.	In-Progress High 2024-2026	City Public Works Dept.	The city's public works department is in the process of lining the sewer main along Cedar Street which will mitigate I & I requiring processing through the wastewater treatment plant. They are also planning for improvements to CSAH 13/Spruce Street in the city boundary which will further mitigate I & I once complete.	City Funding
7	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city follows rural water resources recommendations during periods of low precipitation and shares tips with residents via water bills notes, city website and Facebook.	City Funding

CITY OF LA CRESCENT

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	The city posts information on it's website, the City, Police and Fire department post information on each of the department social media accounts. The city sends out a newsletter 2 times a year.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	The city has a link on our website to Houston county's emergency management website. The city could hand out flyers at awareness events instructing how to sign up for notifications.	City Funding
3	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Acquire a generator for the community building and Fire Hall.	New High 2025-2030	City Admin / City EM	The city needs backup power for these facilities to provide an emergency operation center and shelter in the event of extended power outages. The city will purchase a generator as funding is available. We may look to apply for FEMA grant funding if it is available.	City Funding, FEMA grant funding
4	Extreme Cold	Education & Awareness Programs	Increase notifications to residents that may be affected by extreme cold events.	Existing Moderate 2025-2030	City EM	This is an ongoing effort of our public outreach to residents on severe weather and temperature events. We seek to use a range of public outreach methods to reach all residents. Residents are also encouraged to follow local news to be aware of extreme temperature periods.	City Funding
5	Severe Summer Storms	Structure & Infrastructure Projects / Local Planning & Regulations	Work with the mobile home park owner to construct an emergency shelter and develop an evacuation plan.	New High 2025-2030	City EM in coord with MHP	We will work with the MHP owner to develop an evacuation plan to residents of the park. We will also look at what options exist for construction of a new storm shelter. If we decide to construct a tornado safe room, this is something that we would seek FEMA grant funding on in the future.	City Funding, MHP funding, FEMA grant funding

CITY OF LA CRESCENT**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
6	Flooding	Structure & Infrastructure Projects	Raise Shore Acres Road and sewer pumps along the road to eliminate future flood damages. Also improve the stormwater conveyance system to reduce localized flooding.	New High 2025-2030	City Public Works	Flooding of the Mississippi River along shore Acres Rd. has led to disaster declarations, the city will need outside funding to mitigate further damage. We may look to apply for future FEMA grant funding to support our flood mitigation projects for this area.	City Funding, FEMA grant funding
7	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will enforce emergency water use restrictions when needed as per direction from the MN DNR. The city will also do outreach to help make residents aware of limitations on non-essential water use.	City Funding

CITY OF SPRING GROVE

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage residents to be aware of and prepared for severe weather events, periods of extreme temperatures, and extended power outages.	Existing High 2025-2030	City Admin / City EM	We are looking at creating a newsletter to send to residents to try and get more information out that may not have social media. We do use our city Facebook page, city website, and a designated newspaper to get information out to the public.	City Funding
2	All-Hazards	Education & Awareness Programs	Encourage residents in our community to sign up for the county's emergency notification system.	Existing High 2025-2030	City Admin / City EM	We will work with Houston County Emergency Management to help us put a link to sign up for CodeRED on our city website. We can also put up some information flyers and put information in our future newsletter to encourage residents to sign up.	City Funding
3	All-Hazards	Local Planning & Regulations	Continue to enforce the City Code zoning requirements for new developments and updating for old developments.	Existing Moderate 2025-2030	City Admin	The city's Planning and Zoning Department enforces the City Code zoning requirements for new developments and updating for old developments. We have a recently updated Comprehensive Plan that is designed to plan for future physical growth of the city and appropriate land uses.	City Funding
4	Extreme Heat/Cold Temps	Education & Awareness Programs	Increase outreach to residents that may be more affected by extreme heat or cold events.	Existing Moderate 2025	City EM	Our community newsletter we are working on will help to reach residents who may not use social media or get the newspaper. We will work to include seasonal information in the newsletter including preparation for extreme heat / cold events that may be coupled with a power outage.	City Funding

CITY OF SPRING GROVE**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	Flooding	Structure & Infrastructure Projects	Continue to address stormwater improvement projects for the city in order to better handle high-rain events.	In-Progress High 2023-2024	City Public Works	The city started a street project in 2023 and will be completed in 2024 which replaced a street including new water, sewer, streets, curb and gutters. This should help with water drainage and any other issues relating to infrastructure along that street.	City Funding
6	Drought	Local Planning & Regulations / Education & Awareness Programs	Establish watering restrictions during drought conditions and raise public awareness of water conservation measures.	New Moderate 2025-2030	City Admin	The city will to enforce emergency water use restrictions when needed as per direction from the MN DNR. The city will also do outreach to help make residents aware of limitations on non-essential water use.	City Funding
7	Severe Winter & Summer Storms	Structure & Infrastructure Projects	Reduce the risk of downed powerlines out power outages due to severe winter or summer storm events.	Existing High 2025-2030	City Utilities Dept.	Our utilities department is responsible for mitigating against power outages.	City Funding