

BIG STONE COUNTY MINNESOTA



2023

Hazard Mitigation Plan



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BIG STONE COUNTY MINNESOTA

HAZARD MITIGATION PLAN

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Contents

Section 1 – Introduction	1
1.1 Introduction	1
1.1.1 Scope.....	2
1.1.2 Hazard Mitigation Definition	2
1.2 State Administration of Mitigation Grants	3
Section 2 – Public Planning Process	4
2.1 Planning Team Information.....	4
2.2 Review of Existing Plans, Capabilities & Vulnerabilities	6
2.3 Planning Process Timeline and Steps	6
2.3.1 Big Stone County Stakeholder Coordination	7
2.3.2 Overview of Jurisdictional Participation.....	7
Section 3 – Risk Assessment and Vulnerability Analysis	10
3.1 Hazard Identification and Prioritization	10
3.1.1 Hazard Prioritization.....	10
3.1.2 FEMA- and Minnesota-Declared Disasters and Assistance.....	11
3.2 Population Vulnerability	12
3.3 Climate Change	12
3.4 Jurisdictional Change in Risk or Vulnerability Assessment.....	13
3.4.1 Jurisdictional Responses	13
3.4.2 Future Development.....	17
Section 4 – Hazards	19
4.1 Flooding.....	19
4.1.1 Probability of Occurrence.....	19
4.1.2 Vulnerability	20
4.1.3 Program Gaps and Deficiencies.....	21
4.2 Windstorms.....	22
4.2.1 Probability of Occurrence.....	22
4.2.2 Vulnerability	23
4.2.3 Program Gaps and Deficiencies.....	23
4.3 Tornadoes.....	24
4.3.1 Probability of Occurrence.....	24
4.3.2 Vulnerability	25
4.3.3 Program Gaps and Deficiencies.....	25
4.4 Hail.....	26

4.4.1	Probability of Occurrence.....	26
4.4.2	Vulnerability.....	26
4.4.3	Program Gaps and Deficiencies.....	27
4.5	Winter Storms.....	27
4.5.1	Probability of Occurrence.....	28
4.5.2	Vulnerability.....	28
4.5.3	Program Gaps and Deficiencies.....	28
4.6	Extreme Cold.....	29
4.6.1	Probability of Occurrence.....	29
4.6.2	Vulnerability.....	30
4.6.3	Program Gaps and Deficiencies.....	30
4.7	Extreme Heat.....	31
4.7.1	Probability of Occurrence.....	31
4.7.2	Vulnerability.....	32
4.7.3	Program Gaps and Deficiencies.....	32
4.8	Dam Failure.....	33
4.8.1	Probability of Occurrence.....	33
4.8.2	Vulnerability.....	34
4.8.3	Program Gaps and Deficiencies.....	35
Section 5 – Mitigation Strategy	36
5.1	Community Capability Assessments.....	36
5.1.1	National Flood Insurance Program (NFIP).....	36
5.1.2	Plans and Ordinances.....	38
5.1.3	Plans and Programs in Place to Address Natural Hazards.....	38
5.2	Mitigation Goals.....	42
5.3	Mitigation Action and Project Strategies.....	43
Section 6 – Plan Maintenance	54
6.1	Monitoring, Evaluation, and Updating the Plan.....	54
6.2	Implementation.....	55
6.3	Continued Public Involvement.....	56
APPENDICES		
Appendix A – References		
Appendix B – Adopting Resolutions		
Appendix C – Local Mitigation Survey Report		
Appendix D – Plans & Programs in Place		
Appendix E – Past Mitigation Action Review Status Report		
Appendix F – Planning Team Meetings		
Appendix G – Public Outreach & Engagement Documentation		
Appendix H – Mitigation Actions by Jurisdiction		

Section 1 – Introduction

1.1 Introduction

Hazard mitigation is defined as any sustained action to reduce or eliminate long-term risk to human life and property from hazard events. 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, 2015).

Since 1980, damages due to natural disasters in the U.S. exceeded \$2.295 trillion. 2017 was the costliest year on record with \$306 billion in damage, and while the costliest disasters may occur in coastal states, in 2020, wildfires, hailstorms, drought, and tornadoes caused a record amount of billion-dollar disasters across the nation (Smith, 2022). 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 wellbeing 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. For communities to be eligible for future mitigation funds, they 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).

Big Stone County is vulnerable to a variety of natural hazards that threaten the loss of life and property in the county. Hazards such as tornadoes, flooding, wildfires, blizzards, straight-line winds, and droughts have the potential for inflicting vast economic loss and personal hardship.

This HMP represents the efforts of Big Stone County and its local governments to fulfill the responsibility of hazard mitigation planning. The intent of the plan is to limit the damages and losses caused by specific hazards.

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

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



*Big Stone County HMP
website*

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

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 Big Stone County Emergency Management to facilitate an update to the 2015 Big Stone 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 Big Stone 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 Big Stone County, including the cities of Barry, Beardsley, Clinton, Correll, Graceville, Johnson, Odessa, and Ortonville. The Big Stone 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 Big Stone County after final approval by FEMA (see Appendix B).

Big Stone County has specified the following goals for this plan update:

- Include more recent data documenting the critical infrastructure and hazards faced by Big Stone County.
- Reformat and reorganize the plan to reflect definitions of hazards as expressed in the 2019 Minnesota State Hazard Mitigation Plan.
- Reflect current hazard mitigation priorities in Big Stone County.
- Encourage recipients and sub-recipients of hazard mitigation grants to consider climate change adaptation and resiliency in their planning efforts.

1.1.2 HAZARD MITIGATION DEFINITION

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

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

1.2 State Administration of Mitigation Grants

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

Section 2 – Public Planning Process

2.1 Planning Team Information

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

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

Jurisdictional representatives were contacted throughout the HMP process to help facilitate local participation and provide feedback on the hazards of concern to their communities. This feedback was used to develop local mitigation actions that they would seek to implement upon plan adoption (see Section 5.3 and Appendix H).

Table 1. Hazard Mitigation Planning (HMP) Team

Name	Agency/Organization	Participant Title
Dona Greiner	Big Stone County Emergency Management	Emergency Management Director
Val Siefert	Big Stone County Emergency Management	Deputy Emergency Management Director
John Maatz	Big Stone County Sheriff's Office	Chief Deputy
Shannon Millerbernd	Big Stone County Highway Dept.	Accountant
Darren Wilke	Big Stone County Environmental Dept.	Director
Matt Anderson	Big Stone County	IT Director
Sandy Vold	Big Stone County	County Assessor
Jared Heck	Big Stone County	Building Maintenance Supervisor
Michelle Knutson	Big Stone County	Auditor-Treasurer
Ward Odom	Big Stone County	CVSO
Dawn Gregoire	Big Stone County	Human Resources Director (past)
Pam Rud	Big Stone County	Coordinator
Jeff Klages	Big Stone County	County Commissioner
Wade Athey	Big Stone County	County Commissioner
Roger Sandberg	Big Stone County	County Commissioner
Chad Zimmel	Big Stone County	County Commissioner
Todd Larson	Big Stone County Highway Dept.	County Engineer (past)
Jorden Roggenbuck	Big Stone County Highway Dept.	County Engineer
Darwin Karsky	Big Stone County Highway Dept.	Maintenance Supervisor
Neila Gary	City of Barry	City Clerk
Michelle Homan	City of Beardsley	City Clerk/Treasurer
Jackie Hoffman	City of Beardsley	City Clerk/Treasurer
Karie Wiegman	City of Clinton	City Clerk
Lee Siegler	City of Clinton	Vice Mayor

Name	Agency/Organization	Participant Title
Kirstin Koch	City of Correll	City Clerk
Scott Bauer	City of Graceville	City Clerk
John Ristvedt	City of Graceville Fire Department	Fire Chief
Elain Johnsrud	City of Johnson	City Clerk
Don Johnsrud	City of Johnson	Mayor
Christopher Teske	City of Odessa	Fire Chief/City Councilor
Char Grossman	City of Ortonville	City Clerk/Administrator
Jason Mork	City of Ortonville Police Department	Chief of Police (past)
Dan Wiese	Akron Township	Chairman
Holly Wellendorf	Big Stone Township	Clerk
Diane Vogt	Moonshine Township	Clerk/Treasurer
Randy Shelstad	Odessa Township	Supervisor
Jeff Taylor	Ortonville School	Superintendent
Kris Evje	Ortonville School District ISD#2903	Superintendent
Tracey Raguse	Clinton-Graceville-Beardsley Schools	K-12 Principal
Brad Kelvington	Clinton-Graceville-Beardsley Schools	Superintendent
Nicole Erickson	Countryside Public Health Services	RN
Dawn Bjorgan	Countryside Public Health Services	Emergency Preparedness Coordinator
Alex Halvorson	Countryside Public Health Services	Environmental Health Specialist
Suzanne Paulson	Countryside Public Health Services	Environmental Health Specialist II
Becky Pansch	Essentia Health Graceville	Lab/Safety
Mike Mittelstaedt	Essentia Health	Emergency Management
Julie Rosenberg	Essentia Health	Administrator
John Meyer	Ortonville Area Health Services	Safety Officer
Brett Danielson	Stakeholder	Truck Driver
Don Tweet	Big Stone County Farm Service Agency	Executive Director
Aaron Twedt	Big Stone Agricultural Society	Vice President
Michael Forsberg	Big Stone County Farm Service Agency	Farm Loan Manager
Amber Doschadis	Upper Minnesota River Watershed District	Administrator
Tom Hoffman	Agralite Electric Cooperative	Manager of Engineering and Operations
Kelly Serr	National Weather Service	Warning Coordination Meteorologist
Paul Hester	Burlington Northern Santa Fe Railway	Hazmat and Emergency Response Field Manager
Lisa Villcheck	Minnesota Homeland Security and Emergency Management	HSEM Region 4 Regional Program Coordinator
Blain Johnson	Lac qui Parle County Emergency Management	Emergency Management Director
Lynn Siegel	Traverse County Emergency Management	Emergency Management Director

2.2 Review of Existing Plans, Capabilities & Vulnerabilities

Big Stone County and its local communities utilized a variety of planning documents to direct plan development. These documents included a Comprehensive/Master Plan, Emergency Operations Plan, Transportation Plan, etc. (see Section 5.1.3 and Appendix D). The planning process also incorporated the existing natural hazard mitigation elements from previous planning efforts. In addition, the 2019 Minnesota All-Hazard Mitigation Plan was consulted.

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

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

Local Mitigation Surveys: As part of Big Stone County's 2023 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 Big Stone County LMS report, see Appendix C).

2.3 Planning Process Timeline and Steps

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

2.3.1 BIG STONE COUNTY STAKEHOLDER COORDINATION

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

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

To provide opportunity for public input, Big Stone 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, and the public feedback period for the draft plan was open from 2/2/23 to 2/26/23, for a period of 15 days. Appendix G provides documentation of the public outreach for feedback on the draft plan by Big Stone County and jurisdictions.

Table 2. Big Stone County hazard mitigation update meetings and public outreach

Event	Date	Appendix
Kickoff Webinar	7/14/21	Appendix F, Planning Team Meetings
News Release #1	9/1/21	Appendix G, Public Outreach & Engagement Documentation
Planning Team Meeting #1	1/12/22	Appendix F, Planning Team Meetings
Planning Team Meeting #2	11/15/22	Appendix F, Planning Team Meetings
News Release #2	2/2/23	Appendix G, Public Outreach & Engagement Documentation

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

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

2.3.2 OVERVIEW OF JURISDICTIONAL PARTICIPATION

Throughout the planning process, Big Stone 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 Big Stone 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 Big Stone 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 Big Stone 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 Big Stone 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. Big Stone 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 the participation of each city that took part in the Big Stone County HMP update planning process, with reference to the location of 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
Big Stone County (5,093)	X	X	X	X	X	X
City of Barry (17)	X	X		X	X	X
City of Beardsley (210)	X	X			X	X
City of Clinton (359)	X	X		X	X	X
City of Correll (25)	X	X	X	X		X

Jurisdiction (2022 Est. Population, Esri)	News Release #1	Planning Team Mtg. #1	Local Mitigation Survey	Mitigation Action Charts	Planning Team Mtg. #2	News Release #2 & Plan Review
Supporting Documentation	App. G	App. F	App. C	Sec. 5.3 App. H	App. F	App. G
City of Graceville (574)	X	X	X	X	X	X
City of Johnson (23)		X		X	X	X
City of Odessa (100)	X	X	X			X
City of Ortonville (1,983)	X	X	X		X	X
Neighboring Jurisdictions:						
Lac qui Parle County		X				
Swift County						
Traverse County		X			X	
Grant County (SD)						
Roberts County (SD)						

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.

[See a list of all natural hazards covered in the 2023 HMP](#)

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.

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.

3.1 Hazard Identification and Prioritization

The cornerstone of the risk assessment is identification of the hazards that affect jurisdictions. Listed below are the natural hazards addressed in the 2019 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 Big Stone 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 to reflect the definitions of natural hazards used in the 2019 Minnesota State Hazard Mitigation Plan.

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

The prioritization of hazards for the Big Stone 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 2023 Big Stone County HMP Update

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

3.1.2 FEMA- AND MINNESOTA-DECLARED DISASTERS AND ASSISTANCE

Another historical perspective is derived from FEMA-declared disasters. Fifteen major disasters and four emergency declarations in Big Stone County have been made between 1957 and December 2022; details of these can be viewed on the [Big Stone 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). Big Stone County was included in two 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 which reduce disaster losses and protect life and property from future disaster damages (FEMA, 2021a). Table 5 lists the projects in the county funded by a hazard mitigation assistance program.

Table 5. Historical hazard mitigation funding awarded in Big Stone County

Project Identifier	Sub-Grantee	Project Type	Federal Share (%75)
DR-1717-0015-P	Upper Minnesota Valley Regnl Devel Comm	Local Multihazard Mitigation Plan	\$116,580
DR-4069-0009-P	Upper Minnesota Valley Regnl Devel Comm	Local Multihazard Mitigation Plan	\$90,488
DR-1175-0040-R	City of Clinton	Vegetation Management - Wind	\$1,425

SOURCE: (MN HSEM, 2022)

3.2 Population 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)

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

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 who may need support in preparing for hazardous or recovering from disaster. The CDC SVI is created at the census tract level using American Community Survey (ACS) five-year data.

3.3 Climate Change

Minnesota’s climate is currently changing in ways that are pushing us to adapt to weather patterns and extreme events that pose major threats to our health, homes, environment, and livelihoods. These events cost our state millions in property loss, damaged infrastructure, disrupted business, medical care, and support services, and put residents and responders at risk. Understanding how our weather is changing now and into the future will help planners and decision-makers in emergency management and supporting fields extend our progress in climate adaptation and lead to more resilient communities (MDH, 2018).

[Climate Change and Natural Hazards](#)

The National Climate Assessment suggests that infrastructure planning (particularly water resources infrastructure) should “be improved by incorporating climate change as a factor in new design standards and asset management and rehabilitation of critical and aging facilities, emphasizing flexibility, redundancy, and resiliency” (Georgakakos, et al., 2014).

Federal, state, and tribal governments are increasingly integrating climate change adaptation into existing decision-making, planning, or infrastructure-improvement processes (Georgakakos, et al., 2014). Definite predictions are difficult to make, as changes may vary depending on geographical location, even within Minnesota. Intense study of these topics is ongoing.

Rural communities are particularly vulnerable to climate change, due to their dependence upon natural resources, physical isolation, limited economic diversity, higher poverty rates and aging populations. According to *Climate Change Impacts in the United States: The Third National Climate Assessment*,

Warming trends, climate volatility, extreme weather events, and environmental change are already affecting the economies and cultures of rural areas. Many rural communities face considerable risk to their infrastructure, livelihoods, and quality of life from observed and projected climate shifts. These changes will progressively increase volatility in food commodity markets, shift the ranges of plant and animal species, and, depending on the region, increase water scarcity, exacerbate flooding and coastal erosion, and increase the intensity and frequency of wildfires across the rural landscape (Hales et al., 2014).

The Assessment also notes that transportation systems in rural areas are more vulnerable to risks such as flooding since there are typically fewer transportation options and infrastructure redundancies. In addition, power and communication outages due to severe weather events typically take longer to repair in rural areas, which can increase the vulnerability of elderly populations. Rural area populations are also more vulnerable since they typically have limited financial resources to deal with the effects of climate change.

The composition of the region's forests is expected to change as increasing temperatures shift tree habitats northward. While forests in the Midwest are currently acting as a net absorber of carbon, this could change in the future due to projected increases in insect outbreaks, forest fires, and drought, which will result in greater tree mortality and carbon emissions (Pryor et al., 2009).

3.4 Jurisdictional Change in Risk or Vulnerability Assessment

Jurisdictions in Big Stone 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, Big Stone County Emergency Management and each city jurisdiction were asked to provide a vulnerability assessment that described what structures, systems, populations, or other community assets were susceptible to damage and loss from specific hazard events. Following are examples of common responses related to noted local vulnerabilities (as preserved in

Appendix C: Part A, Question 3) for each jurisdiction. This information was used to help tie local vulnerability back to the exposure of people, buildings, infrastructure, and the environment to the natural hazards listed in Table 4 and to assist local governments in development of related local mitigation actions to reduce risk.

Big Stone County

Flooding: Area flooding encroaches upon and often overtops township and county roads, wearing away soils of the roadbed and creating significant erosion if not a complete washout of the road, altering public safety and transportation systems. Similarly, bridges and culverts may experience structural erosion due to high rates of flow and general capacity challenges.

Spring snowmelt from heavy snow events can cause flooding, road closures or otherwise impassable road conditions which create temporary loss of access to transportation and adverse effects to public safety systems. Spring snowmelt can also lead to wet/soft road base soils, potentially creating washouts and eroded transportation systems.

Lake homes often experience ongoing high-water conditions. Additional water from flooding/flash floods adds to their susceptibility and increases the level of shoreline erosion and damage. Numerous properties and roadways in Big Stone County are prone to flooding during high rain events and during springtime snow melting. Residents have sandbagged the areas in the past to prevent flooding into homes and businesses.

All Wind Events (Thunderstorm, Tornado, Windstorm, Ice Storm, Blizzard): Uprooted and fallen trees and branches have the ability to cause extensive physical damage to residential and community infrastructure, create impediments to travel and emergency response access, and create cascading impacts such as power outages.

A vast majority of electrical infrastructure across Big Stone County is above ground. We have experienced damage to electrical infrastructure (power generation facilities/equipment, poles & lines, substations, transformers, etc.) that has resulted in power outages, creating near-universal vulnerability for people (especially children, seniors, and anyone who relies on powered medical devices) and animals. Physical damages and losses to private homes, commercial structures, and disconnects societal access to community lifelines, economic activity, etc. are also widely experienced in power outages.

We have a mobile home park, campgrounds, Fairgrounds and other susceptible locations within the county that do not have a storm shelter and residents are vulnerable to high wind and tornado events.

We have cities within the county that do not have emergency notification sirens, each city should have the ability to install a new outdoor warning siren to help warn residents.

Some new developments are built on slab with no basement. These residents are at greater risk during severe wind events. The absence of storm shelters leaves residents, guests, and visitors

with only their vehicle or manufactured structure for protection and making them more susceptible to the winds, debris, and damage associated with these storms.

Much of the electrical service in the county 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.

In addition to the impacts caused by all wind events, heavy snow events cause road closures or otherwise impassable roads create at least temporary loss of access to transportation and adverse effects to public safety systems.

Extreme Cold: Residents are susceptible to dangers from extreme cold, especially if the power goes down during winter storm events. We have a high population of senior citizens and also low-income residents who are more vulnerable during these events. We have experienced damages to roads from spring frost heaves, and frozen culverts that cause localized flooding.

City of Barry

Flooding: City streets are prone to flooding during high rain events.

Ice Storms, Blizzards: The city 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 do not have an outdoor warning siren. There is no severe weather safe room available for the public.

Extreme Cold: Residents are susceptible to dangers from extreme cold, especially if the power goes down during winter storm events. We have some senior citizens and also low-income residents who are more vulnerable during these events. The city has experienced damages to roads from spring frost heaves, frozen culverts that cause localized flooding.

City of Beardsley

Flooding: City streets are prone to flooding during high rain events.

Ice Storms, Blizzards: The city 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: Our outdoor warning siren is aging. There is no severe weather safe room available for the public, this is a great concern during outdoor events.

Extreme Cold: Residents are susceptible to dangers from extreme cold, especially if the power goes down during winter storm events. We have a significant number of senior citizens and also

low-income residents who are more vulnerable during these events. The city has experienced damages to roads from spring frost heaves and frozen culverts that cause localized flooding.

City of Clinton

Flooding: Our sanitary sewer lift station is prone to flooding during high rain events. City streets are prone to flooding during high rain events.

Ice Storms, Blizzards: The city 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: Our outdoor warning siren is aging and there is no severe weather safe room available for the public, this is a great concern during outdoor events like the Fair that is held each year in August.

Extreme Cold: Residents are susceptible to dangers from extreme cold, especially if the power goes down during winter storm events. We have a high population of senior citizens and also low-income residents who are more vulnerable during these events. The city has experienced damages to roads from spring frost heaves, frozen culverts that cause localized flooding.

City of Graceville

Flooding: Our nursing home/assisted living complex (Grace Home) is the most vulnerable, overland flooding can inundate the complex if water reaches the elevation of Highway 75, which has happened twice. If these buildings were flooded, evacuations would need to happen with elderly population.

We have also had to sand bag homes and dike Lake Avenue when Toqua Lake has flooded out of its banks. Flooding of Toqua Lake, once over Lake Ave could destroy numerous homes, a 24-unit apartment complex and several accessory buildings and roads.

Our sanitary sewer also runs through this low area, the manholes were placed at a higher elevation in 2016 but there is always the chance of surface water entering the system.

Windstorms: Homes, streets and businesses could be damaged, and blocked roads could cause emergency responder problems. We have a very high senior citizen population, which makes things more complicated.

Winter Storms: Winter storms could cause power outages, senior citizen population is at risk, emergency responders would be hindered. Extreme cold causes water main breaks, storm water system can freeze causing local flooding. Emergency responders are not able to respond to outlying areas.

City of Johnson

Flooding: Our gravel streets are prone to flooding during high rain events.

Ice Storms, Blizzards: Johnson’s city 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 do not have an outdoor warning siren. There is no severe weather safe room available for the public.

Extreme Cold: Our residents are susceptible to dangers from extreme cold, especially when the power goes down during winter storms. We have some senior citizens and also low-income residents who are more vulnerable during these events. The city has experienced damages to roads from spring frost heaves and frozen culverts that cause localized flooding.

City of Odessa

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: Windstorms and tornadoes usually lead to loss of electricity. This causes sump pumps to not work and then the sewers back up into homes.

City of Ortonville

Windstorms, Hail, Tornadoes: Our primitive campground at the foot of Big Stone Lake does not have a storm shelter, but local law enforcement officers notify the campers when a storm is approaching. When available, the MN National Guard Armory in Ortonville is opened for people that have no place to go for safety.

3.4.2 FUTURE DEVELOPMENT

Because Big Stone 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. Big Stone 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 Big Stone County HMP update, jurisdictions were asked to describe if there were any factors related to population growth, zoning, or development they felt have increased their community’s vulnerability to future severe weather or disaster events. Following is a compilation of common responses as noted in Appendix C: Part A, Question 5.

Big Stone County

Big Stone County residents continue to “age in place” – the percentage of elderly continues to grow and represent the largest segment of our population. At the same time, efforts toward “rural rebound” – the encouragement of people to move from metro to rural communities – has slowly begun to impact the county. In limited cases, this has led to an increase in expectations of a lifestyle and infrastructure similar to their prior experiences.

City of Clinton

With the construction of a new assisted living facility, there is also a large concentration of senior residents in one location that will need assistance during a disaster event.

City of Graceville

In the past few years many tiling projects have been approved, ditches have been cleaned on farmland and culverts are being updated. This all adds to the flood potential for the city of Graceville as water collects in Toqua Lake. Major storms and rain events seem to be more frequent, adding to the increase in vulnerability.

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 Big Stone 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 Big Stone 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 to incorporate mitigation into other planning mechanisms (see Section 5.1 and Appendix C).

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

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

4.1 Flooding

Flooding is the most significant and costly natural hazard in Minnesota. Twelve of the 19 federal disaster declarations in Big Stone County included flooding.

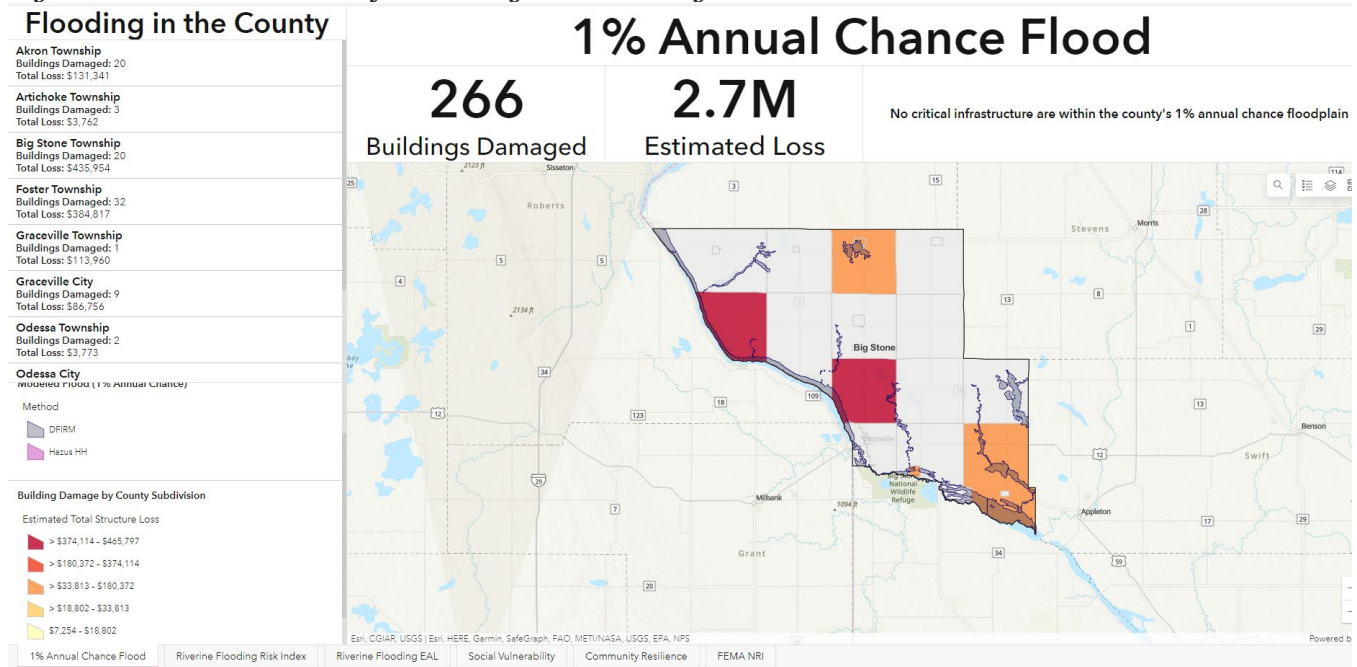
4.1.1 PROBABILITY OF OCCURRENCE

From 1997 to 2022, the NCEI Storm Events Database has recorded 14 flood and flash flood events. Big Stone County has experienced one flash flood event every 12.5 years and one riverine flood event every 2.2 years on average during this period.

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. Flood cross-section and base flood elevation data were used to generate depth grids where available. The remainder of the county's depth grids were modeled in HAZUS using the EQL method. The resulting Hazus 1% annual chance floodplain is shown in the Flood Vulnerability dashboard on the Big Stone County HMP website (Figure 1), where it is available in an interactive form.

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

Figure 1. 1% Annual chance flood in Big Stone County



4.1.2 VULNERABILITY

Potential economic loss estimates were based on county-specific building data. Big Stone 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. 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, 7,548 points were input to Hazus to represent buildings with a total estimated building plus contents value of \$608 million.

Approximately 56% of the buildings (and 49% of the building value) are associated with residential housing. The estimated loss by occupancy class for the entire county is shown in Table 6.

Table 6. 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	4,261	\$299,304,224	239	\$19,637,400	228	\$2,240,266
Commercial	343	\$83,866,504	11	\$1,703,000	11	\$140,879
Other	2,944	\$225,112,504	31	\$2,578,800	27	\$290,682
Totals	7,548	\$608,283,232	281	\$23,919,200	266	\$2,671,827

SOURCE: (FEMA, 2021B)

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 for the purposes of visualizing the loss (see map [here](#)). 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 Big Stone 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 Big Stone 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, 2018).

It is important to identify any critical infrastructure within the 1% annual chance floodplain, given the higher risk of the facility or infrastructure being incapacitated or destroyed during a flood. None of Big Stone County's critical infrastructure was determined to be in the 1% chance flood boundary using the available facility data.

Community Vulnerability

Potential economic losses were estimated by Census Minor Civil Division. The City of Ortonville would suffer significant estimated losses in the 1% annual chance flood. All jurisdictions with buildings identified in the 1% annual chance flood zone can also be viewed on the [Big Stone County HMP website](#).

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

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

4.1.3 PROGRAM GAPS AND DEFICIENCIES

Big Stone County Emergency Management identified several 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:

Increasing Culverts and Raising Roads: Some roads, bridges, and culverts within Big Stone County continue to need improvements as they are impacted by annual high rain events. The county needs funding assistance to improve roads and culverts that experience repetitive flooding.

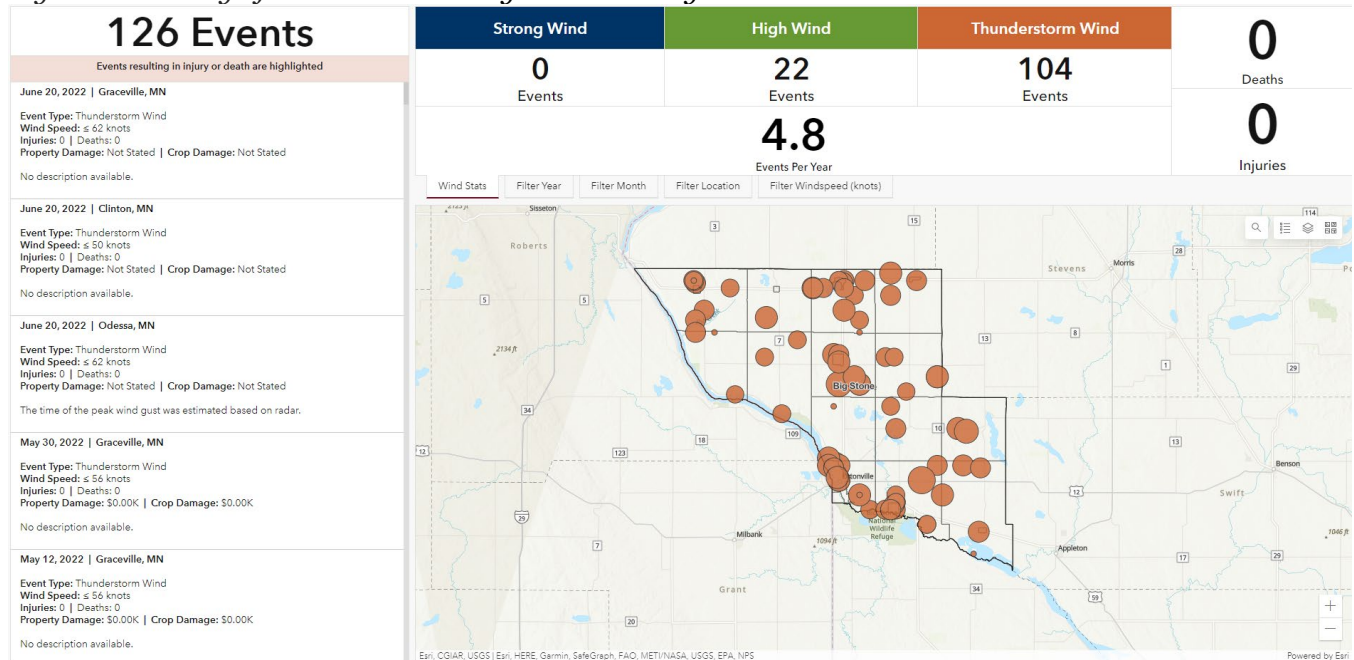
Road Infrastructure: Flood mitigation for county and township roads (e.g., culvert replacements, road repair) is an ongoing need. The county and many of our townships have limited funding for road infrastructure. Big Stone County continues to provide assistance on road infrastructure mitigation projects to reduce the impacts of localized 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 Big Stone County is shown in Figure 2; an interactive version of this map can be found on the Big Stone County HMP website.

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

Figure 2. History of windstorms in Big Stone County



4.2.1 PROBABILITY OF OCCURRENCE

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

4.2.2 VULNERABILITY

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

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

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

4.2.3 PROGRAM GAPS AND DEFICIENCIES

Big Stone 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 Big Stone County are above ground, exposing them to impacts/damage from high wind events, potentially leading to localized or extensive power outages.

Public Education: Continued public education needs to be conducted during tornado season to inform the public on what is a tornado watch/warning and what to do when outdoor warning sirens are activated. Ongoing public education is also needed to encourage residents to be ready for long-term power outages during dangerous spring and summer storm events such as thunderstorms or high wind events.

Storm Shelters and Tornado Safe Rooms: There are areas throughout the county without viable storm shelters or tornado safe rooms where there are populations vulnerable to high wind and storm events, such as campgrounds, resorts, mobile home parks, schools, and other seasonal gathering locations such as the county fairgrounds and county parks that offer camping. 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 appropriate.

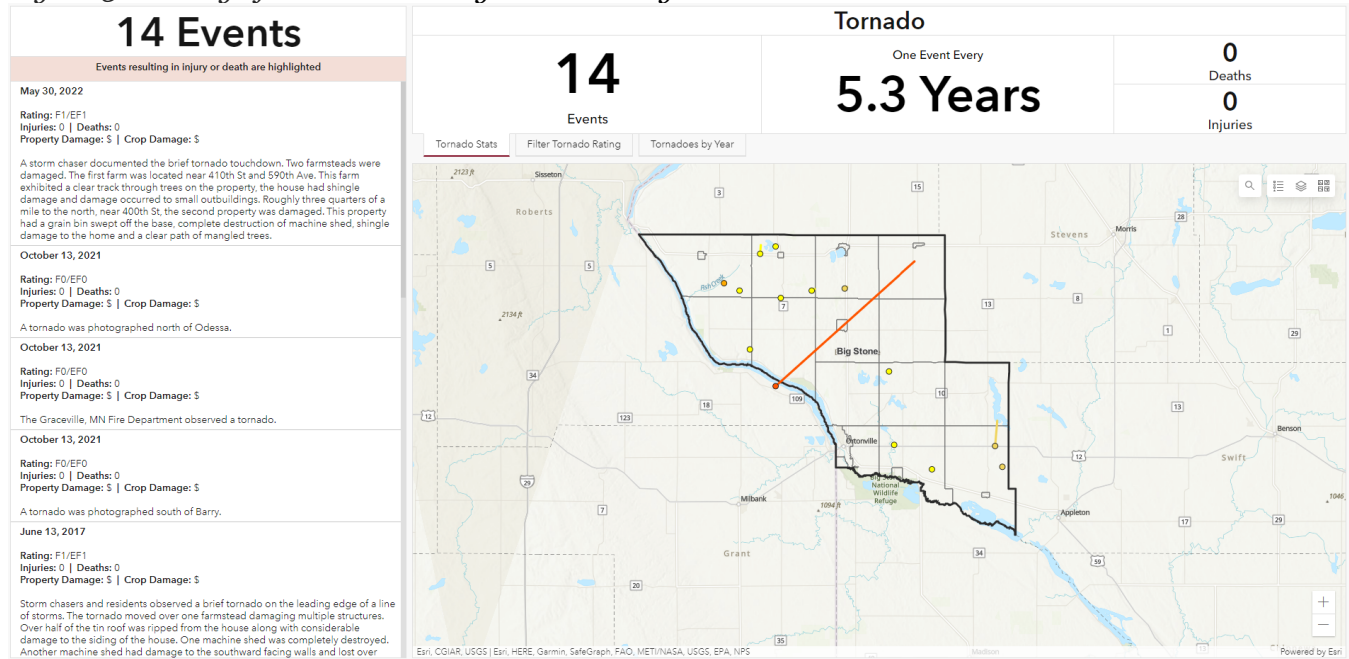
4.3 Tornadoes

With wind speeds reaching up to 300 mph, tornadoes are one of nature’s most violent storms (Hogeback, 2020). The history of tornadoes in Big Stone County is shown in Figure 3; an interactive version of this map can be found on the Big Stone County HMP website.

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

The worst tornadic disaster in Big Stone County occurred in 1996, when an EF3 storm split the county and caused \$1.5 million in crop damage.

Figure 3. History of tornadoes in Big Stone County



4.3.1 PROBABILITY OF OCCURRENCE

Estimating the probability of future tornadoes in Big Stone County was done using two methods. The first method summed the total number of tornadoes which either touched down in or traveled through the county. This sum was divided by the number of years tornado data was recorded, resulting in the annual relative frequency of tornado occurrences in the county. Based on records in the NCEI Storm Events Database through February 2020, there has been one tornado every 5.3 years in Big Stone County. These 14 tornadic events occurred in 8 of the 70 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 Big Stone County, there was an annual frequency of 2-4 tornadoes within a 50-mile radius. The historical frequency was only slightly higher in the southeast than the northwest. These relative frequencies can be used to infer the probability of these events occurring in the future.

4.3.2 VULNERABILITY

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

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

People living in mobile homes are particularly vulnerable to tornadoes due to them not being able to withstand the strong winds produced by a tornado. According to NOAA’s Storm Prediction Center, from 1985–2002, 49% of tornado fatalities in the United States were people who remained within or attempted to flee from mobile homes (AMS, 2004). While Minnesota law requires most mobile home parks to have storm shelters, many do not (Sepic, 2017).

4.3.3 PROGRAM GAPS AND DEFICIENCIES

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

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

Public Education: Continued public education needs to be conducted during tornado season to inform the public on what is a tornado watch/warning and what to do when outdoor warning sirens are activated. Ongoing public education is also needed to encourage residents to be ready for long-term power outages during dangerous spring and summer storm events such as thunderstorms or high wind events.

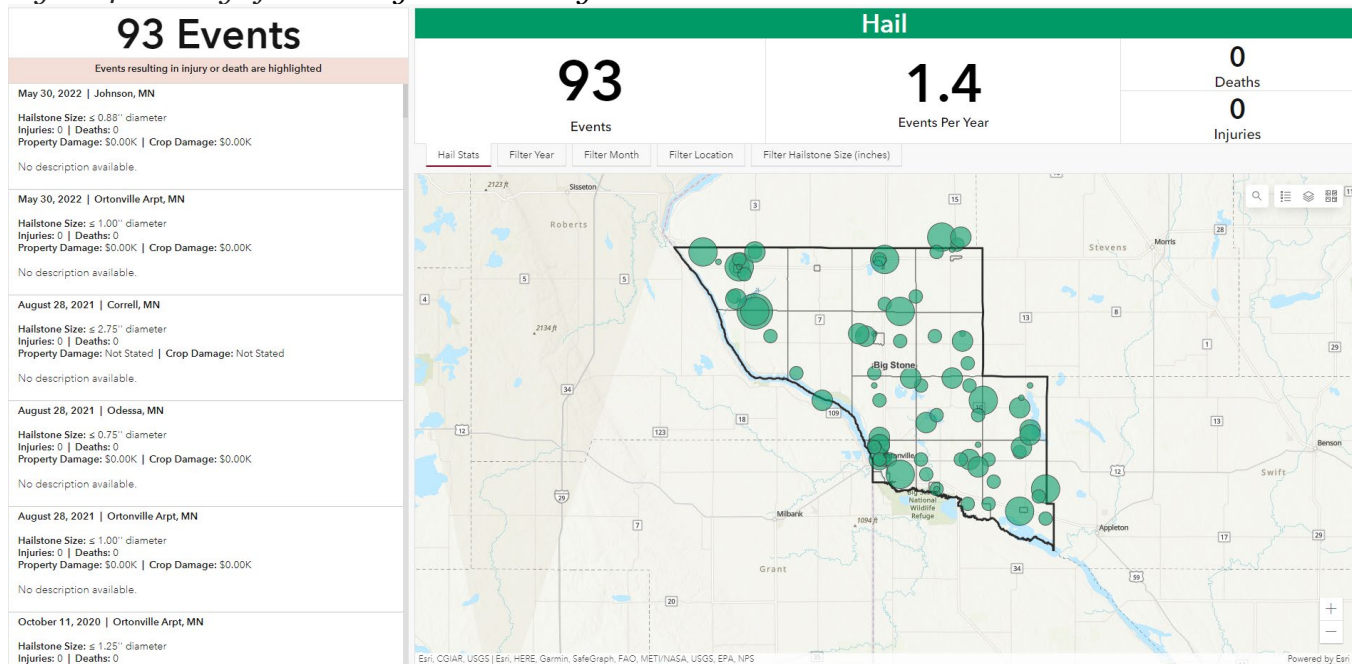
Storm Shelters and Tornado Safe Rooms: There are areas throughout the county without viable storm shelters or tornado safe rooms where there are populations vulnerable to high wind and storm events, such as campgrounds, resorts, mobile home parks, schools, and other seasonal gathering locations such as the county fairgrounds and county parks that offer camping. 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 appropriate.

4.4 Hail

Hailstorms occur throughout the year though are most frequent between May and August (NWS, 2020). Although hailstorms rarely cause injury or loss of life, they do cost Minnesota nearly \$16 million in property and crop damage each year (CEMHS, 2019). In 2017, 44% of properties in Minnesota were affected by damaging hail events (Samanta & Wu, 2017). The history of hail in Big Stone County is shown in Figure 4; an interactive version of this map can be found on the Big Stone County HMP website.

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

Figure 4. History of hail in Big Stone County



4.4.1 PROBABILITY OF OCCURRENCE

To determine the probability of future hailstorms in Big Stone County, records of previous hail events in the county were examined for the period of record. From January 1955 through January 2020, the relative frequency of hail events was 1.4 per year. This relative frequency can be used to infer the probability of hail events occurring in the future. Please note that public reports of hail are often secondary to those of thunderstorm winds or tornadoes because if either damaging winds or tornadoes occur, the damaging wind and/or tornado are more important to the reporter and may result in underreporting of hail events.

4.4.2 VULNERABILITY

Big Stone County’s agricultural lands and structures are vulnerable to hail damage and its residents to injury and possibly death. Data from the Spatial Hazard Events and Losses Database for the United States (SHELDUS) was examined to identify the county’s monetary losses due to hail damage to crops, property,

injury, and death. From 1960 through 2018 Big Stone County reported \$4,138,734 in hail damages, ranking 56th among Minnesota counties in total hail damages. Big Stone County’s losses are primarily due to crop damages reported at \$2,861,507, followed by \$1,277,227 in property damages. Crop indemnity payments due to hail totaled \$12,019,741 for the period of record spanning 1989–2018 (CEMHS, 2019).

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

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

4.4.3 PROGRAM GAPS AND DEFICIENCIES

Big Stone County Emergency Management identified that there are several program gaps and deficiencies that make its citizens more vulnerable to summer storms, including hail. The following gaps and deficiencies should be addressed with new mitigation efforts to reduce that vulnerability:

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

Public Education: Continued public education needs to be conducted during tornado season to inform the public on what is a tornado watch/warning and what to do when outdoor warning sirens are activated. Ongoing public education is also needed to encourage residents to be ready for long-term power outages during dangerous spring and summer storm events such as thunderstorms or high wind events.

Storm Shelters and Tornado Safe Rooms: There are areas throughout the county without viable storm shelters or tornado safe rooms where there are populations vulnerable to high wind and storm events, such as campgrounds, resorts, mobile home parks, schools, and other seasonal gathering locations such as the county fairgrounds and county parks that offer camping. 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 appropriate.

4.5 Winter Storms

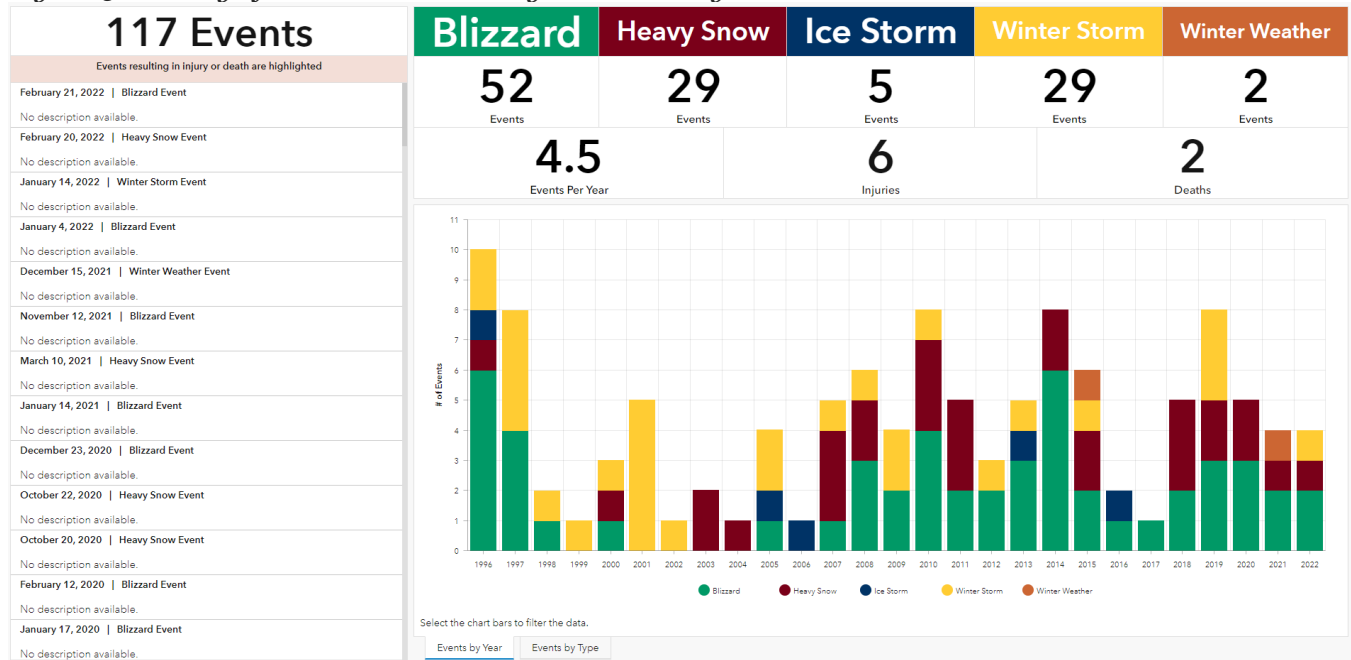
Winter storms encompass a number of winter weather events which the National Weather Service (NWS) organizes into the following categories: blizzard, heavy snow, ice storm, winter storm, and winter

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

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 \$957 million dollars in damages since 1960 (CEMHS, 2019). The history of winter storms in Big Stone County is shown in Figure 5; an interactive version of this map

can be found on the Big Stone County HMP website.

Figure 5. History of winter storms in Big Stone County



4.5.1 PROBABILITY OF OCCURRENCE

To determine the probability of future winter-related storm events in Big Stone 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 2020, the relative frequency of winter-related storm events in Big Stone County is 4.5 per year. This relative frequency can be used to infer the probability of these events occurring in the future.

4.5.2 VULNERABILITY

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

4.5.3 PROGRAM GAPS AND DEFICIENCIES

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

Above-Ground Power Lines: Most powerlines throughout Big Stone 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.

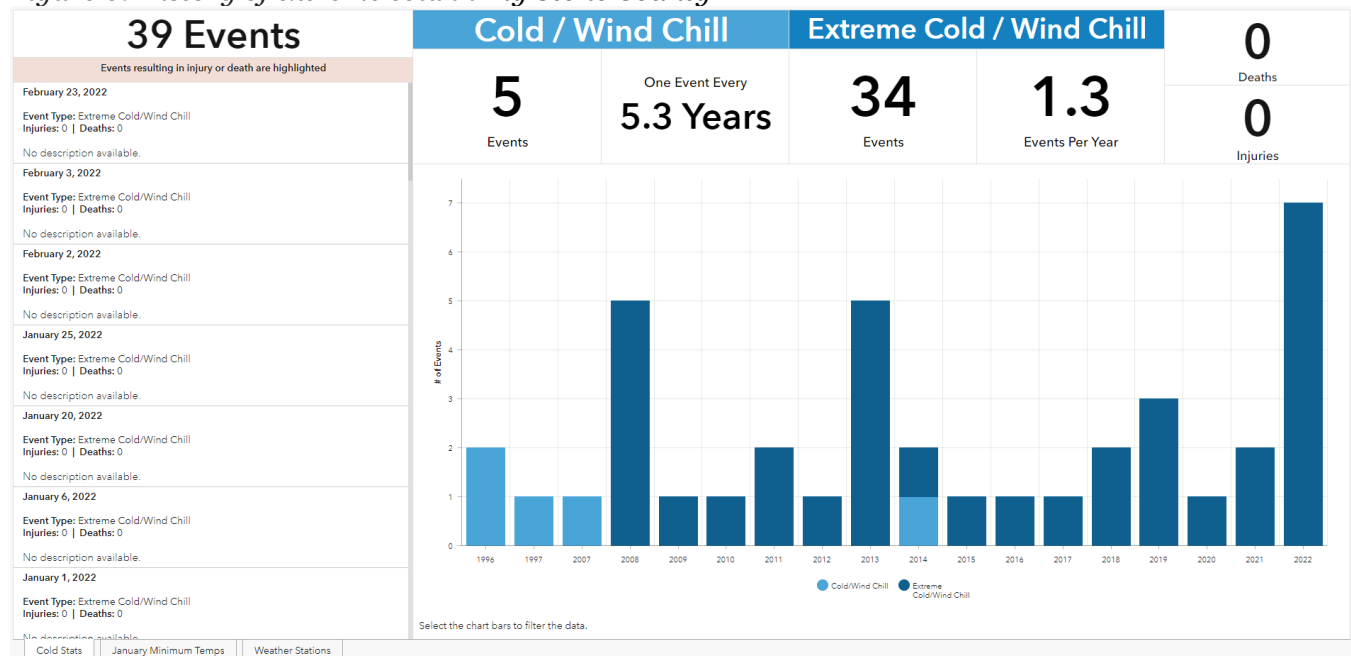
Backup Power: Not all designated shelter facilities have generator back-up power to provide the ability to care for residents if displaced during a severe winter event coupled with an extended power outage.

4.6 Extreme Cold

Due to Minnesota’s position in the middle of the continent and subsequent climate, the state may experience extremely frigid temperatures in winter. Winter in Big Stone County can be especially dangerous when low temperatures and wind create arctic-like wind chills. The history of extreme cold in Big Stone County is shown in Figure 6; an interactive version of this dashboard can be found on the Big Stone County HMP website.

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

Figure 6. History of extreme cold in Big Stone County



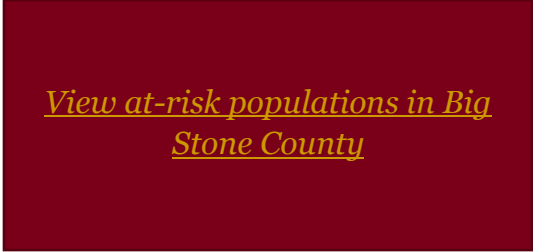
4.6.1 PROBABILITY OF OCCURRENCE

To determine the probability of future cold-related events in Big Stone 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 2020, the relative frequency of extreme cold/wind chill events in Big Stone County is

1.3 per year. (NCEI, 2021). This relative frequency can be used to infer the probability of these events occurring in the future.

4.6.2 VULNERABILITY

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



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

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

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

4.6.3 PROGRAM GAPS AND DEFICIENCIES

Big Stone 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.

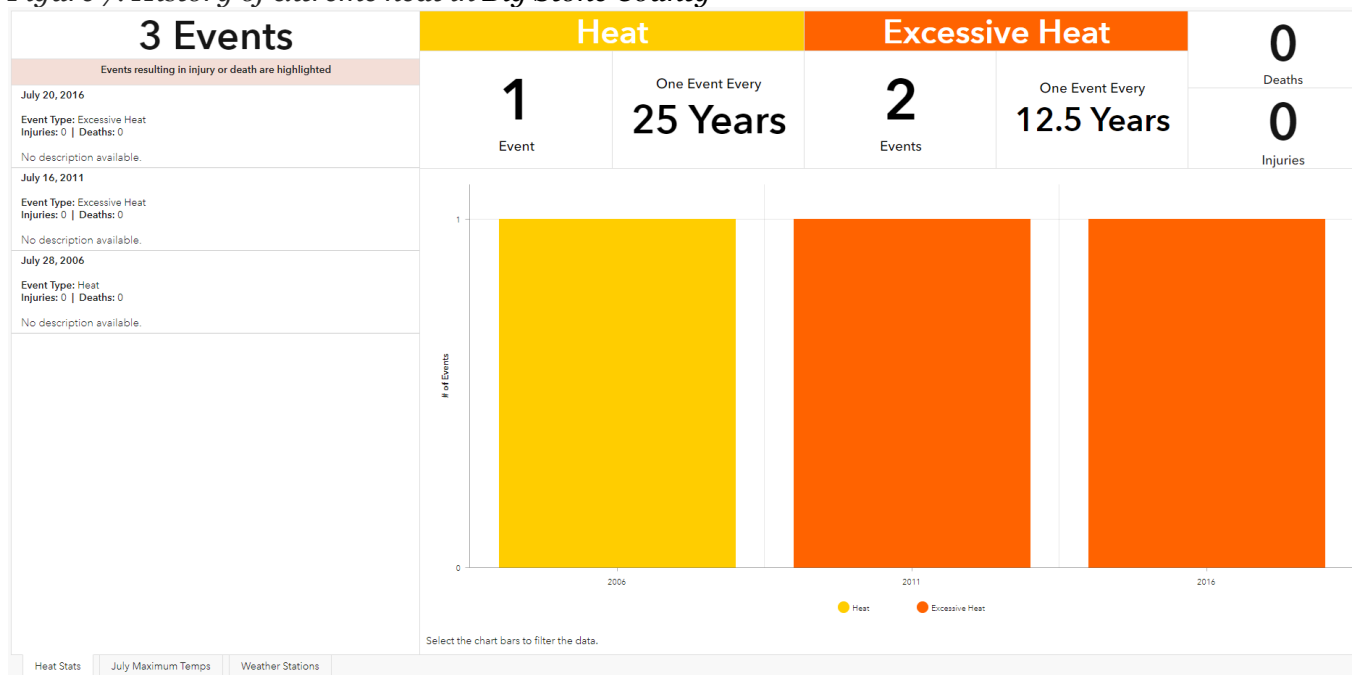
Public Education: Ongoing public education is needed to encourage residents to be prepared for extreme weather, including power outages during periods of extreme cold.

4.7 Extreme Heat

Extreme heat is the combination of very high temperatures and exceptionally humid conditions. 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 Big Stone County is shown in Figure 7; an interactive version of this chart can be found on the Big Stone County HMP website.

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

Figure 7. History of extreme heat in Big Stone County



Extreme heat events are linked to a range of illnesses, even death, and can exacerbate pre-existing chronic conditions (Moss, 2017). Medical costs related to extreme heat can be enormous: in 2005, the total was \$1.5 billion nationwide, or more than \$16,000 per patient (Union of Concerned Scientists, 2009). Heat-related hazards have cost Big Stone County over \$63,000 in property damages since 1960 (CEMHS, 2019).

4.7.1 PROBABILITY OF OCCURRENCE

To determine the probability of future heat-related events in Big Stone 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 2020, the relative frequency of extreme heat events in the county is one every 12.5 years. This relative frequency can be used to infer the probability of these events occurring in the future.

4.7.2 VULNERABILITY

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

High temperatures can be exacerbated by the urban heat island effect in densely developed areas, an effect that amplifies higher temperatures in areas with a higher concentration of impervious and paved surfaces. These types of surfaces absorb more heat and hold it for longer than vegetation cover (EPA, 2019). Impervious surfaces cover about 0.02% of Big Stone County (MDH & University of Minnesota, 2019). Impervious surfaces are not spread evenly throughout the county and attention should be given to cities or areas within the county that contain the largest amounts of this type of surface cover. Except for these areas, the risk of extreme heat does not vary geographically.

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 are not able to 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).



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

4.7.3 PROGRAM GAPS AND DEFICIENCIES

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

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

4.8 Dam Failure

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

Dam Inventory: There are seven dams in Big Stone County. Dams are mapped in Figure 8; an interactive version of this map is available on the Big Stone County HMP website.

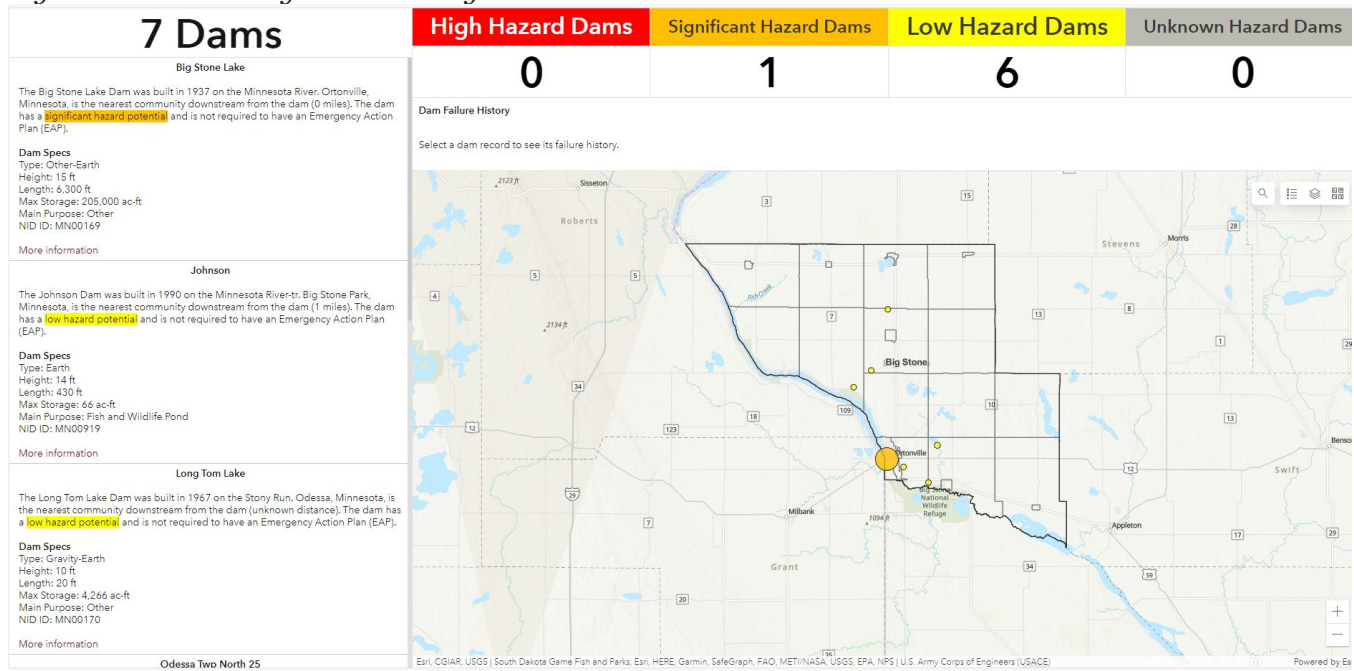
[*View interactive maps and see information about dam failure history, risk, and vulnerability*](#)

There is one significant hazard dam in Big Stone County, the Big Stone Lake Dam. This dam was built in 1937 and is immediately upstream of the community of Ortonville, Minnesota. The dam has a primary purpose of recreation and is owned and operated by the MN Department of Natural Resources. It is not known if this dam has an Emergency Action Plan (EAP).

4.8.1 PROBABILITY OF OCCURRENCE

Extreme precipitation is only one factor contributing to dam failure, and the possibility of failure is dam specific, relating to both environmental and structural conditions. There are few incidents of dam failure in Minnesota and none in Big Stone County. The likelihood of a dam failure in Big Stone County is very low. Dam failures are extremely unlikely if the dam is maintained in compliance with Minnesota's Dam Safety Program.

Figure 8. Dams in Big Stone County



4.8.2 VULNERABILITY

Although dam regulatory authorities differ between various federal and state agencies, all authorities attempt to classify dams according to the potential impacts from a dam failure or mis-operation. In response to the numerous classification systems, FEMA’s Interagency Committee on Dam Safety created a downstream hazard potential classification system that is adaptable to any agency’s current system. Table 7 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 7. 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 which 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). There are no high hazard dams in Big Stone County.

4.8.3 PROGRAM GAPS AND DEFICIENCIES

Big Stone 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 Big Stone County as related to hazard mitigation.
- Appendix C: As part of the Big Stone 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 Big Stone 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 8 lists and describes jurisdictional participation in the National Flood Insurance Program (NFIP).

Table 8. NFIP participation in Big Stone County

Community Name	Participation in the NFIP	FEMA Map	Description of Participation
Big Stone County	Participating	FEMA-mapped high-risk areas	Big Stone County’s Environmental Services Department maintains the Big Stone County Floodplain Management Ordinance (2006) and floodplain maps for the county. The Environmental Services Department is the repository for the National Flood Insurance Program’s Digital Flood Insurance Rate Maps (DFIRM), as well as flood boundary and floodway maps for rural Big Stone County. The Planning and Zoning Office can assist county residents in determining whether their property is affected by an officially mapped flood area.
Barry	Participating	No FEMA-mapped high-risk areas	The city enforces requirements of the NFIP through the city’s Floodplain Ordinance, adopted in 2019 upon enrollment in the NFIP.
Beardsley	Not Participating	No FEMA-mapped high-risk areas	The city does not have a FEMA map and is not participating.
Clinton	Participating	No FEMA-mapped high-risk areas	Clinton was originally enrolled in FEMA’s “emergency program” in 1997, and an ordinance wasn’t required at that time if communities did not have mapped floodplain. They were “converted” to the regular program on the date of the new maps on 4/17/2006. When the community doesn’t have mapped floodplain, FEMA doesn’t require an updated ordinance.
Correll	Not Participating	No FEMA-mapped high-risk areas	The city does not have a FEMA map and is not participating.
Graceville	Participating	FEMA-mapped high-risk areas	The city enforces its Federal Flood Insurance Ordinance, which requires permits for all proposed construction or other development in the community, including the placement of manufactured homes, so that it may determine whether such construction or other development is proposed within flood-prone areas.
Johnson	Not Participating	No FEMA-mapped high-risk areas	The city does not have a FEMA map and is not participating.

Community Name	Participation in the NFIP	FEMA Map	Description of Participation
Odessa	Participating	FEMA-mapped high-risk areas	The city was not familiar with their participation in the NFIP. The state NFIP coordinator noted that the city has a Floodplain Ordinance in place, which was updated in 2006.
Ortonville	Participating	FEMA-mapped high-risk areas	The city enforces requirements of the NFIP through Section 150.110, Flood Hazard Ordinance, in the city's code of ordinances.

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.

Big Stone County has two RL properties and a total of six losses. The properties are both single-family residences. Payments have totaled \$72,806 as of September 2022.

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

5.1.2 PLANS AND ORDINANCES

Big Stone 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

Big Stone 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 Big Stone County to support mitigation for the hazards addressed in this plan.

All Hazards

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

Emergency Notification Systems: Big Stone County maintains the Smart911 (RAVE) Emergency Alert 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 Big Stone County website.

Relationship with National Weather Service: Big Stone County has a strong relationship with the National Weather Service – Aberdeen, South Dakota 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: Big Stone County utilizes the Big Stone County Emergency Management website page, Big Stone County Emergency Management Facebook page, and local news media to communicate with residents and visitors on emergency preparedness.

Mass Care Shelter Facilities: In partnership with the American Red Cross, Big Stone County has designated facilities throughout the county that could be utilized to provide mass care services to support an evacuation or other incident where temporary housing and basic human services are needed. Big Stone County Emergency Management maintains a list of shelters within the county and has trained staff prepared for shelter operations.

NOAA Weather Radios: Big Stone County actively promotes the use of NOAA Weather Radios by local residents, businesses, schools, long term care facilities, government buildings, faith communities, and other places of common gathering to encourage their use & functionality.

Weather-Ready Nation Ambassador: Big Stone County Emergency Management is a NOAA Weather-Ready Nation 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: Generator back-up power is in place for the Big Stone County Courthouse.

School Closings: Schools throughout Big Stone County have policies, decision-making protocols, and communications plans in place to determine the need to close schools and to notify targeted audiences in the event of severe weather, extreme temperatures, or other events that pose risk to students and staff.

Severe Winter Storms

Winter Weather Statements (Watch, Advisory, Warning, etc.): Big Stone County relays all winter weather statements received from the National Weather Service via social media platforms and our community partners.

Public Education: Big Stone County participates annually in the Winter Hazard Awareness Week campaign sponsored by the National Weather Service and MN Homeland Security and Emergency Management each November. Throughout the week, the county shares information on winter storms, outdoor & indoor winter safety, winter fire safety, and winter driving.

Snow Removal & Ice Control: The Big Stone County Highway Department is responsible for the removal of snow and ice control for county roads, as well as some city and township roads based upon agreement. The department completes its snow removal process in accordance with the Big Stone County Hwy Department Snow Removal Policy. MNDOT removes snow from State Highways as well as disperses salt/sand as needed.

Severe Summer Storms

Emergency Notifications: Severe spring and summer storm warnings are initiated by the National Weather Service. Residents receive warnings by NOAA weather radio, local media, Smart911 (RAVE) Emergency Alert System, cell phone apps, and the outdoor warning siren system. Big Stone County redistributes outlook, watch, advisory, and warning statements issued by the NWS.

Outdoor Warning Sirens: Outdoor warning sirens are located in the cities of Beardsley, Graceville, Clinton, Ortonville and Odessa. Warning sirens are tested on a monthly basis by the Big Stone County Sheriff's Office or the jurisdiction where the siren is located. Sirens are activated when the National Weather Service notifies Dispatch of high winds or tornado conditions that pose a risk to the public. Warning sirens are owned and maintained by the cities where they are located. The sirens in the city of Ortonville can be remotely activated by the Big Stone County Sheriff's Office.

Skywarn Program: Big Stone County Emergency Management works with the National Weather Service to offer Storm Spotter training to local fire and law enforcement departments and local 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.

Public Education: Big Stone County participates in the annual Severe Weather Awareness Week campaign sponsored by the National Weather Service and Minnesota Homeland Security and

Emergency Management each April. Throughout the week, the county shares information on severe weather alerts and warnings, lightning, hail, floods, tornadoes, and extreme heat.

Right of Way Clearance: Big Stone County Highway Department and local utility providers regularly maintain and clear their right of ways of trees, vegetation, and debris to prevent the creation of additional hazards or blocking road/site access resulting from severe spring and summer storm events.

Manufactured Home Parks Shelters & Evacuation Plans: Countryside Public Health works with licensed manufactured home parks to ensure the requirements of MN Statute 327.20 relating to shelters and evacuation plans are met. Shelter and evacuation plans must be approved by the city or township in which they are located and submitted to Countryside Public Health.

Extreme Cold

Emergency Notifications: Extreme cold temperature warnings are issued by the National Weather Service. Big Stone County Emergency Management assists with sharing this information with the public.

Extreme Cold Safety Awareness: Big Stone County Emergency Management and Countryside Public Health promote public awareness of personal safety measure to take during periods of extreme cold, such as minimizing exposure and being prepared with survival kits in vehicles during winter.

Extreme Heat

Emergency Notifications: Extreme heat temperature warnings are issued by the National Weather Service. Big Stone County Emergency Management assists with sharing this information with the public.

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

Flooding

National Flood Insurance Program (NFIP): Big Stone County has FEMA Mapped High Risk Areas and participates in the NFIP.

Floodplain Ordinance and Mapping: Big Stone County's Environmental Services Department maintains the floodplain management ordinance (2006) and floodplain maps for the county. The Environmental Services Department is the repository for the National Flood Insurance Program's Digital Flood Insurance Rate Maps (DFIRM), as well as flood boundary and floodway maps for

rural Big Stone County. The Planning and Zoning Office can assist county residents in determining whether their property is affected by an officially mapped flood area.

Shoreland Regulations: Big Stone County Environmental Services is responsible for implementing State Shoreland Rules found in Minnesota Rules 6120.2500 – 3900. Shoreland regulations were first implemented by the State in the early 1970s to provide for the orderly development and protection of rivers and lakes. In 1993, Big Stone County adopted its shoreland use controls through the Big Stone County Shoreland Management Resource Ordinance.

Transportation Improvement Plan: Big Stone County Highway Department maintains a five-year Transportation Improvement Plan that identifies and schedules road improvement projects that include measures for flood mitigation. The current TIP is for 2022-2027. Every year a meeting is held to update the plan for the coming year.

Big Stone County Water Plan: The Big Stone County Water Plan (2014-2023) is written and overseen by the Big Stone County Environmental Department has a five-year implementation plan. The plan identified the primary water planning concerns, which include erosion and sediment control, stormwater management, and wetlands and water storage/retention.

Watershed District Partnerships: Big Stone County works in partnership with three watershed districts within the county: Upper Minnesota River, Bois de Sioux, and Pomme de Terre. Each of these bodies has involvement in regional planning and projects to reduce the impact of high rain events and resulting localized flooding and erosion.

Dam Failure

Big Stone Lake Dam Inspections – Engineers from the MNDNR Dam Safety Program inspect the Big Stone Lake Dam every 4 years as per requirements for Class II Dams. The August 7, 2019 inspection deemed the dam to be in good condition and well-maintained with no major dam safety issues. The dam will be inspected again in 2023.

5.2 Mitigation Goals

The goals and strategies for natural hazards in the 2019 Minnesota State Hazard Mitigation Plan were adopted for use in the Big Stone County Plan. This framework, as outlined below, will allow for integration of the mitigation actions that are listed by Big Stone 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 9 below:

Table 9. 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

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

Local leaders work together with the Big Stone 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 Big Stone 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 Big Stone 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 Barry, Beardsley, Clinton, Correll, Graceville, Johnson, Odessa, and Ortonville.

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

Number (#)

Each mitigation action is identified by a number.

Hazard

Each mitigation action is identified by the natural hazard that it relates to. Actions that fall under “All-Hazards” relate to both natural and non-natural hazards.

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 9 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 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 Big Stone 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 10 provides criteria that were taken into consideration in the process.

Table 10. Criteria for Mitigation Action Priority Ranking

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

Time frame

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

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

Responsibility

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

Comments on Implementation & Integration

Each mitigation action provides a description of how the jurisdiction will work to implement the mitigation action and incorporate the activity into other existing planning mechanisms.

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.

The Big Stone County Mitigation Action Chart is provided in Table 11.

Appendix H provides the mitigation action charts developed for each city participating in the HMP update.

Table 11. Big Stone County Mitigation Action Chart (2023–2027)

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
1	All-Hazards	Education & Awareness Programs	Encourage all county residents to sign-up for the county’s Smart911/Rave emergency notification alert system.	Existing High 2023-2028	Big Stone County Emergency Management (BCEM)	A link for the Smart911/Rave emergency notification system is located on the Big Stone County website. BCEM also works with cities to post information on community boards, city post offices, and businesses.	County
2	All-Hazards	Mitigation Preparedness & Response Support	Ensure the Big Stone County Emergency Operations Plan (EOP) is updated and addresses policies & procedures needed to support EM functions prior to, during, and following a disaster.	Existing Moderate 2023-2028	BCEM	BCEM has an EOP that is updated on a regular basis which helps the county be ready to respond to disasters across a range of EM functions. This includes plans in place for sheltering of displaced residents and pet sheltering.	County
3	All-Hazards	Mitigation Preparedness & Response Support	Ensure designated facilities are in place and prepared for providing mass care sheltering and county staff are trained in sheltering operations.	Existing Moderate 2023-2028	BCEM	In partnership with the American Red Cross, BCEM has designated facilities throughout the county that could be utilized to provide mass care services to support an evacuation or other incident where temporary housing and basic human services are needed. BCEM maintains a list of shelters within the county and has trained staff prepared for shelter operations. BCEM participates in and promotes the NWS Severe Weather Awareness Weeks in spring and fall each year. We use the county website and BCEM Facebook page to promote residents to be prepared for emergencies, to have NOAA weather radios, and to sign up for the Smart911/RAVE emergency notification system. During special circumstances, we post information throughout the county in each Post Office. We also make announcements during County Commissioner meetings to the public during severe weather season. Big Stone County Emergency Management is a NOAA Weather-Ready Nation Ambassador, promoting weather-ready messages to the public.	County
4	Severe Winter & Summer Storms	Education & Awareness Programs	Provide education and outreach to residents on personal preparedness for severe weather events and extended power outages. Coordinate with local jurisdictions to share information locally.	Existing High 2023-2028	BCEM in coord with Local Gov’t		County

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	Severe Winter & Summer Storms	Structure & Infrastructure Systems	Work with municipalities / rural electric coops to encourage them to address burying powerlines or strengthening power poles to avoid power outages from high wind events and storms.	Existing High 2023-2028	BSCEM in coord with Local Gov't and Rural & Municipal Utility Coops	Ottertail Power Company, Agralite, and Ortonville Electric Utility continue to address where power lines can be strengthened or buried underground. BSCEM will assist as needed with future applications to FEMA for eligible projects to reduce risk of power outages by these coops.	Electric Coops, FEMA HMA grant
6	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Work with county departments and local jurisdictions to acquire generator backup power to support critical infrastructure and delivery of essential services during an extended power outage due to storms.	Existing Moderate 2023-2028	BSCEM in coord with Local Gov't	BSCEM is working to obtain generators for the county Emergency Operations Center and Highway Department. BSCEM also continues to provide assistance to local jurisdictions that need to acquire portable generators to power infrastructure such as lift stations and other key facilities such as City Hall /community shelters in the event of a power outage. In some cases, this may include helping to identify where used portable generators may be obtained or helping to prepare a funding application.	County, Local Gov't
7	Severe Winter & Summer Storms	Natural Systems Protection	Conduct vegetation management along county-owned roads to reduce the risk of downed trees and branches resulting from severe storms.	Existing Moderate 2023-2028	BSC Highway Dept.	Big Stone County Highway Department and local utility providers regularly maintain and clear their right of ways of trees, vegetation, and debris to prevent the creation of additional hazards or blocking road/site access resulting from severe spring and summer storm events.	County
8	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Encourage schools and long-term facilities that house senior citizens or other vulnerable populations to have emergency plans and generators in place to deal with severe weather, extreme temperatures and power outages.	Existing High 2023-2028	BSCEM, in coord with Schools & Other Facilities	BSCEM continues to work with school districts and other long-term care facilities across the county and will encourage them to have plans in place for when the need arises.	County, Local Facilities
9	Severe Summer Storms	Local Planning & Regulations	Work with owners of mobile home parks (MHP's) to ensure they are in compliance with Minnesota Department of Health (MDH) requirements for evacuation plans and storm shelters.	Existing High 2023-2028	CPH in coord with Local Gov't and MHP's	Countryside Public Health works with the owners of manufactured home parks and the municipalities where they are located to help to ensure that they are meeting Minnesota Department of Health requirements for storm shelters and evacuation plans.	ACPH, MHP Owners

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
10	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure there is a network of trained Storm Spotters throughout the county to support situational awareness of and public notification for dangerous storms such as severe thunderstorms and tornadoes.	Existing Moderate 2023-2028	BSCEM in coord with NWS & Local Gov't	BSCEM works with the NWS to provide SKYWARN storm spotter training on an annual basis to local law enforcement, fire departments, and local residents who wish to participate.	County, NWS
11	Severe Summer Storms	Mitigation Preparedness & Response Support	Ensure the functionality of all outdoor warning sirens within Big Stone County.	Existing High 2023-2028	BSC Sheriff's Office	Outdoor warning sirens are located in the cities of Beardsley, Graceville, Clinton, Ortonville and Odessa. Warning sirens are tested on a monthly basis by the Big Stone County Sheriff's Office or the jurisdiction where the siren is located. Sirens are activated when the National Weather Service notifies Dispatch of high winds or tornado conditions that pose a risk to the public. Warning sirens are owned and maintained by the cities where they are located. The sirens in the city of Ortonville can be remotely activated by the Big Stone County Sheriff's Office.	County,
12	Severe Summer Storms	Local Planning & Regulations / Structure & Infrastructure Projects	Provide assistance to local jurisdictions that require purchase & installation of new outdoor warning sirens and ensure they are connected to the county's remote activation system.	Existing High 2023-2028	BSCEM in coord with Local Gov't	There are three cities without warning sirens: Barry, Correll, and Johnson. BSCEM will assist these communities as needed with applying for funding to the USDA Community Facilities Grant Program which is a source for funding outdoor warning sirens. All new sirens will be connected to the county's remote activation system.	County, Local Gov't, USDA CF Grant Program
13	Severe Summer Storms	Structure & Infrastructure Projects	Address the need for the construction of storm shelters or tornado safe rooms in communities, parks, or other locations in the county where people are vulnerable to high wind or tornadic events.	Existing Moderate 2023-2028	BSCEM in coord with Local Gov't	BSCEM will provide assistance to help assess need, possible construction options, and assist in applying for possible FEMA grant funding as needed to cities, townships, or other organizations such as the Big Stone County Farm Service Agency that request assistance to address tornado safe rooms vulnerable areas. RV Park Owners in the county are also encouraged to work on addressing the need for storm shelters as needed.	County, FEMA HMA, Other (TBD)

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
14	Flooding	Local Planning & Regulations	Participate in the National Flood Insurance Program and enforce policies that address development in high-risk flood areas.	Existing High 2023-2028	BSC Envir. Services Dept.	Big Stone County's Environmental Services Department maintains the Big Stone County Floodplain Management Ordinance (2006) and floodplain maps for the county. The ES Department is the repository for the National Flood Insurance Program's Digital Flood Insurance Rate Maps (DFIRM), as well as flood boundary and floodway maps for rural Big Stone County. The ES Dept. is al responsible for implementing State Shoreland Rules found in Minnesota Rules 6120.2500 – 3900 Big Stone County Shoreland Management Resource Ordinance.	County
15	Flooding	Local Planning & Regulations / Structure & Infrastructure Projects	Plan for and implement measures to address minor localized flood reduction projects for roads, bridges, and culverts throughout the county.	In-Progress High 2023-2028	BSC Highway Dept.	Big Stone County Highway Department maintains a five-year Transportation Improvement Plan that identifies and schedules road improvement projects that include measures for flood mitigation. The current TIP is for 2022-2027. Every year a meeting is held to update the plan for the coming year. The Hwy. Dept works with townships directly on projects to reduce flood damages to roads, bridges, and culverts.	County, State, Federal
16	Flooding	Local Planning & Regulations / Structure & Infrastructure Projects	Work in partnership with the Big Stone County Soil & Water Conservation District and other watershed partners to address mitigation projects that address erosion and localized flooding.	Existing Moderate 2023-2028	BSC in coord with SWCD and Local Gov'ts	Big Stone County works in partnership with three watershed districts within the county: Upper Minnesota River, Bois de Sioux, and Pomme de Terre. Each of these bodies has involvement in regional planning and projects to reduce the impact of high rain events and resulting localized flooding and erosion.	County, Local Gov't, SWCD Cost Share Grant Funding
17	Flooding	Local Planning & Regulations / Structure & Infrastructure Projects	Conduct property buyouts to acquire homes affected by repetitive flooding and physically relocate or remove those homes to eliminate future flood damages.	Existing Low 2023-2028	BSC in coord with Local Gov'ts	There are currently no projects for conducting property buyouts, however Big Stone 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.	County, MN DNR, FEMA HMA, Local Gov't
18	Flooding	Structure & Infrastructure Projects	Continue repairs and maintenance for the Long Tom Dam as determined following inspections by the Big Stone County Highway Department.	Existing Moderate 2023-2028	BSC Highway Dept. in coord with NRCS	This is a project under the direction of the BSC Highway Dept. The dam is located at the outlet of Long Tom Lake, which washed out in approximately 1995 or 1996 causing damage to roads and private property downstream. The dam was reconstructed with some added safeguards and is inspected by the NRCS and the Highway Department annually.	County, NRCS

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
19	Flooding	Structure & Infrastructure Projects	Continue implementation of mitigation projects to lower water levels on area lakes to reduce impacts to roadbeds and shoreline properties from flooding.	Existing Moderate 2023-2028	BSC Highway Dept.	BSC Highway Dept. monitors lake levels and lowers water levels when needed to reduce impacts to roadbeds, allowing the subgrade to drain. Reducing saturation to roadbeds prevents loss of structural capacity leading to a dangerous condition. Lowering water levels on lakes also helps to minimize the risk of shoreline property damage or having water back up into the municipal storm sewer systems.	County
20	Flooding	Structure & Infrastructure Projects	Complete construction of the Whetstone River Diversion project to reduce ice jams, flooding and congestion at the foot of Big Stone Lake where the dam is located.	In-Progress High 2023-2028	UMRWD in coord with Big Stone County	The Upper Minnesota River Watershed District (UMRWD) is in the process of constructing the Whetstone River Diversion project. The project will reduce ice jams, flooding and congestion at the foot of Big Stone Lake where the dam is located. By diverting this water away from the foot of the lake and the dam it will reduce the risk of flooding damage around Big Stone Lake.	UMRWD, County
21	Flooding	Natural Systems Protection	Conduct soil stabilization and slope management projects in unstable areas for sediment and erosion control resulting from high rain events.	New High 2023-2028	Big Stone SWCD & Bois de Sioux Watershed District (BDSWD)	The Big Stone SWCD and the BDSWD each work to design, construct, and maintain erosion prevention projects that stabilize banks by proper sloping and grading techniques, planting vegetation, terracing hillsides, installing riprap boulders, geotextile fabric and/or concrete mats.	SWCD & Watershed Districts
22	Flooding	Natural Systems Protection	Conduct floodplain and stream corridor restoration in areas that are impacted by high rain events.	New High 2023-2028	Big Stone SWCD & BDSWD	The Big Stone SWCD and the BDSWD each work to design, construct, and maintain floodplain and stream restoration projects mitigate erosion and flood risk by reestablishing the structure and function of ecosystems and floodplains to as close to possible natural conditions prior to development influences. The BDSWD 10-Year Bois de Sioux – Mustinka River Joint Comprehensive Watershed Management Plan (January 27, 2021) incorporates many projects related to this work.	SWCD & Watershed Districts

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
23	Flooding	Natural Systems Protection	Construct flood diversion and storage projects where identified as needed to reduce the impacts of high rain events on streams, rivers, or drainage systems which may result in localized or downstream flooding.	New High 2023-2028	Big Stone SWCD & BDSWD	The Big Stone SWCD and the BDSWD each work to design, construct, and maintain projects diverting floodwaters from a stream, river, or drainage system into a wetland, floodplain, canal, pipe, other conduit and storing them in reservoirs, floodplains, wetlands, impoundments, or other storage facilities. This allows for a controlled baseflow release and tempers peak flows, stages, and velocities to mitigate flooding. The UMRWD owns and operates the Big Stone Lake/Whetstone River Dam, coordinating directly with MN DNR on dam inspections. Engineers from MN DNR Dam Safety Program inspect the Big Stone Lake Dam (located in Ortonville, MN) on a schedule of every 4 years as defined by Minnesota Rules for Class II Dams. In the 2020 inspection report by the MN DNR Dam Safety Program the Big Stone Lake Dam was found to be in good condition and well-maintained with no major safety issues noted. The next inspection will be conducted again in 2023. Big Stone County is kept informed by the MN DNR and the UMRWD on the condition of the dam, any safety concerns, and measures to address any necessary infrastructure improvements. Big Stone County collaborates as needed with the MN DNR, UMRWD, and City of Ortonville on these matters for the Big Stone Lake Dam.	SWCD & Watershed Districts
24	Dam Failure	Local Planning & Regulations / Structure & Infrastructure Projects	Continue to work with the MN DNR and Upper Minnesota River Watershed District to monitor the condition of the Big Stone Lake Dam and address any issues.	Existing Moderate 2023-2028	MN DNR Dam Safety Program in coord with UMRWD, City of Ortonville, and Big Stone County Emergency Management		MN DNR

Section 6 – Plan Maintenance

6.1 Monitoring, Evaluation, and Updating the Plan

The Big Stone County Hazard Mitigation Plan 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 Big Stone County HMP.

The Big Stone 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 Big Stone County EMD will work with an emergency managers group to help monitor, review, evaluate, and update the Hazard Mitigation Plan. The group will include township representatives and designated city emergency managers from the cities of Barry, Beardsley, Clinton, Correll, Graceville, Johnson, Odessa, and Ortonville as well as other city elected officials or staff as needed. The Big Stone 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 Big Stone 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 Big Stone 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 Big Stone 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 committee deems appropriate and necessary, and as approved by county commissioners.

Throughout the five-year window of the plan, Big Stone County EMD will request updates from county departments and jurisdictions on that status of mitigation efforts so that progress notes may be maintained for the next plan update.

6.2 Implementation

Big Stone County and its included municipalities share a common Hazard Mitigation Plan and work together closely to develop, revise, and implement it. This HMP provides a comprehensive chart of mitigation actions for Big Stone County and its jurisdictions (see Appendix H and Section 5.3). The cities of Barry, Beardsley, Clinton, Correll, Graceville, Johnson, Odessa, and Ortonville participated in the HMP planning process and identified the specific mitigation strategies that they would seek to implement in their communities during the five-year planning cycle. These mitigation actions are provided in Appendix H.

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

6.3 Continued Public Involvement

Continued public involvement is critical to the successful implementation of the Hazard Mitigation Plan. The Big Stone 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.

In order to seek continued public participation after the plan has been approved and during the five-year window of implementation for this plan, Big Stone County will take the following measures:

- The plan will be posted on the Big Stone County Emergency Management website for the public to read and provide 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, Big Stone 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 to keep their local government, schools and community members updated and engaged in the implementation of their respective mitigation action charts (see Appendix H). Each respective jurisdiction will be required to report on the status of mitigation actions in their charts to the Big Stone County Emergency Management Director.
- Jurisdictions will use numerous means of public outreach to engage new public stakeholders in providing input on mitigation efforts or concerns on hazards by sharing information at city council/township board meetings, sharing information at special events, working with local schools and partner organizations, and posting information on relevant local or social media that their 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.

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

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

Big Stone County

Local Mitigation Survey Report

Overview

As part of Big Stone County’s Multi-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 are the responses from the county and jurisdictions that participated in the survey.

LMS Forms

Big Stone County	Page 2
City of Barry	Page 9
City of Beardsley	Page 13
City of Clinton	Page 16
City of Correll	Page 20
City of Graceville	Page 22
City of Johnson	Page 26
City of Odessa	Page 30
City of Ortonville	Page 32

BIG STONE COUNTY

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

- Hazard Identification & Risk Prioritization:** Please fill out the chart below as you feel it relates for your jurisdiction. Please note that hazards that are considered as significant (moderate to high priority) will need to have at least one mitigation action associated with it.

Natural Hazard	Use an "X" to Select 3-5 of the top hazards you feel pose risk to your jurisdiction.	Indicate your priority level of each hazard to your community as <u>Low, Moderate, or High</u> . Consider past events, likelihood of future events, and impacts to community assets.	Note if you feel the risk has increased, decreased, or had no change over the last 5 years.
Winter Storms (Blizzards, Ice Storms)	X	High	No change
Tornadoes	X	High	No change
Windstorms	X	High	No change
Lightning		Moderate	No change
Hail	X	Moderate	No change
Flooding	X	High	Increased
Extreme Cold		Low	No change
Extreme Heat		Low	No change
Drought		Low	No change
Wildfire		Low	No change
Landslides		Low	No change
Dam Failure		Low	No change

- Recent Hazard Events:** Describe any severe weather or disaster events that have occurred over the last 5 years that caused damages in your community.

June 13, 2017 - Tornadoes and straight-line winds swept through the county with wind speeds of over 75 mph were reported. Emergency responders and electric companies worked to quickly restore outages. MnDOT was out working to clear Highway 7 and city crews worked non-stop to clear roadways and public property. Results: Power outages occurred, damages to trees (uprooted and blown over), critical infrastructure required the need for emergency response. The NWS out of Aberdeen confirmed at least two EF 1 tornadoes; one 4 miles North of Clinton and the other was 2 miles Northwest of Johnson. The City of Johnson and the City of Ortonville had the greatest impacts reported. The Ortonville cemetery had damage to trees. Spotters were activated, monitoring safety of roadways and downed power lines from trees and debris. Road debris removal was required to open roadways, and electric companies worked to quickly restore power.

March 19, 2019 - Big Stone County declared a State of Emergency on March 19, 2019 due to flooding of lakeshore property, private property and public infrastructure throughout the county, damages exceeded \$305,000.00.

Again in 2021, tornadoes moved through Big Stone County, but damages were minimal due to the path of the tornadoes.

April, 2022 - The Big Stone County Board of Commissioners declared a State of Emergency due to overland flooding of roadways.

May, 2022 – The Big Stone County Board of Commissioners declared a State of Emergency due to heavy rain and straightline winds reaching 60 to 100 mph.

In general, over the last 5 years, the county has experienced an increase in high rain and resulting flood events. Flooding has shown to pose a greater risk than in the past.

- 3. Local Vulnerabilities: Use the chart below to identify what specific community assets (i.e., infrastructure, systems, populations) are vulnerable to damages or loss from the hazards that pose risk to your community. Use the blank rows to enter in your answers as they relate to your community.**

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets are susceptible to damage or loss from hazard events.
Flooding	<p>Area flooding encroaches upon and often overtops township and county roads, wearing away soils of the roadbed and creating significant erosion if not a complete washout of the road, altering public safety and transportation systems. Similarly, bridges and culverts may experience structural erosion due to high rates of flow and general capacity challenges.</p> <p>Spring snowmelt from heavy snow events can cause flooding, road closures or otherwise impassable road conditions which create temporary loss of access to transportation and adverse effects to public safety systems. Spring snowmelt can also lead to wet/soft road base soils, potentially creating washouts and eroded transportation systems</p> <p>Lake homes often experience ongoing high-water conditions. Additional water from flooding/flash floods adds to their susceptibility and increases the level of shoreline erosion and damage. Numerous properties and roadways in Big Stone County are prone to flooding during high rain events and during springtime snow melting. Residents have sandbagged the areas in the past to prevent flooding into homes and businesses.</p>
All Wind Events (Thunderstorm, Tornado, Windstorm, Ice Storm, Blizzard, etc.)	<p>Uprooted and fallen trees and branches have the ability to cause extensive physical damage to residential and community infrastructure, create impediments to travel and emergency response access, and create cascading impacts such as power outages.</p> <p>A vast majority of electrical infrastructure across Big Stone County is above ground. We have experienced damage to electrical infrastructure (power generation facilities/equipment, poles & lines, substations, transformers, etc.) that has resulted in power outages, creating near-universal vulnerability for people (especially children, seniors, and anyone who relies on powered</p>

	<p>medical devices) and animals. Physical damages and losses to private homes, commercial structures, and disconnects societal access to community lifelines, economic activity, etc. are also widely experienced in power outages.</p> <p>We have a mobile home park, campgrounds, Fairgrounds and other susceptible locations within the county that do not have a storm shelter and residents are vulnerable to high wind and tornado events.</p> <p>We have cities within the county that do not have emergency notification sirens, each city should have the ability to install a new outdoor warning siren to help warn residents.</p> <p>Some new developments are built on slab with no basement. These residents are at greater risk during severe wind events. The absence of storm shelters leaves residents, guests, and visitors with only their vehicle or manufactured structure for protection and making them more susceptible to the winds, debris, and damage associated with these storms.</p> <p>Much of the electrical service in the county consists of overhead power lines and electrical poles. Those overhead lines and power poles are prone to failure in ice storms and blizzards with heavy snowfall and high winds that may bring down trees and branches.</p> <p>In addition to the impacts caused by all wind events, heavy snow events cause road closures or otherwise impassable roads create at least temporary loss of access to transportation and adverse effects to public safety systems.</p>
Extreme Cold	<p>Residents are susceptible to dangers from extreme cold, especially if the power goes down during winter storm events. We have a high population of senior citizens and also low-income residents who are more vulnerable during these events. We have experienced damages to roads from spring frost heaves, and frozen culverts that cause localized flooding.</p>

4. Reduction in Vulnerability - 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 underway that reduces future risk.

Big Stone County has implemented the emergency notification and emergency response system Smart911/Rave, and actively promotes this system to residents, visitors, and businesses to receive weather and community emergency alerts.

The county has also created a Big Stone County Emergency Management Facebook page and a Big Stone County Sheriff’s Office Facebook page to communicate with residents on emergency preparedness.

In recent years, the county highway department has installed larger capacity culverts to allow better drainage/flow.

The Big Stone County Highway Department has undertaken several mitigation projects in the past 5 years to lower water levels on area lakes. Using water level control structures and tiles,

we slow the release of water down to the OHWL level as determined by the MnDNR. Because the water level control structures or tile inlets have a limited capacity, a “bounce” in the water elevation is created during periods of high rainfall or rapid runoff in the lakes to maximize water storage while minimizing the risk of shoreline property damage or having water back up into the municipal storm sewer systems. Another benefit from lowering water levels on roadbeds is to allow the subgrade to drain. A roadbed that is saturated will lose structural capacity leading to a dangerous condition.

Storage limitations by the office of Emergency Management has increased over the past years, which has eliminated the capability for storage of sandbags and other items that may be required during a flooding event. The cities of Graceville, Ortonville and Odessa have received the sandbag inventory and will work with the county to provide sandbag distribution during emergency situations when agreed upon between the Emergency Management Director and designated city. This generous support is a testament of how small-town departments and cities support one another during difficult times.

Engineers from the MNDNR Dam Safety Program inspect the Big Stone Lake Dam every 4 years as per requirements for Class II Dams. The August 7, 2019 inspection deemed the dam to be in good condition and well-maintained with no major dam safety issues. The dam will be inspected again in 2023.

The Upper Mississippi River Watershed District (UMRWD) is in the process of constructing the Whetstone River Diversion project. The project will reduce ice jams, flooding and congestion at the foot of Big Stone Lake where the dam is located. By diverting this water away from the foot of the lake and the dam it will reduce the risk of flooding damage around Big Stone Lake.

5. Increase in Vulnerability – Describe any current conditions or changes you feel have increased your community’s vulnerability to future severe weather or disaster events. Consider factors such as recent population growth or new development.

Big Stone County residents continue to “age in place” – the percentage of elderly continues to grow and represent the largest segment of our population. At the same time, efforts toward “rural rebound” – the encouragement of people to move from metro to rural communities – has slowly begun to impact the county. In limited cases, this has led to an increase in expectations of a lifestyle and infrastructure similar to their prior experiences.

In recent years, high-wind weather events – especially those commonly seen in spring and summer months – have increased in frequency and severity. Our ability to prepare for and alert the public for these events has also been complicated by gaps in radar coverage, as Big Stone County is on the extreme edges of the National Weather Service Aberdeen forecast office. To ensure access to the most relevant information available, we also rely on the National Weather Service Twin Cities forecast office, recognizing here Big Stone County is on the extreme edge of their radar capabilities.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. Describe what methods you use to provide information to residents on emergencies or personal preparedness for severe weather.

We use the county website, Facebook page and Smart911/RAVE notification system. During special circumstances, we post information throughout the county in each Post Office. We also make announcements during County Commissioner meetings to the public during severe weather season.

2. Do you encourage residents to sign up for the county's emergency notification system and/or a local emergency alert system? If so, how?

Posters are hung on community boards, posted in city post offices/businesses and a direct link is provided on the county website to the Smart911/RAVE sign-up page.

3. Does your community participate in the National Flood Insurance Program?

Yes. Big Stone County has FEMA Mapped High Risk Areas and participates in the NFIP. Big Stone County's Environmental Services Department maintains the floodplain management ordinance (2006) and floodplain maps for the county. The Environmental Services Department is the repository for the National Flood Insurance Program's Digital Flood Insurance Rate Maps (DFIRM), as well as flood boundary and floodway maps for rural Big Stone County. The Planning and Zoning Office can assist county residents in determining whether their property is affected by an officially mapped flood area.

4. Describe any plans, authorities or policies in place that help to reduce risk from natural hazards in your community.

We have a 5-year Transportation Plan that identifies and schedules road improvement projects to reduce over-the-road repetitive flooding. The current TIP is for 2022-2027.

Big Stone County's Environmental Services Department maintains the floodplain management ordinance (2006) and floodplain maps for the county. Environmental Services is also responsible for implementing State Shoreland Rules found in Minnesota Rules 6120.2500 – 3900. Shoreland regulations were first implemented by the State in the early 1970s to provide for the orderly development and protection of rivers and lakes. In 1993, Big Stone County adopted its shoreland use controls through the Big Stone County Shoreland Management Resource Ordinance.

Countryside Public Health (CPH) is the public health agency that works with Big Stone County. CPH works with licensed manufactured home parks to ensure the requirements of MN Statute 327.20 relating to shelters and evacuation plans are met. Shelter and evacuation plans must be approved by the city or township in which they are located and submitted to CPH.

5. Please describe what staff or partnerships are in place to help accomplish mitigation in your community.

Big Stone County staff related to mitigation efforts include the Emergency Management Director; County Engineer, County Maintenance Supervisor, Environmental Services Director, Public Health Director, and Public Health Emergency Preparedness (PHEP) Coordinator.

We have a county engineer and highway department staff who work directly with cities and townships to address road maintenance issues for flooding (culverts, repetitive flooding).

6. Describe any programs in place that to help accomplish mitigation in your community.

Big Stone County participates in the annual Winter Weather Awareness Week and Spring Severe Weather Awareness Week campaigns sponsored by the National Weather Service (NWS) and Minnesota HSEM. Throughout each week the county shares information on severe weather that can occur, education on alerts and warnings as well as tips and resources for personal preparedness.

Big Stone County maintains the Smart 911/Rave Alert system which allows residents and visitors to sign up (“opt-in”) to receive weather alerts (tornado and severe thunderstorm warnings) targeted to their location, along with local emergency alerts, and general situational awareness updates. The system is capable of sending the alerts by telephone, text message, email message, and mobile app. The system can also be used to alert everyone in or passing through a community to any qualifying incident through the Integrated Public Alert & Warning System (IPAWS). The County’s Smart911/Rave Alert emergency notification system also utilizes statements issued by the NWS to deliver Severe Thunderstorm and Tornado Warning alerts to those who have opted-in to receive them on their personal communications devices. The county also utilizes its outdoor warning sirens, and local media partners for emergency notification.

Big Stone County Emergency Management is a NOAA Weather-Ready Nation 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.

7. Please describe any agency partnerships, funding or other resources to help accomplish mitigation in your community.

Big Stone County works closely with the Upper MN River Watershed District (UMRWD) and the Big Stone Soil and Water Conservation District (SWCD), which oversees regional planning and projects to reduce the impact of high rain events and resulting localized flooding and erosion.

In partnership with the American Red Cross, Big Stone County has identified, engaged, and designated sites throughout the county that could be utilized to provide mass care services to support an evacuation or other incident where temporary housing and basic human services are needed.

Emergency Management works closely with MN HSEM Region 4 and support each other in emergency mitigation and preparedness planning, exercises, and emergency response, when needed.

Big Stone County has a strong relationship with the National Weather Service (NWS), 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.

8. Does your jurisdiction have any plans or policies in place related to resilience and adaptation for climate change? If yes, please describe.

No.

9. Who is your local electric provider? (i.e., municipal / rural electric coop / other)

Ottertail Power Company, Agralite, and Ortonville Electric Utility

10. Do you need back-up generators for specific critical facilities? Please identify them.

We need a generator for our county Emergency Operations Center, Highway Department and other critical facilities throughout the county that are designated community mass care shelters or serve the community during disaster related incidents.

PART C: LOCAL MITIGATION PROJECTS

1. Local Mitigation Projects: Describe any specific mitigation activities you think would help to address local vulnerabilities and reduce risk against future hazard events in your community.

We would like to upgrade the warning sirens throughout the county. There are three cities without warning sirens: Barry, Correll, and Johnson.

We also would like to work with communities who have a need for storm shelters or tornado safe rooms.

Public education is a standing need and homeowners would benefit from more information on how to be prepared for bad storms and extended power outages (i.e., generators, food, water, etc.).

Obtain generators for our county EOC, Highway Department and other critical facilities throughout the county that are designated community mass care shelters or serve the community during disaster related incidents.

(From Big Stone County Highway Department) Continue repairs and maintenance for the Long Tom Dam as determined following inspections by the Big Stone County Highway Department. The dam is located at the outlet of Long Tom Lake, which washed out in approximately 1995 or 1996 causing damage to roads and private property downstream. The dam was reconstructed with some added safeguards and is inspected by the NRCS and the Highway Department annually.

(From Big Stone County Highway Department) Continue implementation of mitigation projects to lower water levels on area lakes to slow the release of water. This reduces impacts to roadbeds, allowing the subgrade to drain. Reducing saturation to roadbeds prevents loss of structural capacity leading to a dangerous condition. Lowering water levels on lakes also helps

to minimize the risk of shoreline property damage or having water back up into the municipal storm sewer systems.

(From UMRWD) Complete construction of the Whetstone River Diversion project to reduce ice jams, flooding and congestion at the foot of Big Stone Lake where the dam is located. By diverting this water away from the foot of the lake and the dam it will reduce the risk of flooding damage around Big Stone Lake.

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

Not all our residents are signed up for the county’s emergency notification system.

We have poor NOAA weather tower coverage due to our topography and notifications on severe weather can be delayed.

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

PART D: SURVEY PARTICIPANTS

- Dona Greiner, BSC Emergency Management Director
- Val Seifert, BSC Deputy Emergency Management Director
- Todd Larson, BSC Highway Department, County Engineer
- Amber Doschadis, UMRWD Administrator
- Suzanne Paulson, Countryside Public Health, Environmental Health Specialist II
- Dawn Bjorgan, Countryside Public Health, Emergency Preparedness Coordinator

CITY OF BARRY

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. Hazard Identification & Risk Prioritization: Please fill out the chart below as you feel it relates for your jurisdiction. Please note that hazards that are considered as significant (moderate to high priority) will need to have at least one mitigation action associated with it.

Natural Hazard	Use an “X” to Select 3-5 of the top hazards you feel pose risk to your jurisdiction.	Indicate your priority level of each hazard to your community as <u>Low</u> , <u>Moderate</u> , or <u>High</u> . Consider past events, likelihood of future events, and impacts to community assets.	Note if you feel the risk has increased, decreased, or had no change over the last 5 years.
Winter Storms (Blizzards, Ice Storms)	X	High	No Change
Tornadoes	X	High	No Change
Windstorms	X	High	No Change

Lightning		Moderate	No Change
Hail	X	Moderate	No Change
Flooding	X	High	Increased
Extreme Cold		Low	No Change
Extreme Heat		Low	No Change
Drought		Low	No Change
Wildfire		Low	No Change
Landslides		Low	No Change
Dam Failure		Low	No Change

2. Recent Hazard Events: Describe any severe weather or disaster events that have occurred over the last 5 years that caused damages in your community.

Our streets are gravel and have repeatedly flooded during high rain events. Homes have received water in basements. Trees have been taken down by high winds.

In 2021, we had a tornado which damaged a local bin site in town, and in 2022 there were several storms causing building and tree damage.

3. Local Vulnerabilities: Use the chart below to identify what specific community assets (i.e., infrastructure, systems, populations) are vulnerable to damages or loss from the hazards that pose risk to your community. Use the blank rows to enter in your answers as they relate to your community.

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific community assets</u> are susceptible to damage or loss from hazard events.
Flooding	City streets are prone to flooding during high rain events.
Ice Storms, Blizzards	The city 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 do not have an outdoor warning siren. There is no severe weather safe room available for the public.
Extreme Cold	Residents are susceptible to dangers from extreme cold, especially if the power goes down during winter storm events. We have some senior citizens and also low-income residents who are more vulnerable during these events. The city has experienced damages to roads from spring frost heaves, frozen culverts that cause localized flooding.

4. Reduction in Vulnerability - 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 underway that reduces future risk.

We have encouraged residents of Barry to enroll in the county emergency notification system in order to be aware of dangerous storm events.

- 5. Increase in Vulnerability – Describe any current conditions or changes you feel have increased your community’s vulnerability to future severe weather or disaster events. Consider factors such as recent population growth or new development.**

In general, we have noticed an increase in more frequent high-rain events in the last 5 years.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

- 1. Describe what methods you use to provide information to residents on emergencies or personal preparedness for severe weather.**

Barry has no city website or Facebook page. With such a small population, we rely on our neighbors and word of mouth, as well as information from the National Weather Service. We also have discussions at city council meetings and give reminders to residents about upcoming weather seasons.

- 2. Do you encourage residents to sign up for the county’s emergency notification system and/or a local emergency alert system? If so, how?**

Yes, when we have received information from Emergency Management about the emergency alert system, we encourage residents to sign up and will help them sign up for it.

- 3. Does your community participate in the National Flood Insurance Program?**

Yes. The city participates but does not have FEMA mapped high risk areas. The city enforces requirements of the NFIP through the city’s Floodplain Ordinance, adopted in 2019 upon enrollment in the NFIP.

- 4. Describe any plans, authorities or policies in place that help to reduce risk from natural hazards in your community.**

Big Stone County has a comprehensive plan designed to plan for the future physical growth of the city and appropriate land uses. The County also has a Transportation Plan that identifies and schedules road improvement projects to reduce over-the-road repetitive flooding.

- 5. Please describe what staff or partnerships are in place to help accomplish mitigation in your community.**

Our city has a city public works manager that will address road maintenance issues for flooding. We are currently working with the County Emergency Manager to address public notification systems.

- 6. Describe any programs in place that to help accomplish mitigation in your community.**

Our city works with the County Emergency Manger to participate in the National Weather Service's annual Severe Winter/Spring Weather Awareness Week by reaching out to residents regarding severe weather. Each fall & spring we do active outreach to homeowners to clear leafy and woody debris from roadside gutters to prevent clogging and over the road flooding in these areas. Each spring and winter we do outreach to encourage residents to maintain their sump pumps to reduce the chances of basement flooding.

7. Please describe any agency partnerships, funding or other resources to help accomplish mitigation in your community.

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

8. Does your jurisdiction have any plans or policies in place related to resilience and adaptation for climate change? If yes, please describe.

No

9. Who is your local electric provider? (i.e., municipal / rural electric coop / other)

Otter Tail Power

10. Do you need back-up generators for specific critical facilities? Please identify them.

None needed.

PART C: LOCAL MITIGATION PROJECTS

1. Local Mitigation Projects: Describe any specific mitigation activities you think would help to address local vulnerabilities and reduce risk against future hazard events in your community.

We would potentially add a city warning siren. Due to the cost, we are currently unable to do this for our city.

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

Our city does not have its own website or Facebook page to do better outreach to our residents. Not all residents are signed up for the county's emergency notification system. We have poor NOAA weather tower coverage. We are small city with limited financial and staff resources to address local mitigation projects.

PART D: SURVEY PARTICIPANTS

Nelia Gary, City Clerk,
Gene Carrington, Mayor

CITY OF BEARDSLEY

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

- Hazard Identification & Risk Prioritization:** Please fill out the chart below as you feel it relates for your jurisdiction. Please note that hazards that are considered as significant (moderate to high priority) will need to have at least one mitigation action associated with it.

Natural Hazard	Use an "X" to Select 3-5 of the top hazards you feel pose risk to your jurisdiction.	Indicate your priority level of each hazard to your community as <u>Low, Moderate, or High</u> . Consider past events, likelihood of future events, and impacts to community assets.	Note if you feel the risk has increased, decreased, or had no change over the last 5 years.
Winter Storms (Blizzards, Ice Storms)	X	High	No Change
Tornadoes	X	High	No Change
Windstorms	X	High	No Change
Lightning		Moderate	No Change
Hail	X	Moderate	No Change
Flooding	X	High	Increased
Extreme Cold		Low	No Change
Extreme Heat		Low	No Change
Drought		Low	No Change
Wildfire		Low	No Change
Landslides		Low	No Change
Dam Failure		Low	No Change

- Recent Hazard Events:** Describe any severe weather or disaster events that have occurred over the last 5 years that caused damages in your community.

In 2022, we have experienced damages from severe thunderstorms with high winds and falling trees, causing damage to city infrastructure and the need for additional cleanup of city streets and property. Also causing power outages at times.

- Local Vulnerabilities:** Use the chart below to identify what specific community assets (i.e., infrastructure, systems, populations) are vulnerable to damages or loss from the hazards that pose risk to your community. Use the blank rows to enter in your answers as they relate to your community.

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets are susceptible to damage or loss from hazard events.
Flooding	City streets are prone to flooding during high rain events.
Ice Storms, Blizzards	The city 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	Our outdoor warning siren is aging. There is no severe weather safe room available for the public, this is a great concern during outdoor events.
Extreme Cold	Residents are susceptible to dangers from extreme cold, especially if the power goes down during winter storm events. We have a significant number of senior citizens and also low-income residents who are more vulnerable during these events. The city has experienced damages to roads from spring frost heaves and frozen culverts that cause localized flooding.

4. Reduction in Vulnerability - 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 underway that reduces future risk.

In the past year, we have built a new, larger fire station. This allows for safer storage of fire trucks and equipment that are needed on a regular basis.

We have encouraged business, resident, and area nursing homes to enroll in the county’s emergency notification system so they will be aware of dangerous storm events. The city has also increased use of our Facebook page to communicate with residents on emergency information.

5. Increase in Vulnerability – Describe any current conditions or changes you feel have increased your community’s vulnerability to future severe weather or disaster events. Consider factors such as recent population growth or new development.

In general, we have noticed an increase in more frequent high-wind events in the last 5 years.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. Describe what methods you use to provide information to residents on emergencies or personal preparedness for severe weather.

We post information on bulletin boards at the Community Center and at the Post Office. We also make announcements at city council meetings to the public during severe weather season.

2. Do you encourage residents to sign up for the county’s emergency notification system and/or a local emergency alert system? If so, how?

Yes - We have shared the emergency management information on the Facebook page about the RAVE system.

3. Does your community participate in the National Flood Insurance Program?

No. The city does not have a FEMA map and is not participating.

4. Describe any plans, authorities or policies in place that help to reduce risk from natural hazards in your community.

Our County has a Comprehensive Plan that is designed to plan for the future physical growth of the county and appropriate land uses. The County also has a Transportation Plan that identifies and schedules road improvement projects to reduce over-the-road repetitive flooding. We have a sump pump ordinance in place to mitigate against overload of the city's system.

5. Please describe what staff or partnerships are in place to help accomplish mitigation in your community.

We have a city public works manager that address' road maintenance issues for flooding (culverts, repetitive flooding). We are currently working with the county emergency manager to address public notification systems.

6. Describe any programs in place that to help accomplish mitigation in your community.

Our city works with the county emergency manager to participate in the National Weather Service's annual Severe Winter/Spring Weather Awareness Week by posting severe weather awareness information out on our city Facebook page. Each spring and winter we do outreach to encourage residents to maintain their sump pumps to reduce the chances of basement flooding. The city has a program to manage vegetation near powerlines to reduce risk of power outages during storms.

7. Please describe any agency partnerships, funding or other resources to help accomplish mitigation in your community.

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

8. Does your jurisdiction have any plans or policies in place related to resilience and adaptation for climate change? If yes, please describe.

No

9. Who is your local electric provider? (i.e., municipal / rural electric coop / other)

Ottertail Power Company

10. Do you need back-up generators for specific critical facilities? Please identify them.

Yes, community center.

PART C: LOCAL MITIGATION PROJECTS

- 1. Local Mitigation Projects: Describe any specific mitigation activities you think would help to address local vulnerabilities and reduce risk against future hazard events in your community.**

We would like to upgrade the city’s warning siren and a storm shelter or tornado safe room constructed. Public education is a standing need and homeowners would benefit from more information on how to be prepared for bad storms and extended power outages (i.e., generators, food, water, etc.).

- 2. Gaps or Deficiencies: Please describe any specific gaps or deficiencies that are a barrier to implementing local mitigation measures.**

Not all of our residents are signed up for the county’s emergency notification system. We have poor NOAA weather tower coverage due to our topography and notifications on severe weather can be delayed. We are small city with limited financial and staff resources to address local mitigation projects.

PART D: SURVEY PARTICIPANTS

Jackie Homan, City Clerk
 Mary Sykora, Mayor
 Chad Sibson, Fire Chief

CITY OF CLINTON

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

- 1. Hazard Identification & Risk Prioritization: Please fill out the chart below as you feel it relates for your jurisdiction. Please note that hazards that are considered as significant (moderate to high priority) will need to have at least one mitigation action associated with it.**

Natural Hazard	Use an “X” to Select 3-5 of the top hazards you feel pose risk to your jurisdiction.	Indicate your priority level of each hazard to your community as <u>Low</u> , <u>Moderate</u> , or <u>High</u> . Consider past events, likelihood of future events, and impacts to community assets.	Note if you feel the risk has increased, decreased, or had no change over the last 5 years.
Winter Storms (Blizzards, Ice Storms)	X	High	No Change
Tornadoes	X	High	No Change
Windstorms	X	High	No Change
Lightning		Moderate	No Change
Hail	X	Moderate	No Change
Flooding	X	High	Increased
Extreme Cold		Low	No Change
Extreme Heat		Low	No Change
Drought		Low	No Change

Wildfire		Low	No Change
Landslides		Low	No Change
Dam Failure		Low	No Change

2. Recent Hazard Events: Describe any severe weather or disaster events that have occurred over the last 5 years that caused damages in your community.

In 2022, we have experienced damages from severe thunderstorms with high winds and falling trees, causing damage to city infrastructure and the need for additional cleanup of city streets and property. Also causing power outages at times.

3. Local Vulnerabilities: Use the chart below to identify what specific community assets (i.e., infrastructure, systems, populations) are vulnerable to damages or loss from the hazards that pose risk to your community. Use the blank rows to enter in your answers as they relate to your community. Some example answers are provided.

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets are susceptible to damage or loss from hazard events.
Flooding	Our sanitary sewer lift station is prone to flooding during high rain events. City streets are prone to flooding during high rain events.
Ice Storms, Blizzards	The city 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	Our outdoor warning siren is aging and there is no severe weather safe room available for the public, this is a great concern during outdoor events like the Fair that is held each year in August.
Extreme Cold	Residents are susceptible to dangers from extreme cold, especially if the power goes down during winter storm events. We have a high population of senior citizens and also low-income residents who are more vulnerable during these events. The city has experienced damages to roads from spring frost heaves, frozen culverts that cause localized flooding.

4. Reduction in Vulnerability - 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 underway that reduces future risk.

In 2021 and 2022 the city completed a street reconstruction project which included adding more storm sewer and catch basins. In 2022, the city rebuilt and raised the height of a sanitary sewer lift station that was prone to flooding and also adopted a stormwater ordinance.

We have encouraged business, resident, and area nursing homes to enroll in the county’s emergency notification system so they will be aware of dangerous storm events. The city has also increased use of our Facebook page to communicate with residents on emergency information.

- 5. Increase in Vulnerability – Describe any current conditions or changes you feel have increased your community’s vulnerability to future severe weather or disaster events. Consider factors such as recent population growth or new development.**

With the construction of a new assisted living facility, there is also a large concentration of senior residents in one location that will need assistance during a disaster event. In general, we have noticed an increase in more frequent high-wind events in the last 5 years.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT.

- 1. Describe what methods you use to provide information to residents on emergencies or personal preparedness for severe weather.**

We use our city Facebook page. We also post information on bulletin boards at the Community Center and at the Post Office. We also make announcements at city council meetings to the public during severe weather season.

- 2. Do you encourage residents to sign up for the county’s emergency notification system and/or a local emergency alert system? If so, how?**

Yes - We have shared the emergency management information on the Facebook page about the RAVE system.

- 3. Does your community participate in the National Flood Insurance Program?**

The city of Clinton is participating in the NFIP but does not have any FEMA mapped high risk areas. Clinton was originally enrolled in FEMA’s “emergency program” in 1997, and an ordinance wasn’t required at that time if communities did not have mapped floodplain. They were “converted” to the regular program on the date of the new maps on 4/17/2006. When the community doesn’t have mapped floodplain, FEMA doesn’t require an updated ordinance.

- 4. Describe any plans, authorities or policies in place that help to reduce risk from natural hazards in your community.**

Our County has a Comprehensive Plan that is designed to plan for the future physical growth of the county and appropriate land uses. The County also has a Transportation Plan that identifies and schedules road improvement projects to reduce over-the-road repetitive flooding. We have a sump pump ordinance in place to mitigate against overload of the city’s system.

- 5. Please describe what staff or partnerships are in place to help accomplish mitigation in your community.**

We have a city public works manager that address’ road maintenance issues for flooding (culverts, repetitive flooding). We are currently working with the county emergency manager to address public notification systems.

6. Describe any programs in place that to help accomplish mitigation in your community.

Our city works with the county emergency manager to participate in the National Weather Service's annual Severe Winter/Spring Weather Awareness Week by posting severe weather awareness information out on our city Facebook page. Our local school practices tornado drills on an annual basis. Each fall & spring we do active outreach to homeowners to clear leafy and woody debris from roadside gutters to prevent clogging and over the road flooding in these areas. Each spring and winter we do outreach to encourage residents to maintain their sump pumps to reduce the chances of basement flooding. The city has a program to manage vegetation near powerlines to reduce risk of power outages during storms.

7. Please describe any agency partnerships, funding, or other resources to help accomplish mitigation in your community.

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

8. Does your jurisdiction have any plans or policies in place related to resilience and adaptation for climate change? If yes, please describe.

No.

9. Who is your local electric provider? (i.e., municipal / rural electric coop / other)

Ottertail Power Company

10. Do you need back-up generators for specific critical facilities? Please identify them.

Yes, school building that may be used as a shelter until a saferoom can constructed.

PART C: LOCAL MITIGATION PROJECTS

1. Local Mitigation Projects: Describe any specific mitigation activities you think would help to address local vulnerabilities and reduce risk against future hazard events in your community.

We would like to upgrade the city's warning siren and need a storm shelter or tornado safe room constructed at the Fairgrounds within the city. The city has a need for additional storm sewer upgrades and purchase of additional pumps in the event of flooding. Public education is a standing need and homeowners would benefit from more information on how to be prepared for bad storms and extended power outages (i.e., generators, food, water, etc.). We need a portable generator for our school and community center, which is our designated community mass care shelter sites.

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

Our city does not have its own to do better outreach to our residents. Not all of our residents are signed up for the county’s emergency notification system. We have poor NOAA weather tower coverage due to our topography and notifications on severe weather can be delayed. We are small city with limited financial and staff resources to address local mitigation projects.

PART D: SURVEY PARTICIPANTS

Kari Wiegman, City Clerk
 Greg Basta, Mayor
 Lee Sigler, City Council
 David Davis, Public Works
 Andrew Martig, Fire Chief

CITY OF CORRELL

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

- Hazard Identification & Risk Prioritization:** Please fill out the chart below as you feel it relates for your jurisdiction. Please note that hazards that are considered as significant (moderate to high priority) will need to have at least one mitigation action associated with it.

Natural Hazard	Use an “X” to Select 3-5 of the top hazards you feel pose risk to your jurisdiction.	Indicate your priority level of each hazard to your community as <u>Low, Moderate, or High</u> . Consider past events, likelihood of future events, and impacts to community assets.	Note if you feel the risk has increased, decreased, or had no change over the last 5 years.
Winter Storms (Blizzards, Ice Storms)	X	Moderate	No change
Tornadoes			
Windstorms	X	Moderate	Increased
Lightning			
Hail	X	Moderate	Increased
Flooding	X	Moderate	No change
Extreme Cold			
Extreme Heat			
Drought			
Wildfire			
Landslides			
Dam Failure			

- Recent Hazard Events:** Describe any severe weather or disaster events that have occurred over the last 5 years that caused damages in your community.

None noted.

- Local Vulnerabilities:** Use the chart below to identify what specific community assets (i.e., infrastructure, systems, populations) are vulnerable to damages or loss from the hazards that

pose risk to your community. Use the blank rows to enter in your answers as they relate to your community.

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets are susceptible to damage or loss from hazard events.
	N/A. We are a population of 26.

4. **Reduction in Vulnerability - 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 underway that reduces future risk.**

None that I am aware of.

5. **Increase in Vulnerability – Describe any current conditions or changes you feel have increased your community’s vulnerability to future severe weather or disaster events. Consider factors such as recent population growth or new development.**

None that I am aware of.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. **Describe what methods you use to provide information to residents on emergencies or personal preparedness for severe weather.**

None. We use the post office to post information for the public, but very few residents visit there. We are a population of only 26.

2. **Do you encourage residents to sign up for the county’s emergency notification system and/or a local emergency alert system? If so, how?**

No, we do not have a central way to communicate with residents. I believe they are encouraged through county communication on Facebook.

3. **Does your community participate in the National Flood Insurance Program?**

The city does not participate in the NFIP and does not have FEMA-mapped high-risk areas.

4. **Describe any plans, authorities or policies in place that help to reduce risk from natural hazards in your community.**

None that I am aware of.

5. **Please describe what staff or partnerships are in place to help accomplish mitigation in your community.**

None that I am aware of.

6. **Describe any programs in place that to help accomplish mitigation in your community.**

None that I am aware of.

7. **Please describe any agency partnerships, funding or other resources to help accomplish mitigation in your community.**

None that I am aware of.

8. **Does your jurisdiction have any plans or policies in place related to resilience and adaptation for climate change? If yes, please describe.**

No

9. **Who is your local electric provider? (i.e., municipal / rural electric coop / other)**

Ottertail Power

10. **Do you need back-up generators for specific critical facilities? Please identify them.**

We do not have any currently. Perhaps one would be needed for the city well?

PART C: LOCAL MITIGATION PROJECTS

1. **Local Mitigation Projects: Describe any specific mitigation activities you think would help to address local vulnerabilities and reduce risk against future hazard events in your community.**

Upgrade the city warning siren.

2. **Gaps or Deficiencies: Please describe any specific gaps or deficiencies that are a barrier to implementing local mitigation measures.**

Our city does not have a website or Facebook page; nor do we have a central location to post information that residents frequent. We use the post office, but very few residents visit there.

PART D: SURVEY PARTICIPANTS

Kirstin Koch, City Clerk
Josh Stock, Public Works Director
Nic Stock, Mayor

CITY OF GRACEVILLE

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. **Hazard Identification & Risk Prioritization: Please fill out the chart below as you feel it relates for your jurisdiction. Please note that hazards that are considered as significant (moderate to high priority) will need to have at least one mitigation action associated with it.**

Natural Hazard	Use an "X" to Select 3-5 of the top hazards you feel pose risk to your jurisdiction.	Indicate your priority level of each hazard to your community as <u>Low</u> , <u>Moderate</u> , or <u>High</u> . Consider past events, likelihood of future events, and impacts to community assets.	Note if you feel the risk has increased, decreased, or had no change over the last 5 years.
Winter Storms (Blizzards, Ice Storms)	X	Moderate	No change
Tornadoes	X	Moderate	No change
Windstorms			
Lightning			
Hail			
Flooding	X	Moderate	No change
Extreme Cold			
Extreme Heat			
Drought			
Wildfire			
Landslides			
Dam Failure			

2. Recent Hazard Events: Describe any severe weather or disaster events that have occurred over the last 5 years that caused damages in your community.

The city has experienced flooding 3 different years starting in 1997. Our nursing home complex is the most vulnerable, overland flooding can inundate the complex if water reaches the elevation of Highway 75, which has happened twice. We have also had to sand bag homes and dike Lake Ave when Toqua Lake has flooded out of its banks. Wind damage has caused falling trees, blocking streets and damaging property. We have not had a tornado in years but that is always a possibility.

3. Local Vulnerabilities: Use the chart below to identify what specific community assets (i.e., infrastructure, systems, populations) are vulnerable to damages or loss from the hazards that pose risk to your community. Use the blank rows to enter in your answers as they relate to your community.

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets are susceptible to damage or loss from hazard events.
Flooding	<p>Our nursing home/assisted living complex (Grace Home) is the most vulnerable, overland flooding can inundate the complex if water reaches the elevation of Highway 75, which has happened twice. if these buildings were flooded, evacuations would need to happen with elderly population.</p> <p>We have also had to sand bag homes and dike Lake Avenue when Toqua Lake has flooded out of its banks. Flooding of Toqua Lake, once over Lake Ave could destroy numerous homes, a 24-unit apartment complex and several accessory buildings and roads.</p>

	Our sanitary sewer also runs through this low area, the manholes were placed at a higher elevation in 2016 but there is always the chance of surface water entering the system.
Windstorms	Homes, streets and businesses could be damaged, and blocked roads could cause emergency responder problems. We have a very high senior citizen population, which makes things more complicated.
Winter storms	Winter storms could cause power outages, senior citizen population is at risk, emergency responders would be hindered. Extreme cold causes water main breaks, storm water system can freeze causing local flooding. Emergency responders are not able to respond to outlying areas.

4. Reduction in Vulnerability - 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 underway that reduces future risk.

In 2016 the city raised all of the sanitary manholes and they are sealed, so a flood is less likely to inundate the system. We have also installed pumps and have portable pumps to help if anything fails. The creek that runs through the Grace Home complex was diked as much as possible to help with flood water but more needs to be done.

Big Stone County has implemented an emergency alert system available to anyone with a phone. We also use our Facebook page to communicate with our residents.

A new siren is being installed to help more of the community and surrounding residents to be able to hear emergency alerts.

5. Increase in Vulnerability – Describe any current conditions or changes you feel have increased your community’s vulnerability to future severe weather or disaster events. Consider factors such as recent population growth or new development.

In the past few years many tiling projects have been approved, ditches have been cleaned on farm land and culverts are being updated. This all adds to the flood potential for the City of Graceville as water collects in Toqua Lake. Major storms and rain events seem to be more frequent, adding to the increase in vulnerability.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. Describe what methods you use to provide information to residents on emergencies or personal preparedness for severe weather.

We use local radio stations, our city website, city Facebook page and an emergency alert system to notify our residents of potential problems

2. Do you encourage residents to sign up for the county’s emergency notification system and/or a local emergency alert system? If so, how?

We currently do not.

3. Does your community participate in the National Flood Insurance Program?

Yes. The City participates in the National Flood Insurance Program. We do not allow building in the floodplain. The City has a Federal Flood Insurance ordinance in place which requires permits for all proposed construction or other development in the community, including the placement of manufactured homes, so that it may determine whether such construction or other development is proposed within flood-prone areas.

4. Describe any plans, authorities or policies in place that help to reduce risk from natural hazards in your community.

We enforce our sump pump ordinance to help keep our sanitary system from overloading in wet cycles. We have talked to engineers about solutions to the flooding potential at our Grace Home complex. It is an expensive project to fix. We have applied for permits to reroute high water from the area, but were rejected by MNDOT.

5. Please describe what staff or partnerships are in place to help accomplish mitigation in your community.

We partner with Widseth for advice on flood prevention, and we are working with our Bois de Sioux Watershed District (BDSWD) for solutions.

We have done a tree inventory and are in the process of replacing old big trees along our street right of ways.

There are also planned projects to mitigate damages from floods, wind storms, and tornadoes, but the city budget cannot cover the cost of such projects. The city relies on grants and funding partners.

6. Describe any programs in place that to help accomplish mitigation in your community.

None. We just have our public outreach methods in the event we need to communicate to residents during emergency situations.

7. Please describe any agency partnerships, funding or other resources to help accomplish mitigation in your community.

We only have our budget to work with, which is pretty much used up on emergency service, general maintenance and water and sewer. We recently received a grant from USDA Rural Development Program to install an outdoor warning siren.

8. Does your jurisdiction have any plans or policies in place related to resilience and adaptation for climate change? If yes, please describe.

No

9. Who is your local electric provider? (i.e., municipal / rural electric coop / other)

Ottertail Power

10. Do you need back-up generators for specific critical facilities? Please identify them.

None needed. We have one on our main lift station, one at the water treatment plant and a portable generator.

PART C: LOCAL MITIGATION PROJECTS

1. Local Mitigation Projects: Describe any specific mitigation activities you think would help to address local vulnerabilities and reduce risk against future hazard events in your community.

If we could connect three culverts going through the Grace Home complex, our engineers claim the efficiency would be 130% or more of what the current culverts can handle.

Moonshine Bottom should have a spring flood structure in place to help flood problems. This project has been looked at for several years, BDSWS and area farm land owners are on board with the idea. Cost is the only thing holding us back.

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

The city does not have the funding to finish these projects. We are very small with all of our resources use for general day-to-day activities.

PART D: SURVEY PARTICIPANTS

Scott Bauer, City Clerk

CITY OF JOHNSON

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. Hazard Identification & Risk Prioritization: Please fill out the chart below as you feel it relates for your jurisdiction. Please note that hazards that are considered as significant (moderate to high priority) will need to have at least one mitigation action associated with it.

Natural Hazard	Use an "X" to Select 3-5 of the top hazards you feel pose risk to your jurisdiction.	Indicate your priority level of each hazard to your community as <u>Low</u> , <u>Moderate</u> , or <u>High</u> . Consider past events, likelihood of future events, and impacts to community assets.	Note if you feel the risk has increased, decreased, or had no change over the last 5 years.
Winter Storms (Blizzards, Ice Storms)	X	High	No Change
Tornadoes	X	High	No Change
Windstorms	X	High	No Change
Lightning		Moderate	No Change

Hail	X	Moderate	No Change
Flooding	X	High	Increased
Extreme Cold		Low	No Change
Extreme Heat		Low	No Change
Drought		Low	No Change
Wildfire		Low	No Change
Landslides		Low	No Change
Dam Failure		Low	No Change

2. Recent Hazard Events: Describe any severe weather or disaster events that have occurred over the last 5 years that caused damages in your community.

Johnson is a very small community with gravel streets. The city has repeatedly flooded during events with high rain. Homes have gotten water in their basements. Trees have been taken down by high winds. After the first large storm in May, we were without power for numerous hours.

3. Local Vulnerabilities: Use the chart below to identify what specific community assets (i.e., infrastructure, systems, populations) are vulnerable to damages or loss from the hazards that pose risk to your community. Use the blank rows to enter in your answers as they relate to your community. Some example answers are provided.

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets are susceptible to damage or loss from hazard events.
Flooding	Our gravel streets are prone to flooding during high rain events.
Ice Storms, Blizzards	Johnson’s city 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 do not have an outdoor warning siren. There is no severe weather safe room available for the public.
Extreme Cold	Our residents are susceptible to dangers from extreme cold, especially when the power goes down during winter storms. We have some senior citizens and also low-income residents who are mor vulnerable during these events. The city has experienced damages to roads from spring frost heaves and frozen culverts that cause localized flooding.

4. Reduction in Vulnerability - 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 underway that reduces future risk.

We have encouraged residents of Johnson to enroll in the county emergency notification system in order to be aware of dangerous storm events.

5. **Increase in Vulnerability – Describe any current conditions or changes you feel have increased your community’s vulnerability to future severe weather or disaster events. Consider factors such as recent population growth or new development.**

In general, we have noticed an increase in more frequent high-rain events in the last 5 years.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. **Describe what methods you use to provide information to residents on emergencies or personal preparedness for severe weather.**

Johnson has no city website or Facebook page. With such a small population, we rely on our neighbors and word of mouth, as well as information from the National Weather Service. We also have discussions at city council meetings and give reminders to residents about upcoming weather seasons.

2. **Do you encourage residents to sign up for the county’s emergency notification system and/or a local emergency alert system? If so, how?**

Yes, when we have received information from Emergency Management about the emergency alert system, we encourage residents to sign up and will help them sign up for it.

3. **Does your community participate in the National Flood Insurance Program?**

Yes.

4. **Describe any plans, authorities or policies in place that help to reduce risk from natural hazards in your community.**

Big Stone County has a comprehensive plan designed to plan for the future physical growth of the city and appropriate land uses. The County also has a Transportation Plan that identifies and schedules road improvement projects to reduce over-the-road repetitive flooding.

5. **Please describe what staff or partnerships are in place to help accomplish mitigation in your community.**

Johnson has a city public works manager that will address road maintenance issues for flooding. We are currently working with the County Emergency Manager to address public notification systems.

6. **Describe any programs in place that to help accomplish mitigation in your community.**

Our city works with the County Emergency Manger to participate in the National Weather Service’s annual Severe Winter/Spring Weather Awareness Week by reaching out to residents regarding severe weather. Each fall & spring we do active outreach to homeowners to prepare for over the road flooding. Each spring and winter we do outreach to encourage residents to maintain their sump pumps to reduce the chances of basement flooding

- 7. Please describe any agency partnerships, funding, or other resources to help accomplish mitigation in your community.**

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

- 8. Does your jurisdiction have any plans or policies in place related to resilience and adaptation for climate change? If yes, please describe.**

No

- 9. Who is your local electric provider? (i.e., municipal / rural electric coop / other)**

Ottertail Power Company

- 10. Do you need back-up generators for specific critical facilities? Please identify them.**

No

PART C: LOCAL MITIGATION PROJECTS

- 1. Local Mitigation Projects: Describe any specific mitigation activities you think would help to address local vulnerabilities and reduce risk against future hazard events in your community.**

We would potentially add a city warning siren. Due to the cost, we are currently unable to do this for our city.

- 2. Gaps or Deficiencies: Please describe any specific gaps or deficiencies that are a barrier to implementing local mitigation measures.**

Our city does not have its own website or Facebook page to do better outreach to our residents. Not all residents are signed up for the county's emergency notification system. We have poor NOAA weather tower coverage. We are small city with limited financial and staff resources to address local mitigation projects.

PART D: SURVEY PARTICIPANTS

Elaine Johnsrud, City Clerk, 2 hours
Don Johnsrud, Mayor, 2 hours

CITY OF ODESSA

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

- Hazard Identification & Risk Prioritization:** Please fill out the chart below as you feel it relates for your jurisdiction. Please note that hazards that are considered as significant (moderate to high priority) will need to have at least one mitigation action associated with it.

Natural Hazard	Use an "X" to Select 3-5 of the top hazards you feel pose risk to your jurisdiction.	Indicate your priority level of each hazard to your community as <u>Low, Moderate, or High</u> . Consider past events, likelihood of future events, and impacts to community assets.	Note if you feel the risk has increased, decreased, or had no change over the last 5 years.
Winter Storms (Blizzards, Ice Storms)	X	Moderate	No Change
Tornadoes			
Windstorms	X	High	No Change
Lightning			
Hail			
Flooding	X	High	No Change
Extreme Cold			
Extreme Heat			
Drought			
Wildfire			
Landslides			
Dam Failure			

- Recent Hazard Events:** Describe any severe weather or disaster events that have occurred over the last 5 years that caused damages in your community.

None noted.

- Local Vulnerabilities:** Use the chart below to identify what specific community assets (i.e., infrastructure, systems, populations) are vulnerable to damages or loss from the hazards that pose risk to your community. Use the blank rows to enter in your answers as they relate to your community.

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets are susceptible to damage or loss from hazard events.
Flooding	Our town is built on a swamp so we have flooding.
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	Windstorms and tornadoes usually lead to loss of electricity. This causes sump pumps to not work and then the sewers back up into homes.

- 4. Reduction in Vulnerability - 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 underway that reduces future risk.**

We've done a water and sewer project where new pipe was laid.

- 5. Increase in Vulnerability – Describe any current conditions or changes you feel have increased your community's vulnerability to future severe weather or disaster events. Consider factors such as recent population growth or new development.**

None.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

- 1. Describe what methods you use to provide information to residents on emergencies or personal preparedness for severe weather.**

We have an outdoor warning siren for the town we purchased a few years ago.

- 2. Do you encourage residents to sign up for the county's emergency notification system and/or a local emergency alert system? If so, how?**

We don't do this. Our local radio station is good at informing the public.

- 3. Does your community participate in the National Flood Insurance Program?**

Yes. The city participates in the NFIP and has FEMA-mapped high-risk areas.

- 4. Describe any plans, authorities or policies in place that help to reduce risk from natural hazards in your community.**

Not sure. Our Fire Department is very active in the community.

- 5. Please describe what staff or partnerships are in place to help accomplish mitigation in your community.**

Our City Council is great and 3 of them are on the fire department along with our fire chief.

- 6. Describe any programs in place that to help accomplish mitigation in your community.**

Big Stone County Emergency Management does public outreach on storm conditions and being prepared.

- 7. Please describe any agency partnerships, funding or other resources to help accomplish mitigation in your community.**

We work on our own.

8. Does your jurisdiction have any plans or policies in place related to resilience and adaptation for climate change? If yes, please describe.

No.

9. Who is your local electric provider? (i.e., municipal / rural electric coop / other)

Otter Tail Power Company

10. Do you need back-up generators for specific critical facilities? Please identify them.

No, we have them in place already.

PART C: LOCAL MITIGATION PROJECTS

1. Local Mitigation Projects: Describe any specific mitigation activities you think would help to address local vulnerabilities and reduce risk against future hazard events in your community.

None.

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

None.

PART D: SURVEY PARTICIPANTS

Ginger Drobney, City Clerk, .5 hr.

CITY OF ORTONVILLE

PART A: HAZARD IDENTIFICATION, RISK ASSESSMENT & VULNERABILITY ANALYSIS

1. Hazard Identification & Risk Prioritization: Please fill out the chart below as you feel it relates for your jurisdiction. Please note that hazards that are considered as significant (moderate to high priority) will need to have at least one mitigation action associated with it.

Natural Hazard	Use an "X" to Select 3-5 of the top hazards you feel pose risk to your jurisdiction.	Indicate your priority level of each hazard to your community as <u>Low</u> , <u>Moderate</u> , or <u>High</u> . Consider past events, likelihood of future events, and impacts to community assets.	Note if you feel the risk has increased, decreased, or had no change over the last 5 years.
Winter Storms (Blizzards, Ice Storms)			
Tornadoes	X	High	Increased
Windstorms	X	High	Increased
Lightning			

Hail	X	High	Increased
Flooding	X	High	Decreased
Extreme Cold			
Extreme Heat			
Drought			
Wildfire			
Landslides			
Dam Failure			

2. Recent Hazard Events: Describe any severe weather or disaster events that have occurred over the last 5 years that caused damages in your community.

August, 2021 hail storm severely damaged many homes and businesses in the city of Ortonville.

May, 2022 wind storm, many trees were uprooted. The city had 9 trees removed out of Nielson Park and 22 removed from our golf course. The Golf Course Road also washed out and has been closed since the storm.

3. Local Vulnerabilities: Use the chart below to identify what specific community assets (i.e., infrastructure, systems, populations) are vulnerable to damages or loss from the hazards that pose risk to your community. Use the blank rows to enter in your answers as they relate to your community.

Natural Hazard (please list)	Vulnerability Assessment Describe <u>specific</u> community assets are susceptible to damage or loss from hazard events.
Windstorms, Hail Tornadoes	Our primitive campground at the foot of Big Stone Lake does not have a storm shelter, but local law enforcement officers notify the campers when a storm is approaching. They open the MN National Guard Armory in Ortonville for people that have no place to go for safety.

4. Reduction in Vulnerability - 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 underway that reduces future risk.

In 2019 we had a Street Utility Project with improvements to all infrastructure including the storm sewers. The utility department buried all power lines to the homes during this project.

5. Increase in Vulnerability – Describe any current conditions or changes you feel have increased your community’s vulnerability to future severe weather or disaster events. Consider factors such as recent population growth or new development.

The city of Ortonville has experienced larger rainfalls that have created ravine flooding. Our engineer has reviewed and there will be additional storm sewer project in the future.

PART B: LOCAL MITIGATION CAPABILITIES ASSESSMENT

1. Describe what methods you use to provide information to residents on emergencies or personal preparedness for severe weather.

We recommend that the citizens sign up for Big Stone County's emergency notification system in times of severe weather. We have outdoor sirens to warn the public of severe wind events.

2. Do you encourage residents to sign up for the county's emergency notification system and/or a local emergency alert system? If so, how?

We don't do anything currently, but we could use our city of Ortonville website and Facebook page to share information with the public.

3. Does your community participate in the National Flood Insurance Program?

Yes, the city participates in the NFIP and we have a Flood Hazard Ordinance (City Ordinances, Section 150.110).

4. Describe any plans, authorities or policies in place that help to reduce risk from natural hazards in your community.

We do not allow sump pumps to discharge in the city's sanitary sewer system. We have both Shoreland and Flood Hazard Ordinances.

5. Please describe what staff or partnerships are in place to help accomplish mitigation in your community.

We work with Big Stone County Emergency Management, and also the MPCA on our Wellhead Protection plan.

6. Describe any programs in place that to help accomplish mitigation in your community.

We have continued to update our outdoor warning sirens in Ortonville.

7. Please describe any agency partnerships, funding or other resources to help accomplish mitigation in your community.

The city uses our own funding for mitigation projects.

8. Does your jurisdiction have any plans or policies in place related to resilience and adaptation for climate change? If yes, please describe.

No

9. Who is your local electric provider? (i.e., municipal / rural electric coop / other)

Missouri River Energy Service and WAPA

10. Do you need back-up generators for specific critical facilities? Please identify them.

No

PART C: LOCAL MITIGATION PROJECTS

- 1. Local Mitigation Projects: Describe any specific mitigation activities you think would help to address local vulnerabilities and reduce risk against future hazard events in your community.**

Encourage residents to sign up with county warning system link on our city website and Facebook to be prepared for storm events.

Our engineer has reviewed the impacts of larger rainfalls on resulting ravine flooding. There will be additional storm sewer project in the future.

- 2. Gaps or Deficiencies: Please describe any specific gaps or deficiencies that are a barrier to implementing local mitigation measures.**

Our city has a very small amount of staff.

PART D: SURVEY PARTICIPANTS

Charleen Grossman, Clerk/Administrator

Appendix D – Plans & Programs in Place

Big Stone County

MHMP Plans in Place Form

Planning & Regulatory

<i>Plans/Programs</i>	<i>Yes/No</i>	<i>Comments</i>
Comprehensive/Master Plan	Yes	BSC Comprehensive Plan, 2002
Capital Improvements Plan	No	
Economic Development Plan	No	
Emergency Operations Plan	Yes	BSC Emergency Operations Plan, updated annually
Climate Adaptation Plan	No	
Continuity of Operations Plan	Yes	Updated annually by BSC Emergency Management
Transportation Plan	Yes	
Stormwater Management Plan	Yes	BSC Environmental Services Dept.
Community Wildfire Protection Plan	No	MN DNR notes no CWPP for Big Stone County
FireWise Program	No	
Comprehensive Water Management Plan	Yes	BSC Water Plan, 2014-2023
One Watershed, One Plan (1W1P)	Yes	BSC has three watersheds within the county that participate in 1W1P
Wellhead Protection Plan	No	Municipal wellhead protection plans are done in coordination with MDH
Database of dry hydrants/well access	No	
Burning permits/restrictions	Yes	Permits are purchased from the Big Stone County Sheriff's Office or the MN DNR
Zoning ordinance	Yes	BSC Land and Related Resources Management Ordinance, 2011

Subdivision ordinance	Yes	BSC Subdivision Controls Ordinance of 2002
Floodplain ordinance	Yes	BSC Floodplain Management Ordinance, 2006
Natural hazard specific ordinance (i.e., stormwater, steep slope, wildfire)	Yes	2018 Big Stone County Riparian Buffer Protection Ordinance; BSC Shoreland Management Ordinance, 2004
Flood insurance rate maps	Yes	FIRM maps are housed in the Environmental Services Office
Acquisition of homes (buyouts) due to repetitive flood damage or imminent risk of failure from erosion	No	
School closing policy/communications plan in event of inclement weather/temperatures	Yes	Schools maintain their own policies.
Mass Care Sheltering Plan	Yes	In County Emergency Operations Plan
Designated Mass Care Sheltering Facilities (list available)	Yes	In County Emergency Operations Plan
Tornado Safe Rooms/Outdoor Storm Shelters (list available)	No	Not currently, under update
Outdoor Warning sirens (list all locations)	Yes	Beardsley, Graceville, Clinton, Ortonville and Odessa
SKYWARN Program	Yes	Annual training with NWS
Emergency Mass Notification System (provide type, i.e., CodeRED)	Yes	Smart911 Emergency Alert System
Severe Weather Awareness Week	Yes	Annual participation in NWS event (April)
Winter Weather Awareness Week	Yes	Annual participation in NWS event (November)
NOAA Weather Radios	Yes	BSC Emergency Management promotes use of NOAA weather radios
THIRA	Yes	Past THIRA but no longer required, but updated regularly
<i>Other *please describe</i>		

Administrative & Technical

<i>Administration</i>	<i>Yes/No</i>	<i>Comments</i>
Planning Commission	No	
Mitigation Planning Committee	Yes	MHMP Update Planning Team
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Yes	Highway Dept. ROW maintenance and drainage systems
Mutual aid agreements		Neighboring counties + all of HSEM Region IV, American Red Cross
<i>Staff</i>	<i>Yes/No</i>	<i>Comments</i>
Chief Building Official	Yes	For BSC Buildings
Floodplain Administrator	Yes	BSC Environmental Services Office
Emergency Manager	Yes	BSC Emergency Management Director, Part-time
County Coordinator	Yes	New position 2022
Civil Engineer	Yes	BSC Hwy Dept – County Engineer
GIS Coordinator	Yes	BSC Information Technology Dept.
<i>Technical</i>	<i>Yes/No</i>	<i>Comments</i>
Hazard data and information	Yes	Damage information on file from past storm events
Hazus analysis	No	Will be conducted as part of MHMP update.

Education & Outreach

<i>Program/Organization</i>	<i>Yes/No</i>	<i>Comments</i>
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.		We have an Emergency Preparedness Committee and also work with the American Red Cross, Salvation Army, hospitals, long term care facilities, and leadership from local Fire, EMS and Law Enforcement partners

Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes	BSC EM and Countryside Public Health both have a role in conducting ongoing public outreach for hazard and preparedness awareness & information.
Natural disaster or safety related school programs	No	
StormReady certification	No	
Firewise Communities certification	No	
Public-private partnership initiatives addressing disaster-related issues	No	
<i>Other *please list & describe</i>	Yes	Countryside Public Health covers 5 counties including Big Stone County. We also have our own Emergency Preparedness Coordinator for the county.

Appendix E – Past Mitigation Action Review Status Report

Big Stone County

Past Mitigation Action Review Status Report

Following is a report on the status of mitigation actions related to natural hazards listed in *Chapter 5: Goals, Objectives, and Strategies for Natural Hazards* of the Big Stone County 2015 Hazard Mitigation Plan. This report identifies those actions that have been completed, are being deleted, or are ongoing. Mitigation actions that are noted as “ongoing” will be reviewed & revised as necessary based on the updated risk assessment and local input. This report covers the mitigation actions that were listed for implementation by the county and by city jurisdictions, as applicable.

Hazard	Mitigation Action	Responsibility	Status	Comments
Violent Storms & Extreme Temperatures	Encourage all new homes without basements to have a safe room where residents may go during violent storms. / Educate homeowners on safe shelters with newspaper or radio announcements or when people apply for building permits.	All Cities and County	Ongoing	Public education and outreach is ongoing by BSCEM, BSC Environmental Services and local jurisdictions.
Violent Storms & Extreme Temperatures	Work with the manufactured park in Ortonville to develop a Safe Room Plan. Require that the safe room plan go through the local governing unit each year for review. Through this process, determine a safe room for mobile homes.	Ortonville	Ongoing	Ongoing for all jurisdictions with mobile home parks. Shelter and evacuation plans must be approved by the city or township in which they are located and submitted to Countryside Public Health.
Violent Storms & Extreme Temperatures	Ensure that all hospital, school and nursing home facilities have a severe storm plan in place. / The County Emergency Management Director should continue to do periodic visits and review plans annually.	County EM	Ongoing	BSCEM encourages all school and care facilities to have storm plans in place but BSC is not responsible for the completion of those plans.

Hazard	Mitigation Action	Responsibility	Status	Comments
Violent Storms & Extreme Temperatures	Ensure that public and open areas have a safe room identified. / Build safe rooms at city, county, and state campgrounds and parks, and other locations of unprotected populations (i.e. schools, manufactured home parks, all recreational parks, religious camps, apartment buildings, nursing homes, medical facilities, etc.) to protect users from violent storms.	All Cities and County	Ongoing	BSCEM will continue working with communities on potential safe room projects. In 2022 the City of Clinton is working with the BSC Ag Society on a FEMA grant application for a tornado safe room.
Violent Storms & Extreme Temperatures	Assess adequacy of existing emergency warning sirens. / The County Emergency Management Director should review countywide siren needs and look for funding to provide new/improved warning systems.	County EM	Ongoing	Outdoor warning sirens are located in the cities of Beardsley, Graceville, Clinton, Ortonville and Odessa. Warning sirens are tested on a monthly basis. BSC will work with jurisdictions to identify if any warning sirens need to be replaced or upgraded.
Violent Storms & Extreme Temperatures	Educate the public on the use of weather radios.	County EM	Ongoing	BSCEM continues to promote use of NOAA weather radios as part of our public education on storm preparedness.
Violent Storms & Extreme Temperatures	Assess adequacy of existing emergency equipment. / Research and obtain funding for implementing cell phone notifications for severe weather events and other hazardous events.	County EM, Sheriff	Delete	BSC and local jurisdictions, including law enforcement and fire departments manage emergency equipment – not relevant for MHMP. Cell phone notifications are addressed under our established Smart911 (RAVE) Emergency Alert System.
Violent Storms & Extreme Temperatures	Ensure that roads are kept clear during heavy snow events. / Build a Living Snow Fence surrounding town.	County Engineer, County	Ongoing	The Big Stone County Highway Department is responsible for the removal of snow and ice control for county roads. Living snow fence projects will be considered for areas where needed and feasible.

Hazard	Mitigation Action	Responsibility	Status	Comments
Violent Storms & Extreme Temperatures	Keep electric lines away from trees. / Work with power companies. Underground burial of power lines.	All Cities and County	Ongoing	BSC Hwy. Dept, power companies and local road authorities all manage vegetation along power lines in the right of way to reduce downed limbs from storms
Violent Storms & Extreme Temperatures	Encourage people to limit travel on state and major county highways when weather conditions warrant.	County Law Enforcement	Delete	Not a strong mitigation action; this is standard public safety put out by NWS and BSC during dangerous storm events.
Violent Storms & Extreme Temperatures	Ensure that County and City Emergency Operations Plans are kept up-to-date.	County Emergency Manager, All Cities	Ongoing	Big Stone County Emergency Management maintains an all-hazards Emergency Operations Plan that is updated regularly. Local jurisdictions are encouraged to do the same.
Flood	Enforce the County and City Floodplain Ordinance to keep new structures out of floodplains. Review building permits to determine if they want to locate in the floodplain.	County Zoning, Graceville, Ortonville, and Odessa	Ongoing	Big Stone County and the cities of Barry, Clinton, Graceville, Odessa, and Ortonville all participate in the NFIP and enforce local floodplain ordinances.
Flood	Purchase and place two 24-inch culverts under Nursing Home/Assisted Living Center "Link" and Driveway to prevent flooding.	Graceville	Ongoing	The City of Graceville will lead this mitigation work.
Flood	Flood proof affected homes.	Clinton	Ongoing	The City of Clinton will lead this mitigation work.
Flood	Install new culverts in the city, complete ditching, land excavation, and cleaning of ditches.	Johnson	Ongoing	The City of Johnson will lead this mitigation work.
Flood	Minimize the damage from flooding along Big Stone Lake and in Ortonville. / Work with the DNR to evaluate flood level.	County Zoning	Ongoing	The BSCEM will assist in coordinating this mitigation project. The City of Ortonville will lead this mitigation work within the City limits.

Hazard	Mitigation Action	Responsibility	Status	Comments
Flood	Continue to work with the Watershed District Manager to restore the historic Whetstone River channel. / Work with Watershed District to determine the best option for restoration and flood mitigation.	Ortonville and County	Ongoing	The Watershed District, BSC EM, BSC Environmental Services, County Board and City of Ortonville will work together to accomplish this work.
Flood	Minimize the damage from flooding on township roads. / Provide riprap to stabilize roads to prevent repeated flood damage.	County Engineer and Townships	Ongoing	BSC Highway Dept. works with townships to address flood and erosion impacts to roads . The Hwy. Dept. maintains a 5-year Transportation Improvement Plan that identifies and schedules road improvement projects that include measures for flood mitigation. The current TIP is for 2022-2027.
Flood	Identify township roads that continually flood during spring and work to find funding resources to raise or stabilize roads as needed.	County Engineer and Townships	Ongoing	Same as above.
Flood	Keep township roads and fields from flooding. / Monitor and clear waterways, culverts and ditches.	Townships and County Engineer	Ongoing	Same as above.
Flood	Maintain NFIP Compliance for participating jurisdictions. / Develop and implement strategies to demonstrate "Continued Compliance".	Graceville, Odessa, Ortonville, County	Ongoing	Big Stone County and the cities of Barry, Clinton, Graceville, Odessa, and Ortonville all participate in the NFIP and enforce local floodplain ordinances.
Erosion	Limit the potential loss of property and economic impact from river and ravine erosion, landslides, and slope failure. / Support demolition and/or relocation of dwellings and infrastructure to prevent loss of property due to erosion, landslides, or slope failure	County Emergency Manager	Ongoing	Landslides are deemed a low priority, low-risk hazard for BSC. There is only a localized concern which will be addressed by the City of Ortonville. BSC EM will work closely with the City of Ortonville to address this concern.

Hazard	Mitigation Action	Responsibility	Status	Comments
Erosion	Prevent possibility of damage from river and ravine erosion, landslides, and slope failure. / Review, update, and enforce zoning ordinances that prohibit building in areas that are susceptible to water erosion, landslides, and slope failure.	County, All Cities	Ongoing	Same as above
Erosion	Educate the public on possible effects of erosion, landslides, and slope failure. / Increase public awareness and knowledge on erosion landslides, and slope failure, targeting individuals and businesses located in high-risk areas.	County Emergency Manager, County Zoning	Ongoing	Same as above
Drought	Continue to monitor aquifer levels and water quality. Work with DNR to ensure that permitted water use is not depleting water resources in Big Stone Lake and other lakes.	SWCD	Ongoing	This work falls under the MN DNR and SWCD. BSC will be engaged in coordinating drought information or restrictions to the public.
Drought	Continue to support conservation programs in the county that conserve water and decrease the moisture in the soil.	County SWCD, NRCS	Delete	Not a necessary mitigation action for BSC; this falls under the work of SWCD and NRCS.
Drought	Establish an ordinance for water use restrictions in times of drought.	All Cities, County Zoning	Ongoing	Cities take action on this in response to requirements established by the MN DNR if drought conditions are severe.
Wildfire	Minimize the amount of fuel in areas prone to fire damage.	FSA, SWCD, DNR, USFWS	Delete	N/A for plan update; low priority hazard.
Wildfire	Minimize wildfire risks within Big Stone State Park and the National Wildlife Refuge.	USFWS, DNR	Delete	N/A for plan update; low priority hazard.
Wildfire	Provide education to the public about wildfire prevention.	FSA, Local Fire Departments, County Law Enforcement	Delete	N/A for plan update; low priority hazard.

Hazard	Mitigation Action	Responsibility	Status	Comments
Wildfire	Minimize impact of wildfire in residential areas by creating firebreaks between structures and areas with wildfire fuel.	FSA, Local Fire Departments, County Board	Delete	N/A for plan update; low priority hazard.
Wildfire	Promote training programs between the DNR and local firefighters.	Local Fire Departments & County EM	Delete	N/A for plan update; low priority hazard.
Wildfire	Increase access to equipment suitable to fighting wildfires.	Local Fire Departments & DNR	Delete	N/A for plan update; low priority hazard.
Wildfire	Install dry hydrants in suitable areas.	Local Fire Departments & DNR	Delete	N/A for plan update; low priority hazard.
Dam Failure	Ensure dam construction is maintained and functioning properly. / Coordinate dam inspections with the DNR and UMRWD.	County, DNR, UMRWD	Ongoing	The MN DNR Dam Safety Program continues to monitor the condition of the Big Stone Dam.
Dam Failure	Monitor water levels of the reservoir and gauge water capacity. Ensure that emergency plans for dam failures are annually updated. Encourage UMRWD to work with local agencies to keep plans current.	UMRWD	Delete	This activity is not under the responsibility of Big Stone County.

Appendix F – Planning Team Meetings

Big Stone County MHMP Update

Appendix F - Kickoff Meeting Documentation

Overview:

On July 14, 2021, U-Spatial@UMD hosted a kickoff meeting online that was attended by the Big Stone 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 Multi-Hazard Mitigation Plan, the planning process, and the projected timeline of the project

Attached Documentation:

- **Project Handout:** "Minnesota 2021-2022 Multi-Hazard Mitigation Plan Update Project Overview".
- **Webinar Slides:** "Minnesota 2021-2022 Multi-Hazard Mitigation Plan Update Project Kickoff Orientation Webinar"

Minnesota 2021-2022 Multi-Hazard Mitigation Plan Update Project Overview

During 2021-2022, U-Spatial from the University of Minnesota Duluth (U-Spatial@UMD) will be working to update Multi-Hazard Mitigation Plans (MHMPs) for 9 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

Big Stone, Douglas, Isanti, Meeker, Morrison, Polk, Wadena, Wright, and Yellow Medicine counties. Cities within each county are required to participate in the planning process.

Overview of Update Process

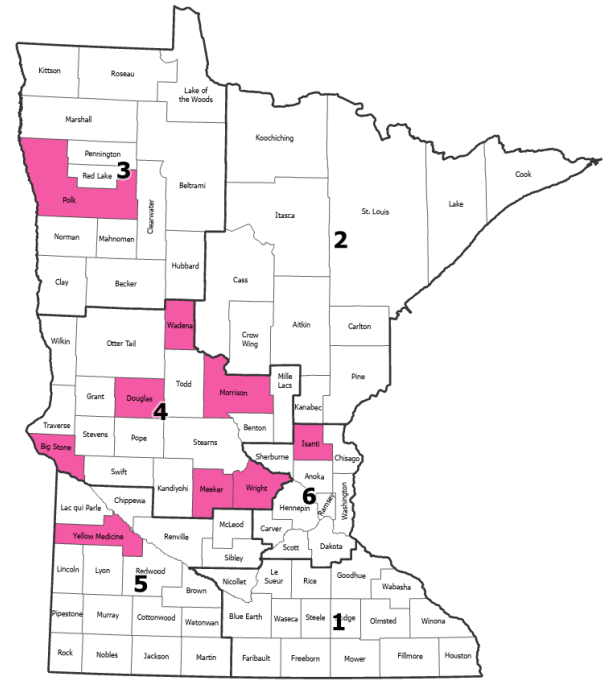
The U-Spatial@UMD team will coordinate with each Emergency Manager throughout the plan update process to engage participating jurisdictions and other stakeholders in the planning process. Following is an overview of key tasks that the U-Spatial@UMD team will facilitate to meet FEMA requirements in the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

- Conduct 2 planning team meetings
- Conduct 2 periods of 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)
- 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 MHMP 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 county profile sections and maps
- 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, EM's are required to submit quarterly reports to HSEM on their local 25% match accrued through MHMP activities during that quarter.

Minnesota 2021-2022 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 2021-2022 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.

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?

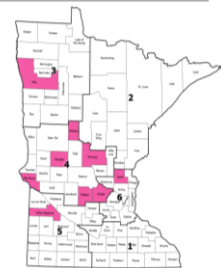
Minnesota HSEM:

Jennifer Davis, MN HSEM
State Hazard Mitigation Officer

Project Overview

9 Counties:

- Big Stone
- Douglas
- Isanti
- Meeker
- Morrison
- Polk
- Wadena
- Wright
- Yellow Medicine



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.

Why U-Spatial@UMD?

> Proven experience

Our updates of 30+ 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.

Overview of MHMP Update Process

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.

MHMP Planning Team

The MHMP planning team must include representation from local government, related stakeholders and neighboring jurisdictions.

- County Government key officials and staff
- Cities – required; Townships – optional
- Other Related Stakeholders (i.e., SWCD, USDA, Schools, Rural & Municipal Electric Coops, MN DNR, etc.)
- Neighboring county/tribal jurisdictions

Key Tasks

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

Key Tasks

- Distribute & document News Release #1.
- Distribute & document News Release #2.
- Conduct other public outreach (optional).

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.

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.

Timeline Overview

- 22-Month total timeline (July 2021 – May 2023)
- 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)	July – November 2021	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)	December 2021 – May 2022	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 2022	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 2022	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

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.

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>

Big Stone County MHMP Update

JURISDICTIONAL CONTACT LIST

County Contacts

Name	Title	Phone	Email
Dona Greiner	Emergency Management Director	320-208-6507	Em.Mgmt@co.big-stone.mn.us dona.greiner@bigstonecounty.gov
Valerie Siefert	EM Deputy Director	320-305-1452	val.seifert@bigstonecounty.gov
Mark Brown	County Sheriff	320-839-3558 320-760-5319	mark.brown@bigstonecounty.gov
Darren Wilke	Environmental Services Director	320-839-6376 320-305-2860	darren.wilke@bigstonecounty.gov
Todd Larson	County Engineer	320-839-2594 320-808-3725	todd.larson@bigstonecounty.gov
David Bothun	Countryside Public Health	701-371-0652	david@countryside.co.swift.mn.us
Jay Backer	County Board Chairman	320-304-2394	wade.athey@bigstonecounty.gov
Jeff Klages	County Board Vice Chairman	605-880-1417	jay.backer@bigstonecounty.gov
Pam Rud	County Coordinator	320-305-2850	pam.rud@bigstonecounty.gov
Dawn Gregoire	Human Resources	320-305-2122	dawn.gregoire@bigstonecounty.gov
Darwin Karsky	Highway Dept. Supervisor	320-808-5743	darwin.karsky@bigstonecounty.gov
Matt Anderson	I.T. Director	320-305-0122	matt.anderson@bigstonecounty.gov
Michelle Knutson	County Auditor	320-305-1781	michelle.knutson@bigstonecounty.gov
Jared Heck	County Facility Support	320-808-3625	jared.heck@bigstonecounty.gov

City Contacts

CITY OF BARRY

Name	Title	Phone	Email
Nelia Gary	City Clerk	320-760-1108	neliasvette@yahoo.com
Gene Carrington	City Mayor	320-748-7525	None

CITY OF BEARDSLEY

Name	Title	Phone	Email
Jackie Homan	City Clerk	320-267-9868	jacksonhoman@yahoo.com
Mary Sykora	City Mayor	320-265-0155	None

CITY OF CLINTON

Name	Title	Phone	Email
Karianna Wiegman	City Clerk	320-325-5580 W 320-305-0751 C	coclintonmn@gmail.com
Greg Basta	City Mayor	320-287-0736	None

CITY OF CORRELL

Name	Title	Phone	Email
Kirstin Koch	City Clerk	320-596-2311	joshstock81@gmail.com kochx040@umn.edu
Nic Stock	City Mayor	320-760-2841	None

CITY OF GRACEVILLE

Name	Title	Phone	Email
Scott Bauer	City Clerk	320-748-7911 W 320-808-9697 C	cigraceville@mchsi.com
Duane Steen	City Mayor	320-808-1337	duane.steen@wdcoop.com

CITY OF JOHNSON

Name	Title	Phone	Email
Elaine Johnsrud	City Clerk	320-748-7440 H 320-808-8514 C	dejemj@yahoo.com
Don Johnsrud	City Mayor	320-748-7440	Same as Elaine

CITY OF ODESSA

Name	Title	Phone	Email
Ginger Drobny	City Clerk	320-273-2375	cityodessa@fedtel.net
Catherine Teske	City Mayor	320-273-2349	None

CITY OF ORTONVILLE

Name	Title	Phone	Email
Char Grossman	City Administrator	320-839-3428	finance@cityofortonville.org
Gene Hausauer	City Mayor	612-799-2356	oahsgh@gmail.com
Jason Mork	Police Chief	320-815-1677	jason.mork@cityofortonville.org
Scott Huizenga	City Maintenance	320-305-0951	scott_huizenga@hotmail.com

Township Contacts - 2022

Name of Township	Name & Title	Phone	Email
Akron	Warren Wiese, Township Clerk	320-232-7144	None
	Roger Rheingans, Tnshp. Supervisor	320-808-5079	lizandroger@fedtel.net
	Dan Wiese, Township Chair	320-305-2064	None
Almond	Greg Athey, Township Clerk	320-815-7249	glathey@hotmail.com
	Gene Moberg, Township Chair	320-808-9283	gmoberg@outlook.com
Artichoke	Amy Larson, Township Clerk	320-815-8542	artichoketownship@gmail.com
	Jacob Danielson Jr, Township Chair	320-596-2261	None
Big Stone	Holly Wellendorf, Township Clerk	320-305-1726	bigstonetownship@gmail.com
	Marlyn Schumacher, Township Chair	320-839-2243	None
Browns Valley	Kim Zych, Township Clerk / Treasurer	218-205-4009	brownsvalleytownship@gmail.com
	Donald Diekmann, Township Chair	320-815-7125	brownsvalleytownship@gmail.com
Foster	Edward Holker, Township Clerk	320-760-1837	None
	Dennis Kvatum, Township Chair	320-760-8950	djkvatum@me.com
Graceville	Jennette Stotesbery, Township Clerk	320-760-1198	jmstotesbery@gmail.com
	Jon Pansch, Township Chair	320-808-9296	None
	Steve Kleindl, Township Treasurer	320-815-5426	None
Malta	Bruce Moberg, Township Clerk	320-760-1582	mobergbk@fedtel.net
	Terry Gillespie, Township Chair	320-760-0869	None
Moonshine	Diane Vogt, Township Clerk/Treas.	320-760-5494	ddvogt@fedtel.net
	Dan Walters, Township Chair	320-748-7719	None
Odessa	Tammy Neubauer, Township Clerk	320-273-2174 (H) 320-304-2244 (C)	tcolson.neubauer@gmail.com
	Paul Maas, Township Chair	320-273-2383	None
	Ortonville	Harold (Rusty) Dimberg, Tnshp Clerk	320-305-1555
	Bruce Hoernemann, Township Chair	320-760-7534	None

Otre	Kimberly Danielson, Township Clerk	320-305-0585	tkdanielson@fedtel.net
	Ronald Thompson, Township Chair	320-273-2314	None
Prior	Kristin Haggerty, Township Treasurer	605-695-0442	kristinhaggerty@hotmail.com
	David Weber, Township Clerk	320-839-2001	None
	Wayne Athey, Township Chair	320-748-7729	None
Toqua	Mark Kleindl, Township Clerk	320-760-5492	markhkleindl@hotmail.com
	Mike Kleindl, Township Chair	320-287-3506	None

Other Stakeholder Contacts

Contacts to consider including: HSEM RPC, USDA CF Contact, School Districts, Colleges, Rural Electric Coops, MN DNR, etc.

Name of Agency/Org.	Name & Title	Phone	Email
USDA Rural Development Community Programs	Jeff Scholten, Area Specialist	320-763-3191, ext. 112	jeff.scholten@usda.gov
MN Homeland Security & Emergency Management	Lisa Dumont, HSEM Region 4 Regional Program Coordinator	320-429-0348	lisa.dumont@state.mn.us
Big Stone County Soil & Water Conservation District	Tammy Neubauer, District Manager	320-839-6149, ext. 3	tammy.neubauer@mn.nacdnet.net
Upper MN Watershed District	Amber Doschadis	320-839-3411	amber@umrwd.org
Nat. Weather Service - Aberdeen	Kelly Serr, Warning Coordination Meteorologist	605-281-0685	kelly.serr@noaa.gov
BNSF Railroad	Paul Hester		paul.hester@bnsf.com
MN-DOT	Shiloh Wahl, Transportation District Engineer	218-846-3603	info.dot@state.mn.us
Ortonville Area Schools	Jeff Taylor, Interim Superintendent	320-839-6181	jeff.taylor@ortonville.k12.mn.us
CGB Schools	Julie Critz, Interim Superintendent	320-325-5224	jcritz@graceville.k12.mn.us
CGB Schools	Tracey Raguse, K-12 Principal	320-748-7233	traguse@graceville.k12.mn.us
Big Stone County FSA	Don Tweet, Acting Exec Dir.	320-839-6121 855-765-7531	don.tweet@usda.gov
	Michael Forsberg, FSA Farm Loan Mgr.	320-842-7201	michael.forsberg@usda.gov
Agralite Electric Cooperative	Tom Hoffman, Operations/Engineering	320-843-4150 800-950-8375	thoffman@agralite.com

Neighboring Jurisdiction Contacts

Name of Jurisdiction	Name & Title	Phone	Email
Grant County, SD	Kevin Schuelke, Emergency Mgmt. Director	605-432-4637	kevin.schuelke@grantcountysd.us
LQP County	Blain Johnson, Emergency Mgmt. Director	701-429-1737	emergencymanagement@lqpcoco.com
Swift County	Bill McGeary, Emergency Mgmt. Director	320-314-2153 320-843-2157	bill.mcgeary@co.swift.mn.us
Roberts County, SD	Jim Pearson, Emergency Mgmt. Director	605-880-2620	roberts.co.em@venturecomm.net
Traverse County	Lynn Siegel, Emergency Mgmt. Director	320-808-1447 320-563-0872	lynn.siegel@co.traverse.mn.us

Big Stone County Fair Board

Big Stone Co. Fair Board	Name	Phone	Email
Board Member	Gary Sigler	320-760-7681	gas.200@yahoo.com
Board Member	Aaron Twedt	605-212-6327	twedter54@gmail.com
Board Member	Ryan Stattelmann	None	ryans1966@yahoo.com

Big Stone County MHMP Planning Team Meeting #1

1/12/2022 - Meeting Summary & Documentation

Summary: On Wednesday, January 12, 2022 Big Stone 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 Big Stone County Multi-Hazard Mitigation Plan (MHMP). The purpose of the meeting was to formally present information about the Big Stone County MHMP 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: Big Stone County Emergency Management invited all stakeholders included on the county's MHMP 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 **43** people attended the meeting. Representation included elected officials and departmental staff from Big Stone County and the cities of Barry, Beardsley, Clinton, Correll, Graceville, Johnson, Odessa, and Ortonville. Other stakeholders, including neighboring jurisdictions, participated in the meeting. A participant list is included with this meeting summary.

Presentation Overview: The Power Point presentation covered the following items. A PDF of the presentation slides is included with this meeting summary.

- Overview of Hazard Mitigation & the MHMP Update
- Who the Plan Covers & Role of the Planning Team
- Review of Hazards + Overview of Risk Assessment and Vulnerability Analysis
- Update of Risk Priorities
- Review of Mitigation Strategies & Example Actions
- Overview of FEMA HMA grant program
- Discussion of local mitigation ideas
- Discussion of next steps & answer your questions.

Participant Poll: At the start of the meeting participants were presented with an interactive poll asking "Have you participated in Hazard Mitigation Planning previously?" Following are the poll results:

- Yes, I have previously participated in in a hazard mitigation planning process. **(12/33) 36%**
- No, but I am familiar with hazard mitigation planning. **(4/33) 12%**
- No, and this is all new to me. **(17/33) 52%**

Prioritization of Natural Hazards: The planning team was presented with an overview of each of the natural hazards that were covered in the county's last plan and the risk prioritization at that time. Considerations for the current risk prioritization since the last plan was presented for each hazard, such as events recorded since the last plan, NCEI Storm Data, or known existing local vulnerabilities (i.e., number of mobile home parks). It was noted to participants that:

- Hazards deemed to be of high or moderate risk must result in mitigation actions to address them for the jurisdictions that are affected.
- Hazard prioritization may vary for jurisdictions or may not differ countywide.
- Hazards deemed to be low risk and without significant mitigation actions may be dropped from the plan. This excludes the hazard of Dam/Levee failure, which must be addressed per new FEMA guidelines, even if risk is deemed low.

Following is a chart reflecting the 2015 risk priorities for Big Stone County and any changes to the current risk prioritization for the plan update. This discussion served as an introduction to updating the risk prioritization and will be followed up with further information gathered from the county and local jurisdictions during the planning process. Any changes to the risk prioritizations will be noted.

HAZARD	EXISTING PLAN	2022 PLAN
Tornadoes	High	High
Winter Storms	Moderate	Moderate
Flooding	Moderate	Moderate
Windstorms	Low/Moderate	High
Hail	Low/Moderate	Moderate
Extreme Cold	Low/Moderate	Moderate
Extreme Heat	Low/Moderate	Moderate
Drought	Low	Low
Wildfire	Low	Low
Dam/Levee Failure	Low	Low
Landslides	N/A	Low (note local risk to City of Ortonville)
Lightning	N/A	Low

Comments, Questions or Mitigation Ideas – Following are the questions, comments or mitigation ideas that were shared by participants and how they will be addressed for the plan update.

Meeting Participant	Comment, Question or Mitigation Idea Submitted	Facilitator Feedback / How to be Addressed in Plan Update
Kelly Serr, National Weather Service	Regarding prioritization of windstorms: "During summer thunderstorm season, the NWS issues more warnings and have more damage related to straightline winds as compared to tornadoes. If tornadoes are prioritized as "high" then I would suggest the group think about listing winds as "high" as well.	The planning team agreed to increase the hazard prioritization of wind storms from Low/Moderate in the 2015 plan to High for the 2022 plan.
Aaron Twedt, Agricultural Society	In regards to tornado safe rooms: "We as an Agricultural Society are looking at wanting to build storm shelter/bathrooms. Would bathrooms be acceptable as a "safe room"? Where can I find information on what is allowed for storm shelters or safe rooms under FEMA grant funding?"	Bonnie Hundrieser explained that tornado safe rooms are different than a storm shelter, they are built to specific standards to withstand wind velocity. A handout will be sent out with the meeting summary about tornado safe rooms.

Following the discussion, participants were encouraged to fill out and return the "Mitigation Ideas" worksheet that they were provided with to Big Stone County Emergency Management to submit any specific local concerns and related mitigation ideas. The meeting concluded with an overview of next steps and estimated timeline for completion.

Attached are the following documentation items for the Big Stone County MHMP Meeting #1:

- 1-12-22 Mtg. #1 Email Invitation
- 1-12-22 Mtg. #1 List of Participants
- 1-12-22 Mtg. #1 Power Point Slides
- 1-12-22 Mtg. #1 Handouts

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

From: [Dona Greiner](#)
To: [Dona Greiner](#)
Cc: [Bonnie K Hundrieser](#); [Amber Doschadis](#); [Darwin Karsky](#); [Jared Heck](#); [scott_huizenga@hotmail.com](#); [Jason Mork](#); [Don & Elaine Johnsrud Johnson](#); [Duane Steen, Graceville](#); [finance@cityofortonville.org](#); [Gene Hausauer](#); [Ortonville](#); [Ginger Drobny, Odessa](#); [Jackie Homan, Beardsley](#); [Karianna Wiegman, Clinton](#); [Kirstin Koch, Correll](#); [Nelja Gary, Barry](#); [Scott Bauer, Graceville](#); [Amy Larson, Artichoke](#); [Bruce Moberg, Malta](#); [ddvogt@fedtel.net](#); [Dennis Kvatum, Foster](#); [Gene Moberg, Almond](#); [Greg Athey, Almond](#); [Harold \(Rusty\) Dimberg, Ortonville](#); [Holly Wellendorf, Big Stone](#); [Jennette Stotesbery, Graceville](#); [Kimberly Danielson, Otrej](#); [Kristin Haggerty, Prior](#); [Mark Kleindl, Toqua](#); [Nancy Deutsch, Browns Valley](#); [Roger Eheingans, Akron](#); [Tammy Neubauer, Odessa](#); [Andrew Martig](#); [Chad Sibson](#); [Chris Teske](#); [Chuck Henningson](#); [John Ristvedt](#); [Jay Backer](#); [Jeff Klages](#); [Brent Olson](#); [Roger Sandberg](#); [Wade Athey](#); [Michelle Knutson](#); [Dawn Bjorgan](#); [Dawn Gregoire](#); [Sandy Vold](#); [Todd Larson](#); [David Hills](#); [Meyer, John](#); [Pansch, Rebecca L. \(Rebecca.Pansch@essentiahealth.org\)](#); [David Bothun](#); [Darren Wilke](#); [Matt Anderson](#); [Elaine Martig](#); [Lynn Siegel](#); [Blain Johnson](#); [Bill McGeary](#); [kevin.schuelke@grantcountysd.us](#); [Pam Rud](#); [roberts.co.em@venturecomm.net](#); [thoffman@agralite.com](#); [michael.forsberg@usda.gov](#); [don.tweet@usda.gov](#); [info.dot@state.mn.us](#); [Amber Doschadis](#); [tammy.neubauer@mn.nacdnet.net](#); [Dumont, Lisa \(DPS\)](#); [jeff.scholten@usda.gov](#); [Kelly Serr - NWS Federal](#); [Hester, Paul B](#); [jcritz@graceville.k12.mn.us](#); ["traguse@graceville.k12.mn.us"](#); [cory.larson@ortonville.k12.mn.us](#); [Ward Odom](#); [bdswd@runestone.net](#); [sara.gronfeld@mn.nacdnet.net](#); [scott.collins@co.swift.mn.us](#); [Dona Greiner](#); [Val Seifert](#)
Subject: Important First Hazard Mitigation Plan Virtual Meeting - Big Stone County - Save The Date - January 12 at 1:00 PM
Date: Friday, December 3, 2021 11:27:14 AM
Attachments: [image149959.png](#)
[image038552.png](#)
[image158949.png](#)
[image929508.png](#)

BIG STONE COUNTY

MULTI-HAZARD MITIGATION PLAN UPDATE – MEETING INVITATION

Good morning,

A date has been set for the first Planning Team Meeting for the update of the **Big Stone County Multi-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: Tuesday, January 12, 2022

Time: 1:00 – 3:00 p.m.

Zoom Link: https://umn-private.zoom.us/webinar/register/WN_N9hjRRYfSqKFrSAi3YJ2rA

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. Please be sure to include the name, title and representation (jurisdiction/agency) for all persons

planning to attend the meeting from your entity or jurisdiction.

About the Plan

The update of the Big Stone County Multi-Hazard Mitigation Plan (MHMP) 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 Big Stone County and will result in the identification of mitigation actions 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 projects to implement at the county / municipal level, and how they can be integrated with existing plans, policies, or project efforts over the next five years.
2. Participating jurisdictions will be eligible to apply for FEMA hazard mitigation grant funding. The County and each City should have someone participate in this virtual meeting.
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 Big Stone 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,



Dona Greiner
Big Stone County | Emergency Management
Emergency Management Director

Phone: (320) 839-6379 | Cell: (320) 287-2464
843 O'Neill St., Suite 101
Ortonville, MN 56278
Dona.Greiner@BigStoneCounty.gov
www.bigstonecounty.gov



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Big Stone County

1/12/22 MHMP Planning Team Meeting #1

List of Participants (43)

	First Name	Last Name	Organization	Job Title
1	Dona	Greiner	Big Stone County & Stevens County Emergency Management	Emergency Management Director
2	Val	Seifert	Big Stone County	Deputy Emergency Manager
3	Matt	Anderson	Big Stone County	IT Director
4	Roger	Sandberg	Big Stone County	Commissioner
5	Sandy	V old	Big Stone County	County Assessor
6	Jared	Heck	Big Stone County	Building Maintenance Supervisor
7	Michelle	Knutson	Big Stone County	Auditor-Treasurer
8	Ward	Odom	Big Stone County	CVSO
9	Dawn	Gregoire	Big Stone County	Human Resources Director
10	Pam	Rud	Big Stone County	Coordinator
11	Jeff	Klages	Big Stone County	County Commissioner
12	Wade	Athey	Big Stone County	County Commissioner
13	Todd	Larson	Big Stone County Highway Dept.	County Engineer
14	Darwin	Karsky	Big Stone County Highway Dept.	Maintenance Supervisor
15	Nelia	Gary	City of Barry	Clerk
16	Michelle	Homan	City of Beardsley	City Clerk/Treasurer
17	Kari	Wiegman	City of Clinton	City Clerk
18	Kirstin	Koch	City of Correll	City clerk
19	Scott	Bauer	City of Graceville	clerk
20	John	Ristvedt	City of Graceville Fire Department	Chief
21	Elaine	Johnsrud	City of Johnson	Clerk
22	Don	Johnsrud	City of Johnson	Mayor
23	christopher	Teske	City of Odessa	Fire Chief / City Councilor
24	Jason	Mork	City of Ortonville Police Dept.	Chief of Police
25	Jeff	Taylor	Ortonville School	Superintendent
26	Dan	Wiese	Akron Township	chairman
27	Diane	Vogt	Moonshine Township	Clerk/Treasurer
28	Nicole	Erickson	Countryside Public Health	RN
29	Don	Tweet	Big Stone County Farm Service Agency	County Executive Director
30	Michael	Forsberg	Big Stone County Farm Service Agency	Farm Loan Manager
31	Holly	Wellendorf	Big Stone Township	Clerk
32	Amber	Doschadis	Upper Min River WD	Administrator
33	Tom	Hoffman	Agralite Elect. Coop.	Manager of Eng. & Ops.
34	John	Meyer	Ortonville Area Health Services	Safety Officer
35	Tracey	Raguse	CGB schools	K-12 Principal

36	Dawn	Bjorgan	CPHS	EP Coordinator
37	Kelly	Serr	National Weather Service	Warning Coordination Meteorologist
38	Becky	Pansch	Essentia Health Graceville	Lab/Safety
39	Aaron	Twedt	Big Stone Agricultural Society	Vice President
40	Lisa	Villcheck	Minnesota Homeland Security and Emergency Management (HSEM)	Region 4 Regional Program Coordinator
41	Paul	Hester	BNSF Railway	Hazmat and Emergency Response Field Manager
42	Blain	Johnson	Lac qui Parle County	Emergency Management Director
43	Lynn	Siegel	Traverse County	Emergency Manager

BIG STONE COUNTY Multi-Hazard Mitigation Plan Update 2022 Planning Team Meeting #1

January 12, 2022



U-SPATIAL
UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover

Welcome & Introductions

U-Spatial@UMD Project Leads



Stacey Stark
Project Manager
U-Spatial@UMD



Bonnie Hundrieser
HM Planning Specialist
Hundrieser Consulting LLC

Big Stone County Project Lead

- Dona Greiner, Big Stone 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 name and jurisdiction or department in the Chat window

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

USE CHAT:



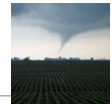
- Send a message to everyone
- Send a message to individuals or the presenters
- Send a message to host to ask for help or ask a question that isn't for the whole group. The host is Stacey Stark

ASK TO SPEAK:



PRESENTER: STACEY STARK

Meeting Purpose & Agenda



2016 tornado near Barry

The purpose of this meeting is to formally convene the **Big Stone County MHMP Planning Team** for a presentation of the plan update and discussion of key items.

Agenda:

- Overview of Hazard Mitigation & the MHMP Update
- Who the Plan Covers & Role of the Planning Team
- Review of Hazards + Overview of Risk Assessment and Vulnerability Analysis
- Review of Hazard Risk Prioritization
- Review of Mitigation Strategies & Actions
- Overview of FEMA HMA grant program
- Discuss local mitigation ideas
- Discuss next steps & answer your questions.

PRESENTER: STACEY STARK

About your Project Team

U-SPATIAL
UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover

U-Spatial at the University of Minnesota Duluth was contracted by MN HSEM to facilitate the development of this plan and to conduct spatial analysis, mapping and research for the plan.

Working with U-Spatial@UMD is **Bonnie Hundrieser**, who specializes in hazard mitigation planning.

We Bring:

- *Proven experience in county/tribal plan updates and State MHMP*
- *Advanced capabilities in GIS, HAZUS, and research*
- *Ability to expedite plan development and approval through consistent & proven approach*

PRESENTER: STACEY STARK

What is Hazard Mitigation?

Hazard Mitigation is any action taken to reduce or eliminate long term risk to people and property from natural disasters.



Hazard Mitigation Planning:

- identifies risks and vulnerabilities
- develops a plan of action built on capabilities and partnerships.
- breaks the cycle of disaster and reconstruction.
- builds stronger & more resilient communities.

PRESENTER: BONNIE HUNDRIESER

MHMP Overview & Timeline



Storm Damage, Ortonville

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

- ✓ The development of a local government plan is required in order to maintain eligibility for FEMA hazard mitigation grant programs.
- ✓ Plans must be updated every 5 years.
- ✓ Must address all jurisdictions and engage key stakeholders.
- ✓ Planning process must give an opportunity to the public to provide feedback.

Big Stone County MHMP Update 2022

- Last plan adopted in 2015.
- The updated plan will cover a 5-year window for implementation.
- Documentation of county and local-level government participation is required for plan approval.

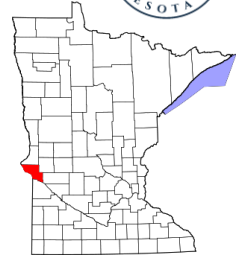
PRESENTER : BONNIE HUNDRIESER

Who the Plan Covers



The Big Stone County MHMP is a multi-jurisdictional plan that covers the county as well as all city & townships within the county.

- ✓ County and city governments are required to adopt the plan.
- ✓ Townships are covered under the umbrella of the county but may elect to adopt.
- ✓ City-level participation in the plan update must be documented for local adoptions to be approved.



PRESENTER : BONNIE HUNDRIESER

MHMP Planning Team



Big Stone County Planning Team

- Big Stone County Emergency Management
- Key County Officials & Staff
- City & Township Officials & Staff
- Neighboring Jurisdictions
- Other Related Agency or Organizational Stakeholders

- Participate in 2 planning team meetings.
- Assist with public outreach (2 news releases) using websites, social media & bulletin boards.
- Provide information to inform plan update.
- Help develop & review local mitigation action charts.
- Review the draft plan.
- Facilitate local-level adoptions.

PRESENTER : BONNIE HUNDRIESER

What Hazards are Addressed in the Plan?



- 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 for Minnesota MHMPs.

PRESENTER : BONNIE HUNDRIESER

Comments and Questions?

Hazard Risk Assessment and 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)



2019 flooding by Beardley



May 2021 hail near Graceville

PRESENTER : STACEY STARR

Big Stone County Review of Hazard Risk Prioritization

HAZARD	EXISTING PLAN	2022 PLAN
Tornadoes	High	Please consider any changes for these priorities in 2022 based on: <ul style="list-style-type: none"> Increase or decrease in risk over the last 5 years (probability + severity) Local vulnerabilities (people, systems, infrastructure) New development
Winter Storms	Moderate	
Flooding	Moderate	
Windstorms	Low/Moderate	
Hail	Low/Moderate	
Extreme Cold	Low/Moderate	
Extreme Heat	Low/Moderate	
Drought	Low	
Wildfire	Low	
Dam/Levee Failure	Low	
Landslides	N/A	
Lightning	N/A	

Updated hazard priorities for 2022 should seek to be clearly identified as High, Moderate or Low.

PRESENTER : STACEY STARK

Tornadoes (High)



- Based NCEI Storm Events Database through February 2020, the relative frequency of tornadoes is .13 per year (9 total)
- Tornadoes occurred in 2017 (EF1 - Clinton) and 2016 (EF0 - Barry)
- Identify mobile home locations



Ortonville Golf Course, 2017

PRESENTER : STACEY STARK

Winter Storms (Moderate)



- Winter storm events include blizzard, heavy snow, ice storm, winter storm and "winter weather".
- Based on all records in the NCEI Storm Events Database, the relative frequency of winter-related storm events is 2 per year.



Associated Press

PRESENTER : STACEY STARK

Flooding (Moderate)



- A potential economic loss model is run for 1% annual chance flood
- Use of FEMA Flood Insurance Rate Map (FIRM)
- Use of property values from county assessor
- Critical Infrastructure locations from GIS and EM input



Distribution of Estimated Economic Loss: 1% annual chance flood.

PRESENTER : STACEY STARK

Windstorms, Lightning, Hail (Low - Moderate)



- Each addressed individually
- The relative frequency of all wind-related events since January of 2012 is 4.2 per year.
- There were 30 hailstorms with hail greater or equal to 1-inch since 2012. The relative frequency of all hail events is 3 per year.
- Hazards deemed low risk and without significant mitigation actions, can be dropped from the plan.



Straight line wind damage near Clinton



Rusting Elms hail storm

PRESENTER : STACEY STARK

Extreme Cold (Low - Moderate)



- From 2012 - 2021, daily low temperatures < -18 °F were recorded 32 times at Artichoke Lake station. Big Stone County experiences an average of 3-4 extreme cold days each year.
- -34°F recorded by the Artichoke Lake station on January 30, 2019

PRESENTER : STACEY STARK

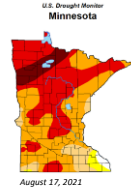
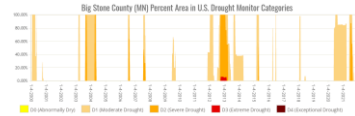
Extreme Heat (Low - Moderate)

- From 2012 - 2021, daily high temperatures > 90 °F were recorded 61 times at Artichoke Lake station. Big Stone County experiences an average of 6-7 extreme heat days each year.
- 101°F recorded by the Artichoke Lake station on June 5, 2021.

PRESENTER : STACEY STARK

Drought (Low)

- From 2000 – 2018, Big Stone County was in at least Moderate (D1) Drought 25% - 27% of the time.



PRESENTER : STACEY STARK

Wildfire/Wildland Fire (Low)

Landslides (not addressed previously)

- Hazards deemed low risk and without significant mitigation actions, can be dropped from the plan.

PRESENTER : STACEY STARK

Dam Failure (Low)

- No high hazard potential dams in Big Stone County
- Big Stone Lake on the Minnesota River the only “significant” hazard dam in the county.
- Must state any mitigation actions if the county wishes to be eligible for the High Hazard Potential Dam Rehabilitation Grant Program

Big Stone County Review of Hazard Risk Prioritization

HAZARD	EXISTING PLAN	2022 PLAN
Tornadoes	High	
Winter Storms	Moderate	
Flooding	Moderate	
Windstorms	Low/Moderate	
Hail	Low/Moderate	
Extreme Cold	Low/Moderate	
Extreme Heat	Low/Moderate	
Drought	Low	
Wildfire	Low	
Dam/Levee Failure	Low	
Landslides	N/A	
Lightning	N/A	

High to moderate priority hazards will be addressed in the 2022 plan update and will require mitigation actions.

PRESENTER : STACEY STARK

Mitigation Strategies & Example Actions



See Handout: Mitigation Strategies & Action Types

PRESENTER : BONNIE HUNDRIESER

#1 - Local Planning & Regulations



These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.

EXAMPLES:

- Establishing & enforcing floodplain & shoreland ordinances
- Participating in the NFIP
- Developing stormwater management plans
- Long-term planning for infrastructure improvements
- Working with MHP operators to be in compliance with State statutes for storm shelters & evacuation plans.



PRESENTER : BONNIE HUNDRIESER

#2 – Structure and Infrastructure Projects



These actions involve modifying existing structures to protect them from a hazard or remove them from a hazard area. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.

EXAMPLES:

- Property acquisitions (repetitive flooding/erosion risk)
- Structural elevations (flooding)
- Constructing floodwalls & retaining walls
- Improving culverts, roads & bridges
- Green infrastructure projects
- Tornado Safe Rooms
- Utility undergrounding



PRESENTER : BONNIE HUNDRIESER

Tornado Safe Rooms

- Are eligible for FEMA HMA grant funding
- Include new construction or retrofit of existing facilities
- Should be considered for vulnerable areas such as MHPs, schools, parks, and campgrounds



1998 Tornado damage to MHP in Le Center, MN.



Warba, MN mobile home park tornado safe room, FEMA grant funded



1st School-based tornado safe room, Wadena, MN (2012) following June 17, 2010 tornado damage

PRESENTER : BONNIE HUNDRIESER

Utility Undergrounding

- Converting vulnerable overhead powerlines to underground is eligible for FEMA HMA grant funding.
- Include municipal and rural electric cooperatives in the planning process to document participation and establish eligibility for potential future project applications.



PRESENTER : BONNIE HUNDRIESER

#3 – Natural Systems Protection



These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.

EXAMPLES:

- Slope management for soil stabilization
- Shoreland restoration
- “Living Fences” for wind/erosion reduction or snow buffer
- Forest management for wildfire mitigation (fuels reduction)
- Flood diversion and storage



PRESENTER : BONNIE HUNDRIESER

#4 – Education & Awareness Programs

These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them.

EXAMPLES:

- Promoting sign-up for emergency notifications
- Educate on use of outdoor warning sirens and response
- Participation in the NWS Severe Weather Awareness Weeks
- SKYWARN Storm Spotter Training
- Turn Around Don't Drown
- Promoting personal & family emergency preparedness (i.e. Ready.gov)



PRESENTER : BONNIE HUNDRIESER

#5 – Mitigation Preparedness & Response Support

These are actions that help to 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.

EXAMPLES:

- Emergency Notification Systems
- Emergency Operations Plans
- Outdoor warning sirens
- Shelter Planning
- Flood fight plans & equipment
- Training local elected officials in EM responsibilities
- Obtaining backup generators for critical facilities



PRESENTER : BONNIE HUNDRIESER

FEMA HMA Grant Program

See Handout: HSEM HMA Grants Program Overview

- ✓ All applicants must have or be covered under an approved MHMP.
- ✓ Eligible applicants: State & local governments, Tribal Communities, and certain private non-profit organizations or institutions.
- ✓ Cost Share: Federal 75%/ Applicant 25%
- ✓ Eligible projects must be identified in the local MHMP.

Examples of Eligible Activities

- Property Acquisition/Relocation
- Tornado Safe Room Construction
- Minor Localized Flood Risk Reduction
- Green Infrastructure
- Infrastructure Retrofits
- Soil Stabilization
- Wildfire Mitigation
- 5% Initiative Projects

PRESENTER : BONNIE HUNDRIESER

Mitigation Ideas

See Handout: Mitigation Ideas Worksheet

Do you have questions or ideas to share about local hazards, vulnerabilities and proposed mitigation actions?

PRESENTER : BONNIE HUNDRIESER



January – April, 2022

Completion of EM Tasks and Local Mitigation Survey (LMS) Forms

Lead: Bonnie Hundrieser

- **EM Tasks:** Plans in Place Form, Capabilities Assessment, and Past Mitigation Action Review
- **LMS Forms (County/City)**
 - 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



(Concurrent) January – June, 2022

Critical Infrastructure Inventory, Risk Assessment and Vulnerability Analysis

Lead: U-Spatial

- Updated risk assessment & vulnerability analysis
- Update of CI inventory
- Development of hazard profiles (history, probability, impacts of climate change)
- GIS mapping
- HAZUS analysis

PRESENTER : BONNIE HUNDRIESER



April – June, 2022

Development of Local Mitigation Action Charts

Lead: Bonnie Hundrieser

- County and City-Specific MACs
- 5-year window
- Mitigation actions must address high and moderate risk hazards.
- Mitigation actions must incorporate local capabilities & planning mechanisms.
- Include projects eligible for FEMA HMA grant funding.

PRESENTER : BONNIE HUNDRIESER



July – August, 2022

Hold Planning Team Meeting #2

Lead: U-Spatial & Bonnie Hundrieser

- > **Planning Team Mtg. #2**
 - Outreach to stakeholders
 - Presentation of risk assessment & vulnerability analysis, hazards prioritizations
 - Overview of Mitigation Action Charts and FEMA grant funding.
 - Finalize draft MACs

PRESENTER : BONNIE HUNDRIESER



Sept. – Oct., 2022

EM review of Draft Plan + Public Review & Comment Period

Lead: U-Spatial & Bonnie Hundrieser

- > EM initial review of draft plan
- > **News Release #2**
 - Disseminate & document news release by county and jurisdictions.
 - Document and incorporate feedback as appropriate.

PRESENTER : BONNIE HUNDRIESER



Nov. – Dec., 2022 to Spring, 2023

Draft Plan Submission to HSEM & FEMA for Approval

Lead: U-Spatial

- > 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 and submission to HSEM (Spring, 2023)
- > Final Letter of Approval

PRESENTER : BONNIE HUNDRIESER

Questions?

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

PRESENTER : STACEY STARK

Contact Information

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U-Spatial@UMD

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Bonnie Hundrieser, Consultant

Hundrieser Consulting LLC

hundrieserconsulting@outlook.com

218-343-3468



PRESENTER : STACEY STARK

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.



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 IDEAS WORKSHEET

Please use the following worksheet to list your ideas for mitigation actions that you feel will help reduce the impact of future natural hazard events to the county or to your jurisdiction. Following the MHMP planning team meeting, please return this form via email to your county Emergency Manager to submit your feedback.

NAME OF JURISDICTION:

CONTACT INFORMATION

Name:

Phone:

Email:

Hazard	Description of Concern or Proposed Mitigation Action

Big Stone County MHMP Planning Team Meeting #2

November 15, 2022 - Meeting Summary & Documentation

Summary: On Tuesday, November 15, 2022, Big Stone 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 Big Stone County Multi-Hazard Mitigation Plan (MHMP). The purpose of the meeting was to formally convene the Big Stone County MHMP 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: Big Stone County Emergency Management invited all stakeholders included on the county's MHMP 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 35 people attended the meeting. Representation included elected officials and departmental staff from Big Stone County and the cities of Barry, Beardsley, Clinton, Graceville, Johnson, and Ortonville. The cities of Correll and Odessa were unable to attend. Other stakeholders, including neighboring jurisdictions, participated in the meeting. A participant list is included with this meeting summary.

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
- Prioritization of Hazards
- Hazards Risk Assessment (Critical Infrastructure, Population Vulnerability Factors, and Review of High/Moderate Priority Natural Hazards)
- Development of Mitigation Actions
- FEMA HMA Grant Funding
- Overview of Mitigation Action Charts and Discussion
- 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.

Discussion Notes: Following is an overview of key discussion points, questions, or mitigation ideas that were shared during the presentation and how they will be incorporated into the plan update.

Meeting Participant	Comment, Question or Mitigation Idea Submitted	Facilitator Feedback / How to be Addressed in Plan Update
Matt Anderson, Big Stone County IT Director	Regarding the new interactive website for the plan update – Where is this interactive site?	Stacey Stark - We will be sharing it soon when we conduct the open public review period. Both the PDF version of the plan and the interactive content will be available.
Matt Anderson, Big Stone County IT Director	In regards to the vulnerability of mobile home parks to high wind and tornado events – When we mention mobile home parks, I think we should look at the RV parks as well.	Bonnie Hundrieser – RV parks do not fall under the same State statutes as mobile home parks to have evacuation plans and storm shelters in place, but it is a good point for the county and communities to encourage RV Park owners to plan for providing storm shelter facilities to their park users. I can add in an additional mention on this into the Big Stone County mitigation action chart.

There were no additional comments or questions during or following the presentation.

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

Attached are the following documentation items for the Big Stone County MHMP Meeting #2:

- 11-15-22 Mtg. #2 Email Invitation
- 11-15-22 Mtg. #2 List of Participants
- 11-15-22 Mtg. #2 Power Point Slides
- 11-15-22 Mtg. #2 Handouts

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

From: [Dona Greiner](#)
To: [Jackie Homan](#); [Graceville City Clerk](#); [Barry City Clerk](#); [Johnson City Clerk](#); [coclintonmn@gmail.com](#); [finance@cityofortonville.org](#); [Odessa City Clerk](#); [Chad Sibson](#); [John Ristvedt](#); [Andrew Martig](#); [Chuck Henningson](#); [Chris Teske](#); [Correll City Clerk](#); [Commissioners](#); [Pam Rud](#); [Michelle Knutson](#); [Mittelstaedt, Michael](#); [Pansch, Rebecca L.](#) ([Rebecca.Pansch@essentiahealth.org](#)); [abby.williams@essentiahealth.org](#); [Meyer John](#); [Lovgren, Nicole](#); [Nicole Erickson](#); [Dawn Bjorgan](#); [Sandy Vold](#); [Danny Tuckett](#); [Darren Wilke](#); [barb.dockter@gmail.com](#); [mmfolk2@hotmail.com](#); [ljthorson1976@gmail.com](#); [Darwin Karsky](#); [Jared Heck](#); [Todd Larson](#); [Shannon Millerbernd](#); [scott_huizenga@hotmail.com](#); [Torres, Jeff - FSA, Morris, MN](#); [jeff.scholten@usda.gov](#); [Bonnie K Hundrieser](#); [Lynn Siegel](#); "Blain Johnson"; [Blain Johnson](#); [Dumont, Lisa \(DPS\)](#); [Dona Greiner](#); [Val Seifert](#); [Mark Brown](#); [John Maatz](#); [Amber Doschadis](#); [Brett Baldwin \(SWCD\)](#); [Laura Laub](#); [Matt Anderson](#); [paul.hester@bnsf.com](#); [Suzanne Paulson](#); [Suzanne Souza](#); [Ronda Maas](#); [Shannon Millerbernd](#); [Sandy Vold](#); [Val Seifert](#); [duane.steen@wdcoop.com](#); [mabailey@fedteldirect.net](#); [thoffman@agralite.com](#); [djkvatum@me.com](#); [lizandroger@fedtel.net](#); [farmboy668@yahoo.com](#); [stocko84@hotmail.com](#); [radermacker@wat.midco.net](#); [jmstotesbery@gmail.com](#); [gmoberg@outlook.com](#); [Aaron Twedt](#); [Brett Danielson](#); [ehamm@otpc.com](#); [EH@countyside.co.swift.mn.us](#); [klupkes@traverseelectric.com](#); [ryans1966@yahoo.com](#); [Vicki Oakes](#); [Wes Pfaff](#); [gas.2@yahoo](#); [Brian Zavesky](#); [Township Clerk](#); [brownvalleytownship@gmail.com](#); [ddvogt@fedtel.net](#); [droe@cenbank.com](#); [tkdanielson@fedtel.net](#); [markkleindl@hotmail.com](#); [bdswd@runestone.net](#); [info.dot@state.mn.us](#); [kristopher.evje@ortonville.k12.mn.us](#); [bkelvington@graceville.k12.mn.us](#); "traguse@graceville.k12.mn.us"; [Lawler, Steve GRE-MG](#); [Shane.Ayres@oahs.us](#); [Julie Rosenberg \(julie.rosenberg@essentiahealth.org\)](#); "Maanum, Hannah B."

Subject: BIG STONE COUNTY Multi-Hazard Mitigation Plan - Important Meeting Invitation
Date: Monday, September 26, 2022 10:32:05 AM
Attachments: [image519062.png](#)
[image107552.png](#)
[image913019.png](#)
[image277842.png](#)

BIG STONE COUNTY

MULTI-HAZARD MITIGATION PLAN UPDATE – MEETING INVITATION

Greetings,

Your presence is requested at the 2nd Planning Team Meeting for the update of the Big Stone County Multi-Hazard Mitigation Plan (MHMP). This meeting will be the final planning meeting for the hazard mitigation planning process for the county, city jurisdictions, and other stakeholders.

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 webinar:

Date: Tuesday, November 15, 2022

Time: 2:00 p.m. – 4:00 p.m.

Click on the following Zoom link to pre-register: https://umn-private.zoom.us/webinar/register/WN_kE0_ud_IRUmJBPTrTUUnlg

You must click on the link above to register. (Ctrl + click to follow link)

The purpose of this meeting is to provide a final overview of the plan, including a review of the updated risk assessment for natural hazards that affect the county (history, local vulnerabilities, and future trends). We will also discuss the Mitigation Action Charts that have been developed for Big Stone County and each city, as well as funding opportunities for eligible projects under the FEMA Hazard Mitigation Assistance grant program. Your participation in this meeting and feedback on the draft plan is important to us. The draft Big Stone County MHMP is underway and will be ready for review by planning team members and the public following this meeting.

When you register, you will automatically be placed on an RSVP list. Please be sure to include the name, title and representation (jurisdiction/agency) for all persons planning to attend the meeting.

Thank you,

Dona Greiner, Emergency Management Director
Val Seifert, Deputy Emergency Management Director



Dona Greiner
Big Stone County | Emergency Management
Emergency Management Director

Phone: (320) 839-6379 | Cell: (320) 287-2464
843 O'Neill St., Suite 101
Ortonville, MN 56278
Dona.Greiner@BigStoneCounty.gov
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From: [Dona Greiner](#)
To: [Jackie Homan](#); [Graceville City Clerk](#); [Barry City Clerk](#); [Johnson City Clerk](#); [coclintonmn@gmail.com](#); [finance@cityofortonville.org](#); [Odessa City Clerk](#); [Chad Sibson](#); [John Ristvedt](#); [Andrew Martig](#); [Chuck Henningson](#); [Chris Teske](#); [Correll City Clerk](#); [Commissioners](#); [Pam Rud](#); [Michelle Knutson](#); [Mittelstaedt, Michael](#); [Pansch, Rebecca L.](#) ([Rebecca.Pansch@essentiahealth.org](#)); [abby.williams@essentiahealth.org](#); [Meyer John](#); [Lovgren, Nicole](#); [Nicole Erickson](#); [Dawn Bjorgan](#); [Sandy Vold](#); [Danny Tuckett](#); [Darren Wilke](#); [barb.dockter@gmail.com](#); [mmfolk2@hotmail.com](#); [ljthorson1976@gmail.com](#); [Darwin Karsky](#); [Jared Heck](#); [Todd Larson](#); [Shannon Millerbernd](#); [scott_huizenga@hotmail.com](#); [Torres, Jeff - FSA, Morris, MN](#); [jeff.scholten@usda.gov](#); [Bonnie K Hundrieser](#); [Lynn Siegel](#); "Blain Johnson"; [Blain Johnson](#); [Dumont, Lisa \(DPS\)](#); [Dona Greiner](#); [Val Seifert](#); [Mark Brown](#); [John Maatz](#); [Amber Doschadis](#); [Brett Baldwin \(SWCD\)](#); [Laura Laub](#); [Matt Anderson](#); [paul.hester@bnsf.com](#); [Suzanne Paulson](#); [Suzanne Souza](#); [Ronda Maas](#); [Shannon Millerbernd](#); [Sandy Vold](#); [Val Seifert](#); [duane.steen@wdcoop.com](#); [mabailey@fedteldirect.net](#); [thoffman@agralite.com](#); [djkvatum@me.com](#); [lizandroger@fedtel.net](#); [farmboy668@yahoo.com](#); [stocko84@hotmail.com](#); [radermacker@wat.midco.net](#); [jmstotesbery@gmail.com](#); [gmoberg@outlook.com](#); [Aaron Twedt](#); [Brett Danielson](#); [ehamm@otpc.com](#); [eh@countyside.co.swift.mn.us](#); [klupkes@traverseelectric.com](#); [ryans1966@yahoo.com](#); [Vicki Oakes](#); [Wes Pfaff](#); [gas.2@yahoo](#); [Brian Zavesky](#); [Township Clerk](#); [brownvalleytownship@gmail.com](#); [ddvogt@fedtel.net](#); [droe@cenbank.com](#); [tkdanielson@fedtel.net](#); [markhkleindl@hotmail.com](#); [bdswd@runestone.net](#); [info.dot@state.mn.us](#); [kristopher.evje@ortonville.k12.mn.us](#); [bkelvington@graceville.k12.mn.us](#); "traguse@graceville.k12.mn.us"; [Lawler, Steve GRE-MG](#); [shane.ayres@oahs.us](#); [Julie Rosenberg \(julie.rosenberg@essentiahealth.org\)](#); "Maanum, Hannah B."; [Paul Radermacher](#); [Department Heads](#); [Bonnie K Hundrieser](#)
Subject: Re: BIG STONE COUNTY Multi-Hazard Mitigation Plan - Important Meeting Invitation
Date: Monday, November 7, 2022 3:04:41 PM
Attachments: [image224754.png](#)
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[image261039.png](#)
[image840713.png](#)
[image025888.png](#)
[image792782.png](#)

Good afternoon,

This is a friendly reminder to please register for the upcoming Big Stone County Multi-Hazard Mitigation plan update meeting. This meeting is the **Final** planning meeting for the hazard mitigation planning process. Please use the link below to register. Once you are registered you will be sent the meeting information and be placed on the RSVP list. Please let me know if you have questions.

We will be holding the meeting virtually using Zoom webinar:

Date: Tuesday, November 15, 2022

Time: 2:00 p.m. – 4:00 p.m.

Zoom Link to register: https://umn-private.zoom.us/webinar/register/WN_kE0_ud_IRUmJBPTrTUUnlg

You must click on the link above to register. (Ctrl + click to follow link)

Thank you,

Dona and Val

Big Stone County

11/15/22 MHMP Planning Team Meeting #2

List of Participants (35)

	First Name	Last Name	Organization	Job Title
1	Dona	Greiner	Big Stone County Emergency Management	Emergency Management Director
2	Valerie	Seifert	Big Stone County Emergency Management	EM Deputy Director
3	Darren	Wilke	Big Stone County	Environmental Director
4	Sandy	Vold	Big Stone County	County Assessor
5	John	Maatz	Big Stone County Sheriff's Office	Chief Deputy
6	Jorden	Roggenbuck	Big Stone County Hwy. Dept.	County Engineer
7	Shannon	Millerbernd	Big Stone County Hwy. Dept.	Accountant
8	Matt	Anderson	Big Stone County	IT Director
9	Pam	Rud	Big Stone County	Coordinator
10	Jared	Heck	Big Stone County	Building Maintenance Supervisor
11	Jeff	Klages	Big Stone County	County Commissioner
12	Roger	Sandstone	Big Stone County	County Commissioner
13	Nelia	Gary	City of Barry	City Clerk
14	Jackie	Homan	City of Beardsley	City Clerk/Treasurer
15	Kari	Wiegman	City of Clinton	Clerk-Treasurer
16	Lee	Sigler	City of Clinton	Vice Mayor
17	Scott	Bauer	City of Graceville	City Clerk
18	Chad	Zimmel	City of Graceville	Maintenance Supervisor
19	Elaine	Johnsrud	City of Johnson	City Clerk
20	Don	Johnsrud	City of Johnson	Mayor
21	Char	Grossman	City of Ortonville	Clerk/Administrator
22	Randy	Shelstad	Odessa Township	Supervisor
23	Alex	Halvorson	Countryside Public Health	Environmental Health Specialist
24	Suzanne	Paulson	Countryside Public Health	Environmental Health Specialist II
25	Nicole	Erickson	Countryside Public Health	Registered Nurse
26	Dawn	Bjorgan	Countryside Public Health	EP Coordinator
27	Mike	Mittelstaedt	Essentia Health	Emergency Management
28	Julie	Rosenberg	Essentia Health	Administrator
29	Becky	Panish	Essentia Health - Graceville	Lab Manager/Safety
30	John	Meyer	Ortonville Area Health Services	Safety Officer
31	Brad	Kelvington	Clinton-Graceville-Beardsley Schools	Superintendent
32	Kris	Evje	Ortonville School District 2903	Superintendent
33	Lisa	Villcheck	MN HSEM	HSEM Region 4 RPC
34	Brett	Danielson	Stakeholder	Truck driver
35	Lynn	Siegel	Traverse County	Emergency Management Director

BIG STONE COUNTY Multi-Hazard Mitigation Plan Update 2022 Planning Team Meeting #2

November 15, 2022



U-SPATIAL
UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover

Welcome & Introductions

U-Spatial@UMD Project Leads



Stacey Stark
Project Manager
U-Spatial@UMD

Big Stone County Project Lead

- Dona Greiner, Big Stone County Emergency Management Director



Bonnie Hundrieser
HM Planning Specialist
Hundrieser Consulting LLC



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 name and jurisdiction or department in the Chat window

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

USE CHAT:



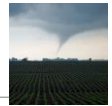
- > Send a message to everyone
- > Send a message to individuals or the presenters
- > Send a message to host to ask for help or ask a question that isn't for the whole group. The host is Stacey Stark

ASK TO SPEAK:



PRESENTER: STACEY STARK

Meeting Purpose & Agenda



2016 tornado near Barry

The purpose of this meeting is to formally convene the **Big Stone County MHMP 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 MHMP Points
- > Review of Risk Assessment & Vulnerability Analysis
- > Overview of FEMA HMA Funding and Mitigation Action Charts
- > Review & Feedback
- > Next Steps

PRESENTER: STACEY STARK

Overview of Plan Update

Big Stone County is updating its **Multi-Hazard Mitigation Plan (MHMP)** to fulfill a state & federal requirement. The plan must be updated every 5 years. The last plan was adopted in 2015.

The purpose of the plan is to identify & assess natural hazards that pose risk to the county and it's jurisdictions and **develop long-term strategies and mitigation actions** that will help to reduce or eliminate the impact of future hazard or disaster events.



Hazard Mitigation is any action taken to reduce or eliminate long term risk to people and property from natural disasters.

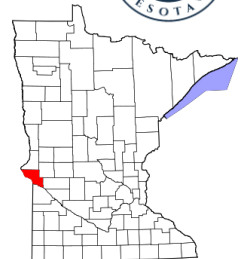
PRESENTER: BONNIE HUNDRIESER

Who the Plan Covers



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

The plan also takes into consideration the needs and concerns of other stakeholders participating in the plan update.



PRESENTER: BONNIE HUNDRIESER

Who Needs to Participate



Key Stakeholders

It is required to provide an opportunity for local county & municipal government, related agency stakeholders and neighboring jurisdictions to participate in the plan update.

- 2 Planning Team Meetings
- Local Mitigation Survey
- Provision of key data
- MAC Review & Feedback
- Review of Draft Plan

The Public

It is required to provide an opportunity for the public to learn about the plan update, ask questions and provide input that may be incorporated into the plan update.

- 2 News Releases
- Outreach conducted via websites, social media and local media
- Online public review & comment period for draft plan

PRESENTER: BONNIE HUNDRIESER

The structure of the HMP

PDF document

- Contains almost all FEMA required elements
- Limited Figures and Images
- Summary of Hazard Identification
- Local mitigation survey report
- Plans and Programs in Place
- Past Mitigation Action Review Status Report
- Planning Team Meetings
- Public Outreach and Engagement Documentation
- Mitigation Actions by Jurisdiction

Website companion

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



PRESENTER: BONNIE HUNDRIESER

All Hazards - Critical Infrastructure



PRESENTER: STACEY STARK

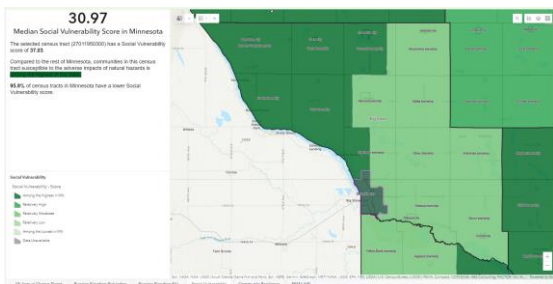
All Hazards - Critical Infrastructure



- Correctional facilities
- Mobile home parks/ RV campgrounds
- Historic Places
- EPA Resource Conservation and Recovery Act (RCRA) Registry

PRESENTER: STACEY STARK

All Hazards – Population Vulnerability



PRESENTER: STACEY STARK

Hazards Risk Assessment

- Validate prioritization
- Provide probability and severity of future events as possible
- Identify vulnerable populations and structures at risk as possible
- Consider variable jurisdictional vulnerability
- Inform Mitigation Actions in the HMP



May 2021 hail near Graceville

PRESENTER: STACEY STARK

Prioritization of Hazards for Big Stone County



Prioritization of hazards by the Big Stone County planning team included consideration of:

- Probability and Severity of natural hazard events (risk)
- Observed increase or decrease in risk since 2015
- Jurisdictional variations in risk (i.e., local vulnerabilities, changes in development)

Hazard	2022 Priority
Tornadoes	High
Windstorms	High
Winter Storms	Moderate
Flooding	Moderate
Hail	Moderate
Extreme Cold	Moderate
Extreme Heat	Moderate
Dam/Levee Failure	Low – but included
Drought	Low
Wildfire	Low
Lightning	Low
Landslides	Low (noted local risk to Ortonville)

PRESENTER: BONNIE HUNDRIESER

BIG STONE COUNTY: Tornadoes (High)



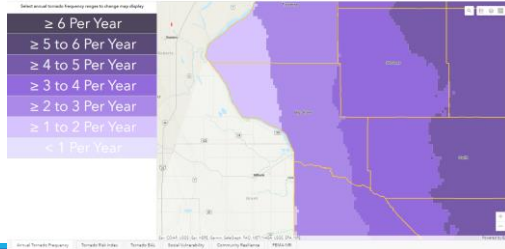
PRESENTER: STACEY STARK

BIG STONE COUNTY: Tornadoes (High)



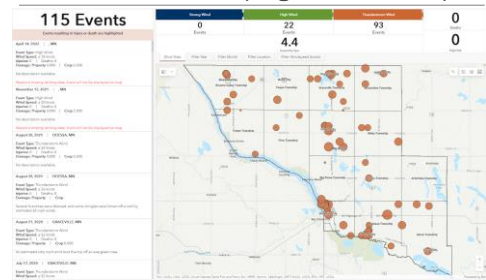
Ortonville Golf Course, 2017

Annual tornado frequency within 50 miles of any location in Minnesota



PRESENTER: STACEY STARK

BIG STONE COUNTY: Windstorms, Hail (High-Moderate)



PRESENTER: STACEY STARK

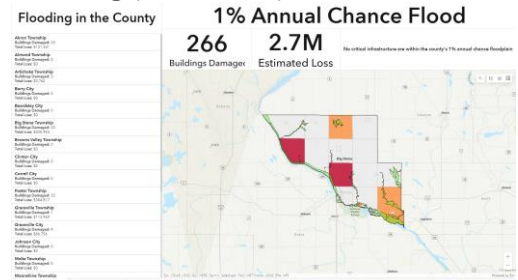
BIG STONE COUNTY: Flooding (Moderate)



- Obtained building and parcel values
- Used statewide building footprint data
- Obtained FEMA Flood Insurance Rate Maps
- Ran flood model to estimate economic loss
- Identified Critical Infrastructure in flood zone

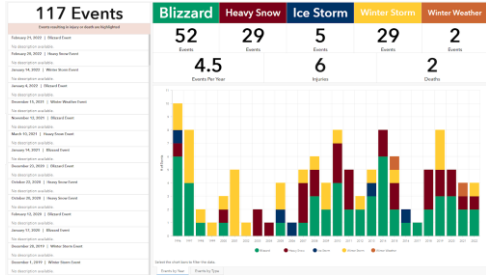
PRESENTER: STACEY STARK

BIG STONE COUNTY: Flooding (Moderate)



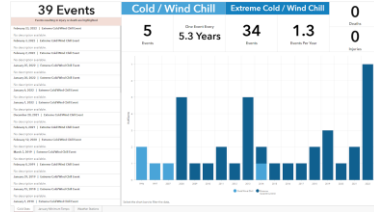
PRESENTER: STACEY STARK

BIG STONE COUNTY: Winter Storms (Moderate)



PRESENTER: STACEY STARK

BIG STONE COUNTY: Extreme Cold (Moderate)



The Artichoke Lake 1 E station experiences a daily minimum temperature of $\leq -18^{\circ}\text{F}$ an average of 22 days per year.

Program Gaps and Deficiencies:
Obtaining generators for backup power to healthcare facilities and designated shelter facilities.

Plans and Programs in Place
Emergency Notifications – NWS & Big Stone County
Emergency Management
School Closings – policy and communication plans
NWS Winter Hazard Awareness Week – public education & awareness

PRESENTER: STACEY STARK

Comments and Questions?

Development of Mitigation Actions

- > Must address hazards of moderate to high risk
- > Must be jurisdictionally-specific
- > Should address local vulnerabilities & reduce risk
- > Should incorporate existing planning mechanisms and capabilities



Important

Eligible FEMA HMA project activities must be identified to support a future grant application.

FEMA HMA Grant Funding



- > All applicants must be covered by an approved MHMP
- > Cost share: Federal 75%, Applicant 25%
- > Projects must address risk reduction.
- > Eligible projects must be identified in the plan of action.

Example Eligible Activities:

- 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 HUNDRIESEN

Overview of 5-year Jurisdictional Mitigation Action Charts

Each MAC is organized to address:

- Hazards of priority
- Mitigation Strategy
- Mitigation Action
- Status/Priority/Timeframe
- Responsibility
- Comments on Implementation and Integration
- Possible Funding



Local Planning & Regulations



Big Stone County Examples:

- Participating in the NFIP
- Collaborating with Big Stone SWCD and area watershed districts on planning and projects to address flooding
- Working with MHP operators to be in compliance with Minnesota State statutes for storm shelters & evacuation plans.
- BSC Highway Dept annual TIP review and planning & assistance to townships to reduce flood damages to roads, bridges and culverts



PRESENTER: BONNIE HUNDRIESER

Structure & Infrastructure Projects

Big Stone County Examples:

- Installation of new outdoor warning sirens.
- Construction of safe rooms / storm shelters
- Burying powerlines to reduce power failure
- Implementing stormwater improvement projects
- Complete construction of Whetstone River Diversion project to reduce ice jams, flooding and congestion at the foot of Big Stone Lake (UMRWD)
- Conducting property buyouts for flooding
- Continue repairs and maintenance for the Long Tom Dam following inspections by BSC Hwy. Dept.



PRESENTER: BONNIE HUNDRIESER

Natural Systems Protection

Big Stone County Examples:

- Conduct vegetation management along roads to reduce the risk of downed trees and branches resulting from severe storms.
 - County Highway Dept.
 - Utility Providers
 - Local road authorities



PRESENTER: BONNIE HUNDRIESER

Education & Awareness Programs

Big Stone County Examples:

- Promoting sign-up for the County's Smart911/RAVE emergency notification system.
- Promoting residents to be aware of and prepared for severe weather and periods of extreme cold.
- Encouraging residents to maintain sump pumps and to clear street drains of debris.
- Participation in the NWS Severe Weather Awareness Weeks



PRESENTER: BONNIE HUNDRIESER

Mitigation Preparedness & Response Support

Big Stone County Examples:

- Work with local jurisdictions to acquire generator backup power (i.e., lift stations, City Hall, Fire Hall, community centers).
- Updating County/Local EOP's
- Mass Care Shelter Planning
- Working with long-term care facilities to be prepared for power outages or evacuation.
- Ensure the functionality of all outdoor warning sirens within Big Stone County.
- Annual SKYWARN Storm Spotter Training



PRESENTER: BONNIE HUNDRIESER

Comments and Questions?



Fall/Winter 2022

EM Review of Draft Plan and Public Review & Comment Period



Following Planning Team Mtg. #2

- EM review of draft plan
- Conduct public review & comment period (News Release #2)
- Document public outreach
- Incorporate public feedback into the plan as appropriate.

PRESENTER: BONNIE HUNDRIESER



Winter 2022-2023

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

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

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Bonnie Hundrieser, HM Planner

Hundrieser Consulting LLC

hundrieserconsulting@outlook.com

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PRESENTER: STACEY STARK



State of Minnesota
Department of Public Safety
Division of Homeland Security and Emergency Management
445 Minnesota Street, Suite 223
St. Paul, MN 55101-6223

HAZARD MITIGATION ASSISTANCE

Hazard Mitigation Assistance (HMA) grant programs provide funding with the aim to reduce or eliminate risk to property and loss of life from future natural disasters. HMA programs are typically a 75%/25% cost share program. The federal share is 75% of total eligible project reimbursement costs. The local applicant is responsible for 25% of the project costs. The amount of HMGP funds availability is based on a percent of Public Assistance provided by Federal Emergency Management Agency (FEMA).

- Hazard Mitigation Grant Program (HMGP) funds assists in implementing long-term hazard mitigation measures following a Presidential major disaster declaration.
- Pre-Disaster Mitigation (PDM) provides funds for hazard mitigation planning and projects on an annual basis.
- Flood Mitigation Assistance (FMA) provides funds on an annual basis to reduce or eliminate risk of flood damage to buildings that are insured under the National Flood Insurance Program (NFIP).

Who is eligible for grant funding?

All applicants must have or be covered under an approved Hazard Mitigation Plan. Eligible applicants include: State and local governments; certain private non-profit organizations or institutions; and Tribal Communities

What types of projects can be funded?

All projects must be eligible, technically feasible, and cost-effective. All projects are subject to environmental and cultural resource review. Examples of projects include:

- **Advance Assistance** may be used to develop mitigation strategies and obtain data, including for environmental and historic preservation compliance considerations, and develop complete project applications in a timely manner.
- **Aquifer Storage and Recovery** (ASR) projects serve primarily as a drought management tool, but can also be used to reduce flood risk and restore aquifers that have been subject to overdraft. The concept is to capture water when there is an abundant supply, store the water in subsurface aquifers, and recover water from the storage aquifer when needed. Storing water underground can help protect it from pollutants, evaporation, and weather events.
- **Floodplain and stream restoration** (FSR) projects are used primarily to reduce flood risk and erosion by providing stable reaches, and may also mitigate drought impacts. FSR projects restore and enhance the floodplain, stream channel and riparian ecosystem's natural function. They provide base flow recharge, water supply augmentation, floodwater storage, terrestrial and aquatic wildlife habitat, and recreation opportunities by restoring the site's soil, hydrology and vegetation conditions that mimic pre-development channel flow and floodplain connectivity.
- **Flood Diversion and Storage** (FDS) projects often are used to reduce flood risk, but also can be used to mitigate drought and improve ecosystem services. These projects involve diverting floodwaters from a stream, river, or other body of water into a conduit such as a canal, pipe, or wetland and storing them in an above-ground storage facility. Water is then slowly released, reducing flood risk.

- **Green Infrastructure Methods** are a sustainable approach to natural landscape preservation and storm water management. Include in *eligible hazard mitigation activities* as well as provide additional ecosystem benefits. Ecosystem-based approach to replicate a site's pre-development, natural hydrologic function. Benefits include: Increase water supply, improved water quality, can be scaled to size and designed to fit site conditions.
- **Property Acquisition and Structure Demolition or Relocation** – The voluntary acquisition of an existing at-risk structure and the underlying land, and conversion of the land to open space through the demolition or relocation of the structure. The property must be deed-restricted in perpetuity to open space uses to restore and/or conserve the natural floodplain functions.
- **Retrofit Flood-Prone Residential Structures** are changes made to an existing structure to reduce or eliminate the possibility of damage to that structure from flooding, erosion, or other hazards. Examples of this mitigation are primarily elevation of structures above flood levels and floodwalls.
- **Safe Room Construction** - Safe room construction projects are designed to provide immediate life-safety protection for people in public and private structures from tornado and severe wind events. Includes retrofits of existing facilities or new safe room construction projects, and applies to both single and dual-use facilities
- **Minor Localized Flood Reduction Projects** - Projects to lessen the frequency or severity of flooding and decrease predicted flood damages, such as the installation or up-sizing of culverts, and stormwater management activities, such as creating retention and detention basins. These projects must not duplicate the flood prevention activities of other Federal agencies and may not constitute a section of a larger flood control system.
- **Infrastructure Retrofit** - Measures to reduce risk to existing utility systems, roads, and bridges.
- **Soil Stabilization** - Projects to reduce risk to structures or infrastructure from erosion and landslides, including installing geotextiles, stabilizing sod, installing vegetative buffer strips, preserving mature vegetation, decreasing slope angles, and stabilizing with rip rap and other means of slope anchoring. These projects must not duplicate the activities of other Federal agencies. *New tools for Bioengineered Shoreline Stabilization, Bioengineered Streambank Stabilization.*
- **Wildfire Mitigation** - Projects to mitigate at-risk structures and associated loss of life from the threat of future wildfire through: Defensible Space for Wildfire, Application of Ignition-resistant Construction and Hazardous Fuels Reduction. *New tool for Bioengineered Wildfire Mitigation.*
- **HMGP only - 5 Percent Initiative Projects** – These projects, which are only available pursuant to an HMGP disaster, provide an opportunity to fund mitigation actions that are consistent with the goals and objectives of approved mitigation plans and meet all HMGP program requirements, but for which it may be difficult to conduct a standard Benefit-Cost Analysis (BCA) to prove cost-effectiveness.

How do I apply?

Start by submitting a Notice of Interest, available on HSEMs website at:

<https://dps.mn.gov/divisions/hsem>

Where can I obtain further information?

For additional information about the HMA grant program, you can refer to the FEMA website:

<http://www.fema.gov/hazard-mitigation-assistance>

Mitigation Strategies & Action Types

Following are the five types of mitigation strategies that will be used in the update of the Multi-Hazard Mitigation Plan with examples of related mitigation actions. Minnesota HSEM recommends the use of these mitigation strategies to be in alignment with the State plan and those recommended by FEMA. The first four strategies listed are taken from the FEMA publications *Local Mitigation Planning Handbook* (2013) and *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards* (2013). The fifth strategy type was determined by Minnesota HSEM for use within the state.

These strategies will provide the framework for identification of new jurisdictional-level mitigation actions for implementation over the next 5-year planning cycle.

Mitigation Strategy	Description	Example Mitigation Actions
Local Planning and Regulations	These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.	<ul style="list-style-type: none"> • Comprehensive plans • Land use ordinances • Planning and zoning • Building codes and enforcement • Floodplain ordinances • NFIP Community Rating System • Capital improvement programs • Open space preservation • Shoreline codes • Stormwater management regulations and master plans • Mobile home park compliance for storm shelters
Structure and Infrastructure Projects	<p>These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure.</p> <p>This type of action also involves projects to construct manmade structures to reduce the impact of hazards.</p>	<ul style="list-style-type: none"> • Property Acquisitions and elevations of structures in flood prone areas • Utility undergrounding • Structural retrofits (i.e., metal roofs) • Floodwalls and retaining walls • Detention and retention structures • Culvert Installation/Modification • Roads & Bridge risk reduction • Safe Room (New construction or facility retrofit) • Green Infrastructure Methods <p><i>Many of these types of actions are projects eligible for funding through FEMA HMA grant programs.</i></p>

Mitigation Strategy	Description	Example Mitigation Actions
Natural Systems Protection	<p>These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.</p>	<ul style="list-style-type: none"> • Soil stabilization for sediment and erosion control • Floodplain and Stream corridor restoration • Slope management • Forest management (defensible space, fuels reduction, sprinkler systems) • Conservation easements • Wetland restoration and preservation • Aquifer Storage & Recovery • Flood Diversion and Storage <p><i>Many of these types of actions are projects eligible for funding through FEMA HMA grant programs.</i></p>
Education and Awareness Programs	<p>These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady or Firewise Communities. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions that support life safety and lessen property damage.</p>	<ul style="list-style-type: none"> • Radio or television spots • Websites with maps and information • Social media outreach • Promotion of sign-up for emergency warnings • Real estate disclosure • Promotion of NFIP insurance to property owners • Presentations to school groups or neighborhood organizations • Mailings to residents in hazard-prone areas. • NWS StormReady Program • Firewise Communities <p><i>Some of these types of actions may be projects eligible for funding through the FEMA HMA "5 Percent Initiative Program".</i></p>
Mitigation Preparedness and Response Support	<p>This is a State of Minnesota mitigation strategy with the intent of covering emergency preparedness actions that protect life and property prior to, during, and immediately after a disaster or hazard event. These activities are typically not considered mitigation, but support reduction of the effects of damaging events.</p>	<ul style="list-style-type: none"> • Emergency Operations Plan • Flood fight plans and preparedness measures • Dam emergency action plans • Emergency Warning Systems (i.e., CodeRed, warning sirens) • Generator backup power • NWS Storm Spotter Training • Training and education for local elected officials and key partners.

Appendix G – Public Outreach & Engagement Documentation

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

Overview: On September 1, 2021, Big Stone 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 Multi-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. Big Stone 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?
- Have you experienced a previous disaster event?
- 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 Big Stone 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 MHMP Jurisdictional Contact List, which includes the names, titles, phone numbers, and email addresses of key stakeholders to be engaged in the MHMP 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 with a request to carry the news release.

Postings: Attached is documentation of the news release postings by Big Stone 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 news release and how their input will be incorporated into the plan update, and if not relevant to be addressed, why.

9/10/21 email to Big Stone County Emergency Management Scott Bauer, City Clerk - City of Graceville

Comment: The City has always been very concerned about flooding at Grace Home. There is a culvert that crosses Highway 75 just east of the complex. The water travels through 2 culverts, one of them being the link between Grace Home and Grace Village. If there was ever money available, our engineer told us if we connected the culverts with solid pipe, the hydrology would be greatly increased

and solve the problem. We also need a storm shelter at Toqua Park. Every year we cringe every time the storms come and the park is full of campers and people.

Incorporation: The concerns from the city of Graceville for localized flooding at Grace Home will be incorporated into the city's local mitigation action chart with their identified measures to address the flood risk (i.e., culvert/drainage improvements). A mitigation action will also be included for the city to address construction of a storm shelter at Toqua Park to protect campers and other visitors from severe storm events.

From: [Val Seifert](#)
To: [northernstar@mchsi.com](#); [vicki@ortonvilleeda.com](#); [mail@ortonvilleindependent.com](#); [kdio@bigstoneradio.com](#)
Cc: [Dona Greiner](#); [Bonnie K Hundrieser](#); [Commissioners](#); [Department Heads](#); [Amber Doschadis](#); [Darwin Karsky](#); [Jared Heck](#); [scott_huizenga@hotmail.com](#); [Jason Mork](#); [Don & Elaine Johnsrud, Johnson](#); [Duane Steen, Graceville](#); [finance@cityofortonville.org](#); [Gene Hausauer, Ortonville](#); [Ginger Drobny, Odessa](#); [Jackie Homan, Beardsley](#); [Karianna Wiegman, Clinton](#); [Kirstin Koch, Correll](#); [Nelia Gary, Barry](#); [Scott Bauer, Graceville](#); [Amy Larson, Artichoke](#); [Bruce Moberg, Malta](#); [ddvogt@fedtel.net](#); [Dennis Kvatum, Foster](#); [Gene Moberg, Almond](#); [Greg Athey, Almond](#); [Harold \(Rusty\) Dimberg, Ortonville](#); [Holly Wellendorf, Big Stone](#); [Jennette Stotesbery, Graceville](#); [Kimberly Danielson, Otrey](#); [Kristin Haggerty, Prior](#); [Mark Kleindl, Toqua](#); [Nancy Deutsch, Browns Valley](#); [Roger Eheingans, Akron](#); [Tammy Neubauer, Odessa](#); [Andrew Martig](#); [Chad Sibson](#); [Chris Teske](#); [Chuck Henningson](#); [John Ristvedt](#)
Subject: Hazard Mitigation Plan News Release
Date: Wednesday, September 1, 2021 3:44:59 PM
Attachments: [HMP - News Release Sept 2021 2.pdf](#)
[HMP - News Release Sept 2021 2.docx](#)

Greetings,

Big Stone County Emergency Management is commencing work on the update of the Big Stone County Multi-Hazard Mitigation Plan (MHMP). Attached is a news release for your information.

Cities and Townships: In order to reach the greater public, we request your assistance to post this news release for your community. We will be documenting local outreach which is a requirement of the planning process. **Participation by all cities is requested in order to help fulfill required documentation to FEMA for the plan update.** The participation by townships is optional.

-
Instructions:

- **Post the News Release Electronically and/or as a Hardcopy:** Please post this news release locally using the outreach methods best available to you (your website and/or Facebook page, Post Office or community center bulletin board, or taped physically to a facility such as the City Hall or Town Hall door or out-facing window for public view.) We welcome as many of ways of posting that you can cover.
- **If posting this news release electronically,** please email me a link to the posting (i.e. website or Facebook page).
- **If posting it as a hardcopy,** please email me a picture of it hung up and let me know the location (i.e., City Hall, Township Hall, Post Office, local community center).

The timely return of your posting documentation is appreciated. We will be working to wrap this up within the month of September.

I look forward to your participation in the Big Stone County MHMP update.

If you have any questions, please let me know.

Thank you,

Val Seifert
Big Stone County
Deputy Emergency Manager
320-487-1123 (Office)
320-305-1452 (Work Cell)
val.seifert@bigstonecounty.org

From: [Dona Greiner](#)
To: [Blain Johnson](#); [Lynn Siegel](#); [Bill McGearry](#); donagreiner@stevens.mn.us
Cc: [Val Seifert](#); [Bonnie K Hundrieser](#)
Subject: Fw: Hazard Mitigation Plan News Release
Date: Wednesday, September 1, 2021 6:39:08 PM
Attachments: [HMP - News Release Sept 2021 2.pdf](#)
[HMP - News Release Sept 2021 2.docx](#)

Hi EM's

Please notice the information attached and below, we will include you in the first meeting when it's been scheduled.

Hopefully you are all well and ready for the conference, I can't wait to see you all!

Let me know if you have any questions, thanks!

Dona

From: Val Seifert <Val.Seifert@BigStoneCounty.org>
Sent: Wednesday, September 1, 2021 3:44 PM
Subject: Hazard Mitigation Plan News Release

Greetings,

Big Stone County Emergency Management is commencing work on the update of the Big Stone County Multi-Hazard Mitigation Plan (MHMP). Attached is a news release for your information.

Cities and Townships: In order to reach the greater public, we request your assistance to post this news release for your community. We will be documenting local outreach which is a requirement of the planning process. **Participation by all cities is requested in order to help fulfill required documentation to FEMA for the plan update.** The participation by townships is optional.

Instructions:

- **Post the News Release Electronically and/or as a Hardcopy:** Please post this news release locally using the outreach methods best available to you (your website and/or Facebook page, Post Office or community center bulletin board, or taped physically to a facility such as the City Hall or Town Hall door or out-facing window for public view.) We welcome as many of ways of posting that you can cover.
- **If posting this news release electronically,** please email me a link to the posting (i.e. website or Facebook page).
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location (i.e., City Hall, Township Hall, Post Office, local community center).

The timely return of your posting documentation is appreciated. We will be working to wrap this up within the month of September.

I look forward to your participation in the Big Stone County MHMP update.

If you have any questions, please let me know.

Thank you,

Val Seifert
Big Stone County
Deputy Emergency Manager
320-487-1123 (Office)
320-305-1452 (Work Cell)
val.seifert@bigstonecounty.org



Big Stone County Emergency Management

843 O'Neill St.

Ortonville, MN 57278

320-839-6379

Em.Mgmt@co.big-stone.mn.us

BIG STONE COUNTY NEWS RELEASE

September 1, 2021

Public Input Wanted as County Updates Multi-Hazard Mitigation Plan

The Big Stone County Office of Emergency Management is working with U-Spatial at the University of Minnesota Duluth to update the county's Multi-Hazard Mitigation Plan (MHMP). 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 Big Stone County MHMP is a multi-jurisdictional plan that covers Big Stone County, including the cities of Barry, Beardsley, Clinton, Correll, Graceville, Johnson, Odessa, and Ortonville. The Big Stone County MHMP also incorporates the concerns and needs of townships, school districts, and other stakeholders 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.

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

Examples of hazard mitigation include actions include improvement of roads and culverts that experience repetitive flooding; construction of safe rooms at campgrounds, public parks, mobile home parks or schools to protect lives in the event of tornados or severe wind 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 public awareness and education campaigns to help people to be prepared to take safe action before, during, or following a hazard event. 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, Big Stone 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?
- Have you experienced a previous disaster event?
- 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?

Comments, concerns, or questions regarding natural disasters and potential mitigation actions to be included into the plan update process should be submitted to Big Stone County Emergency Management by phone or email. Public comments may also be submitted on the Big Stone County Emergency Management Facebook page where this news release will be posted.

There will be additional opportunities for public feedback throughout the planning process. A draft of the plan will be posted on the county website 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

Dona Greiner

Big Stone County Emergency Management Director

Phone: 320-839-6379

Email: Dona.Greiner@BigStoneCounty.org

Big Stone County MHMP News Release #1 Documentation of News Release Postings

COUNTY POSTINGS

Big Stone County County Website, September 4, 2021



MULTI-HAZARD MITIGATION PLAN (MHMP)

[Home](#) / [County Departments](#) / [Emergency Management](#) / [Multi-Hazard Mitigation Plan \(MHMP\)](#)

EMERGENCY MANAGEMENT

Emergency Alert
Notifications

FAQ

Multi-Hazard Mitigation
Plan (MHMP)

The Big Stone County MHMP is a multi-jurisdictional plan that covers Big Stone County, including the cities of Barry, Beardsley, Clinton, Correll, Graceville, Johnson, Odessa, and Ortonville. The Big Stone County MHMP also incorporates the concerns and needs of townships, school districts, and other stakeholders participating in the plan.

Public input is an essential part of the plan update. As part of the planning process, Big Stone County is seeking feedback from residents and businesses from across the county to incorporate into the plan.

Please see PDF below for more information:

[Public Input Wanted as County Updates Multi-Hazard Mitigation Plan](#)

Big Stone County Emergency Management Facebook Page, September 4, 2021

<

[Home](#) [About](#) [Photos](#) [Reviews](#) [P](#)



**Big Stone County Emergency
Management**

2d ·

Big Stone County Emergency

Management

Em.Mgmt@co.big-stone.mn.us

BIG STONE COUNTY NEWS RELEASE

September 1, 2021

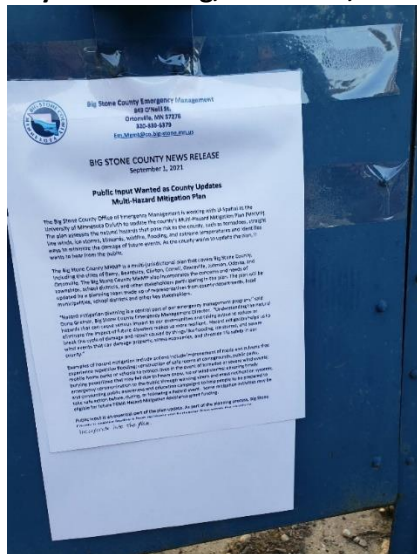
The Big Stone County Office of Emergency Management is working with U-Spatial at the University of Minnesota Duluth to update the county's Multi-Hazard Mitigation Plan (MHMP). The plan assesses the natural

LOCAL MEDIA POSTINGS

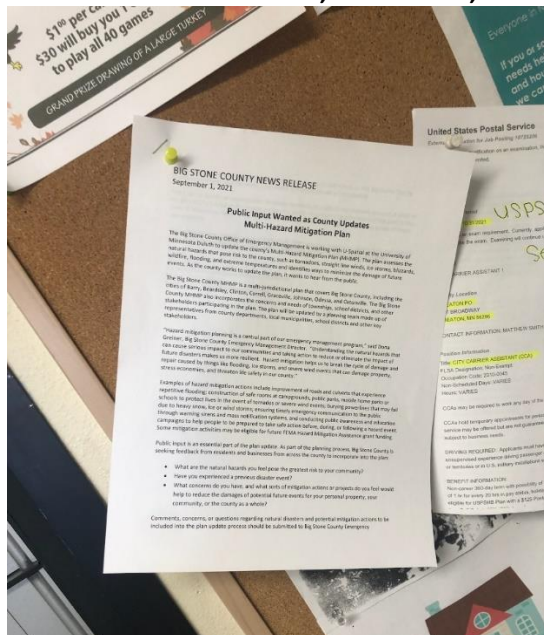
No local media postings

CITY POSTINGS

City of Barry
City Hall Building, October 3, 2021



City of Beardsley
Post Office Bulletin Board, October 29, 2021



City of Clinton
City Website, October 28, 2021

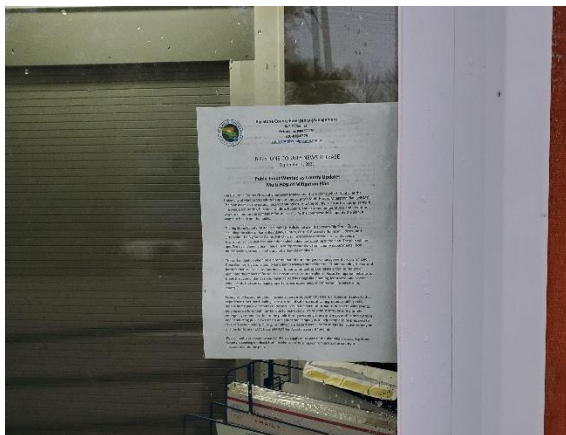


Important News Release

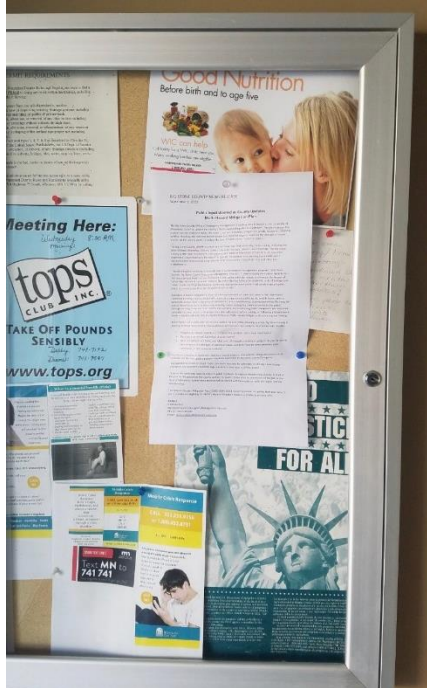
POSTED ON - OCTOBER 27, 2021

Big Stone County Emergency Management is commencing work on the update of the Big Stone County Multi-Hazard Mitigation Plan (MHMP). Public input is an essential part of the plan update. As part of the planning process, Big Stone County is seeking feedback from residents and businesses from across the county to incorporate into the plan. Please check out the [news release](#) for more information.

City of Correll
Post Office Window, October 27, 2021



City of Graceville
City Hall Bulletin Board, September 30, 2021



City of Johnson
Very small city with no government center. No local posting.

City of Odessa
City Hall Front Door posting, October 3, 2021



City of Ortonville City Website, October 29, 2021

Posted on September 27, 2021 by Vicki Oakes [Leave a Comment](#)

Public Input Wanted as County Updates Multi-Hazard Mitigation Plan

The Big Stone County Office of Emergency Management is working with U-Spatial at the University of Minnesota Duluth to update the county's Multi-Hazard Mitigation Plan (MHMP). 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 Big Stone County MHMP is a multi-jurisdictional plan that covers Big Stone County, including the cities of Barry, Beardley, Clinton, Correll, Graceville, Johnson, Odessa, and Ortonville. The Big Stone County MHMP also incorporates the concerns and needs of townships, school districts, and other stakeholders 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.

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

Examples of hazard mitigation actions include improvement of roads and culverts that experience repetitive flooding; construction of safe rooms at campgrounds, public parks, mobile home parks or schools to protect lives in the event of tornadoes or severe wind 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 public awareness and education campaigns to help people to be prepared to take safe action before, during, or following a hazard event. Some mitigation activities may be eligible for future FEMA Hazard Mitigation Assistance grant funding.

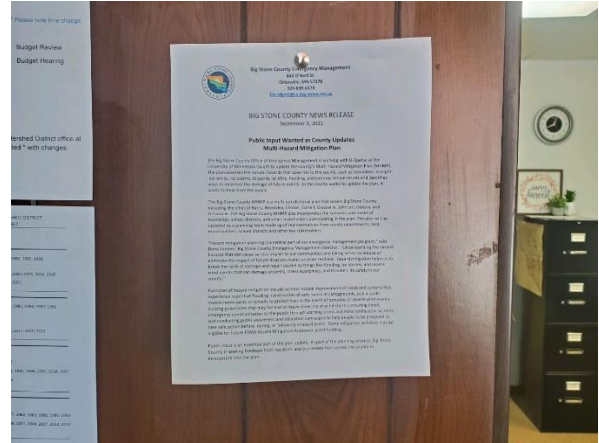
Public input is an essential part of the plan update. As part of the planning process, Big Stone County is seeking feedback from residents and businesses from across the county to incorporate into the plan:

- What are the natural hazards you feel pose the greatest risk to your community?
- Have you experienced a previous disaster event?
- 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?

Comments, concerns, or questions regarding natural disasters and potential mitigation actions to be included into the plan update process should be submitted to Big Stone County Emergency Management by phone or email. Public comments may also be submitted on the Big Stone County Emergency

OTHER POSTINGS

Upper MN River Watershed District UMRWD Office, September 7, 2021



Big Stone County MHMP News Release #2 Record of Public Input & Incorporation

Overview: On February 2, 2023 Big Stone County Emergency Management put out a news release titled “Public Comment Sought for County’s Multi-Hazard Mitigation Plan” to announce the completion of the draft Big Stone County Multi-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 2/2/23 to 2/16/23, for a total of 15 days.

Distribution: The news release was sent via email to the county’s MHMP Jurisdictional Contact List, which includes the names, titles, phone numbers, and email addresses of key stakeholders to be engaged in the MHMP 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 Big Stone 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 Big Stone 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 by Big Stone County Emergency Management, local jurisdictions, or via the online comment form.

From: [Bonnie K Hundrieser](mailto:Bonnie.K.Hundrieser)
To: mark.brown@bigstonecounty.org; darren.wilke@bigstonecounty.org; Jordan.Roggenbuck@BigStoneCounty.gov; david@countryside.co.swift.mn.us; wade.athey@bigstonecounty.org; jay.backer@bigstonecounty.org; pam.rud@bigstonecounty.org; darwin.karsky@bigstonecounty.org; matt.anderson@bigstonecounty.org; michelle.knutson@bigstonecounty.org; jared.heck@bigstonecounty.org; neliasvette@yahoo.com; jacksonhoman@yahoo.com; coclintonmn@gmail.com; cigraceville@mchsi.com; kochx040@umn.edu; duane.steen@wdcoop.com; dejemj@yahoo.com; cityodessa@fedtel.net; finance@cityofortonville.org; oahsqh@gmail.com; joshstock81@gmail.com; scott_huizenga@hotmail.com; lizandroger@fedtel.net; glathey@hotmail.com; gmoberg@outlook.com; artichoketownship@gmail.com; bigstonetownship@gmail.com; brownsvalleytownship@gmail.com; djkvatum@me.com; jmstotesbery@gmail.com; mobergbk@fedtel.net; ddvogt@fedtel.net; tcolson.neubauer@gmail.com; droe@cenbank.com; tkdanielson@fedtel.net; kristinhaggerty@hotmail.com; markhkleindl@hotmail.com; jeff.scholten@usda.gov; lisa.dumont@state.mn.us; tammy.neubauer@mn.nacdnet.net; amber@umrwd.org; kelly.serr@noaa.gov; paul.hester@bsnf.com; info.dot@state.mn.us; jeff.taylor@ortonville.k12.mn.us; jcritz@graceville.k12.mn.us; traquse@graceville.k12.mn.us; don.tweet@usda.gov; michael.forsberg@usda.gov; thoffman@agralite.com; kevin.schuelke@grantcountysd.us; emergencymanagement@lqpc.com; bill.mcgeary@co.swift.mn.us; roberts.co.em@venturecomm.net; lynn.siegel@co.traverse.mn.us; twedter54@gmail.com; ryans1966@yahoo.com
Cc: [Dona Greiner](mailto:Dona.Greiner); [Val Seifert](mailto:Val.Seifert)
Subject: Big Stone County News Release - Public Comment Sought for Hazard Mitigation Plan
Date: Thursday, February 2, 2023 8:06:00 AM
Attachments: [Big Stone County News Release Hazard Mitigation Plan Public Review \(2-2-23\).pdf](#)
Importance: High

Greetings,

Attached is a news release announcing the public review and comment period is open for the Big Stone County Hazard Mitigation Plan from **February 2 – February 16** prior to submission of the plan to FEMA. As a jurisdiction, related agency, or neighboring jurisdiction involved in the Big Stone County plan update, your assistance is requested to help post the news release and also to review the plan. Please see the following directions and links to the plan below:

PLEASE POST THE NEWS RELEASE

All cities within the county are requested to post the news release for their community. As a multi-jurisdictional plan, we are required to document the participation of cities helping to conduct this local outreach. Townships and other agency stakeholders are also encouraged to participate in posting the news release. You can post the news release in any of the ways below:

- *Posting Online:* Please post the news release to your respective website and/or social media and provide me with the name of your jurisdiction/agency, along with a direct website link to your posting(s) or a screenshot of the posting online.
- *Posting a Hardcopy:* If posting a printed copy of the news release, please provide me with the name of your jurisdiction/agency, date & location of where it was posted (i.e., City Hall, Post Office, Community Center).
- *Posting to Local Papers:* If you are a jurisdiction with a local paper, you are also encouraged to run this as a printed or online story and notify me of where it was submitted.

Please email me your documentation of your electronic or hardcopy posting of the news release within the next few days to make sure the public has had an opportunity to be notified and review the plan.

PLEASE REVIEW THE PLAN

All recipients of this notice are encouraged to review the plan and provide comment. Please also share with your local governments or agency partners to review. The county and city mitigation action charts are available in the online website to review. Following are links for the interactive website, PDF plan document, jurisdictional mitigation action charts, and online public feedback form. Use Control +Click to follow links:

[Big Stone County HMP Website](#)

[Mitigation Action Charts](#)

[Public Comment Feedback Form](#)

Please email me the names & titles of who reviewed the plan, as well as approximate time spent. All participants' time counts towards the county's 25% local match on this project.

As this is a 15-day review period, your timeliness to post the news release and review the plan is very important. This is our final step in completing the update of the Big Stone County Hazard Mitigation Plan. We thank you for your assistance and participation.

If you have any questions or comments, please let me know.

Thank you!

Bonnie Hundrieser

Bonnie K. Hundrieser, CEM

Hazard Mitigation Planning Specialist

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

Hundrieser Consulting LLC

Phone: 218-343-3468



BIG STONE COUNTY MINNESOTA

EMERGENCY MANAGEMENT

BIG STONE COUNTY NEWS RELEASE

February 2, 2023

Public Comment Sought for County's Hazard Mitigation Plan

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

All county residents, as well as other interested stakeholders (those in neighboring counties or working with affected agencies) 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 February 16, 2023. The public can access the plan using the following links:

[Big Stone County HMP Website](https://z.umn.edu/BigStoneHMP) (z.umn.edu/BigStoneHMP)

[Mitigation Action Charts](https://big-stone-county-hmp-umn.hub.arcgis.com/pages/mitigation-actions) (https://big-stone-county-hmp-umn.hub.arcgis.com/pages/mitigation-actions)

[Public Comment Feedback Form](https://z.umn.edu/BigStoneSurveyHMP) (https://z.umn.edu/BigStoneSurveyHMP)

The Big Stone County HMP is a multi-jurisdictional plan that covers Big Stone County, including the cities of Barry, Beardsley, Clinton, Correll, Graceville, Johnson, Odessa, and Ortonville. The Big Stone County HMP also incorporates the concerns and needs of townships, school districts, and other stakeholders participating in the plan.

Update of the plan has been under direction of Big Stone County Emergency Management in cooperation with U-Spatial at the University of Minnesota Duluth and representatives from county departments, city and township governments, school districts, and other key stakeholders. Together, the planning team worked to identify cost-effective and sustainable actions to reduce or eliminate the long-term risk to human life or property from natural hazards. Examples include improvement of roads and culverts 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 public awareness and education campaigns to help people be prepared to take safe action before, during, or following a hazard event.

Hazard mitigation planning helps Big Stone 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 Big Stone 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. Big Stone 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 Big Stone County Emergency Management.

Contact:

Dona Greiner

Big Stone County Emergency Management Director

Phone: 320-839-6379

Email: Dona.Greiner@BigStoneCounty.org

Big Stone County 2023 Hazard Mitigation Plan Online Public Review Website & Comment Forms

Big Stone County Hazard Mitigation Plan 2023 About HMP Planning All Natural Hazards Climate Change County Profile Mitigation Actions

Big Stone County Minnesota Hazard Mitigation Planning



Welcome to the Big Stone County 2023 Hazard Mitigation Plan! Hazard mitigation planning is the process of preparing for natural disasters to reduce the loss of life and property in communities of all sizes. By developing long-term strategies for protecting people and property, hazard mitigation plans are key to breaking the cycle of disaster damage and reconstruction ([FEMA 2022](#)).

This website provides 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.

[Link to 2023 Hazard Mitigation Plan \(HMP\)](#)

(PDF companion)

The Big Stone County 2023 Hazard Mitigation Plan was made available for public review online with a website hosted by U-Spatial@UMD ([Big Stone County HMP Website](#)). The website provided an interactive experience for the public to understand the planning process, learn about the natural hazards that affect the county and where county-specific vulnerabilities lie, review jurisdictional mitigation action charts, as well as a chance to submit feedback. Website content included:

- **About HMP Planning**
Description of what hazard mitigation, purpose of the HMP update, overview of the planning process, and members of the planning team.
- **County Profile**
County-specific information on demographics, economy, critical infrastructure, utility & transportation infrastructure, other county assets (significant buildings, cultural or historic assets, and mobile home park locations).
- **Hazard Profiles for each natural hazard covered by the plan**
 - Definition of hazard and supporting information
 - Hazard History of Events
 - Hazard Risk & Vulnerability
 - Relationship to Climate Change
- **Mitigation Actions**
Overview of the development of mitigation actions and PDFs of draft jurisdictional mitigation action charts for the county and each participating city.
- **Climate Change and Adaptation**
Overview of climate change in Minnesota, information on building climate resilience, and interactive data to explore Minnesota climate data.
- **Public Feedback Forms**
Survey links provided for feedback on the 2023 HMP website and draft plan (during public comment period) or submission of mitigation actions (ongoing survey). Following are the detailed questions provided in each survey.

Mitigation Plan Feedback Survey

Fill in this survey to provide feedback on the Hazard Mitigation Draft Plan.

What section(s) of the Plan would you like to comment on? Select all that apply.

- | | |
|---|--|
| <input type="checkbox"/> Planning Process | <input type="checkbox"/> Mitigation Strategy |
| <input type="checkbox"/> Risk Assessment | <input type="checkbox"/> Implementation Plan |

Please provide comments about the Plan. (Comment box provided)

Upload document (optional)

Would you like to be contacted by the Planning Team? (Yes / No)

County – Enter the county you live in or represent (drop down menu)

Jurisdictional Check-box – Select your jurisdictional representation

Hazard Mitigation Ideas Survey

This survey will be used to capture mitigation ideas for a county hazard mitigation plan. Please be as specific as possible. Thank you for your participation!

Name (First Name, Last Name)

Email

Job Title or Organization (enter job title or organization. If a resident, type “community resident”)

County – Enter the county you live in or represent (drop down menu)

Jurisdictional Check-box – Select your jurisdictional representation

New Action Idea - Please describe in detail any mitigation action ideas you have for your jurisdiction.

Is the mitigation action site-specific, or for the whole jurisdiction? (select answer)

What hazards will this action address?

- | | |
|--|--|
| <input type="checkbox"/> Winter Storms | <input type="checkbox"/> Extreme Cold |
| <input type="checkbox"/> Windstorms | <input type="checkbox"/> Extreme Heat |
| <input type="checkbox"/> Tornadoes | <input type="checkbox"/> Wildfire |
| <input type="checkbox"/> Hail | <input type="checkbox"/> Landslides |
| <input type="checkbox"/> Lightning | <input type="checkbox"/> Drought |
| <input type="checkbox"/> Flooding | <input type="checkbox"/> Dam/Levee Failure |

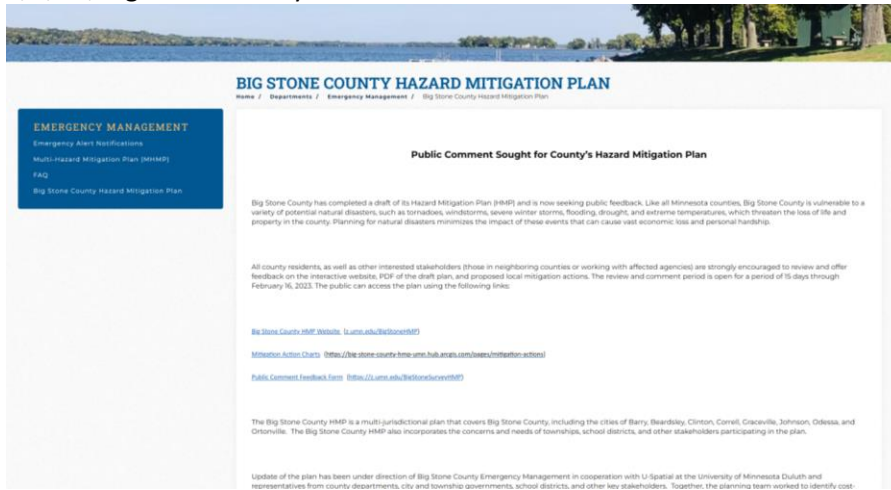
What mitigation strategy best describes this action? Select all that apply

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

Big Stone County MHMP News Release #2 Documentation of News Release Postings

COUNTY POSTINGS

2/2/23, Big Stone County Website



2/2/23, Big Stone County - Emergency Management Facebook Page



LOCAL MEDIA POSTINGS

No local media carried the news release.

CITY POSTINGS

City of Barry

2/7/23, Hardcopy Posting

A printed copy of the news release was shared with the Barry City Council and posted at the City Office.

City of Beardsley

2/6/23 Hardcopy Posting

A printed copy of the news release was posted on the bulletin board at the Beardsley Post Office.

City of Clinton

2/13/23, City of Clinton Website



County News Release

POSTED ON - FEBRUARY 13, 2023

Public Comment Sought for County's Hazard Mitigation Plan

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

All county residents, as well as other interested stakeholders (those in neighboring counties or working with affected agencies) 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 February 16, 2023. The public can access the plan using the following links:

[BIG STONE COUNTY HMP WEBSITE](#)

City of Correll

2/13/23, Hardcopy Posting

A printed copy of the news release was posted outside on the window of the Correll Post Office.

City of Graceville

2/13/23, Hardcopy Posting

A printed copy of the news release was posted inside at the Graceville Community Building.

City of Johnson

2/9/23, Hardcopy Posting

A printed copy of the news release was posted at the City of Johnson public garage and meeting space.

City of Odessa

2/3/23, Hardcopy Posting

A printed copy of the news release was posted outside on the front door of the Odessa City Hall.

City of Ortonville

2/2/23, Hardcopy Posting

A printed copy of the news release was posted on the community bulletin board within Ortonville City Hall.

Appendix H – Mitigation Actions by Jurisdiction

CITY OF BARRY

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 all city residents to sign-up for the county's Smart911/Rave emergency notification alert system.	Existing High 2023-2028	City Admin, City EM	When the city receives information from Big Stone Emergency Management about the emergency alert system, we encourage residents to sign up and will help them sign up for it.	City
2	Severe Winter & Summer Storms	Education & Awareness Programs	Provide education and outreach to residents on personal preparedness for severe weather events and extended power outages.	Existing High 2023-2028	City Admin, City EM	Barry has no city website or Facebook page. With such a small population, we rely on our neighbors and word of mouth, as well as information from the National Weather Service. We also have discussions at city council meetings and give reminders to residents about upcoming weather seasons. Our city works with the County Emergency Manger to participate in the National Weather Service's annual Severe Winter/Spring Weather Awareness Week by reaching out to residents regarding severe weather.	City
3	Severe Summer Storms	Structure & Infrastructure Projects	Purchase and install an outdoor warning siren for the city.	New High 2023-2028	City Admin, City EM, City Public Works in coord with BSCEM	This is a project the city wishes to address, however due to the cost we have been unable to do this for our city. We will seek to work with Big Stone County Emergency Management to look into possible grant funding from the USDA Rural Development Community Facilities grant program which we may be eligible to apply for to purchase a siren.	City, USDA RD CF Grant Program

CITY OF BARRY**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
4	Flooding	Education & Awareness Programs	Conduct public outreach to encourage residents to maintain sump pumps to avoid basement flooding and clear debris from gutters to avoid clogging.	Existing Moderate 2023-2028	City Admin, City Public Works	Each fall & spring we do active outreach to homeowners to clear leafy and woody debris from roadside gutters to prevent clogging and over the road flooding in these areas. Each spring and winter we do outreach to encourage residents to maintain their sump pumps to reduce the chances of basement flooding.	City
5	Flooding	Local Planning & Regulations	Continue to participate in the National Flood Insurance Program (NFIP) and enforce the city's floodplain ordinance.	Existing Moderate 2023-2028	City Admin	The city enforces requirements of the NFIP through the city's Floodplain Ordinance, adopted in 2019 upon enrollment in the NFIP.	City

CITY OF BEARDSLEY

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 all city residents to sign-up for the county's Smart911/Rave emergency notification alert system.	Existing High 2023-2028	City Admin, City EM	The city shares information about the Big Stone County emergency notification system on the city's Facebook page. We continue to encourage business, resident, and area nursing homes to enroll in the county's emergency notification system so they will be aware of dangerous storm events.	City
2	Severe Winter & Summer Storms	Education & Awareness Programs	Provide education and outreach to residents on personal preparedness for severe weather events and extended power outages.	Existing High 2023-2028	City Admin, City EM	We post information on bulletin boards at the Community Center and at the Post Office. We also make announcements at city council meetings to the public during severe weather season. Our city works with the county emergency manager to participate in the National Weather Service's annual Severe Winter/Spring Weather Awareness Week by posting severe weather awareness information out on our city Facebook page.	City
3	Severe Winter & Summer Storms	Structure & Infrastructure Projects	Manage vegetation near powerlines to reduce the risk of power outages from downed limbs and trees during severe storm events.	Existing Moderate 2023-2028	City Public Works in coord with Ottertail Power Company	The city has a program to manage vegetation near powerlines to reduce risk of power outages during storms. Ottertail Power Company also manages vegetation near powerlines.	City, Ottertail Power Co.
4	Severe Summer Storms	Structure & Infrastructure Projects	Upgrade the city's warning siren.	New High 2023-2028	City Admin, City EM, City Public Works in coord with BSC EM	The city's existing outdoor warning siren is aging and the city would like to upgrade it. We will work with our BSC Emergency Manager to work on this effort and see if we may be eligible to apply for USDA Community Facility grant program funding to purchase a siren.	City, USDA CF Grant Program

CITY OF BEARDSLEY**Mitigation Action Chart**

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	Severe Summer Storms	Structure & Infrastructure Projects	Construct a storm shelter or tornado safe room for the community.	New High 2023-2028	City Admin, City EM, City Public Works in coord with BCEM	The city would like to explore how we may construct a storm shelter or tornado safe room for use by our residents. We will work with our BSC Emergency Manager to work on this effort and see if we may be eligible to apply for FEMA HMA grant program funding to construct a tornado safe room.	City, FEMA HMA grant funding
6	Flooding	Education & Awareness Programs	Conduct public outreach to encourage residents to maintain sump pumps to avoid basement flooding from high rain events.	Existing Moderate 2023-2028	City Admin, City Public Works	Each spring and winter we do outreach to encourage residents to maintain their sump pumps to reduce the chances of basement flooding.	City

CITY OF CLINTON

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 all city residents to sign-up for the county's Smart911/Rave emergency notification alert system.	Existing High 2023-2028	City Admin, City EM	The city shares information about the Big Stone County emergency notification system on the city's Facebook page. We continue to encourage business, resident, and area nursing homes to enroll in the county's emergency notification system so they will be aware of dangerous storm events.	City
2	Severe Winter & Summer Storms	Education & Awareness Programs	Provide education and outreach to residents on personal preparedness for severe weather events and extended power outages.	Existing High 2023-2028	City Admin, City EM	We post information on bulletin boards at the Community Center and at the Post Office. We also make announcements at city council meetings to the public during severe weather season. Our city works with the county emergency manager to participate in the National Weather Service's annual Severe Winter/Spring Weather Awareness Week by posting severe weather awareness information out on our city Facebook page.	City
3	Severe Winter & Summer Storms	Structure & Infrastructure Projects	Manage vegetation near powerlines to reduce the risk of power outages from downed limbs and trees during severe storm events.	Existing Moderate 2023-2028	City Public Works in coord with Ottertail Power Company	The city has a program to manage vegetation near powerlines to reduce risk of power outages during storms. Ottertail Power Company also manages vegetation near powerlines.	City, Ottertail Power Co.
4	Severe Summer Storms	Structure & Infrastructure Projects	Upgrade the city's warning siren.	New High 2023-2028	City Admin, City EM, City Public Works in coord with BSC EM	The city's existing outdoor warning siren is aging and the city would like to upgrade it. We will work with our BSC Emergency Manager to work on this effort and see if we may be eligible to apply for USDA Community Facility grant program funding to purchase a siren.	City, USDA CF Grant Program

CITY OF CLINTON

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	Severe Summer Storms	Structure & Infrastructure Projects	Construct a tornado safe room for the community.	In-Progress High 2023-2028	City Admin, City EM, City Public Works in coord with Ag Society and BSCEM	The city would like to explore how we may construct a storm shelter or tornado safe room for use by our residents. In December, 2021 we held a first meeting with Big Stone County Emergency Management and the Ag Societu for a safe room project in the City of Clinton, the Big Stone County Ag Society will lead development of an application to FEMA for grant funding.	City, FEMA HMA grant funding
6	Flooding	Local Planning & Regulations	Enforce city ordinances and develop plans that reduce the impacts of high rain events and risk of flooding to areas of new development.	Existing High 2023-2028	City Admin, City Public Works	We have a sump pump ordinance in place to mitigate against overload of the city's system.	City
7	Flooding	Education & Awareness Programs	Conduct public outreach to encourage residents to maintain sump pumps to avoid basement flooding and clear debris from gutters to avoid clogging.	Existing Moderate 2023-2028	City Admin, City Public Works	Each fall & spring we do active outreach to homeowners to clear leafy and woody debris from roadside gutters to prevent clogging and over the road flooding in these areas. Each spring and winter we do outreach to encourage residents to maintain their sump pumps to reduce the chances of basement flooding.	City

CITY OF CORRELL

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 all city residents to sign-up for the county's Smart911/Rave emergency notification alert system.	Existing High 2023-2028	City Admin, City EM	The city does not have a central way to communicate with residents, so we encourage residents to go to the county website and emergency management Facebook page to learn how to sign up for the notification system.	City
2	Severe Winter & Summer Storms	Education & Awareness Programs	Provide education and outreach to residents on personal preparedness for severe weather events and extended power outages.	Existing High 2023-2028	City Admin, City EM	We encourage residents to sign up for the Big Stone County Emergency Management Facebook page to receive information on severe weather or other emergencies. We use the post office to post information for the public, but very few residents visit there. We are a population of only 26.	City
3	Severe Summer Storms	Structure & Infrastructure Projects	Upgrade the city's warning siren.	New High 2023-2028	City Admin, City EM, City Public Works in coord with BSCEM	The city's existing outdoor warning siren in aging and the city would like to upgrade it. We will work with our BSC Emergency Manager to work on this effort and see if we may be eligible to apply for USDA Community Facility grant program funding to purchase a siren.	City, USDA CF Grant Program

CITY OF GRACEVILLE

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 all city residents to sign-up for the county's Smart911/Rave emergency notification alert system.	Existing High 2023-2028	City Admin, City EM	This is something the city has not done to date; however we can use our city website and city Facebook page to encourage residents to go to the county website to sign up for the system.	City
2	Severe Winter & Summer Storms	Education & Awareness Programs	Provide education and outreach to residents on personal preparedness for severe weather events and extended power outages.	Existing High 2023-2028	City Admin, City EM	We use local radio stations, our city website, city Facebook page and an emergency alert system to notify our residents of potential problems.	City
3	Severe Winter & Summer Storms	Mitigation Preparedness & Response Support	Acquire backup generators for the Grace Village Independent Living Center and the city's Community building.	New High 2023-2028	City Admin, City EM	The wishes to obtain portable generators to provide emergency backup power for our local senior living complex and our community center, which will serve as a temporary shelter if needed. The city will work to purchase said generators as funding allows. Outside grant funding from FEMA may also be applied for if an application were to be eligible.	City, FEMA HMA grant funding
4	Severe Summer Storms	Structure & Infrastructure Projects	Construct a storm shelter or tornado safe room at Toqua Park to protect campers and visitors from dangerous high wind and storm events.	New High 2023-2028	City Admin, City EM, City Public Works in coord with BSC EM	The city would like to explore how we may construct a storm shelter or tornado safe room for use by campers and visitors to Toqua Park. We will work with our BSC Emergency Manager to work on this effort and see if we may be eligible to apply for FEMA HMA grant program funding to construct a tornado safe room.	City, FEMA HMA Grant Funding

CITY OF GRACEVILLE

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
5	Flooding	Structure & Infrastructure Projects	Work with Big Stone County Highway Department to address flood mitigation measures necessary to reduce flood risk to our nursing home/assisted living complex, Grace Home.	Existing High 2023-2028	City Admin, City Public Works in coord with BSC Hwy. Dept.	This is an ongoing planning process between the city and BSC county engineer. We have talked to engineers about solutions to the flooding potential at our Grace Home complex. It is an expensive project to fix. If we could connect three culverts going through the Grace Home complex, our engineers claim the efficiency would be 130% or more of what the current culverts can handle. We have applied for permits to reroute high water from the area, but were rejected by MNDOT. If our project is eligible for FEMA HMA grant funding, we would work with Big Stone County Emergency Management to advance an application.	City, County, FEMA HMA grant funding
6	Flooding	Structure & Infrastructure Projects	Work with the Bois de Sioux Watershed District to address flood mitigation for Moonshine Bottom.	In-Progress High 2023-2028	City Admin, City Public Works in coord with BDSWD	This is an ongoing effort between the city and the BDSWS. Moonshine Bottom should have a spring flood structure in place to help flood problems. This project has been looked at for several years, BDSWS and area farm land owners are on board with the idea. Cost is the only thing holding us back. If our project is eligible for FEMA HMA grant funding, we would work with Big Stone County Emergency Management to advance an application.	City, BDSWD, FEMA HMA grant funding

CITY OF GRACEVILLE

Mitigation Action Chart

#	Hazard	Mitigation Strategy	Mitigation Action	Status Priority Timeframe	Responsibility	Comments on Implementation & Integration	Possible Funding
7	Flooding	Structure & Infrastructure Projects	Continue to plan for and address mitigation for Lake Avenue when Toqua Lake floods its banks.	In-Progress High 2023-2028	City Admin, City Public Works in coord with BSCEM	This is an ongoing effort of the city. In the past we have had to sand bag homes and dike Lake Avenue when Toqua Lake has flooded out of its banks. Flooding of Toqua Lake, once over Lake Ave could destroy numerous homes, a 24-unit apartment complex and several accessory buildings and roads. We continue to work on this effort in conjunction with Big Stone County Emergency Management. If flood mitigation measures are eligible for FEMA HMA grant funding, we would work with Big Stone County Emergency Management to advance an application.	City, FEMA HMA grant funding
8	Flooding	Local Planning & Regulations	Enforce city ordinances and develop plans that reduce the impacts of high rain events and risk of flooding to areas of new development.	Existing High 2023-2028	City Admin	The city participates in the National Flood Insurance Program and has a Federal Flood Insurance ordinance in place which requires permits for all proposed construction or other development in the community, including the placement of manufactured homes, so that it may determine whether such construction or other development is proposed within flood-prone areas. We also enforce our sump pump ordinance to help keep our sanitary system from overloading in wet cycles. The city partners with Widseth for advice on flood prevention, and we are working with our Bois de Sioux Watershed District (BDSWD) for solutions.	City

CITY OF JOHNSON

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 all city residents to sign-up for the county's Smart911/Rave emergency notification alert system.	Existing High 2023-2028	City Admin, City EM	The city continues to encourage residents of Johnson to enroll in the county emergency notification system in order to be aware of dangerous storm events. We have no city website or Facebook page, so residents are directed to go to the county website to sign up.	City
2	Severe Winter & Summer Storms	Education & Awareness Programs	Provide education and outreach to residents on personal preparedness for severe weather events and extended power outages.	Existing High 2023-2028	City Admin, City EM	Johnson has no city website or Facebook page. With such a small population, we rely on our neighbors and word of mouth, as well as information from the National Weather Service. We also have discussions at city council meetings and give reminders to residents about upcoming weather seasons.	City
3	Severe Summer Storms	Structure & Infrastructure Projects	Work with Big Stone County Emergency Management to purchase and install an outdoor warning siren that is connected to the county siren system.	New Moderate 2023-2028	City Admin, City EM, City Public Works in coord with BSCEM	The city would like to potentially add an additional warning siren to the city. We will work with our BSC Emergency Manager to work on this effort and see if we may be eligible to apply for USDA Community Facility grant program funding to purchase a siren.	City, USDA CF Grant Funding
4	Flooding	Education & Awareness Programs	Conduct public outreach to encourage residents to maintain sump pumps to avoid basement flooding from high rain events.	Existing Moderate 2023-2028	City Admin, City Public Works	Each spring and winter we do outreach to encourage residents to maintain their sump pumps to reduce the chances of basement flooding.	City
5	Flooding	Structure & Infrastructure Projects	Continue to work with the Big Stone County Highway Department on local flood mitigation projects for roads in Johnson.	Existing Moderate 2023-2028	City Public Works in coord with BSC Hwy. Dept. & Zoning Dept.	The city continues to work closely with the county highway engineer on local flood mitigation projects for roads and the county zoning department.	City, County

CITY OF ODESSA

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 all city residents to sign-up for the county's Smart911/Rave emergency notification alert system.	Existing High 2023-2028	City Admin, City EM	The city does not do anything directly, as we have no city website or Facebook page. Residents are encouraged to go to the Big Stone County website to sign up.	City
2	Severe Winter & Summer Storms	Education & Awareness Programs	Provide education and outreach to residents on personal preparedness for severe weather events and extended power outages.	Existing High 2023-2028	City Admin, City EM	Residents are encouraged to stay tuned to local media and sign up for the Big Stone County Emergency Management Facebook page. Big Stone County Emergency Management does public outreach on storm conditions and being prepared. The city does not do anything directly as we have no central way to communicate with residents.	City
3	Flooding	Local Planning & Regulations	Enforce the city's floodplain ordinance to restrict development in areas of flood risk within the city.	Existing Moderate 2023-2028	City Admin	The city has a Floodplain Ordinance in place, which was updated in 2006 and continues to be enforced.	City

CITY OF ORTONVILLE

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 all city residents to sign-up for the county's Smart911/Rave emergency notification alert system.	Existing High 2023-2028	City Admin, City EM	This is not something the city has done to date; however we could use our city of Ortonville website and Facebook page to share information with the public.	City
2	Severe Winter & Summer Storms	Education & Awareness Programs	Provide education and outreach to residents on personal preparedness for severe weather events and extended power outages.	Existing High 2023-2028	City Admin, City EM	We recommend that the citizens sign up for Big Stone County's emergency notification system in times of severe weather. We have outdoor sirens to warn the public of severe wind events.	City
3	Flooding	Local Planning & Regulations	Enforce city ordinances and develop plans that reduce the impacts of high rain events and risk of flooding to areas of new development.	Existing High 2023-2028	City Admin	The city enforces requirements of the NFIP through Section 150.110, Flood Hazard Ordinance, in the city's code of ordinances. We do not allow sump pumps to discharge in the city's sanitary sewer system. We have both Shoreland and Flood Hazard Ordinances.	City
4	Flooding	Local Planning & Regulations	Continue to plan for and address ravine flooding from high rain events.	In-Progress Moderate 2023-2028	City Admin, City Public Works	Our city engineer has reviewed the impacts of larger rainfalls on resulting ravine flooding. There will be additional storm sewer project in the future.	City
5	Dam Failure	Structure & Infrastructure Projects	Continue to work with the MN DNR to monitor the condition of the Big Stone Lake Dam and address any issues.	Existing Moderate 2023-2028	MN Dam Safety Program in coord with City Admin	The city of Ortonville continues to work with the MN DNR Dam Safety Program to be aware of inspection reports made to the dam and any infrastructure projects done to address maintenance needs. The MN DNR conducts an inspection of the dam every 4 years. If there are any incidents with the dam, the city coordinates with the MN DNR, Upper Minnesota River Watershed, and Big Stone County Emergency Management.	MN DNR