



# 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan Chickasaw County, Iowa

**Adopted By:** Chickasaw County, Iowa (06/03/2024)

Including: City of Alta Vista (06/10/2024), City of Fredericksburg (06/19/2024), City of Ionia (6/3/2024), City of Lawler (05/06/2024), City of Nashua (6/3/2024), City of New Hampton (6/3/2024), City of North Washington (5/7/2024), City of Protivin (07/09/2024), New Hampton Community School District (06/17/2024), Sumner-Fredericksburg Community School District (5/13/2024), and Nashua-Plainfield Community School District (6/10/2024)

**Adopted By FEMA:** December 16, 2024

**Expiration Date:** December 4, 2029

**Funded by:**

**CHICKASAW**  
COUNTY • IOWA

**Prepared by**



**INRCOG**

Iowa Northland Regional  
Council of Governments

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# 2024 Chickasaw County Hazard Mitigation Plan

## FEMA Approval Letter



December 16, 2024

John Benson  
Director  
Iowa Department of Homeland Security and Emergency Management  
7900 Hickman Rd. Suite 500  
Windsor Heights, IA 50324

Subject: Approval of the Chickasaw County Hazard Mitigation Plan

Director Benson:

In accordance with applicable<sup>1</sup> laws, regulations and policy, the Risk Analysis Branch of the Federal Emergency Management Agency (FEMA) Region 7 has approved the Chickasaw County Hazard Mitigation Plan. The attached Local Mitigation Plan Review Tool lists participants receiving approval that have submitted required adoption documentation.

The approval period for this plan is from December 05, 2024, through December 04, 2029. The same official plan expiration date applies to all participating jurisdictions, regardless of adoption date.

An approved mitigation plan is one of the conditions for applying for and receiving FEMA assistance from the following programs:

- Hazard Mitigation Grant Program (HMGP)
- HMGP Post-Fire
- Building Resilient Infrastructure and Communities
- Flood Mitigation Assistance
- Rehabilitation of High Hazard Potential Dams Grant Program
- Safeguarding Tomorrow Revolving Loan Fund Program
- Pre-Disaster Mitigation Congressionally Directed Spending

Based on FEMA's review, the plan did not meet all elements required for the Rehabilitation of High Hazard Potential Dams (HHPD) grant program. Thus, the participating jurisdictions are not eligible for assistance from the HHPD Grant Program at this time. If any participating jurisdictions with HHPDs are interested in this assistance, they should contact the FEMA regional mitigation planner identified below to learn more about how to meet the required mitigation planning elements for this program.

Having an approved mitigation plan does not mean that mitigation grant funding will be awarded.

<sup>1</sup> Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and National Dam Safety Program Act, as amended; 44 CFR Part 201, Mitigation Planning; and Local Mitigation Planning Policy Guide (FP-206-21-0002).

Director Benson  
Approval of the Chickasaw County Hazard Mitigation Plan  
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Specific application and eligibility requirements for the programs listed above can be found in each FEMA grant program's respective policies and annual Notice of Funding Opportunities, as applicable.

To avoid a lapsed plan, the next plan update must be approved before the end of the approval period, including adoption by the participating jurisdictions. Before the end of the approval period, please allow sufficient time to secure funding for the update, including the review and approval process. Please include time for any revisions, if needed, and for the jurisdiction to formally adopt the plan after the review, if not adopted prior to submission. This will enable them to remain eligible to apply for and receive funding from FEMA's mitigation grant programs with a mitigation plan requirement. Local governments, including special districts, with a plan status of "Approvable Pending Adoption" are not eligible for FEMA's mitigation grant programs with a mitigation plan requirement.

We look forward to discussing options for implementing this mitigation plan. If you should have any questions or concerns, please contact Collette Linder, Mitigation Planning Supervisor, at (816) 394-6859 or [collette.linder@fema.dhs.gov](mailto:collette.linder@fema.dhs.gov).

Sincerely,

LAURIE L  
BESTGEN

Digitally signed by LAURIE L  
BESTGEN  
Date: 2024.12.16 08:31:23  
-06'00'

Laurie L. Bestgen, Director  
Mitigation Division

Attachment: Local Mitigation Plan Review Tool

ACKNOWLEDGMENTS

CHICKASAW COUNTY HAZARD MITIGATION PLANNING COMMITTEE

Over the course of the planning process, many individuals donated their time and efforts toward providing information, attending meetings, and providing input for the successful completion of the plan. The following is a list of people who participated in the development of this Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan, in no particular order:

Chickasaw County	Scott Cerwinske, District 2 Supervisor Matthew Kuhn, District 4 Supervisor Jeff Bernatz, Emergency Management Agency Coordinator Lisa Welter, Director of Public Health & Home Care Services	New Hampton Community School District	Jay Jurrens, Superintendent
		Sumner-Fredericksburg Community School District	Fred Matlage, Superintendent
		Nashua-Plainfield Community School District	Megan Baltes, Todd Liechty
City of Alta Vista	Burt Ostert, Mayor Amy Laures, City Council Member	Iowa Northland Regional Council of Governments (INRCOG)	Isaiah Corbin, Director of Development Dan Schlichtmann, GIS Coordinator
City of Fredericksburg	James Mitchell, Mayor Ray Armbrrecht, Fire Chief		
City of Lawler	Mark Mueterthies, Mayor Jeremy Marklenburg, Fire Chief		
City of Ionia	Randy Taylor, Mayor Derek Day, Fire Chief		
City of Nashua	Samantha Johnson, City Council Member		
City of Protivin	Brad Moudry, Fire Chief		
City of New Hampton	Tim Pederson, Police Chief Karen Clemens, City Clerk Casey Mai, Public Works Director/Zoning Administrator		
City of North Washington	Megan Baltes, City Council Member		
City of Bassett	James Ashley, Mayor		

## Adopting Resolution by Chickasaw County Board of Supervisors

### Resolution 06-03-24-25

**A RESOLUTION OF THE BOARD OF SUPERVISORS OF CHICKASAW COUNTY, IOWA, ADOPTING THE CHICKASAW COUNTY, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.**

WHEREAS, the Board of Supervisors of Chickasaw County recognizes the threat that natural hazards pose to people and property within Chickasaw County; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing Chickasaw County served and participated in the formulation of the Plan, hereby known as the Chickasaw County, Iowa Hazard Mitigation Plan 2024 Update, as part of the the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Chickasaw from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the Plan; and


WHEREAS adoption by the Board of Supervisors of Chickasaw County demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE BOARD OF SUPERVISORS OF CHICKASAW COUNTY, IOWA, THAT:

Section 1: In accordance with local regulations, the Board adopts the Chickasaw County, Iowa Hazard Mitigation Plan 2024 Update. While content related to the Chickasaw County Plan may require revisions to meet the plan approval requirements, changes occurring after adoption will not require Chickasaw County to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 3rd day of June 2024.

ATTEST:

  
County Auditor

  
Board of Supervisor Chairperson

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## Section I: Introduction

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## About

Natural disasters are an ever-present hazard for many communities throughout the world. This Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP) was developed as a broad-based planning effort involving numerous incorporated communities, school districts, and County agencies. This Plan is a comprehensive county wide strategy to mitigate losses due to natural or man-made hazards. The jurisdictions included in this Plan had representatives that served as participants Chickasaw County's Hazard Mitigation Planning Committee. Representatives from each jurisdiction attended four publicly held meetings and submitted materials that provided necessary information to formulate their local hazard mitigation plans. Those Plans can be found in the Appendices of this Plan.

This Plan is an update to the 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. This Plan was written and developed to meet the requirements in FEMA's Local Mitigation Policy Guide updated in April 2023, Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), and the regulations in Title 44 CFR § 201.6 relating to Mitigation Planning.

## What is Hazard Mitigation?

Hazard mitigation encompasses any proactive measure undertaken to diminish or eradicate the enduring threats posed to both human life and property by hazardous events. It embodies a collective set of actions, policies, or programs to be implemented at the community- level. This whole effort is aimed at fostering a sustained reduction in vulnerability to hazards.

This approach is not only proactive in preparation for natural disasters, but this overall reduces enormous costs associated with damage to property and community way of life that incur following being impacted by a natural disaster.

A FEMA approved Plan makes each participating jurisdiction eligible for federal grant funding that becomes available to communities in order to complete hazard mitigation activities or programs. This grant program is a major part of developing this Plan in accordance with FEMA's Hazard Mitigation requirements and federal regulations.

The implementation of this Plan signifies a strategic, risk-informed strategy aimed at curbing long-term risks associated with the wellbeing of individuals, the protection of property, and the preservation of community cohesion across all areas within Chickasaw County.

**Figure 1: Emergency Management Cycle**



Source: FEMA

### **Purposes of Hazard Mitigation Planning**

The following list identifies reasons to conduct hazard mitigation planning:

- To facilitate the protection of the health, safety, and economic security of residents, workers, visitors, and property owners by mitigating the impacts of natural and man-made hazards.
- Influence decision-making in both the public and private sectors.
- Fulfill statutory requirements of Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act such that Chickasaw County and participating jurisdictions remain eligible for federal programs such as the Flood Mitigation Assistance Grant program (FMA), Hazard Mitigation Grant Program (HMGP), Hazard Mitigation Grant Program Post-Fire (HMGP Post Fire) and Building Resilient Infrastructure and Communities (BRIC) program.

For this plan, Chickasaw County's jurisdictions that participated in the process collected data and their approach for their local hazard mitigation plan with assistance from the County EMA and INRCOG. Each jurisdiction fulfilled all requirements in the process for the development of their mitigation strategy.

### **A Multi-Jurisdictional Approach**

This comprehensive document has components informed by the planning committee. Those include mitigation goals, selected mitigation activities/actions/programs, policies and regulations set by each jurisdiction, needs, fiscal level, and local planning implementation capacity. INRCOG served as the coordinator of this

Plan by coordinating meetings with the planning committee, collecting information by each jurisdiction in order to assemble data gathering assignments into a strategic body with details, priorities, and funding sources called out for each associated action item.

The City of Protivin and Sumner-Fredericksburg Community School District were new participants in this update. The City of Protivin lies along the northern boundary with city limits that encompass both Chickasaw (partially) and Howard County (primarily).

### **Benefits of Multi-Jurisdictional Mitigation Planning**

- ✓ A comprehensive approach to hazard mitigation may have greater positive impacts for participants and others. This process imposes external specialty on the topic of hazard mitigation which is available for rural communities through COGs throughout Iowa.
- ✓ Taking an opportunity to create more sustainable and disaster-resistant communities.
- ✓ Benefiting from a collaborative intergovernmental effort that qualifies participants for pre-disaster mitigation grants.
- ✓ Using limited resources on hazards that have the biggest impacts on a community.
- ✓ Reducing or preventing damage to existing structures, subsequently reducing repair costs.
- ✓ Identifying vulnerable populations to establish socially equitable outcomes.
- ✓ Setting long-term goals that will be compatible with existing community plans such as a comprehensive land use plan.

See Table 2 for committee members and participation details.

## The Planning Process



### **OUR APPROACH**

#### **1 Gathering Data and Getting Updates on Previous Hazard Mitigation Activities**

Representatives from each of the participating jurisdictions attended the first planning committee meeting in which provided community data, information, and shared updates on previous mitigation efforts done by their communities were discussed.

Meetings were held between March 19<sup>th</sup> to April 23<sup>rd</sup> at the Chickasaw County Community Center in New Hampton, Iowa. Public notices were issued and published in the New Hampton Tribute, the largest and most read local newspaper for the county.

All meetings were open to the public and community members were welcome to attend and observe the committee. We had no guests or members of the public attend these meetings. Copies of notices are located in Appendix N.

For Protivin, previous mitigation activities were drawn from the 2012 Howard County MJ-6 Multi Hazard Mitigation Plan. Protivin lies in both Howard County and Chickasaw County.

Next, updates took place based upon the previous Plan and with input from plan participants. This focused on helping each jurisdiction be reflective of what they have achieved, what they have still yet to achieve, and what has not worked for better or worse.

Responses are located in Appendix N.

## **2 HAZARD IDENTIFICATION & ASSESSMENTS**

### ***Identify Hazards***

Through the planning process, the hazards that posed a risk to the entire planning area, as well as unique hazards for each jurisdiction, were reviewed and updated. The committee agreed on including all 13 hazards identified in the State of Iowa's 2023 Hazard Mitigation Plan. Hazard profiles were prepared by the plan coordinator and shared with the committee participants during the hazard risk assessment.

### ***Assessing: Vulnerability, Capability, and Risk***

Committee participants evaluated their community's vulnerabilities by listing critical facilities, vulnerable populations, repetitive loss property history, and any properties located in flood risk zones based on the latest effective flood study.

Next, participants conducted a capability assessment on their community's abilities to carry out hazard mitigation activities. An inventory of existing policies, practices, programs, regulations, and activities was listed in tables. Responses for the capability assessments are located in Section 4.

A risk assessment was conducted for each hazard based on four risk factors. Historical occurrence, probability of a hazard event occurring in the area, magnitude of a hazard event, and the warning time of an event occurring.

Responses by participants were put on score sheets with each factor given a rating between 1 and 4. Using a hazard risk formula based on the values of the numbered rating given to each factor, a composite score was calculated for each hazard and the list of hazards were organized from highest to lowest risk for each community. The results of this assessment and hazard profiles are in Section 3.



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### **ESTABLISH**

## **1 Mitigation Goals and New Activities**

Each community's team or representative in the planning committee consulted with their local government and local planning committees to determine the goals for their local hazard mitigation plan. Those goals were developed from problems statements submitted by committee participants about a specific issue.

Participants were able to list mitigation activities they could accomplish as a community that would help them achieve their goals. Those new mitigation activities were assembled with their updated list of previous mitigation activities, then arranged into five different mitigation action types. These components make up a new strategy by each community to implement their hazard mitigation activities over the next 5 years.

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### **ASSEMBLE**

## **4 Implementation Strategy**

A strategic guide for use in the mitigation efforts is presented for each mitigation plan. Each action or activity item in the strategy focuses on hazard mitigation and consists of a time frame, designated person to lead, estimated cost, and funding sources to pursue.

The Plan concludes with recommendations to consider. Efforts to keep the public involved, and how to make any future updates or make changes can take place.

When implemented appropriately, mitigation projects can save lives, reduce property damage, be cost-effective, and environmentally sound. This, in turn, can reduce the enormous cost of disasters to property owners and all levels of government. In addition to the approach from this plan, hazard mitigation can

protect critical community facilities, ensure equitable outcomes, reduce exposure to liability, and minimize community disruption.

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### **ADOPT**

## **3 Public Hearing and Adopting Resolution Approving the Updated Hazard Mitigation Plan**

Each community produced drafts of their local hazard mitigation plans using the work sheets and assignments from each of the committee meetings. Then participants shared the Plan with their local officials, emergency responders, board members, etc. for feedback. All feedback was addressed, incorporated, and a final plan was sent out for a public hearing at a city council meeting. A coordinator from the plan development team (INRCOG or Chickasaw County EMA) was present during public hearings when feasible (non-conflicting meeting times) and presented the planning process, pointed out any changes from existing hazard mitigation plan (if applicable), and the overall benefits of an approved plan for the community (i.e. funding, reduction of risks). All city councils and/or school district boards voted unanimously to adopt their updated hazard mitigation plan. See Appendix L for signed resolutions.

## **Planning Committee**

Those that participated were administrators or elected officials. County staff included those from the county public health department, engineering department, ambulance services, auditor's office, conservation board and board of supervisors. These participants helped form county-wide input for hazard mitigation that would focus on unincorporated county areas. The committee members are listed in Table 2.

Representatives from nine incorporated cities located in Chickasaw County included: Alta Vista, Bassett, Fredericksburg, Ionia, Lawler, Nashua, New Hampton, North Washington, and Protivin. All the



## 2024 Chickasaw County Hazard Mitigation Plan

cities that participated in the 2019 Chickasaw County MJ-HMP participated in this 2024 plan update. However, the City of Protivin was a new participant in the Chickasaw County Hazard Mitigation Plan. Protivin's previous mitigation actions and strategies are located in Howard County's 2012 Multi-Jurisdictional Hazard Mitigation Plan. Protivin participants updated their previous mitigation activities based on the list from the Howard County 2012 Plan.

*Requirement 44 CFR §201.6(b)(2): An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process must include an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and nonprofit interests to be involved in the planning process.*

All school districts with areas within Chickasaw County were invited to participate in the plan development process and serve on the committee. New Hampton Community School District (CSD), Nashua-Plainsfield CSD, and Sumner-Fredericksburg CSD each participated in the planning process by attending meetings and/or completing necessary data by meeting with plan coordinator to receive meeting materials. NHMCSD was a previous participant in the 2019 Chickasaw County MJ-HMP.

### **Committee Participation**

Each respective jurisdiction had at least one representative attend the series of required planning meetings and completed all necessary information for this hazard mitigation plan. If jurisdiction

participants were not able to make the meetings due to scheduling conflicts, they were given meeting materials and learned about hazard mitigation topics from our handouts that will help them form their local strategies. See Table 2 for a summary of each committee member's participation.

Data from the information gathering phase of the process included listing critical facilities/sites, local capabilities, identifying critical buildings, updating their 2019 strategies (if they were a previous participant), filled out worksheets with problem statements, and selected new mitigation activities/actions for their updated strategy. During the risk assessment, committee participants scored factors that would calculate their community's overall risk to each hazard in their local hazard mitigation plans.

Other stakeholders including organizations and/or individuals were invited to attend committee meetings to be informed about the process and provide an opportunity to join the committee such as:

- New Hampton Community School District
- Sumner-Fredericksburg Community School District
- Nashua Plainfield Community School District

INRCOG organized the meetings in conjunction with the Chickasaw County Emergency Management Coordinator. INRCOG was also responsible for compiling information and writing the final document.

Each participant on the planning committee completed worksheets that would provide the content used to write their local hazard mitigation plan in accordance with requirements for approval by Iowa Department of Homeland Security and FEMA. Changes or updates are documented in the responses by participants (See Appendix N).

### Public Participation

The public was invited to planning committee meetings by public notices published in the weekly local newspaper publication the *New Hampton Tribune*. Outreach efforts by Chickasaw County invited neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties and residents of the planning process. All interested parties to attend and contribute to the development of the plan. No other formal invitations were sent outside of the public notices. Given much of the information discussed during the public meetings involved departments, agencies, and representatives outside of the expertise of the committee, it was requested the committee members discuss each meeting with various stakeholders to get the most updated information available. Committee members consulted with a variety of stakeholders, including community development partners, public works, emergency departments, local nonprofit organizations, and businesses. Such information was then conveyed back to the committee and discussed at the following meetings.

Vulnerable populations were represented by the various committee members. Given that many of the committee members interact on a day-to-day basis with vulnerable populations in their communities given their day-to-day duties, they were able to describe how hazards could have an impact on those most vulnerable in their community. Moreover, each hazards impact was discussed and during such conversations, particular attention was given to its impact on communities who are elderly, lack resources, have little to no transportation, or are generally considered underserved.

Outside of feedback brought back from individual committee members, no additional public feedback was received.

Public notices and public involvement materials can be found in Appendix O. All public notices for each public hearing held for each jurisdiction's local hazard mitigation plan are found in Appendix O.

**Table 1: Summary of All Public Meetings for the 2024 Chickasaw County M-J HMP**

Mtg #	Date	Description of Meeting and Outcomes of Meetings
<b>Meeting 1</b>	Tuesday March 19, 2024	Review the scope of the planning process and schedule meetings for the next committee meetings. Complete worksheets to update community data. Completed worksheets to provide updates to previous mitigation activities.
<b>Meeting 2</b>	Tuesday March 26, 2024	Reviewed hazard profiles to be assessed in this planning process for Chickasaw County's communities. Discussed additional hazards to consider. Completed a hazard assessment using a scoring rubric developed in the plan.
<b>Meeting 3</b>	Tuesday April 2, 2024	Complete vulnerability assessment and completed problem statement work sheet with new mitigation activities. Return previous work items if available.
<b>Meeting 4</b>	Tuesday April 23, 2024	Review drafts of their hazard mitigation plans and send out to boards for review before posting online and at city halls for public hearing.

### Committee Meetings

Four public meetings were held at the Chickasaw County Community Services building at 260 E. Prospect Street, New Hampton, IA. Each meeting was open to all. Attendance for each meeting was documented and can be found in Appendix N. Table 1 provides a list of the public meetings. Public notices were published in the main newspapers for 3 of the 4 meetings. Notices for meetings #1 and #2 did not meet the newspaper notice deadline to publish in the biweekly newspapers.

2024 Chickasaw County  
Hazard Mitigation Plan

**Table 2: Chickasaw County MJ-HMP Planning Committee Members and Participation**

Name	Jurisdiction or Dept.	Position	Attended Meeting?			
			#1	#2	#3	#4
Burt Ostert	City of Alta Vista	Mayor	X	X	X	X
Amy Laures	City of Alta Vista	City Council Member	X	X		
Larry Laures	Alta Vista Fire Dept.	Fire Chief		X		
James Ashley	City of Bassett	Mayor	X	X		
James Mitchell	City of Fredericksburg	Mayor	X		X	X
Roy Armbrrecht	Fredericksburg Fire Dept.	Fire Fighter	X	X	X	X
Sheriton Detther	Fredericksburg Fire Dept.	Fire Fighter		X	X	X
Randy Taylor	City of Ionia	Mayor	X	X	X	X
Derek Day	Ionia Fire Dept.	Fire Fighter	X	X	X	X
Mark Muetterthies	City of Lawler	Mayor	X	X	X	X
Jeremy Matlenburg	Lawler Fire Department	Fire Fighter	X	X	X	X
Samantha Johnson	City of Nashua	City Council Member	X	X	X	X
Tom Johnson	Nashua Fire Dept.	Fire Fighter		X	X	X
Karen Clemens	City of New Hampton	City Clerk	X	X		
Tim Pederson	New Hampton Police	Police Chief	X	X	X	X
Toby Schwickerath	New Hampton Fire			X	X	X
Casey Mai	City of New Hampton		X	X	X	X
Megan Baltes	City of North Washington	City Council Member	X	X	X	X
Milan Mohn	City of Protivin	Mayor		X		
Brad Moudry	Protivin Fire Department		X	X	X	X
Scott Cerwinske	Chickasaw County	District 2 Supervisor	X			
Matt Kuhn	Chickasaw County	District 4 Supervisor	X	X		
Lisa Welter	Chickasaw County	Public Health Administrator	X			
Jeff Bernatz	Chickasaw County	Emergency Management Agency Coordinator	X	X		
Fred Matlage	Sumner-Fredericksburg CSD	Superintendent	X		X	X
Ryan Shawver	Chickasaw County	Sheriff		X	X	X
Toby Liechty	Nashua-Plainsfield CSD	Superintendent		X		
Jay Jurrens	New Hampton CSD	Superintendent			X	X

## Current & Previous Planning Documents Used

In addition to information obtained through the series of Committee Meetings, INRCOG reviewed existing reports, plans, studies, reports, and historical data. Relevant information and resources were shared with each jurisdiction. These documents and data include:

- 2023 Iowa Hazard Mitigation Plan.
- Plans, studies, reports, maps, and technical information, including updated Flood Insurance Rate Maps (FIRM) and data.
- Documentation of communities' status in the National Flood Insurance Program (NFIP).
- Repetitive Loss Properties and /or Severe Repetitive Loss Properties information from FEMA.
- 2040 RTA Long Range Transportation Plan.
- 2018 National Climate Assessment

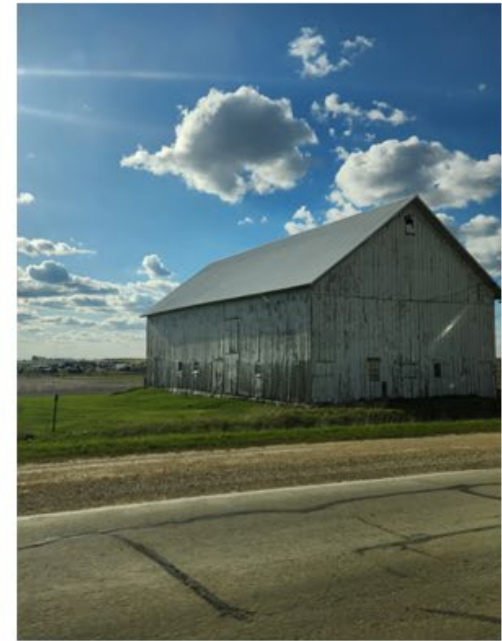
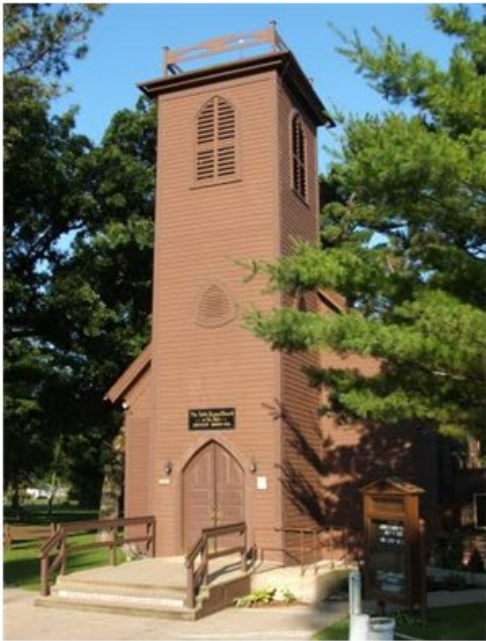
The County will continue to support and encourage the integration into other planning documents. Integration of the prior plan took place in various forms through County strategic planning, Emergency Operations Planning, and regionally within the Comprehensive Economic Development Strategy (CEDS). Such integration will continue as described below.

In addition, this plan will be integrated with other jurisdictional plans through a coordinated and collaborative approach. This integration involves aligning goals, strategies, and actions of the hazard mitigation plan with other relevant plans including emergency operations plans of the County. Although the County currently does not have a zoning ordinance (thus no comprehensive plan), the County will ensure that the plan is used in capital improvement plans as well as other plans. Other jurisdictions plan to follow suit while schools will integrate with their Emergency Operations Plans. Regionally, the plan will be considered alongside the Comprehensive Economic Development

Strategy (CEDS). By embedding such principles into other planning processes, the overall resilience of the region will continue to be enhanced, leading to more effective risk reduction and streamlined responses to potential hazards in the future.

## Section II: County Profile

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## Chickasaw County, Iowa

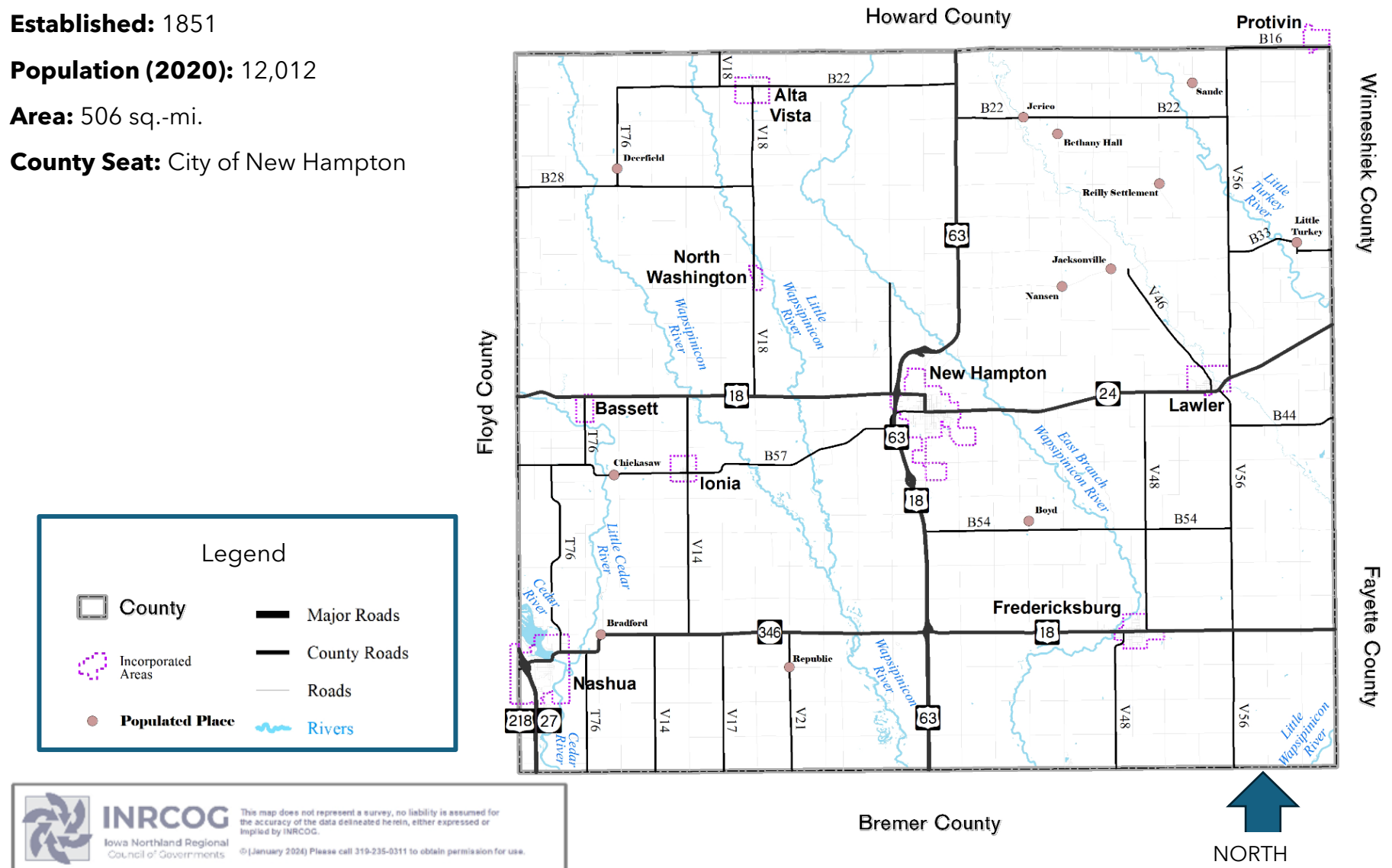
**Established:** 1851

**Population (2020):** 12,012

**Area:** 506 sq.-mi.

**County Seat:** City of New Hampton

**Figure 2: Map and Location of Chickasaw County**





## Location

Chickasaw County is located in northeastern Iowa. Situated along the stretches of corn fields and cropland, the land is broken up by many rivers and waterways that flow through it providing a glistening steam through bountiful croplands and flowing through most of the 10 rural communities located in Chickasaw County.

Located in the geographic center of the county, the city of New Hampton serves as the county seat. Based on 2020 Census data, New Hampton is also the most populated with 3,494 people. Two cities are partially located in Chickasaw County and adjacent counties. The cities of Nashua and Protivin are both partially in Floyd and Howard County, respectively. For this Plan, the communities are evaluated as a whole and not split at the county lines. The city of Basset is the smallest town in the county with 45 residents.

Ranking	City	Population (2020 Census)
1	New Hampton	3,494
2	Nashua (partially)	1,551
3	Fredericksburg	987
4	Lawler	406
5	Ionia	226
6	Protivin (partially)	269
7	Alta Vista	227
8	North Washington	112
9	Basset	45

US Highways -18 and -63 converge in New Hampton and the center of the county. Other major highways in Chickasaw County include US-218 and US-63. The County has a land mass of 505 sq-mi.

There are six rivers that run south-eastwardly throughout the county. The Cedar River and Little Cedar River converge in Nashua near the southwestern part of the county. East of those rivers are the Wapsipinicon River and Little Wapsipinicon River. These also converge in the lower west quadrant of the county. Further east of the Wapsipinicon River, the East Branch tributary of said river nearly bisects the county. Finally, further east of all the other waterways flows the Little Turkey River.

Counties Floyd, Howard, Winneshiek, Fayette, and Bremer lie adjacent to Chickasaw County.

## History

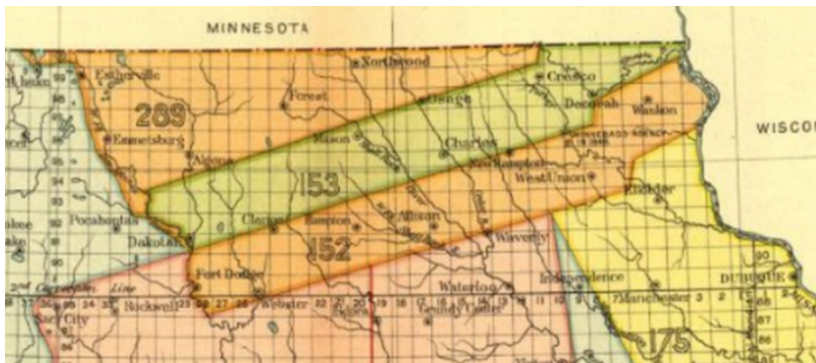
Before the arrival of European settlers, Chickasaw County was a marshy prairie cultivated by the loway tribe until a period of continental emigration occurred in the 1800s. This period started a time that saw several other tribal groups resettle in the area because of faraway land acquisitions and conflict to the east as the U.S. continent started to colonize.

Chickasaw County was named after the Chickasaw tribe who may have inhabited the area. The Chickasaw tribe were primarily from regions in the southern U.S. in present day Mississippi, Tennessee, Kentucky, and Missouri.

Based on historical documents, the Ioway, Sauk and Fox, Sisseton Band of Dakota Sioux, Mdewakanton, Missouri, Omaha, Oto, and Wahpekute were tribes that had claims to the land and eventually signed rights away to it in treaty documents. The Treaty with the Confederate Tribes of the Sacs & Foxes in 1830 was signed in Prairie Du Chien, Michigan. The tribes that signed included the Sac and Fox tribe (Meskwaki), the Medawah-Kanton Wahpacoota, Wahpeton, and Sisseton Band of Dakota Sioux, the Omahas, Ioways, Ottoes, and Missourians. These tribes signed this treaty that ceded lands located in Cession 153 and 152. See map for location of land cessions.

This fate of resettlement occurred over the first half of the 19th century from 1832 to 1857 when several tribal groups resettled in and around Chickasaw County. All were eventually relocated to Kansas, Oklahoma, and Mississippi following the passing of the Indian Removal Act.

**Figure 3: Map of Lands Ceded in the Treaty with Confederate Tribes of the Sacs and Foxes of 1830**



Source: National Archives and Treaty Explorer at  
<https://digitreaties.org/treaties/treaty/131516479/>

What followed was a history rooted in its rapid growth and settlement. In 1851, Chickasaw County was established. New Hampton was named by settler Osgood Gowan in homage to his former residence of the same name originally located in New Hampshire. The county quickly became a hub for emigration and community development. Within two years of its inception, Chickasaw County's population soared from 600 to over 2,651.

Initially comprising seven townships, Chickasaw County's territorial boundaries expanded over time, eventually encompassing twelve townships. Despite its promising beginnings, the county faced administrative challenges early on. Initially attached to Fayette County for electoral, revenue, and judicial matters, Chickasaw County soon sought independence. A pivotal moment occurred on January 12, 1853, when a petition led to the county's detachment from Fayette County, culminating in the election of officials in the town of Bradford. However, despite their election, administrative complexities hindered the officials' ability to fully execute their duties, highlighting the early hurdles faced in establishing governance.

Nevertheless, Chickasaw County persevered, overcoming its initial setbacks to become a thriving community in Iowa. Its journey from a fledgling political subdivision to a flourishing county underscores the resilience and determination of its early settlers and leaders. Today, Chickasaw County stands as a testament to the enduring spirit of those who shaped its history and continues to evolve as a vibrant community in the heart of Iowa.

The tales of Iowa's courthouse history are not left to the imagination with the meticulous chronicles of county seat contention, exemplified poignantly by Chickasaw County's saga. Dating back to its inception in 1851, the establishment of the inaugural courthouse, modestly priced at \$1,840, laid the cornerstone of Chickasaw County's legal apparatus. Subsequently, in 1857, the county seat transitioned to New Hampton, strategically positioned at the geographic heart of the burgeoning county, setting the stage for decades of steadfast administration.

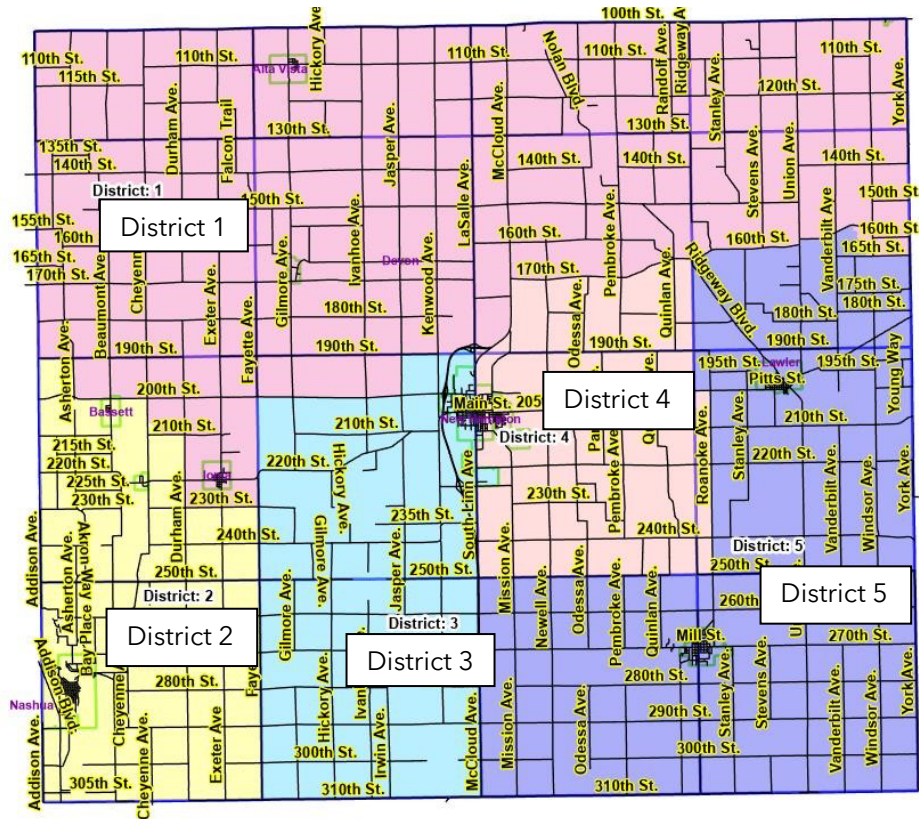


Throughout the ensuing years, neighboring townships, including Fredericksburg, Bradford, and Forest City, ardently vied for the coveted status of county seat, yet all attempts were met with resolute defense by New Hampton. The architectural evolution of Chickasaw County's courthouses mirrors the resilience of its civic identity. Tragically, the original courthouse in New Hampton, completed in 1865, succumbed to a devastating fire in 1880, resulting in

irreparable document loss. Undeterred, the community rallied to construct a new courthouse by 1881, costing \$10,500, with subsequent expansions in 1905 and 1906 further solidifying its stature as a bastion of legal integrity.

Finally, in 1929, Chickasaw County unveiled its present courthouse, a testament to architectural sophistication, designed by Ralston and Ralston of Waterloo and erected by Tarazar Construction Co. of Albert Lea, Minnesota. This grand edifice, adorned with Moderne and Art Deco influences, stands as an enduring symbol of Chickasaw County's unwavering commitment to jurisprudential excellence, embodying the culmination of centuries of civic evolution and institutional fortitude.

**Figure 4: County District Map**



Source: Chickasaw County Assessor and GIS Services

## Government Structure

A five-member board of supervisors comprise the governing body of the County. The board of supervisors is the policy making body of the County, under the laws of Iowa. A map of district boundaries represented by each supervisor is shown here.

- District 1 Supervisor - Stephen Breitbach.
- District 2 Supervisor - Scott Cerwinske.
- District 3 Supervisor - Jacob Hackman.
- District 4 Supervisor - Matthew Kuhn.
- District 5 Supervisor - Travis Suckow.

Each of Chickasaw County's incorporated municipalities has a Mayor-Council government structure. Pursuant to Iowa Code 376.2 city council members may serve either 2- or 4-year terms. Mayors and city council members are each elected to serve a 2-year term.

By state law, city councils appoint a city clerk to fulfill duties that include publishing meeting minutes, completing budget forms, managing city finances, and responding to resident requests, among other duties. For this plan, city clerks, mayors, and first responders were involved to provide information and gather input from their respective communities.



## Natural Environment

Topographically, Chickasaw County is a land of relatively flat or long rolling slopes. This is ideal for agricultural production and drives a strong agricultural and farming sector for Chickasaw's economy.

### Soils

According to the Chickasaw County Soil Survey, which was issued in July 1996, the soil composition reveals a remarkable and valuable natural to support a thriving agriculturally based economy. According to the Survey, the soils in the County are grouped into eight (8) soils associations, each of which has different characteristics. The associations, including a brief description of each, are located in Figure 5.

### Surface Water Systems

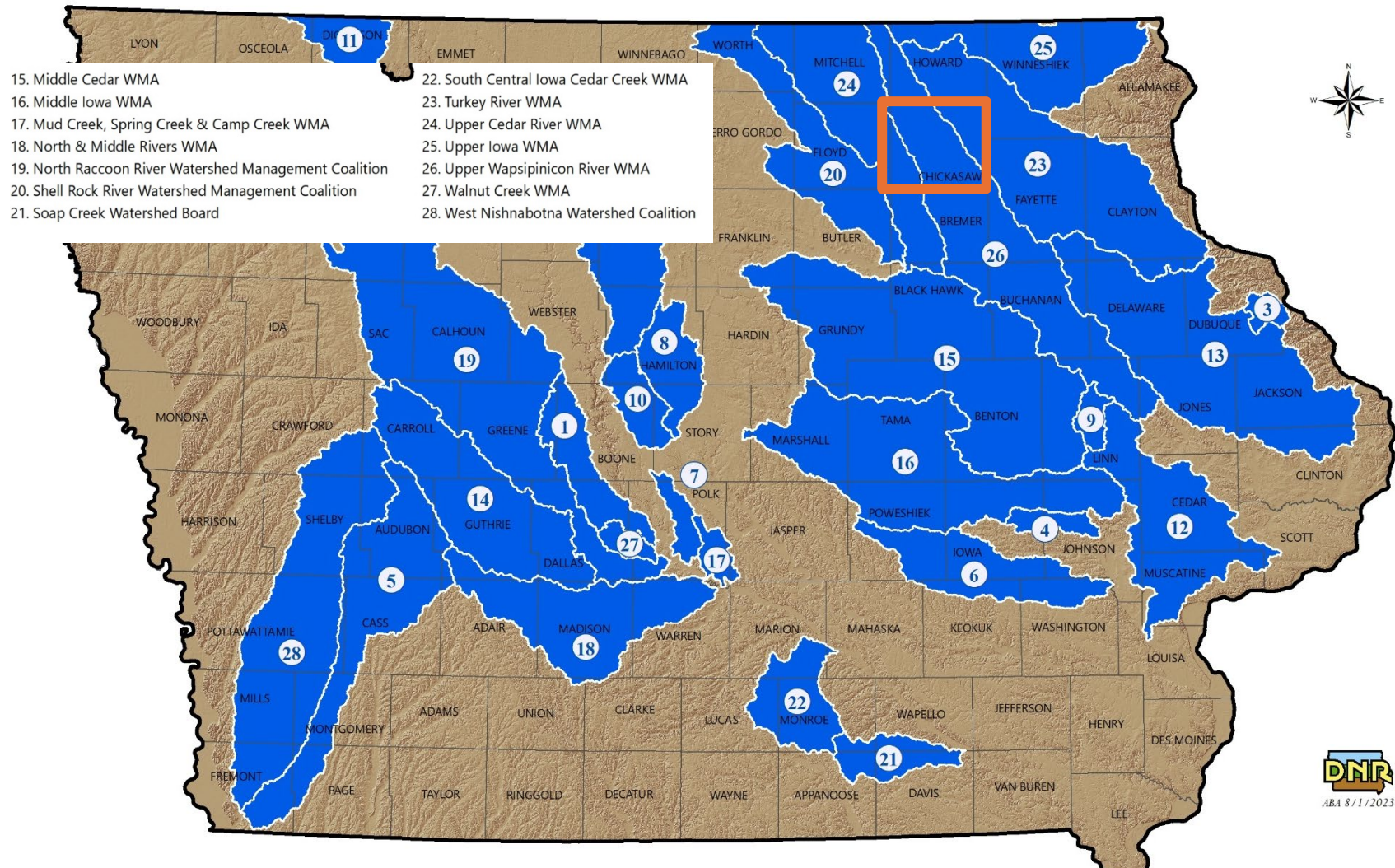
The County lies within the boundaries of three watersheds authorities in Northeast Iowa: #24-Upper Cedar River, #26-Upper Wapsipinicon River, and #23-Turkey River. See the map of watershed management authorities below.

The highest point in the county is located in the rural areas north of New Hampton and lies at approximately 1,316 feet above sea level. The lowest point in the county is located south of Nashua and lies at approximately 934 feet above sea level.

**Figure 5: Chickasaw County Soil Associations**

Readlyn-Tripoli Association	• Nearly level, somewhat poorly drained to poorly drained soils formed in loamy erosional sediments and underlying firm, loamy glacial till; on uplands.
Oran-Bassett-Clyde Association	• Nearly level to moderately sloping, moderately well drained to poorly drained, moderately dark and dark soils formed in loamy
Kenyon-Clyde-Floyd Association	• Nearly level and moderately sloping, moderately well drained to poorly drained, dark soils formed in loamy erosional sediments and the underlying firm, loamy glacial till; on uplands.
Ostrander-Lilah Association	• Gently sloping to strongly sloping, excessively drained and well drained soils formed in loamy erosional sediments and the underlying friable, loamy glacial till and the underlying gravelly and sandy glacial outwash; on uplands and high benches.
Dickinson-Rockton Association	• Gently sloping and moderately sloping, somewhat excessively drained and well drained soils formed in loamy eolian or erosional sediments over sand or the underlying residuum and limestone; on uplands.
Cresco-Protovin-Jamestown Association	• Nearly level to moderately sloping, moderately well drained to poorly drained soils formed in loamy erosional sediments and the underlying firm, loamy glacial till; on uplands.
Coland-Marshan-Hayfield Association	• Nearly level, poorly drained and somewhat poorly drained soils formed in loamy alluvial deposits and in the underlying sandy and gravelly glacial outwash; on floodplains and stream terraces.
Spillville-Wapsie Association	• Nearly level to gently sloping, somewhat poorly drained and well-drained soils formed in loamy alluvium; on floodplains and stream terraces.

**Figure 6: Map of Watershed Management Authorities in Iowa**



Source: Iowa DNR



## Climate

Chickasaw County experiences a temperate climate with significant seasonal contrasts. Winters bring occasional heavy snow, ice, and frequent cloudiness, with about four winter storms per season. True blizzards are uncommon, but arctic cold snaps can cause extreme cold and hazardous wind chills. Spring and summer see 30 to 50 thunderstorms annually, some of which may spawn tornadoes, large hail, or damaging winds. The area is also prone to river and flash flooding. Heat waves and high humidity occur sporadically during the summer months. Autumn typically brings calmer weather, though high winds can arise in spring and fall.

Historical climate data for New Hampton, Iowa is summarized in the tables below. Using the 30-year average, the maximum, mean, and minimum temperatures are shown for each month and then the annual averages are computed by taking the average of all 12 months.

Precipitation and snowfall average are shown monthly based on the 30-year average. Precipitation and snow fall is shown in inches. Annual precipitation and snowfall seasonal averages are shown as well.

<b>30-year Average Monthly Temperatures and Annual Average (in degrees F)</b>													
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	<b>Annual</b>
<b>Max Temp.</b>	24.1	28.7	42.1	56.9	68.8	78.8	81.5	79.5	74.1	60.2	44.3	30.2	<b>55.3</b>
<b>Mean Temp.</b>	15.9	19.8	32.9	45.8	58	68.4	71.3	69.2	62.3	49.2	34.8	22.3	<b>45.4</b>
<b>Min. Temp.</b>	-16	-10	2	21	33	45	51	49	36	23	8	-7	<b>-19</b>
<i>Source: NOAA Online Weather Data (NOWData) from the La Crosse, WI Weather Forecast Office.</i>													

<b>30-year Average Monthly Precipitation and Snow Fall (in inches)</b>													
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	<b>Annual</b>
Precipitation (in.)	0.04	0.05	0.07	0.13	0.17	0.23	0.15	0.15	0.12	0.08	0.06	0.05	<b>0.11</b>
													<b>Seasonally</b>
Snowfall (in.)	11	9.5	5.2	1.8	-	-	-	-	-	0.1	2	7.9	<b>35.8</b>
<i>Source: NOAA Online Weather Data (NOWData) from the La Crosse, WI Weather Forecast Office.</i>													

## Forest and Vegetation

According to the Iowa Dept. of Natural Resources, Chickasaw County has approximately 7,136 of forested acres. This is nearly 2.32% of the county's land mass. Chickasaw County ranks 79<sup>th</sup> in Iowa's counties in remaining forested areas. Chickasaw County was a glaciated region. Glaciers once covered the region and scrapped up the earth as it melted and retreated northward during the thawing of the last Ice Age. Forests are sparse and this has been good topography for agriculture.

The Chickasaw County Conservation Board manages 37 areas including parks, boat launches, easements, and habitats.

## Infrastructure

U.S. Highways 63 and 218 traverse the County north and south. Chickasaw County also has access to highways from US 63 and 18, as well as from Iowa Highway 24 and 346. A distribution of roadway lane miles in Chickasaw County is shown below. Most of the roadways in the county are local street classifications. Local roads serve local trip purposes and connect to higher order

roadways. Local road classification type roadways cover 65% of Chickasaw County's road system. Of those local roads, most of the surface type for them are asphalt and PCC concrete.

Railway throughout the county includes routes owned by Canadian Pacific Railroad. The route runs east and west through New Hampton, Ionia, and Lawler.

Air service is available to Chickasaw County residents at a number of local, regional, and international airports. Locally, the New Hampton Airport serves the county, while other out-of-county regional air service is offered by the Waterloo, Cedar Rapids, and Dubuque Airports.

International air service is available in Rochester, Minnesota; Minneapolis-St. Paul, Minnesota; and Des Moines, Iowa.

In Iowa, there are 13,033 miles of gas and liquid pipelines and 45 pipeline suppliers. Iowa's pipeline system provides the state with liquid petroleum, natural gas, and anhydrous ammonia. In Chickasaw County, there are 67 miles of gas pipelines and 29 miles of liquid pipelines. This only represents 0.7% of all pipeline mileage in the state.

There are no major commercial watercraft routes in Chickasaw County. The Cedar and Wapsipinicon Rivers offer a location for recreational watercraft use by the public.

The Iowa Northland Regional Transit Commission (RTC) offers transit service to residents of Chickasaw County. Demand response service, which requires 24-hour notice, is offered. The remainder of the County is served by RTC on a case-by-case basis depending on space and service timing considerations.

Roadway Lane Miles by Federal Functional Classification							
Location	Road Type Classification Miles						Total
	Interstate	Principle Arterial	Minor Collector	Major Collector	Minor Collector	Local	
Chickasaw County	0	200.7	75.1	372.7	316.9	1,804.7	2,770
Source: Iowa DOT, Open Data Portal, Road Network Info							

Secondary Road Centerline Mileage, by Surface Type						
Location	Surface Type					Total
	Earth	Gravel	Bituminous	Asphalt	PCC	
Chickasaw County	0	200.7	75.1	372.7	316.9	1,804
Source: Iowa DOT, Iowa Miles of Secondary Roads as of January 1, 2019						

**Table 3: Utility Providers**

<b>Jurisdiction</b>	<i>Electric</i>	<i>Natural Gas</i>	<i>Telephone/ Internet</i>	<i>Cable TV</i>	<i>Water Services</i>	<i>Sewer Services</i>	<i>Sanitation</i>
<b>City of Alta Vista</b>	Alta Vista Municipal	None	Windstream	None	City of Alta Vista	City of Alta Vista	Jendro Sanitation
<b>City of Fredericksburg</b>	Fredericksburg Municipal	Black Hills	Windstream	Mediacom	City of Fredericksburg	City of Fredericks- burg	City of Fredericksburg/ Jendro Sanitation
<b>City of Ionia</b>	Alliant Energy	Black Hills	Windstream	None	City of Ionia	City of Ionia	Jendro Sanitation
<b>City of Lawler</b>	Lawler Municipal	Black Hills	Iowa Telecom	None	City of Lawler	City of Lawler	Jendro Sanitation
<b>City of Nashua</b>	MidAmerican Energy	MidAmerican Energy	Quest	Butler-Bremer Communications	City of Nashua	People- Service, Inc (Contracted)	Jendro Sanitation
<b>City of New Hampton</b>	New Hampton Municipal Light Plant	Black Hills Energy	Windstream	Mediacom Communications	City of New Hampton	City of New Hampton	Jendro Sanitation
<b>City of North Washington</b>	Alliant Energy	None	Windstream	None	Well (Private)	Septic	Jendro Sanitation
<b>Nashua-Plainsfield Community School District</b>	MidAmerican Energy	MidAmerican Energy	Quest	Butler-Bremer Communications	City of Nashua	People- Service, Inc	Jendro Sanitation
<b>New Hampton Community School District</b>	New Hampton Municipal Utilities	Black Hills Energy	Windstream	Mediacom	City of New Hampton	City of New Hampton	Jendro Sanitation
<b>Sumner-Fredericksburg Community School District</b>	City of Fredericksburg	Black Hills Energy	Windstream/ ICN	Mediacom	City of Fredericksburg	City of Fredericks- burg	City of Fredericksburg/ Jendro Sanitation

### Utilities

Chickasaw County is serviced by multiple utility providers. The table on the previous page shows the utility providers for each jurisdiction's utilities.

### Potable Water Systems

In Chickasaw County there are over 1,200 wells that draw water from aquifers that serve residential, commercial, and industrial uses. These wells draw from the Cambrian-Ordovician and Devonian aquifers.

There are 6 water towers in Chickasaw County with known storage capacity:

	<b>Storage Capacity (gallons)</b>
Nashua Water Tower	300,000
Fredericksburg Water Tower	250,000
Ionia Storage Tank	75,000
New Hampton's Water Towers (2)	800,000
Lawler Storage Capacity	50,000
<b>TOTAL STORAGE CAPACITY</b>	<b>1,475,000</b>

Protivin is located partly in Howard County and has 1 water tower. The storage capacity of that tower is unknown.

### Wastewater Treatment Systems

In Chickasaw County, there are 8 wastewater treatment facilities with lagoons. In rural, unincorporated areas, the disposal of wastewater and sewage is done primarily through individual, on-site septic systems. Septic systems consist of tanks and septic

fields. The County Public Health Department regulates on-site sewage systems through ordinances, inspections, and its Board of Health.

## Demographics

### Population

In the table below, population changes across the last decade from 2010 to 2020 are shown for Chickasaw County and the county's municipalities. These population trends show a pattern of population decline across most cities. Overall, Chickasaw County had a population loss of 2%. The city with the highest change in population was Nashua with a population loss of 110 people. Fredericksburg was the only city that gained a population of 56 (or 6%).

**Table 4: Population Changes in Chickasaw County**

City	2010	2020	Change in Persons	% Change
<b>Alta Vista</b>	266	227	-39	-15%
<b>Bassett</b>	66	45	-21	-32%
<b>Fredericksburg</b>	931	987	56	6%
<b>Ionia</b>	291	226	-65	-22%
<b>Lawler</b>	439	406	-33	-8%
<b>Nashua (pt.)</b>	1,661	1,551	-110	-7%
<b>New Hampton</b>	3,571	3,494	-77	-2%
<b>North Washington</b>	117	112	-5	-4%
<b>Protivin (pt.)</b>	21	9	-12	-57%
<b>Chickasaw County</b>	5,076	4,955	-121	-2%

Source: U.S. Census Bureau

**Table 5: Population Projections for Chickasaw County, Iowa**

Year	Chickasaw County	State of Iowa
2030	12,000	3,328,308
2040	11,988	3,487,942

Source: U.S. Census Bureau and Woods & Poole Economics

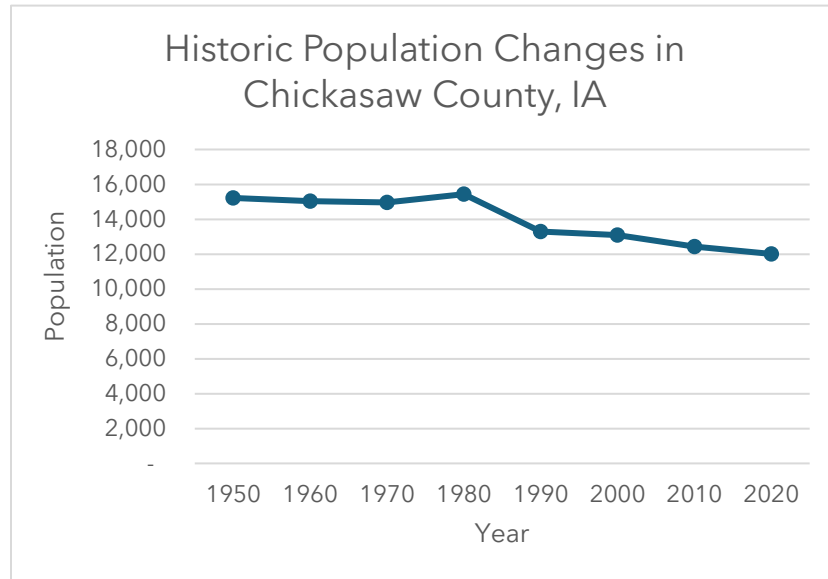
Historically, the population in Chickasaw County has been on a steady decline over the last 70 years. In 1980, it peaked at over 15,400 people.

**Table 6: Historical Population Change of Chickasaw County by Decade (1950-2020)**

Year	Population	% Change from 10 years
<b>1950</b>	15,228	-
<b>1960</b>	15,034	-1.3%
<b>1970</b>	14,969	-0.4%
<b>1980</b>	15,437	3.0%
<b>1990</b>	13,295	-16.1%
<b>2000</b>	13,095	-1.5%
<b>2010</b>	12,439	-5.3%
<b>2020</b>	12,012	-3.6%

### Population Projections

Projections are only estimates of future population and many factors have an effect on the future population, such as employment, housing, and educational opportunities. While some projections use some of this data in order to estimate future population, they cannot plan for unknown events, such as drastic changes in employment opportunities or the perilous effects of natural disasters.



In the Population Projections for Chickasaw County, Iowa, projections are based on linear and geometric methods, which assume that future population will continue to change based on past trends. The linear method adds or subtracts from the population the average number from each ten-year period since 1950, while the geometric method uses an average growth or decline rate. The table shows the actual number change and the growth or decline rate for each decade and their averages.

### Vulnerable populations

Some of the vulnerable populations are listed for the County in the following table. Nearly 9% of households in Chickasaw County live below the poverty line. About 27% of households

have at least 1 person with a disability. About 4.7% of households receive SNAP food benefits.

For people in group quarters, this may include older adults in a nursing home, over 1% of the population are in group quarters housing units.

**Table 7: Vulnerable Population Characteristics for Chickasaw County**

	Total	%
Total Households in Chickasaw County	4,920	100%
Below poverty level	420	8.5%
1 or more persons with a disability	1,318	26.8%
Receiving SNAP food benefits	231	4.7%
Median household Income	\$72,734	-
Population in group quarters	153	1.3%

Households with 1 or children under 18 make up 27% of occupied households. Nearly 14% of households have householders living alone that are 65 years and over. There are 109 mobile homes estimated in Chickasaw County (2.0% of occupied households).

**Table 8: Housing Characteristics for Occupied Houses in Chickasaw County (2022)**

	Value	%
Occupied housing units	4,920	100%
Average Household Size	2.36 persons	-
Owner Occupied Units	4,034	82%
Renter-Occupied Units	886	18%
UNITS IN STRUCTURE		
1, detached	4,399	89%
1, attached	89	2%
2 apartments	55	1%
3 or 4 apartments	125	3%
5 to 9 apartments	70	1%
10 or more apartments	73	2%
Mobile home or other type of housing	109	2%
VEHICLES AVAILABLE		
No vehicle available	164	3.3%
1 vehicle available	1,207	24.5%
2 vehicles available	1,814	36.9%
3 or more vehicles available	1,735	35.3%
TELEPHONE SERVICE AVAILABLE		
With telephone service	4,861	98.8%
HOUSE HEATING FUEL		
Utility gas	2,507	51.0%
Bottled, tank, or LP gas	1,531	31.1%
Electricity	717	14.6%
Fuel oil, kerosene, etc.	44	0.9%
Coal or coke	0	0.0%
All other fuels	117	2.4%
No fuel used	4	0.1%

## Housing Trends

According to 2022 American Community Survey 5-year estimates, there are approximately 4,920 occupied housing units in Chickasaw County. Of these housing units, 4,034 are owner-occupied and 886 are renter-occupied. The average household size for Chickasaw County is 2.36 people.

About 89% of homes are single family type houses. There is very little multi-family housing (7%) in Chickasaw County. About 2% of the housing stock in Chickasaw County includes mobile homes (or other types of housing).

**Table 9: Median Value of Existing Housing Supply (in 2022 dollars)**

Jurisdiction	Median Value of Homes (2022 dollars)
Alta Vista, Iowa	\$62,700
Bassett, Iowa	\$83,000
Fredericksburg, Iowa	\$154,600
Ionia, Iowa	\$97,200
Lawler, Iowa	\$90,000
Nashua, Iowa	\$105,800
New Hampton, Iowa	\$146,800
North Washington, Iowa	\$100,000
Protivin, Iowa	\$91,400
Chickasaw County, Iowa	\$151,700
State of Iowa	\$181,600



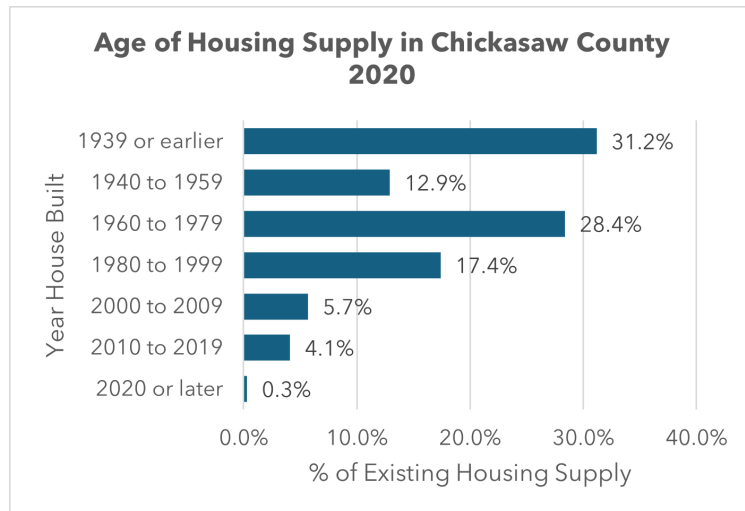
The median value of homes in Chickasaw County is estimated at \$151.7K which is less than the average value of homes for the state of Iowa at \$181.6K. Fredericksburg has the highest median value of homes at \$154.6K. Alta Vista has the lowest median value at \$62.7K.

Over the last decade from 2010 to 2020, Chickasaw County's housing supply reduced by 182 units from 2010 to 2020. This trend follows the state of Iowa's decline in housing units for the same period. Almost all municipalities saw a loss in the number of housing units in their communities. Nashua lost the most with 48 units. Only two communities gained housing units (+2 each) which were North Washington and Lawler.

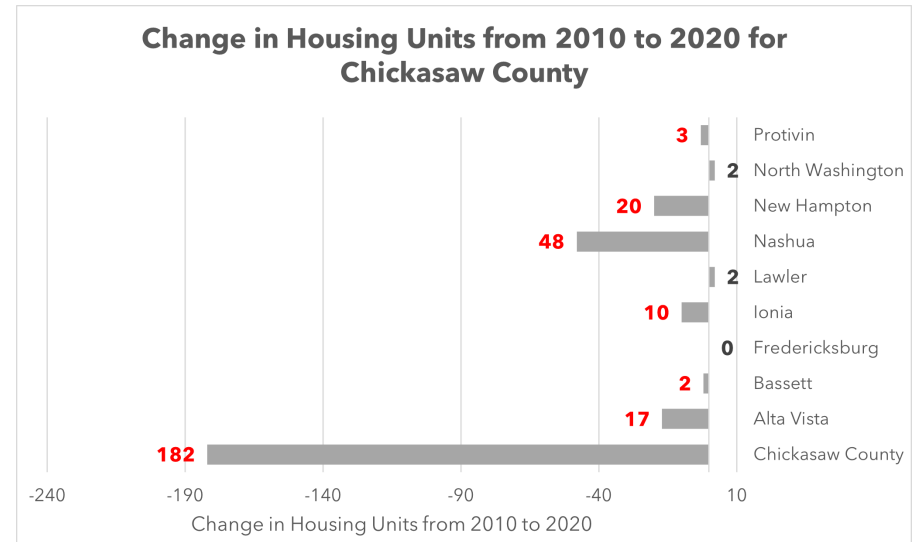
In 2020, most owner-occupied homes were valued at and above \$100K. About 25% (475) of homes in the county were between \$50K and \$99K.

Most of the county's housing stock are pre-war (WWII) structures. About 31% of houses were built before 1940. In the 60s and 70s, 28% of the housing stock was built. Since 2000, only 10% of the housing stock has been built since then.

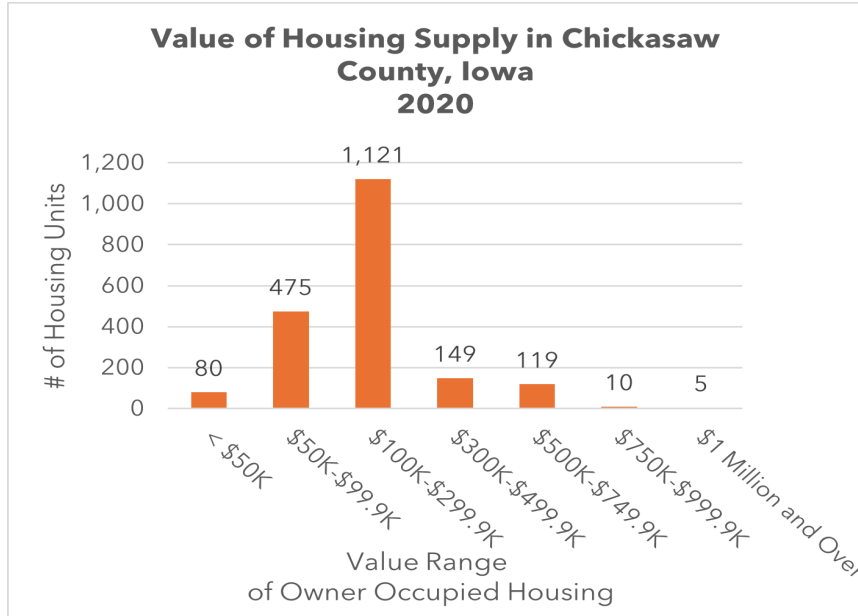
**Figure 8: Age of Chickasaw County's Housing Supply**



**Figure 9: Housing Supply Shrinks Across Chickasaw County**



**Figure 10: Price Range of Home Values for Chickasaw County**



About 2% of the housing units in Chickasaw County are mobile homes. Most of these mobile homes are in the unincorporated county area. Besides the unincorporated area, the cities of Nashua and New Hampton have the greatest number of mobile homes within their jurisdiction (Table 10).

Table 10: Total Occupied Housing Units - Mobile Homes		
	#	% of local housing supply
<b>State of Iowa</b>		
Chickasaw County	91	2.0%
Alta Vista	3	4.3%
Bassett	0	0%
Fredericksburg	5	1.1%
Ionia	2	1.4%
Lawler	1	1.1%
Nashua	23	2.9%
New Hampton	23	2.3%
North Washington	1	2.0%
Protivin	1	1.9%
Unincorp. County	33	
<b>Source: 2022 American Community Survey 5-year estimates</b>		

## Economy

The median income for the county and its communities is listed in Table 11. The values in Table 11 are adjusted for inflation and shown in 2022 dollars. The median household income for the entire county, in 2022, was \$72,734. The City of North Washington had the highest median income of \$83,333; and the City of Lawler had the lowest median household income, \$54,688.

**Table 11: Median Income of Select Communities in 2022**

Jurisdiction	Median income (dollars)
Alta Vista	\$56,458
Bassett	\$58,250
Fredericksburg	\$62,583
Ionia	\$69,107
Lawler	\$54,688
Nashua	\$60,000
New Hampton	\$60,052
North Washington	\$83,333
Protivin (Howard County)	\$59,375
Chickasaw County	\$72,734
State of Iowa	

A summary of 2022 data for employment for Chickasaw County:

**Table 12: Employment Data for Chickasaw County (2022)**

INDUSTRY	Workers	% of Workforce
<b>Civilian employed population 16 years and over</b>	6,239	100%
Agriculture, forestry, fishing and hunting, and mining	532	8.5%
Construction	440	7.1%
Manufacturing	1,742	27.9%
Wholesale trade	166	2.7%
Retail trade	550	8.8%
Transportation and warehousing, and utilities	382	6.1%
Information	7	0.1%
Finance and insurance, and real estate and rental and leasing	248	4.0%
Professional, scientific, and management, and administrative and waste management services	365	5.9%
Educational services, and health care and social assistance	1,230	19.7%
Arts, entertainment, and recreation, and accommodation and food services	175	2.8%
Other services, except public administration	261	4.2%
Public administration	141	2.3%

The top three economic sectors with the largest share of the county's workforce are 1) manufacturing, 2) educational services, and health care and social assistance, and 3) retail trade.

## Section III: Risk Assessment & Hazard Profiles

For this section, the risk assessment draws from the requirements in Requirement §201.6(c)(2)(i). The 3 components of this section are as follows:

### 1. Hazard Identification

- Hazard selection process
- Disaster Declaration History

### 2. Hazard Profiles

- Description, historical occurrence, probability, magnitude, warning time, and duration of hazards.

### 3. Vulnerability Assessment

- Risk Assessment
- Risk Score Summary
- Inventory of critical facilities and other community assets at risk

Hazards that vary geographically across the planning area are addressed in greater detail. If the hazard is not explicitly identified for a localized specific area only, hazards are assumed to potentially occur in the entire county area.

## Hazard Identification

There are two hazard types in this plan: natural hazards and human-caused hazards.

**Natural hazards** are defined as environmental phenomena that have the potential to impact societies and the human environment. These are meteorological or geological events that occur in nature. For example, widespread flooding due to natural changes in the river flow due to snow melt or heavy rains is a natural hazard.

**Human-caused hazards** are events that may be unexpected events that cause harm to the environment due to technological failure in materials that make up our infrastructure systems. For example, widespread flooding from a sudden change in the river flow due to a dam failure is a human caused hazard.

Biological hazards, such as disease, are not classified as natural hazards. This plan assumes this hazard occurred due to conditions that were human-caused such as contamination in industrial food processing or diseases among herds of livestock kept in close containment by farmers.

Hazards listed in the 2023 Iowa Hazard Mitigation Plan in the Iowa Comprehensive Emergency Plan Part B section were considered by the planning committee and adopted into the plan development process.

## Disaster Declaration History

**Table 13: Iowa Governor’s Disaster Proclamation History for Chickasaw County, Iowa**

Proclamation Date	Incident	Proclamation #
December 1, 2021	Severe Storm System	2021-28
October 30, 2021	Severe Storm System	2021-17
March 09, 2020- February 03, 2022	State Public Health Emergency Declaration for COVID-19 Virus	2020-01 & 2022-03

**Table 14: Major Presidential Disaster Declarations for Chickasaw County, Iowa**

Declaration Date	Incident	Proclamation #
August 10, 2020	Severe storms	DR-4557-IA
March 17, 2020	COVID-19 Pandemic	DR-4483-IA
March 23, 2019	Severe Storms / flooding	DR-4421-IA
August 27, 2017	Severe storms, tornados, straight line winds, and flooding	
October 31, 2016	Severe storms / flooding	DR-4289-IA
July 24, 2014	Severe storms / flooding	DR-4184-IA
July 02, 2013	Severe storms / flooding	DR-4126-IA
May 27, 2008	Severe storms/ flooding	DR-1763-IA
March 14, 2007	Winter Storms	DR-1688-IA
May 25, 2004	Severe storms / flooding	DR-1518-IA
July 22, 1999	Severe storms / flooding	DR-1282-IA

Federal and/or state declarations may be granted when the severity and magnitude of an event surpasses the ability of the local government to respond and recover. Disaster assistance is supplemental and sequential.

When the local government’s capacity has been surpassed, a state disaster declaration may be issued, allowing for the provision of state assistance. Should the disaster be so severe that both the local and state governments’ capacities are exceeded; a federal emergency or disaster declaration may be issued allowing for the provision of federal assistance.

The federal government may issue a disaster declaration through FEMA, the U.S. Department of Agriculture (USDA), and/or the Small Business Administration (SBA). FEMA also issues emergency declarations, which are more limited in scope and without the long-term federal recovery programs of major disaster declarations. The amount and types of damage are the determining factors.

There have been three Iowa Governor disaster state declarations since 2019. Two were for severe storms and one was the COVID-19 pandemic.

Since 1999, Chickasaw County has had 11 major presidential disaster declarations. Most of these disaster declarations were due to severe storms and flooding. Chickasaw County has many waterways that traverse county lands that flow southeasterly. This allows more probable ways for river flooding.

## Methodology of Hazard Risk Assessment

### Factors of Hazard Risk

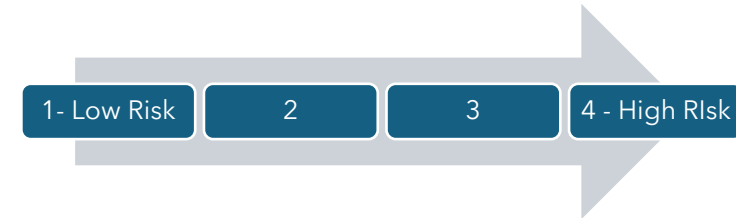
Risks to a hazard event may differ across geographical locations or even differ based on certain times of year. For example, tornado season in Iowa is usually in May and tornados have the highest risk during this time due to change in weather patterns from the western and central Gulf of Mexico causing higher chances of extreme weather.

For this analysis, four risk factors are rated on a scale between 1 and 4 by committee participants after reviewing hazard profiles. Information on each hazard included its description, occurrences within Chickasaw County from recent history, potential negative impacts, duration of a hazard event, and potential warning time. Participants used this information to strengthen their understanding to rate each hazard factor.

### Hazard Risk Score Formula

$$\begin{aligned} &[\text{Probability}] \times 45\% + [\text{Magnitude or Severity}] \times 30\% \\ &+ [\text{Warning Time}] \times 15\% + [\text{Duration}] \times 10\% \\ &= \text{Final Hazard Assessment [1 to 4]} \end{aligned}$$

### What does a hazard risk score mean?



Score	Hazard Risk	Description
1	<u>Low Risk</u>	Hazard is not likely to affect people or property because the likelihood is minimal.
2	<u>Moderate Risk</u>	Hazard may occur infrequently. Impacts to property is limited because the magnitude or severity is typically low.
3	<u>Elevated Risk</u>	Hazard may occur more frequently than in recent history. Negative impacts on property are higher than normal because the magnitude or severity is higher.
4	<u>High Risk</u>	The hazard has significant negative impacts on people and property. Magnitude or severity may be higher than normal and/or occur slightly more frequently in urban areas.

### Probability

The probability score reflects the likelihood of the hazard occurring soon. Historical data of the hazard event occurring in Chickasaw County or Iowa informed the likelihood of future occurrence.

**Table 15: Probability Score Definitions**

Score	Description
<b>1</b>	Unlikely < 10% probability in any given year (up to 1 in 10 chances of occurring)
<b>2</b>	Occasional 10% - 20% prob. in any given year (up to 1 in 5 chances of occurring),
<b>3</b>	Likely 20% - 33% prob. in any given year (up to 1 in 3 chances of occurring)
<b>4</b>	Highly Likely > 33% probability in any given year (1 in 1 chance of occurring)

### Magnitude or Severity

The magnitude or severity of the hazard event is measured by the level of impact on the human environment. Property damage is assessed by the whole planning area.

**Table 16: Magnitude or Severity Score Definitions**

Score	Description
<b>1</b>	Negligible < 10% of property severely damaged, facilities and services shutdown for less than 24 hours, and/or injuries/illnesses treatable with first aid.
<b>2</b>	Limited 10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
<b>3</b>	Critical 25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
<b>4</b>	Catastrophic More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.



### Duration

The duration is the time of a typical or expected hazard event to occur. For an earthquake or traffic accident that is a score of 1. For infrastructure failure, it is likely a 4.

Table 17 displays rated risk scores for each associated hazard. This assessment was completed by the county.

Table 17: Duration Score Definitions	
Score	Description
1	Less than 6 hours
2	Less than 1 day
3	Less than 1 week
4	More than 1 week

### Warning Time

This should be taken as an anticipated warning time.

The warning time score assesses the ability to warn a population before the hazard occurs. The values of the score range from 1 (at least 24 hours) to 4 (minimal or no warning time).

For many of the climate hazards, there is a considerable amount of warning time as opposed to the human-caused hazards (transportation and hazardous materials incidents).

**Table 18: Warning Time Score Definitions**

Score	Description	
1	Forecasted	More than 24 hours warning time.
2	Likely	12 to 24 hours warning time.
3	High Chance	6 to 12 hours warning time
4	Imminent	Minimal or no warning time (up to 6 hours warning)

## Hazard Profiles

The identified hazards are discussed at length on the following pages and arranged in alphabetical order. Each hazard profile is summarized by the following parts:

1. Definition and Description
2. Historical Occurrence
3. Probability
4. Magnitude
5. Warning Time
6. Duration

The hazard description for each profile in this plan features an overall summary including a definition. Each summary features notable impacts on Chickasaw County with past events from 1990 to 2022.

*Requirement 44 CFR §201.6(c)(2)(i): [The risk assessment must include a] description of the type, location, and extent of all natural hazards that can affect the jurisdiction. The plan must include information on previous occurrences of hazard events and on the probability of future hazard events.*

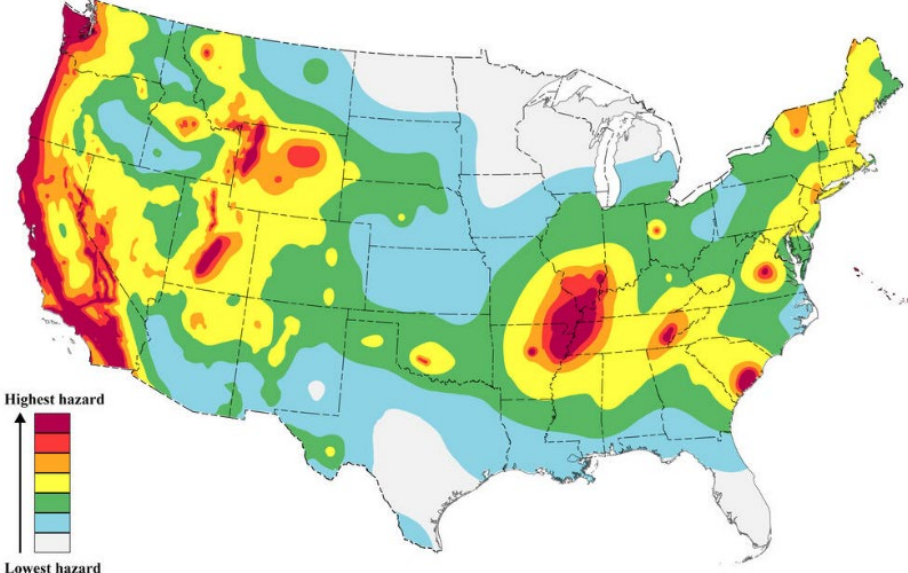
### Natural Hazards:

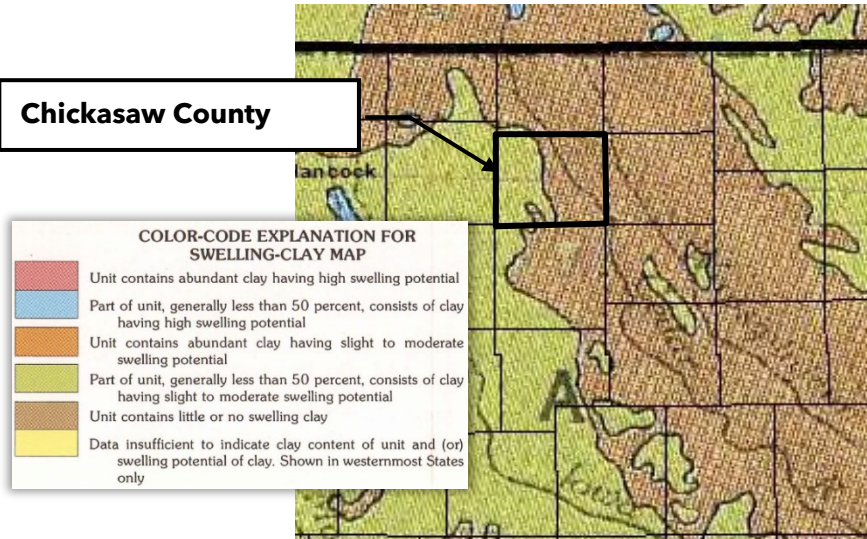
- Animal/ Plant/ Crop Disease
- Dam/ Levee Failure
- Drought
- Earthquake
- Expansive Soils
- Extreme Heat
- Flash Flooding
- River Flooding
- Grass or Wildland Fire
- Landslides
- Severe Winter Storms
- Thunderstorm with Hail and Lighting
- Tornado/ Windstorm

### Human-Caused Hazards:

- Hazardous Materials Incident
- Sinkholes (Also occurs naturally)
- Terrorism
- Transportation Incident
- Radiological Incident
- Pandemic/ Endemic Human Disease
- Infrastructure Failure

<b>Table 19:</b> <b>Drought</b>	<b>Definition:</b> a period of prolonged abnormally low precipitation producing severe dry conditions.	
<b>Historical Occurrences in Chickasaw County</b>	<p>The last drought in Chickasaw County was 2023 when the USDA declared a drought disaster. The National Integrated Drought Information System reports no prolonged (&gt; 6 month) drought event for Chickasaw County (or even Iowa) within the last decade. The Drought.gov map depicts the intensity of drought in the county since 2010.</p>	<div>Historical Conditions for Chickasaw County</div> <div><div>2000-Present1895-Present0-2017</div><div>Time Period (Years): 2010 to 2024 UPDATE GRAPH RESET GRAPH Show Category: All</div></div>
<b>Location</b>	Droughts have the potential to occur throughout the county with the greatest impacts being realized on agricultural lands as well as water supplies for cities within the county. The occurrence of a drought within the county would likely impact the entirety of the planning area.	
<b>Probability and Extent</b>	It is probable to see moderate drought conditions within the next 5 years. It is also doubtful to see extreme drought conditions in Northeast Iowa. According to the U.S. Drought Monitor, the intensity of the drought is rated on a scale of D0 to D4 with D0 being abnormally dry and D4 being exceptional drought conditions. The extent can range from any as indicated by the county's historical report from the last decade.	
Droughts are observed by its impacts on agriculture, food production, energy production when there is a lack of soil moisture due to low precipitation levels. Chickasaw County is not susceptible to severe drought that has had impacts on agriculture, response, or the local economy. Droughts directly affect agricultural crops, livestock, wildlife, and steam habitats (fish). Economic and environmental impacts are more critical for agricultural economies like Chickasaw County's own.		
<b>Duration</b>	Droughts occur over prolonged, consecutive time periods (days, week, months)	
<b>Warning Time</b>	Conditions predicting a drought are often not known. Most droughts are declared until a period of low precipitation has occurred, and the effects are significant on agriculture, wildlife, and farming economies. No warning time, but forecasts are tracked daily and often change by the day.	

<b>Table 20:</b> <b>Earthquake</b>	<b>Definition:</b> Sudden, rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. This shaking can cause buildings and bridges to collapse; disrupt gas, electric, and phone service; it sometimes triggers other hazards including landslides, flash floods, and fires. The three (3) general classes of earthquakes are, tectonic, volcanic, and induced.
<b>Historical Occurrences in Chickasaw County</b>	<i>None in Chickasaw County</i>  Iowa has experienced the effects of only three earthquakes in the past 175 years. The most recent occurrence was a 2.7 magnitude earthquake located east of Rembrandt, Iowa in June 2021.
<b>Probability and Extent</b>	There is minimal possibility of an earthquake occurring in Chickasaw County within the next 50 years that could be of damaging magnitude. The Mercalli scale rates the intensity of earthquakes on a scale of I to X with I being not felt and X being extreme. In Iowa and Chickasaw County, the extent is likely to be I or II if an earthquake were to occur.
	<p>The National Seismic Hazard Map is a U.S. Geological Survey hazard planning tool. To the left is the probabilistic map which illustrates the probability of a damaging earthquake occurring in Iowa within the next 50 years.</p>
<b>Magnitude</b>	Relatively low damage based on historical data. The entire county is likely to feel an earthquake.
<b>Duration</b>	A couple seconds to a minute. Smaller intensity aftershocks occur sparingly over the next few hours.
<b>Warning Time</b>	Minimal or no warning time

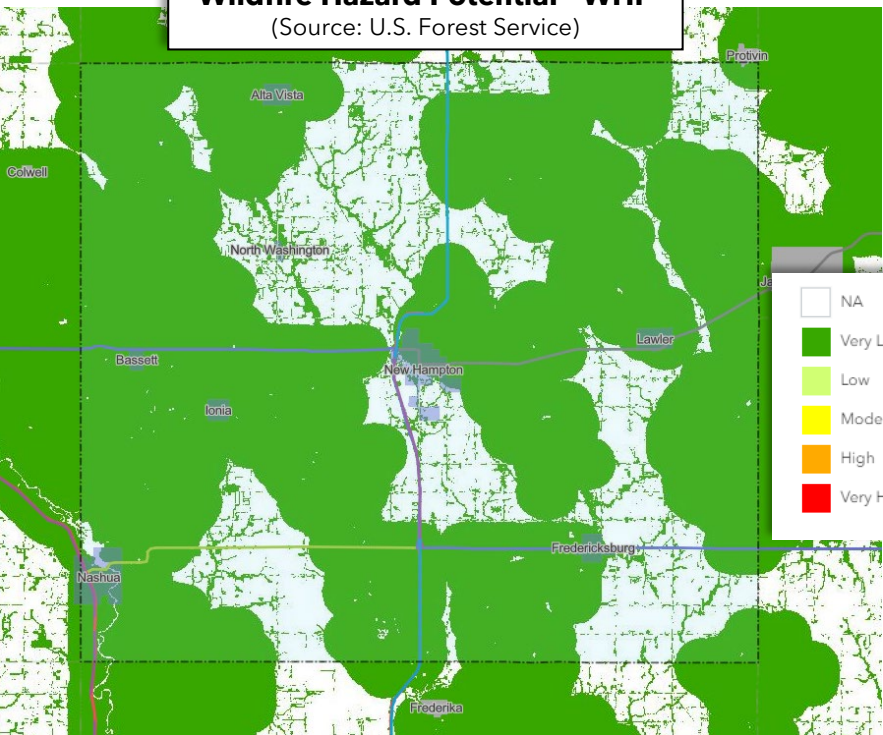
<b>Table 21:</b> <b>Expansive Soils</b>	<b>Definition:</b> Expansive clay soils, also known as shrink-swell soils or swelling clays, are types of soil that undergo significant changes in volume as their moisture content varies. May cause damage to infrastructure, roadways, and costly repairs	
<b>Historical Occurrences in Chickasaw County</b>	No record keeping of this hazard in Chickasaw County	
	There have been no recorded disaster declarations or major incidences of this hazard occurring in Iowa. Expansive soils are still a significant concern, particularly in regions where clay-rich soils are prevalent. Expansive soils in Iowa pose challenges for construction, agriculture, and infrastructure development.	
<b>Probability and Extent</b>	Expansive soils events are unlikely given their historical occurrence.	
	<div> <div> <div>Chickasaw County</div>  </div> <div> <p>Based on part of a swelling clays map produced by the U.S. Geological Survey, most of Chickasaw County has soils that have little or no swelling clay or soils with a composition of less than 50% with swelling potential.</p> </div> </div>	
<b>Warning Time</b>	<p>Varies/Unknown</p> <p>Expansive soils occur on a geologic time scale. This means that the consistent duration to observe the effects of expansive soils occurring is unknown.</p>	
<b>Duration</b>	Varies, the specific duration required to observe the effects of expansive soils varies depending on various factors such as climate, soil composition, and geological conditions.	

<b>Table 22:</b> <b>Extreme Heat (Heat Wave)</b>	<b>Definition:</b> Conditions for extreme heat are defined by summertime weather that is substantially hotter and/or more humid than average for a location at that time of year.																																																																				
<b>Historical Occurrences</b>	Chickasaw County issued an excessive heat warning on August 22-24, 2023, for heat indices exceeding 100 degrees F each day. No deaths, injuries, or crop damages were reported. USDA’s RMA data show \$1.8 million in damages from heat from 1989 to 2022 while NCEI Storm events Database shows three excessive heat events since 1990.																																																																				
<b>Location</b>	The occurrence of a heat wave would likely impact the entire planning area, especially individuals and agricultural livestock.																																																																				
<b>Probability and Extent</b>	Based on historical occurrences, the probability of extreme heat occurring is likely. It will likely last for a few days. As occurrences have grown, people are becoming more familiar with heat exhaustion, heat stroke, and remaining hydrated/indoors, and its severity.																																																																				
<div><div><div><b>Table 2.3.</b> Heat index values (°F)<sup>3,4</sup></div><table><tr><th>Temperature (°F)</th><th colspan="6">Relative Humidity (%)</th></tr><tr><th></th><th>90</th><th>80</th><th>70</th><th>60</th><th>50</th><th>40</th></tr><tr><td>80</td><td>85</td><td>84</td><td>82</td><td>81</td><td>80</td><td>79</td></tr><tr><td>85</td><td>101</td><td>96</td><td>92</td><td>90</td><td>86</td><td>84</td></tr><tr><td>90</td><td>121</td><td>113</td><td>105</td><td>99</td><td>94</td><td>90</td></tr><tr><td>95</td><td></td><td>133</td><td>122</td><td>113</td><td>105</td><td>98</td></tr><tr><td>100</td><td></td><td></td><td>142</td><td>129</td><td>118</td><td>109</td></tr><tr><td>105</td><td></td><td></td><td></td><td>148</td><td>133</td><td>121</td></tr><tr><td>110</td><td></td><td></td><td></td><td></td><td></td><td>135</td></tr></table><div><div>3. Heat index values were not given for the temperature and relative humidity combinations that have blank cells.</div><div>4. Heat index values can be up to 15°F higher with exposure to direct sunlight. Heat index values assume calm wind conditions; hot dry winds can also increase heat index values.</div><div>Source: NWS Forecast Office, Pueblo, Colorado, 2004.</div></div></div><div><div>The heat index is a number in degrees Fahrenheit that tells how hot it really feels when relative humidity is factored into actual air temperature.</div><div>Heat index is the temperature felt rather than the atmospheric temperature when there is humidity.</div></div></div>							Temperature (°F)	Relative Humidity (%)							90	80	70	60	50	40	80	85	84	82	81	80	79	85	101	96	92	90	86	84	90	121	113	105	99	94	90	95		133	122	113	105	98	100			142	129	118	109	105				148	133	121	110						135
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<b>Warning Time</b>	The National Weather Service can issue a Heat Advisory or Excessive Heat Warning roughly 10-14 days in advance.																																																																				
<b>Duration</b>	Multiple days but usually excessive heat events occur when the temperatures are over the 95 <sup>th</sup> percentile of the region’s historical weather data for at least 2 days.																																																																				

<b>Table 23:</b> <b>Flash Flood</b>	<b>Definition:</b> A flash flood is an event that occurs with little or no warning where water levels rise at an extremely fast rate. Flash flooding results from intense rainfall over a brief period, sometimes combined with rapid snowmelt, ice jam release, frozen ground, saturated soil, or impermeable surfaces. Most flash flooding is caused by slow-moving thunderstorms or thunderstorms repeatedly moving over the same area.					
<b>Historical Occurrences and Location.</b>	The table presents historical flash flooding events since 2010 from the National Climatic Data Center. There have been 13 flash flood events resulting in 1 fatality with a combined property and crop damage of \$6.5 million. Flash flooding has the potential to occur throughout the planning area, especially in cities that lack sufficient infrastructure to handle heavy rain events. Cities located next to rivers and streams are especially prone to flash flooding events.					
<b>Historical Occurrences of Flash Flooding in Chickasaw County 2010-2023</b>  Source: NOAA National Centers for Environmental Information	<b>Location</b>	<b>Date</b>	<b>Deaths</b>	<b>Injury</b>	<b>Property Damage</b>	<b>Crop Damage</b>
	Saude	5/29/2013	0	0	\$20,000	\$0
	Nashua	6/26/2013	0	0	\$120,000	\$0
	Deerfield	6/19/2014	0	0	\$5,000	\$0
	Lawler	7/23/2016	0	0	\$0	\$0
	Little Turkey	8/24/2016	1	0	\$10,000	\$0
	Lawler	9/9/2016	0	0	\$35,000	\$0
	Nashua	9/22/2016	0	0	\$48,000	\$5,000
	Williamstown	7/21/2017	0	0	\$20,000	\$0
	Bassett	7/22/2017	0	0	\$350,000	\$5,700,000
	New Hampton	5/18/2019	0	0	\$40,000	\$0
	Fredericksburg	6/9/2020	0	0	\$5,000	\$135,000
	New Hampton	8/8/2021	0	0	\$0	\$0
	Deerfield	8/28/2021	0	0	\$0	\$0
	<b>Total</b>		1	0	\$653,000	\$5,840,000
			<b>Combined Total</b>		\$6,493,000	
<b>Probability and Extent</b>	Flash flooding is likely to occur in the planning area with June being the most common month for flash floods, but they can occur from May through September.					
<b>Warning Time</b>	Usually a sudden event during an unusually heavy rainfall. No warning time.					
<b>Duration</b>	They are most common in the evening hours, between 8-10 p.m., but can occur at other times and typically last from 3-6 hours.					

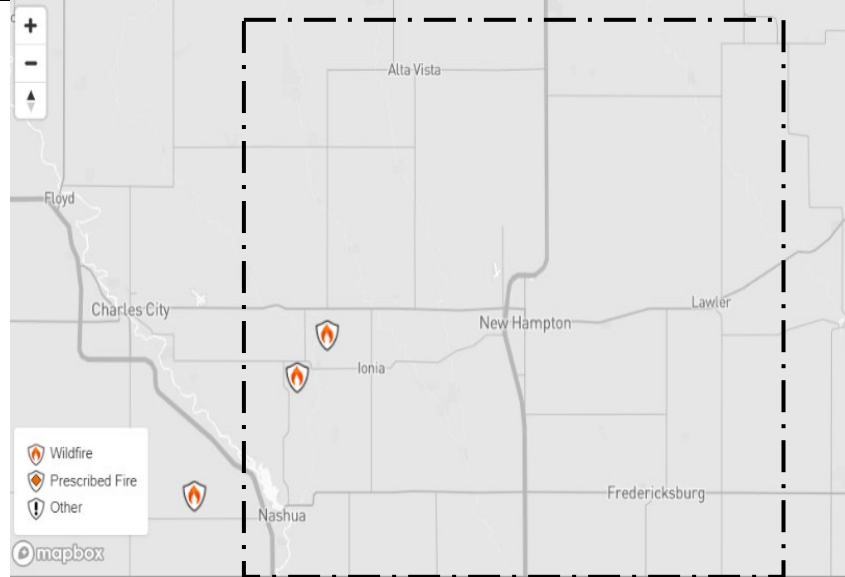


<b>Table 24:</b> <b>River Flooding</b>	<b>Definition:</b> Waterways such as streams and rivers exceed the capacity of their natural or constructed channels to accommodate a sudden increase in flow before the river overflows the banks, spilling out into adjacent low-lying, dry land.						
<b>Historical Occurrences in Chickasaw County</b>	According to data from the National Climatic Data Center, there have been 11 reported flood events in Chickasaw County between 2000 and 2023. The table below displays the date, general location, and impact of storms that caused damage.						
	One injury was reported in 2010. Estimates of property damage are \$1.179 million and \$3.5 million for crop damage.						
<b>Probability and Extent</b>	Based on historical data of the last 25 years, the probability of river flooding occurring is likely. The annualized frequency is 1.25 flooding events occurring each year given the historical recordings coming from multiple sources and more accurately capture the frequency of flooding within the planning area.						
<b>Historical Occurrences of River Floods that have caused damage in Chickasaw County 2000-2023</b>  <i>Source: NOAA National Centers for Environmental Information</i>		<b>Location</b>	<b>Date</b>	<b>Deaths</b>	<b>Injuries</b>	<b>Property Damage</b>	<b>Crop Damage</b>
		HORN FLD ARPT	4/25/2008	0	0	\$50,000	\$0
		HORN FLD ARPT	6/7/2008	0	0	\$600,000	\$1,000,000
		DEERFIELD	3/10/2010	0	1	\$7,000	\$0
		BASSETT	3/11/2010	0	0	\$0	\$0
		NEW HAMPTON	6/23/2010	0	0	\$0	\$0
		DEERFIELD	6/14/2016	0	0	\$2,000	\$0
		DEERFIELD	8/23/2016	0	0	\$20,000	\$0
		BASSETT	8/23/2016	0	0	\$0	\$0
		DEERFIELD	8/28/2021	0	0	\$500,000	\$2,500,000
		CHICKASAW	5/15/2023	0	0	\$0	\$0
		NASHUA	5/16/2023	0	0	\$0	\$0
		TOTAL		0	1	\$1,179,000	\$3,500,000
<b>Warning Time</b>	River flooding can be forecasted to allow for at least 24 hours or more.						
<b>Duration</b>	The duration of a flooding event varies based on the severity and location of the flooding event. Duration can range from a few hours to several days or longer.						
<b>Chickasaw County’s Risk Index Score for Hazard:</b>		61.63 out of 100 (Relatively Moderate)					
<b>Annualized Frequency of Hazard Occurring</b>		1.25 events					
<b>Expected Annualized Loss:</b>		\$840,340 (Relatively Low)					
Source: FEMA Risk Index by County (2024)							

<p><b>Table 25:</b> <b>Grass/Wildland Fire</b></p>	<p><b>Definition:</b> A grass or wild-land fire is an uncontrolled fire that threatens life and property in a rural or a wooded area. Dry weather can also lead to a wildfire threat, especially in the spring before foliage has emerged (i.e. before green up) or in the fall after vegetation has started to die off.</p>
<p><b>Historical Occurrences in Chickasaw County</b></p>	<p>A grass fire or wildland fire is an uncontrolled fire that threatens life and property in a rural or wooded area. This is not the same as a cropland fire. Damage to crops from fire is often covered by insurance and occurs in human-made environments. Wildland or grassfires occur in natural, wild areas.</p>
<p><b>Probability and Extent</b></p>	<p>Wildland fires are more likely to occur when conditions are favorable, such as during periods of drought when natural vegetation is drier and more combustible.</p>
<div> <p><b>Wildfire Hazard Potential - WHP</b> (Source: U.S. Forest Service)</p> </div> 	<p>WHP is an index that quantifies the relative potential for wildfire that may be difficult to control, used as a measure to help prioritize where fuel treatments may be needed. The map indicates that given the conditions of vegetation in Chickasaw County, the potential hazard of wildfires that are difficult to control is very low for the entire county.</p> <p>Dillon, Gregory K.; Menakis, James; Fay, Frank. 2015. <i>Wildland fire potential: A tool for assessing wildfire risk and fuels management needs</i>. In: Keane, Robert E.; Jolly, Matt; Parsons, Russell; Riley, Karin. <i>Proceedings of the large wildland fires conference; May 19-23, 2014; Missoula, MT. Proc. RMRS-P-73</i>. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. p. 60-76. <a href="https://www.fs.usda.gov/treesearch/pubs/49429">https://www.fs.usda.gov/treesearch/pubs/49429</a></p>

Since 2017, there have been 2 wildfires reported:  
1) April 3, 2019 - Human caused wildfire burned 50 acres.  
2) April 20, 2019 - Human caused wildfire burned 25 acres.

Source: <https://datacentral.press-citizen.com/wildfire-history/?page=1&query=iowa&anc=active#ftbl>



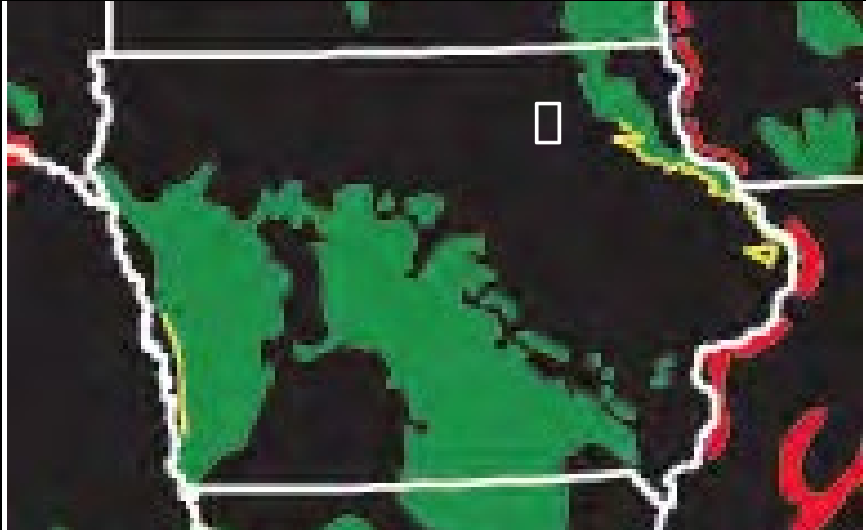
<b>Warning Time</b>	The wildfire history map indicates that Iowa possesses few areas with significant wildfire potential, with the majority classified as "Non-burnable Lands," primarily agricultural fields. Furthermore, the vast majority of the state exhibits a "Very Low" wildfire hazard potential, indicating minimal risk of extreme fire behavior. Consequently, wildfires in Iowa tend to be limited in scope and severity due to the absence of areas conducive to significant fire spread or extreme behavior.	
<b>Duration</b>	Usually contained in a few hours. Less than 24 hours.	
<b>Chickasaw County's Risk Index Score for Hazard:</b>		15.24 out of 100 (Very Low)
<b>Expected Annualized Loss:</b>		
Source: FEMA Risk Index by County (2024)		\$5,729

<p><b>Table 26:</b> <b>Hazardous Materials Incidents</b></p>	<p><b>Definition:</b> A HAZMAT (hazardous materials) incident is the accidental release of chemical substances or mixtures which presents a danger to the public health or safety during production or handling at a fixed facility. Fixed hazardous material incidents usually affect a localized area, and the use of planning and zoning can minimize the area of impact.</p> <p>This hazard includes fixed hazardous materials, pipeline transportation, and transportation of hazardous materials. A HAZMAT or Radiological Transportation Incident is the accidental release of chemical substances or mixtures that presents danger to the public health or safety during transportation. A hazardous substance is one that may cause damage to persons, property, or the environment when released to soil, water, or air. Chemicals that are manufactured and used in ever increasing types and quantities. As many as 500,000 products pose physical or health hazards and can be defined as “hazardous chemicals.” Each year, over 1,000 new synthetic chemicals are introduced and transported across the country via semi-trucks and trains. Hazardous substances are categorized as toxic, corrosive, flammable, irritant, or explosive.</p> <p>A pipeline transportation incident occurs when a break in a pipeline creates the potential for an explosion or leak of a dangerous substance (oil, gas, etc.) possibly requiring evacuation. A pipeline incident can be caused by environmental disruption, accidental damage, or sabotage. Incidents can range from a small, slow leak to a large rupture where an explosion is possible. Inspection and maintenance of the pipeline system along with marked gas line locations and an early warning and response procedure can lessen the risk to those near the pipelines.</p>
<p><b>Historical Occurrences in Chickasaw County</b></p>	<p>According to the Iowa Department of Natural Resources, there were 22 incidents of hazardous material spills in Chickasaw county from 2014-2023 (see below for a list of occurrences). There are no known occurrences of transportation incidents involving radiological materials. There are 2 rail incidents.</p>
<p><b>Probability and Extent</b></p>	<p>Large quantities of hazardous materials are transported daily throughout the county on their various highways. Freight transportation transports hazardous materials across these roadways across the county. The U.S. Department of Transportation regulates U.S. routes and speed limits are used by carriers and monitors the types of hazardous materials crossing state lines. Despite increasing safeguards, more and more potentially hazardous materials are being used in commercial, agricultural, and domestic uses and are being transported on neighboring roads, highways, and railways. Based on the information, the likelihood of this occurring is more than 33% probability in any given year, making it highly likely.</p>

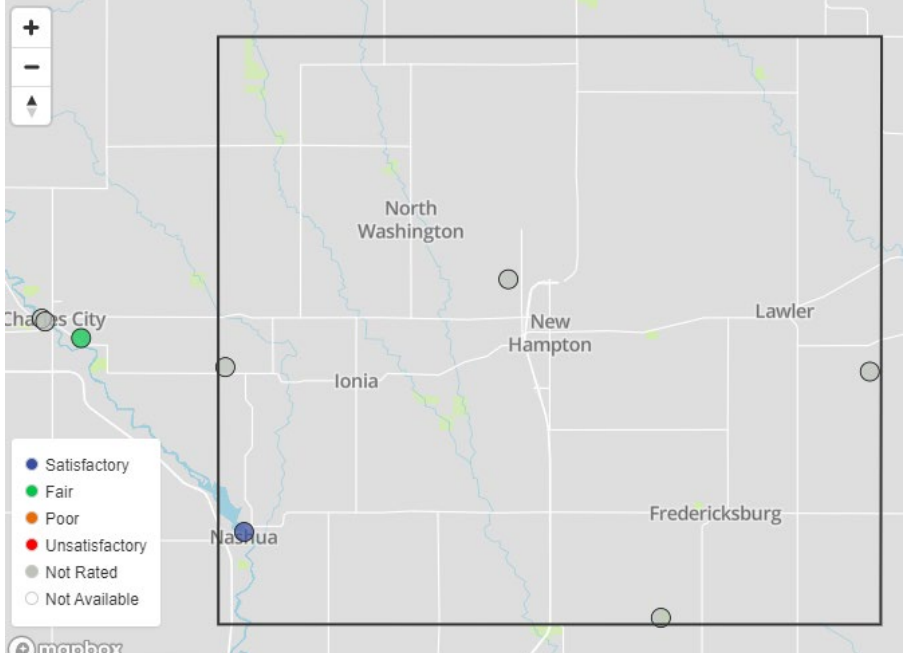
<b>Historical Occurrences of Hazardous Incidents that have caused occurred in Chickasaw County 2014-2023</b>  <i>Source: Iowa DNR Hazardous Material Release Database (5/21/2024)</i>	Location	Date	Incident Report #	Hazardous Substance	Amount	Responsible Party
	Nashua	01/04/14	010414-CDB-1641	Gasoline	6 Gal	Kwik Star
	New Hampton	06/12/14	061214-DJA-1829	Liquid Fertilizer	1500 Gal	Leon Zeien
	Nashua	01/27/15	012715-MAS-0940	Diesel Fuel	40 Gal	Swift Transportation
	New Hampton	02/18/16	021816-ALS-1223	#2 Diesel Ful	200 Gal	North Cedar Trucking
	Ionia	09/01/16	090116-BDJ-1250	Diesel Fuel	20 Gal	Ervin Martin
	Fredericksburg	09/22/16	092216-BCM-0900	Manure	1000 Gal	Adam Kleiss
	Fredericksburg	05/02/17	0505217-MRH-0213	Fiber Aluminum Rust Coating	2 Gal	Cura Emergency Services
	New Hampton	07/26/17	072617-AJP-0028	Headline Fungicide/Nitrogen	120/100 Gal	Unknown
	Unincorporated	10/31/17	103117-JSO-1300	Manure	300 Gal	Reicks View Farms
	New Hampton	01/12/18	011218-BCM-0850	#2 Diesel Fuel	90 Gal	Chickasaw County
	Lawler	12/06/18	120618-BCM-1520	Corn Oil	20,000 lbs	Reicks View Farms
	New Hampton	04/06/20	040620-JFP-1832	#2 Diesel Fuel	500 Gal	Roger Reis
	Lawler	04/19/20	041920-BCM-1540	Manure	1500 Gal	Reicks View Farms
	Nashua	05/24/20	052420-CWO-2200	Anhydrous Ammonia	20 lbs	Five Star Cooperative
	Protivin	07/23/20	072320-JMR-1130	Unknown	-	Unknown
	Unincorporated	04/16/21	041621-DAK-1659	Engine Oil	50 Gal	Canadian Pacific RR
	Ionia	08/27/21	082721-CSG-2215	Transformer Oil	21 Gal	Alliant Energy
	Unincorporated	08/28/21	082821-CSG-1854	Anhydrous Ammonia/Diesel Fuel	77 ton/ 28,000 Gal	Canadian Pacific RR
	New Hampton	12/21/21	122121-TEM-0841	Diesel Fuel	80 Gal	Kwik Trip/Star
	Lawler	06/23/22	062322-ALS-1715	32% Liquid Nitrogen Fertilizer	100 Gal	Dustin Reicks
	Lawler	04/10/23	041023-CSG-2320	Hog Manure	1500 Gal	Trevor Reicks
	New Hampton	06/07/23	060723-JPR-0755	Diesel Fuel	100 Gal	J&J Trucking



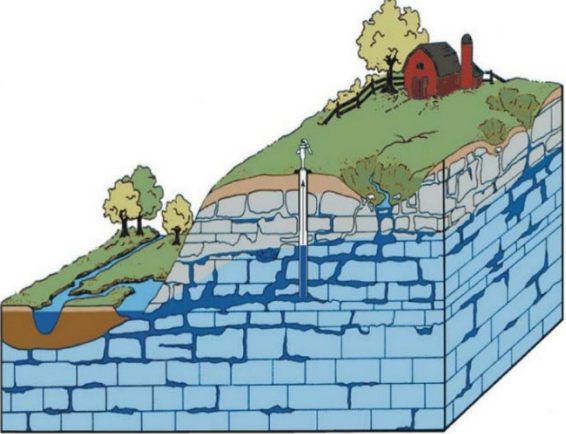
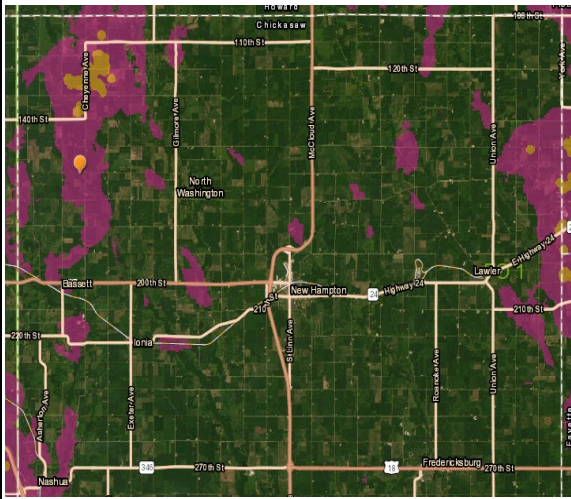
<b>Magnitude or Severity</b>	<p>Most of the hazardous materials are localized and contained by trained first responders that work with hazardous materials teams. Depending on the type of hazardous material or the volume spill in the incident, an affected area is likely to include a 5-mile radius.</p> <p>Immediate dangers from hazardous materials include fires and explosions. The release of some toxic gases may cause immediate death, disablement, or sickness if absorbed through the skin, injected, ingested, or inhaled. Contaminated water resources may be unsafe and unusable, depending on the amount of contamination. Contamination of air, ground, or water may result in harm to fish, wildlife, livestock, and crops. The occurrence of a hazmat incident often shuts down transportation corridors for hours at a time while the scene is stabilized.</p>
<b>Warning Time</b>	<p>The warning time is minimal. When accidents do occur, response time is crucial since hazardous materials can pose a significant risk to the population. Hazardous material incidents usually occur very rapidly with little or no warning.</p>
<b>Duration</b>	<p>The duration of a hazardous materials event will vary upon the amount of hazardous material released and location of the incident. Typical incidents last under a day but could last for days or weeks.</p>

<b>Table 27:</b> <b>Landslide</b>	<b>Definition:</b> Occur when susceptible rock, earth, or debris moves down a slope under the force of gravity and water. Landslides may be very small or very large and can move at slow to very high speeds. A natural phenomenon, landslides have been occurring in slide-prone areas of Iowa since long before the state was created. Landslides can occur due to rainstorms, fires, or human activities that modify slope and drainage		
<b>Historical Occurrences in Chickasaw County</b>	There have been no occurrences of landslides in Chickasaw County.		
	No deaths or injuries reported.		
<b>Probability and Extent</b>	There are no large slopes in Chickasaw County thus the extent of impact is negligible.		
Map of Landslide Potential Red = Very High Potential; Yellow = High Potential; Green = Moderate Potential; Black = Low Potential Source: US Geological Survey			
<b>Warning Time</b>	Great amounts of precipitation and moisture over time will greatly increase the warning time of a landslide event; however, there is no official warning system in place, thus the warning time would be short.		
<b>Duration</b>	Usually contained landslides are typically over within hours of occurring. Less than 24 hours.		
<b>Chickasaw County's Risk Index Score for Hazard: Expected Annualized Loss:</b>	17.19 out of 100 (Relatively Low)  \$20,987 Source: FEMA Risk Index by County (2024)		

<p><b>Table 28:</b> <b>Levee/Dam Failure</b></p>	<p><b>Definition:</b> Dam/Levee failure is the uncontrolled release of water resulting from a structural failure in a dam, wall, dike, berm, or area of elevated soil that causes flooding. Possible causes of the breach could include flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation, poor construction, vandalism, terrorism, erosion, piping, saturation, or under seepage.</p>
<p><b>Historical Occurrences in Chickasaw County</b></p>	<p>1916- Nashua Dam constructed for power generation for the Cedar Valley Electric Power Plant.</p> <p>May 1963 - Flood damages the plant and shuts down.</p> <p>1980s- Farm Debt Crisis causes mass migration out of rural Iowan communities.</p> <p>1982 - last control gate breaks and old Nashua dam can no longer function correctly.</p> <p>1989- Construction begins on the Cedar Lake Dam funded by the City of Nashua, surrounding communities, and State of Iowa legislature.</p> <p>March 1990 - Construction completed.</p> <p>Summer 1990 - First Annual "Water Over the Dam Days" celebration in Nashua.</p> <p>2016 - FEMA awards a \$300,000 hazard mitigation grant to the City of Nashua to repair and rehabilitate the Cedar Lake Dam.</p> <p>Oct. 2020 - Minnowa Construction Inc., a Decorah construction company, completes rehabilitation work on the apron scour of the Cedar Lake Dam.</p> <p>Summer 2021 - large concrete section below the water surface begins to become visible.</p> <p>Oct. 18, 2021 - Structural engineering firm Origin Design reports to Nashua city council that an underwater inspection performed at the dam revealed extensive damage to the repair work that was performed in 2020.</p> <p>Nov 2021 - Origin Design sends initial notice to Minnowa about deficiency requiring immediate repair and replacement. Minnowa does not respond.</p> <p>Dec 7, 2021 - Origin Design engineer sends 10-day notice of deficiency and notice to correct. Minnowa took no action and did not submit a formal response, plan, or cure.</p> <p>May 15, 2023 - City of Nashua v Minnowa Construction Inc. and United Fire &amp; Casualty Co. civil case.</p> <p>No deaths or injuries reported.</p>

<b>Probability and Extent</b>	The probability and extent of a dam failure due to a breach in the structural integrity of the system is also minimal. The hazard risk for the dams in unincorporated Chickasaw County was removed due to no dams or levees being in the county. The probability and extent of a catastrophic dam failure or other dam-related hazard was determined to be unlikely. If failure were to occur, the extent has the potential to be significant on the impacted area.
<p>Blue = Satisfactory Green = Fair Orange = Poor Red = Unsatisfactory Grey = Not Rated White = Unavailable</p> <p>Chickasaw County has 5 dams that are all state regulated. The average age of dams are 56 years. 4 - Not rated 1 - Satisfactory</p> <p>All rated with low hazard potential classification. (Source: US Dam Safety Inspection)</p>	
<b>Warning Time</b>	A sudden failure of a portion of the levee may send floodwaters gushing from this break within seconds. Normally, occupants of the floodplain can be warned about potential levee breaches or breaks when high water encroaches upon the levee.
<b>Duration</b>	The length of time that a dam or levee failure would impact the surrounding area depends largely on the amount of water the specific dam or levee held back. The duration of a failure's impact could feasibly range from hours to months.
<b>*According to the National Levee Database, there are no federally registered levees.</b>	

<b>Table 30: Severe Winter Storm</b>	Severe winter weather conditions that can affect day-to-day activities include blizzard conditions, heavy snow, blowing snow, freezing rain, heavy sleet, and extreme cold. Winter storms are common during the months of October through April in Iowa.					
<b>Historical Occurrences and Location</b>	According to data from the National Climatic Data Center, there have been 35 reported winter storm events in Chickasaw County between 2000 and 2023. Severe Winter Storms are likely to occur throughout the entire planning area. The table below displays the date, location, and impact of storms that caused damage.					
	No fatalities or injuries reported. Estimates of property damage are \$110,000 and none for crop damage.					
<b>Probability and Extent</b>	Based on historical occurrences it is highly likely a severe winter storm will affect Chickasaw County on an annual basis, likely multiple times in a year. The extent of such a storm can be evaluated using the Northeast Snowfall Impact Scale (NESIS). The five categories include notable, significant, major, crippling, and extreme (rated on a scale of 1-5) depending on the event.					
Historical Occurrences of Winter Storms that have caused damage in Chickasaw County 2000-2023  Source: NOAA National Centers for Environmental Information		Location	Date	Deaths	Injury	Property Damage
		Chickasaw County	02/23/2007	0	0	\$100,000
		Chickasaw County	03/23/2016	0	0	\$10,000
		<b>Total</b>		0	0	\$110,000
<b>Warning Time</b>	The National Weather Service has developed effective weather advisories, which are promptly and widely distributed. There are several notifications made by the National Weather Service. These include winter storm watch, winter storm warning, blizzard warning, winter weather advisory, and a frost/freeze advisory.					
<b>Duration</b>	Depending on the type, duration, and the size of the event the entire population could feel the effect of a winter storm. Generally, due to existing snow removal services and other community services the effects of winter storms on incorporated communities in Chickasaw County are short term; however, the more rural, unincorporated areas tend to be impacted longer due to rural nature of the county. Although more of an inconvenience, and somewhat more dangerous, travel and communication are usually an option in less than 24 hours of any given event.					
<b>Chickasaw County's Risk Index Score for Hazard: Expected Annualized Loss:</b>	67.23 out of 100 (Relatively Moderate)  \$120,101 Source: FEMA Risk Index by County (2024)					

<b>Table 31:</b> <b>Sinkholes</b>	<b>Definition:</b> A sinkhole is the loss of surface elevation due to the removal of subsurface support. Sinkholes range from broad, regional lowering of the land surface to abrupt localized collapse. The primary causes of most subsidence are human activities such as underground mining of coal, groundwater/petroleum withdraw, or drainage of organic soils. Sinkholes can aggravate flooding potential, collapse of an abandoned mine may destroy buildings, roads, and utilities.
<b>Historical Occurrences in Chickasaw County</b>	<p>According to Iowa DNR AFO siting maps, there are approximately 10-15 sinkholes located within Chickasaw County (See below). These mainly occur over Karst formations in the ground. There is no data on historical/annual losses, and it is no in FEMA Risk Index. No fatalities or injuries reported. No damage to property or crops. No fatalities or injuries reported. No damage to property or crops.</p>
<b>Probability and Extent</b>	<p>This hazard affects less than 2% of land in the County. Given the lack of historical occurrences, the severity of future events is likely to be negligible and unlikely to occur.</p>
	<p>The dark blue areas denote groundwater stored within the bedrock's crevices, constituting the shallow aquifer and accessible to the depicted well. The diagram illustrates the porous nature of the bedrock, facilitating groundwater storage and movement. It also shows how the land surface and visible stream directly interface with the bedrock-stored water. In Karst systems, soil infiltration, surface runoff, and streams can directly feed into the shallow bedrock, contributing to the shallow groundwater and aquifer, potentially carrying contaminants from the surface to wells drawing from this source.</p> 
<b>Warning Time</b>	<p>Sink holes growing in mass is a slow yet gradual process. Land use practices in the area, soil type in addition to a number of other factors will impact the speed of onset. By identifying these areas city agencies and property owners will be able to implement the necessary precautions to slow and potentially eliminate the development of a sink hole. Catastrophic sinkholes can provide little visible warning, setting in in as little as a few minutes.</p>
<b>Duration</b>	<p>A sinkhole can affect the location in which it occurred for weeks.</p>



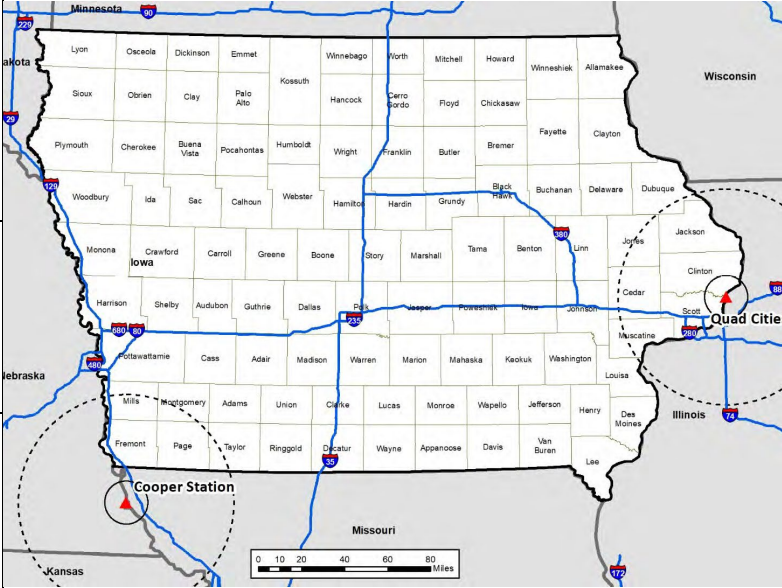
<b>Table 32:</b> <b>Thunderstorm with Lighting or Hail</b>		<b>Definition:</b> Thunderstorms are created from a combination of moisture, rapidly raising warm air, and the lifting mechanism such as that caused when warm and cold air masses collide. Thunderstorms occur in the community on an annual basis. Lightning is an electrical discharge that results from the buildup of positive and negative charges within a thunderstorm. Hailstorms are a product of a severe thunderstorm in which pellets or lumps of ice (of most concern when greater than 1 inch in diameter) fall with rain.					
<b>Historical Occurrences in Chickasaw County</b>		According to the NOAA Storm Events Database, there have been 38 thunderstorm wind events reported causing an estimated \$309.6K in property damage and \$1.5 million in crop damage. There has been 1 reported lighting strike causing property damage in Ionia in 2021 estimated at \$10,000. There 36 hailstorm events causing \$127.6K in property damage and \$3.3 million in crop damage.					
		No fatalities or injuries reported for either of these hazards.					
<b>Probability and Extent</b>		Hail and thunderstorms have the potential to impact all of Chickasaw County. According to the Lightning Risk Index score, Chickasaw County has a relatively moderate to low risk of thunderstorms occurring when compared to the rest of the United States in regard to the severity of such an event. As such, it is likely to occur on a yearly basis. The National Weather Service (NWS) uses objects to describe the size of hail. They range from pea-sized (0.25 in) to DVD-sized (4.75 in). Hail extent can range throughout the scale.					
Historical Occurrences of Lighting and Hail Hazards during a Thunderstorm in Chickasaw County 2000-2023  Source: NOAA Storm Events Database							
		<b>Hazard</b>	<b>Occurrence</b>	<b>Deaths</b>	<b>Injury</b>	<b>Property Damage</b>	<b>Crop Damage</b>
		Hail	36	0	0	\$127,500	\$3,334,000
		Lightning	1	0	0	\$10,000	\$0
		Thunderstorm Wind	38	0	0	\$309,600	\$1,532,000
<b>Warning Time and Duration</b>			The National Weather Service has developed effective weather advisories, which are promptly and widely distributed. Thunderstorm with Lighting or Hail would last less than 24 hours.				
<b>Risk Score for Hail: Expected Annualized Loss:</b>			41.27 out of 100 (relatively low) \$52,393				
<b>Chickasaw County’s Risk Index Score for Hazard: Expected Annualized Loss:</b>			15.03 out of 100 (Very Low)  \$27,479 <i>Source: FEMA Risk Index by County (2024)</i>				

<b>Table 33:</b> <b>Tornado</b>	<b>Definition:</b> A tornado is a violent whirling wind characteristically accompanied by a funnel shaped cloud extending down from a cumulonimbus cloud that progresses in a narrow, erratic path. a severe thunderstorm in which pellets or lumps of ice (of most concern when greater than 1 inch in diameter) fall with rain.						
<b>Historical Occurrences and Location of Impact</b>	According to the NOAA Storm Events Database, there have been 8 tornados reported causing an estimated \$625,000 in property damage and \$16,000 in crop damage. In general, tornados have the potential to impact the entire planning area with no certain specific location.						
	No fatalities or injuries were reported for this hazard.						
<b>Probability and Extent</b>	Tornados have occurred 4 times within the last decade. Greater than 25% likelihood. According to the Tornado Risk Index score, Chickasaw County has a relatively high/moderate risk in regard to the severity of such an event. The Fujito tornado scale ranges from F0 to F4, depending on wind speeds (40-72, 207-260 mph, respectively). The extent in Chickasaw can potentially range throughout the scale.						
Historical Occurrences of Hazard in Chickasaw County 2000-2023  Source: NOAA Storm Events Database	Location	Date	EF Rating	Deaths/ Injury	Property Damage	Crop Damage	
	Ionia	5/8/2002	F0	0	\$0	\$0	
	Ionia	6/21/2002	F0	0	\$0	\$0	
	New Hampton	7/7/2003	F0	0	\$20,000	\$5,000	
	Fredericksburg	8/19/2009	EF0	0	\$20,000	\$10,000	
	Bassett	8/31/2014	EF0	0	\$0	\$1,000	
	Deerfield	5/27/2019	EF0	0	\$0	\$0	
	Bassett	12/15/2021	EF1	0	\$255,000	\$0	
	Deerfield	12/15/2021	EF0	0	\$330,000	\$0	
				<b>TOTAL</b>	\$626,000	\$16,000	
<b>Warning Time</b>	Tornado and thunderstorm watches can warn of likely conditions hours in advance of an upcoming storm. Although an imminent tornado warning may occur with 95% accuracy and those can be issued at least 15 minutes.						
<b>Duration</b>	Less than 24 hours.						
<b>Chickasaw County's Risk Index Score for Hazard: Expected Annualized Loss:</b>	58.29 out of 100 (relatively low) \$1,626,027 (Relatively Low) Source: FEMA Risk Index by County (2024)						

<b>Table 34:</b> <b>Animal/Plant/Crop Disease</b>	<b>Definition:</b> A pathogen that may cause stress, infection, illness, and death. Communicable among livestock flocks, interactions with wild animals, crops, and bug infestations. Naturally occurring but hazard is not in the natural hazard section because of human induced causes such as tiling in agriculture, rising temperatures from climate change, etc. may induce more of a hazard.
<b>Historical Occurrences in Chickasaw County</b>	Instances of plant, crop, or animal disease are common across Iowa and Chickasaw County. However, according to available data and input, there have been no widespread recorded occurrences of plant, crop, or animal diseases having a long-term significant impact in the planning area.
	No fatalities or injuries reported for this hazard.
<b>Probability and Extent</b>	Plant and livestock diseases occur regularly. Iowa DNR tracks and notifies the public of any new or confirmed cases of a pathogen. Chickasaw County has an agricultural crop value of \$347,450,456. This is all potentially at risk of an infestation and loss.
<p>In the past decade, there have been confirmed infestations of tar spot in corn crops in the County (2018). Emerald Ash borer insects infested the region in 2014 and have caused the widespread decline of ash trees. Tree removal of dying trees with falling limb hazards has been a top concern for many rural Iowan communities.</p> <p>Highly pathogenic avian flu cases have been confirmed in Chickasaw Co among wild geese (migratory flocks). (2023). Previously: In 2022, the Iowa Farm Bureau reports that the pathogen may have caused Iowa's egg and poultry farms to have their lowest flock numbers reported since a 2015 avian flu outbreak but has since returned to normal.</p> <p>Hog numbers remained relatively stable without major outbreaks of swine flu reported.</p>	
<b>Warning Time</b>	With the reporting systems set up among agricultural stakeholders, the warning time is likely a few days ahead of time, but this is set to change and varies depending on the specific contagion. Quarantines are often too late to contain pest and insect infestations or migratory bird diseases.
<b>Duration</b>	Weeks or months. Impacts can be years.

<b>Table 35:</b> <b>Pandemic/Endemic Human Disease</b>	<b>Definition:</b> An epidemic as an unexpected increase in the number of disease cases in a specific geographical area. Yellow fever, smallpox, measles, and polio are prime examples of epidemics. A pandemic is an unexpected increase in disease across multiple continents where the contagion is often a virus. Often for new diseases, populations have no immunity and severity of the disease is dependent on the virus characteristics, spreading factors, and efficacy of any existing vaccines to control the spread.
<b>Historical Occurrences in Chickasaw County</b>	Pandemic human disease has long been a known threat, but it was catapulted to the forefront of public thought in 2020 as the multi-year, COVID-19 pandemic caused by the novel SARS-COV2 virus swept across the globe, causing massive disruptions to public health and healthcare systems, public life and society, and economies at every scale. The reverberations from this pandemic are ongoing. Endemics of flu are regular and occur on an annual basis. Rates of infection have remained normal. Lyme Disease, Cryptosporidiosis, E-Coli, Latent tuberculosis are typical infections tracked by County public health officials that occur mostly from an environmental source (contaminated meats, water).
	Total reported deaths from COVID-19 in Chickasaw County were 37. Most occurring during the 2020 outbreak.
<b>Probability and Extent</b>	Population of Chickasaw County was 12,012 (2020 Census) As of Dec 2023, 55% fully vaccinated for COVID 19. Rise in COVID-19 cases occur annually in the colder months making this an endemic that is likely to stay in the population.
In the last 20 years, 10 events occurred where contagions have occurred as pandemics or major endemics (H1N1, SARS, MERS, Polio, Ebola (2), Malaria, Zika, COVID-19). The scale and impact of each one was dependent on the contagion characteristics, vaccine efficacy, and cooperation of worldwide systems to contain these outbreaks. Based on past events, the probability is likely greater than 20% of major endemics or pandemics occurring within 10 years. However, the scale and magnitude can vary depending upon multiple factors primarily in the early weeks of appearance.	
<b>Warning Time</b>	Typically, a few weeks ahead of time.
<b>Duration</b>	Weeks or months. If not contained, pandemics can become endemics and stay in the human population indefinitely.

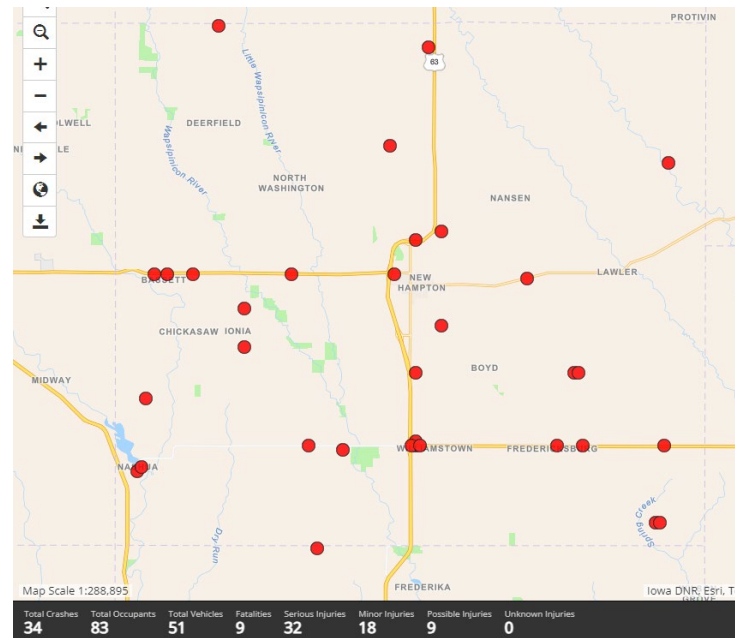
<b>Table 36:</b> <b>Terrorism</b>	<b>Definition:</b> Domestic terrorism is the focus on terrorism in this assessment. This is defined as violent, criminal acts committed by individuals and/or groups to further ideological goals stemming from domestic influences, such as those of a political, religious, social, racial, or environmental nature.
<b>Historical Occurrences in Chickasaw County</b>	None in Chickasaw County.
	No injuries or deaths reported.
<b>Probability and Extent</b>	Population of Chickasaw County was 12,012 (2020 Census) The 2024 Homeland Threat Assessment expects domestic terrorism to remain unchanged in the coming years.
Rural areas are not prone to foreign born terrorism attacks. Domestic terrorism is far more likely for rural areas and the likelihood increases with a variety of factors. Radicalization online and the availability of accessing weapons can make any spot prone to attack. Attacks have largely targeted schools, churches, and mass gatherings such as shopping centers.	
<b>Warning Time</b>	None.
<b>Duration</b>	Usually occurs in less than an hour. Depending on the attack.

<b>Table 37:</b> <b>Radiological Incident</b>	<b>Definition:</b> A radiological incident is an occurrence resulting in a release of radiological material at a fixed facility or in transit. An incident resulting in a release of radiological material at a fixed facility includes, but is not limited to, power plants, hospitals, and laboratories. Although the term "nuclear accident" has no strict technical definition, it generally refers to events involving the release of significant levels of radiation.
<b>Historical Occurrences in Chickasaw County</b>	No occurrences recorded in Chickasaw County No deaths or injuries reported due to this hazard in County.
<b>Probability and Extent</b>	Chickasaw County is located far beyond the 50-mile hazard radius from a nuclear powerplant. Beyond a nuclear bomb attack which would likely impact only large metro areas, Chickasaw County has no vulnerability to radiological hazard.
<p>There are two nuclear power plants that operate close to Iowa's borders: the Quad Cities Generating Station near Cordova, Illinois, and the Cooper Nuclear Station near Brownsville, Nebraska. The map below identifies the location of each facility as well as the 10-mile and 50-mile planning buffers.</p>	<p><b>Nuclear Power Plants Impacting Iowa (2021).</b></p>  <p>Source: Iowa HSEMD</p>
<b>Warning Time</b>	Usually no warning time.
<b>Duration</b>	A nuclear event is likely over in a few seconds. The fallout is likely to last for decades. For a meltdown at a power plant, this can occur over a period of hours or days. If left uncontained, the radioactivity would devastate the region and winds could carry the fallout and drop hazardous fallout a vast area for hundreds of miles.



<b>Table 38: Transportation Incidents</b>	Definition: This hazard encompasses air transportation, highway transportation, railway transportation, and waterway incidents. A transportation incident is described as an accident involving any mode of transportation that directly threatens life, property damage, injury, or adversely impacts a community's capabilities to provide emergency services.
<b>Historical Occurrences in Chickasaw County</b>	There have been 34 car crashes over the last 5 years that have resulted in 9 deaths and 32 serious injuries throughout the county.  From 2011-2021, there have been 6 railway accidents involving collisions with cars at crossings resulting in 1 death and 3 injuries. Total property damage is estimated at \$327,300.  1 aviation incident based on NTSB data since 2000 involving an aerial application spray run with a helicopter that struck wires due to incorrect action performance by the pilot (reason: inattentive). Substantial damage to helicopter during hard landing. The pilot survived.
	10 fatalities and 35 seriously injured from vehicle, rail, and airplane crashes over the last 5-10 years.
<b>Probability and Extent</b>	Car crashes are likely to occur. Based on historical data, 15% probability of serious car accidents each year (not many confirmed involving drugs or alcohol). Most accidents involve 2 vehicles.  Railway and aviation accidents are not likely and there is less than 10% chance of occurring annually. Property damage from the most severe accidents involving a fatality or seriously injured person was \$863,190.
<b>Warning Time</b>	None
<b>Duration</b>	Most transportation incidents are of short duration and limited impact.

### Car Crashes with Highest Severity (Fatal or Severely Injured) (2019-2023)



Source: Iowa DOT

Between 2019-2023, there have been:  
34 car crashes of the highest severity involving 9 fatalities and 32 seriously injured casualties.  
There was 1 fatal crash involving drugs and alcohol.  
1 seriously injured crash involving an animal.

## Vulnerability Assessment

### Hazard Risk for Urban Areas of Chickasaw County

This risk assessment identifies how people, property, and structures would be harmed or damaged by one of the listed hazard events. Potential impacts from hazard events will be different between rural and urban areas of the county.

Urban areas are likely to experience greater structural damage/losses because there are more buildings, houses, infrastructure, etc.

The values under each hazard's risk factor (probability, magnitude, etc.) were determined by averaging the scores provided by all the teams representing each municipality within Chickasaw County. The final risk score is calculated according to the hazard risk score formula. See methodology.

#### Top 3 Hazards for Cities in Chickasaw County



Tornados/  
Windstorms



Thunderstorms  
with  
Lighting/Hail



Severe Winter  
Storms

**Table 39: Hazard Risk Assessment Results  
for Urban Areas of Chickasaw County**

Rank	Hazard	Averaged Probability Score	Averaged Magnitude Score	Averaged Warning Time Score	Averaged Duration Score	Risk Score for Urban Areas
<b>1</b>	<b>Tornado/Windstorm</b>	3.11	2.61	3.22	1.67	<b>2.83</b>
<b>2</b>	<b>Thunderstorm w/ Lighting or Hail</b>	3.44	1.67	2.22	1.56	<b>2.54</b>
<b>3</b>	<b>Severe Winter Storm</b>	3.22	1.78	1.44	2.89	<b>2.49</b>
4	Extreme Heat	3.11	1.67	1.22	3.67	<b>2.45</b>
5	Grass/Wildland Fire	2.56	1.56	3.67	1.11	<b>2.28</b>
6	Flooding - Flash	2.28	1.78	3.22	1.72	<b>2.21</b>
7	Pandemic/ Endemic Human Disease	1.67	2.56	1.56	3.33	<b>2.08</b>
8	Drought	2.33	1.61	1.00	3.78	<b>2.06</b>
9	Hazardous Materials	1.67	1.89	3.67	1.89	<b>2.06</b>
10	Flooding - Riverine	1.89	1.78	2.44	2.56	<b>2.01</b>
11	Transportation Incidents	1.89	1.44	3.22	1.44	<b>1.91</b>
12	Animal/ Crop/ Plant Disease	1.67	1.56	1.78	3.33	<b>1.82</b>
13	Infrastructure Failure	1.33	1.56	3.11	2.00	<b>1.73</b>
14	Earthquake	1.00	1.89	3.00	1.44	<b>1.61</b>
15	Terrorism	1.00	1.33	3.00	2.00	<b>1.50</b>
16	Radiological	1.00	1.44	2.67	2.11	<b>1.49</b>
17	Sinkholes	1.11	1.00	3.00	1.67	<b>1.42</b>
18	Levee/Dam Failure	1.11	1.22	2.22	1.89	<b>1.39</b>
19	Expansive Soils	1.11	1.11	1.11	2.89	<b>1.29</b>
20	Landslide	1.00	1.00	2.44	1.67	<b>1.28</b>

## Hazard Risk for Rural Areas of Chickasaw County

### Top 3 Hazards for Farming and Rural Areas in Chickasaw County



River Flooding



Flash Flooding



Thunderstorms  
with  
Lightning/Hail

Planning committee participants from county departments or agencies contributed to the scores used in this assessment. County departments/agencies included emergency management, public health, and administration.

This risk assessment will be used in a risk informed approach to deciding which hazard mitigation activities or tasks the County will include in this Plan.

**Table 40: Hazard Risk Assessment Results for Rural Areas of Chickasaw County**

Rank	Hazard	Probability Score (County)	Magnitude Score (County)	Warning Time Score (County)	Duration Score (County)	Risk Score for Rural Areas
<b>1</b>	Flooding - Riverine	4	4	3	4	3.9
<b>2</b>	Flooding - Flash	4	3	3	4	3.6
<b>3</b>	Thunderstorm/ Lighting/ Hail	4	2	4	4	3.4
4	Tornado/Windstorm	3	3	4	4	3.3
5	Extreme Heat	4	2	1	4	3.0
6	Drought	3	3	1	4	2.8
7	Transportation Incidents	3	1	4	2	2.5
8	Severe Winter Storm	2	3	1	4	2.4
9	Terrorism	1	3	4	3	2.3
10	Grass/Wildland Fire	2	2	4	1	2.2
11	Hazardous Materials	1	2	4	3	2.0
12	Earthquake	1	1	4	4	1.8
13	Infrastructure Failure	1	1	4	3	1.7
14	Animal/ Crop/ Plant Disease	1	2	1	4	1.6
15	Pandemic/ Endemic Human Disease	1	2	1	4	1.6
16	Levee/Dam Failure	1	1	4	1	1.5
17	Sinkholes	1	1	4	1	1.5
18	Expansive Soils	1	1	1	4	1.3
19	Radiological	1	1	1	3	1.2
20	Landslide	1	1	1	1	1.0

## Critical Facilities

### Incorporated Areas - Urban

The critical facilities for each community are listed in the table on the next page. See appendices for maps of critical facilities in each jurisdiction's local hazard mitigation plan.

It is important to know the threats that each hazard poses to the built environment. The facilities were chosen based on their importance to the operation of local government, community way of life, and disaster recovery.

- Critical facilities may include buildings that would be used for emergency shelters, planned locations for post disaster operations, and buildings with auxiliary power supply such as emergency power generators.
- Public infrastructure and utilities which are crucial to provide necessities included public potable water wells, water towers, communication towers, WWTP lagoons, sewer lift stations, fuel stations, and electrical substations.
- Facilities needed for post disaster recovery and emergency responses services include hospitals, police stations, fire, and ambulance stations.
- Critical sites include important historical cultural sites which provide value to the community. Those included in this Plan are churches and historical sites.
- Buildings where concentrations of vulnerable populations are located are included in the list of critical facilities. Those include schools, daycares, and nursing homes.

### Unincorporated Areas - Rural

A map of all the critical sites located in unincorporated county land is shown in Figure 11. The map illustrates an inventory of facilities such as electrical substations or fuel storage facilities so that strategies to implement mitigation activities are risk informed. The map can help visualize important corridors, locations where there are concentrations of hazardous storage facilities, and critical areas for emergency planning.

*Requirement 44 CFR §201.6(c)(2)(ii): The plan should describe vulnerability in terms of (A) the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas.*

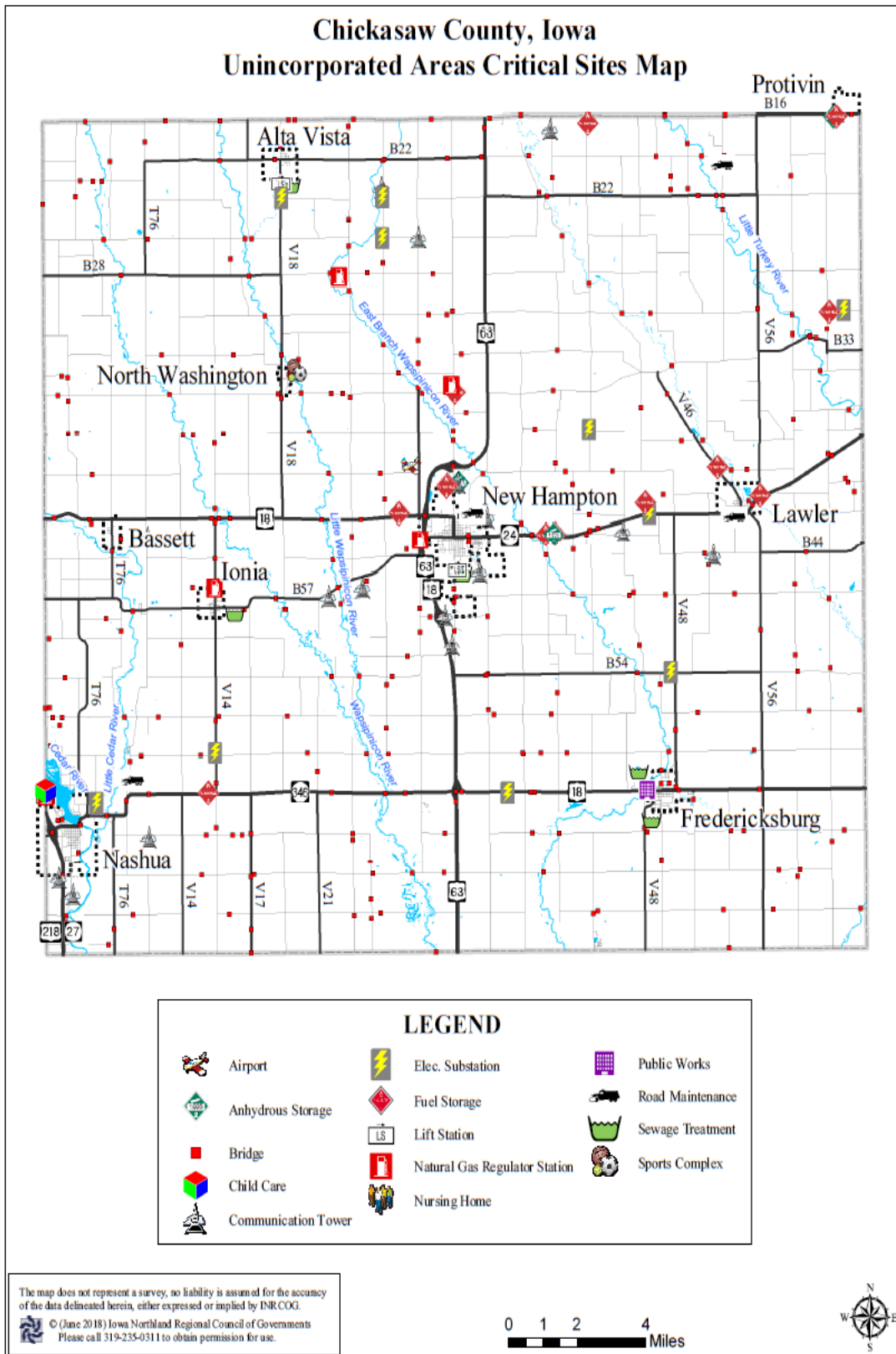
**Table 41: Critical Facilities in Select Communities for Chickasaw County**

Critical Facilities in Alta Vista	Critical Facilities in Fredericksburg	Critical Facilities in New Hampton	Critical Facilities in Nashua
Alta Vista V.F.W.	Ambulance station	1-Ambulance	Welcome Center (tornado shelter)
Alta Vista Maintenance Shop	Anhydrous storage tanks	2 Anhydrous Storage	Fire Station
Alta Vista Express - Gas Station	Child care facility	3 Childcare	City Hall
Communication's Tower	City Hall	4 City Hall	City Shed
City Library	Civil Center	5 Civic Center	Lift Stations (2)
City Well	Clinic	6 County Sheriff	Wastewater Treatment Plant (WWTP)
WWTP Lagoon	Communication's Tower	7 County Courthouse	Potable Water Wells (3)
Terminal Lift Station #1	Electrical substation	8 Elec. Substation	Water tower
Lift Station #2	Fire Station	9 Fire Station	Mid-American substation
Mennonite Church	Fuel Storage	10 Fuel Storage	Dam Power House
Alta Vista City Hall and Fire Station	Library	11 Lift Station (4)	Nashua Clinic
St. Bernard Catholic Church	Lift Station	12- Library	Assisted Living Center
Schucky's Bar and Grill	Natural Gas Station	13- Natural Gas Station	Nashua Plainsfield Elementary
<b>Critical Facilities in North Washington</b>	Nursing Home	14- Nursing Home	Nashua Plainsfield Middle/HS
Fire Station/ City Hall	Public works	15- Police	Taylor Therapy
<b>Critical Facilities in Protivin</b>	School	16- Public Works	Little Brown Church
Community Center	Sewer treatment plant	17- Road Maintenance	United Methodist Church
Protivin City Hall	Tornado siren	18- School	Saint John Lutheran Church
Farmers Mill Grain Elevator	Public Well	19- Sewage Treatment	Saint Michaels Catholic Church
Protivin Fire Station	<b>Critical Facilities in Ionia</b>	20- Siren	Cedar Point Church
Polashek's Locker (Butcher Shop)	Fire Station	21- Sports Complex	Tornado Sirens (3)
Holy Trinity Church	City Hall	22- Telephone Company	<b>Critical Facilities in Lawler</b>
	City maintenance shop	23- Water Tower	Lawler Municipal Hall/ Library
	Public library	24- Well (2)	Lawler Fire Station
	Ionia Locker	25- Bailey Avenue Industrial "Park"	Fire Star Co-op Grain Elevator
	Fire Star Co-op Grain Elevator	26- New Hampton Industrial Park South	Bank of Iowa
	WWTP lagoons	27- MercyOne Medical Center	Mt. Carmel Church
	Water Tower		Mt Carmell CCD Building
	Tornado Siren		

Regulation 44 CFR § 201.6(c)(2)(ii)(a): The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;



**Figure 11: Map of Critical Sites in Chickasaw County**



## Measuring Vulnerability to Selected Hazards

### Property Valuation for Chickasaw County

Property valuation is a metric of measuring the potential losses that may occur in a hazard event. Table 65 summarizes the values of property in Chickasaw County by land type. This data is used in the vulnerability analysis to determine the potential losses.

For residential, \$376,720,898 is the total assessed value for a potential for loss. Agricultural land is assessed at \$367,270,097 and commercial land is assessed at \$74,217,765. All industrial land is assessed at \$51,380,876. Utilities without gas or electric valuations are assessed at \$51,343,617. The entire county's valuation without gas and electric valuations is approximately \$955,153,388. If we consider gas and electric valuations, the county is valued at a total assessed dollar value of \$983,634,028. This is the total vulnerability in terms of cost for Chickasaw County.

**Table 42: Total Assessed Valuations of Property in Chickasaw County by Land Type (2023)**

Land Type	Assessed Value (2022)
Residential	\$376,720,898
Agricultural Land	\$367,270,097
Agricultural Buildings	\$30,060,406
Commercial	\$74,217,765
Industrial	\$51,380,876
Utilities W/O Gas & Electric (G&E)	\$51,343,617
<b>Total Valuation W/O G&amp;E Utilities</b>	\$955,153,388
<b>Gas &amp; Electric Utility Valuation</b>	\$28,480,640
<b>Total Valuation With G&amp;E Utilities</b>	\$983,634,028
<b>Source: Iowa Dept. of Management</b>	

*Requirement 44 CFR §201.6(c)(2)(ii): The plan should describe vulnerability in terms of...(B) An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate.*

### Estimating Potential Property Losses from a 100-Year Flooding Scenario

A flood scenario was modeled across the county using the 1% annual chance flood hazard zone from FEMA's flood insurance rate maps (FIRM). For this analysis, the impact of flooding for the planning area was calculated with parcel valuation data from the county assessor's office and effective FIRM data. See Appendix Q for the flood scenario maps of each city and the affected parcels in that city from a 100-year annual chance flood event.

The effective FIRM data is dated 09/28/2012. Since the 2019 Chickasaw County MJ-HMP there have been no major changes in flood boundaries nor development within city boundaries. No levees or dams or changes in water ways have impacted the planning area nor have any infrastructure projects out of the county changed waterways throughout the County. No development changes have affected the vulnerability of the County. Assuming a similar impact from the 2019 analysis, the values from the 2019 Chickasaw County's MJ-HMP were adjusted for inflation to 2023 dollars. Cumulative inflation was calculated at 34.6%.

The total cost of a 100-year annual chance flood occurring is summarized in Table 44. Table 44 lists the number properties in the entire county that are located within the 100-year floodplain.

For rural areas of Chickasaw County (unincorporated), Table 46 displays the value of 5,732 parcels within the 100-year floodplain. Land values make up nearly 27% of this value. For city parcels, Table 45 shows a total cost for all cities in 2024 dollars for a 100-year annual chance flood event occurring.

**Table 43: Chickasaw County - Entire Planning Area: 100-Year Flood Impacted Properties (2019 and 2023)**

	2013	2024
<b>Number of Parcels</b>	9,804	9,804
<b>Total Value of Land Building, and Dwelling</b>	\$1,238,709,320	\$1,667,238,288

Source: INRCOG & Chickasaw County Assessor 2013

Note: 2023 Dollars calculated with 34.6% cumulative rate of inflation.

**Table 44: Chickasaw County -Incorporated Planning Area: 100-Year Floodplain Properties**

	2013	2023
<b>Number of Parcels</b>	4,072	4,072
<b>Total Value of Land Building, and Dwelling</b>	\$328,629,970	\$442,318,839

Source: INRCOG & Chickasaw County Assessor 2013

Note: 2023 Dollars calculated with 34.6% cumulative rate of inflation.

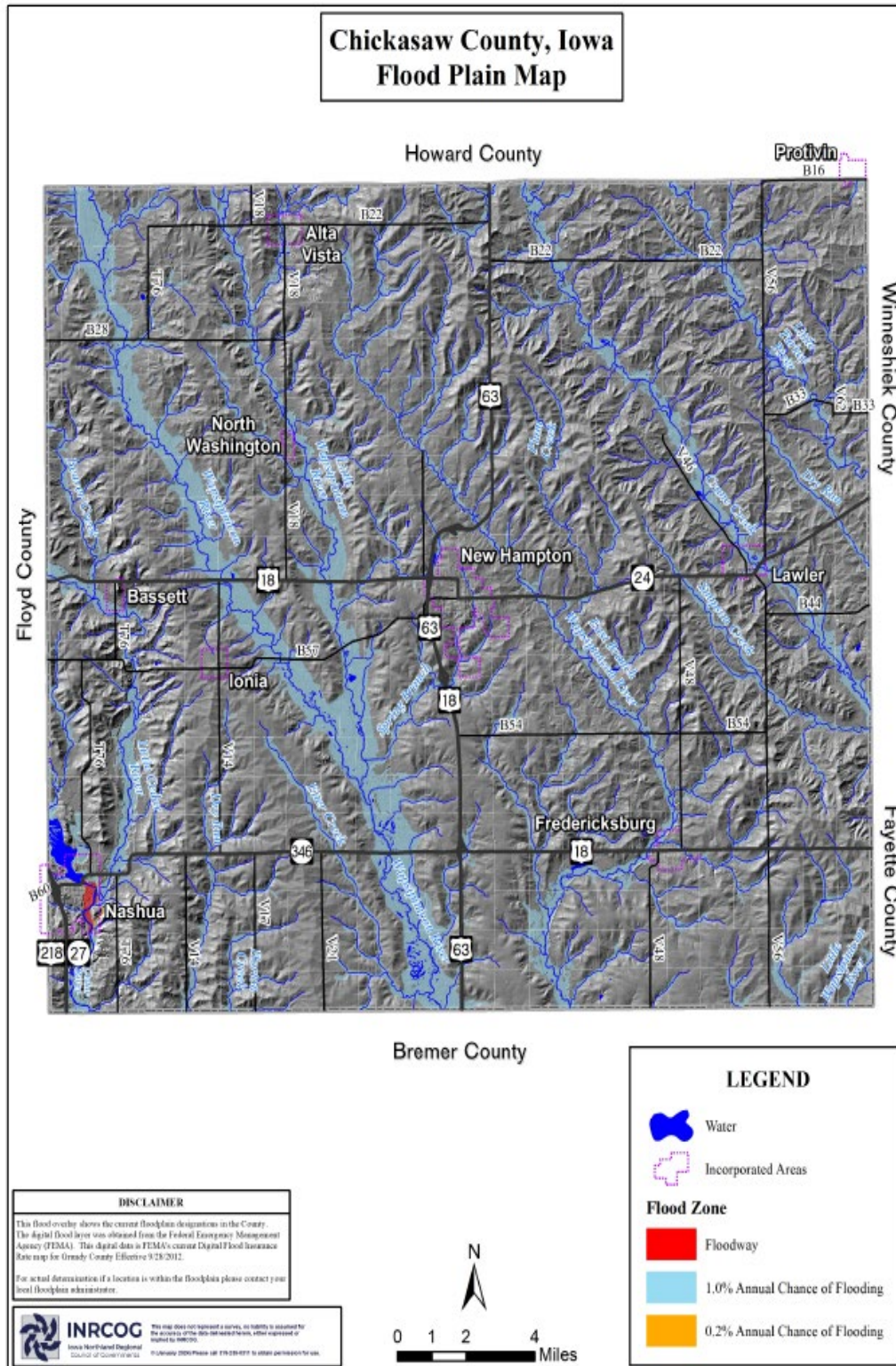
**Table 45: Chickasaw County- Rural Unincorporated Planning Area: 100-Year Flood Impacted Properties**

	2013	2023
<b>Number of Parcels</b>	5,732	5,732
<b>Total Value of Land Building, and Dwelling</b>	\$910,079,350	\$1,224,919,448

Source: INRCOG & Chickasaw County Assessor 2013

Note: 2023 Dollars calculated with 34.6% cumulative rate of inflation.

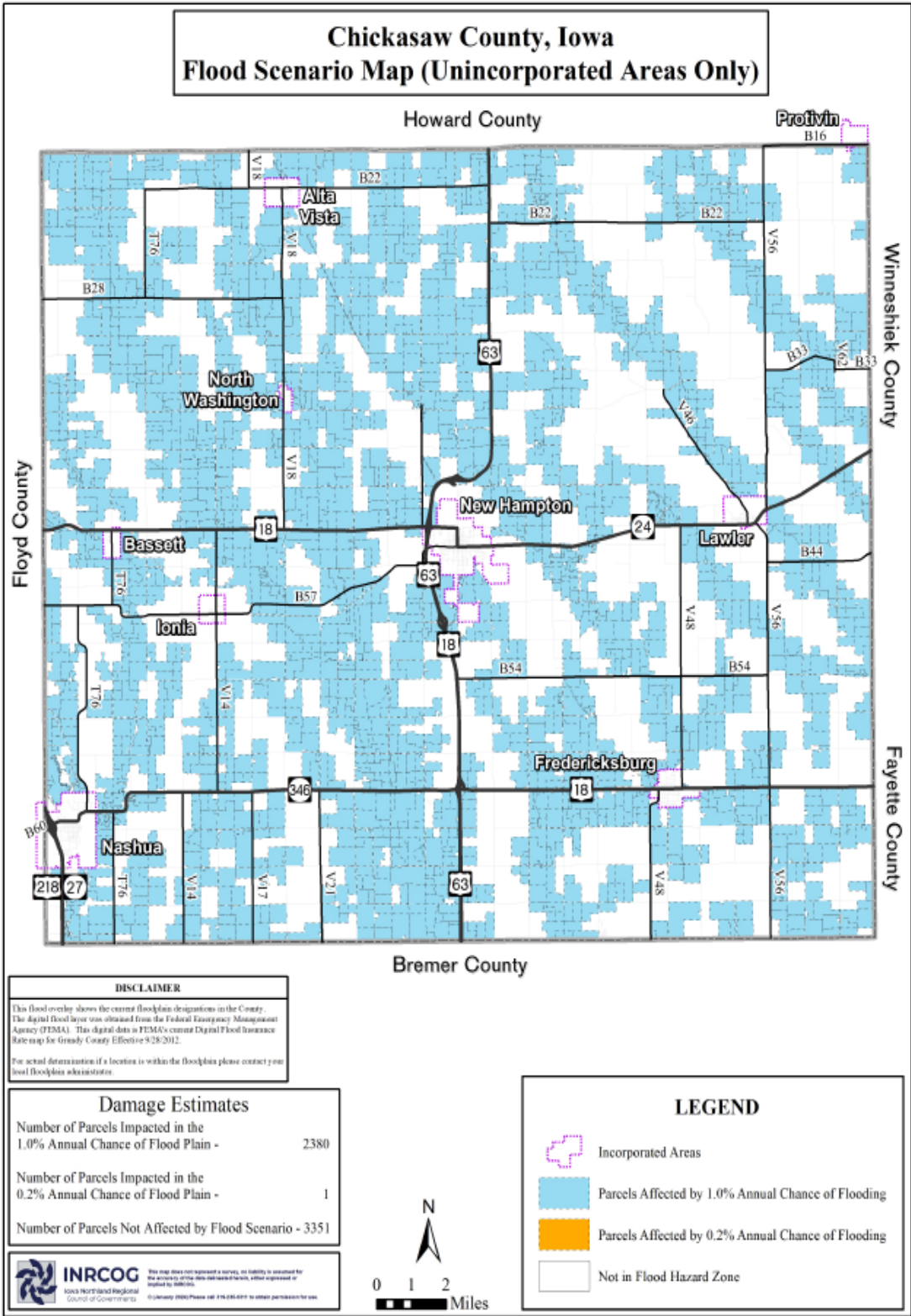
**Figure 12: FIRM Data Flood Risk Areas in Chickasaw County**



Source: FEMA FIRM Panels Effective 12/20/2019



Figure 13: Flood Impacted Parcels in Chickasaw County



### **Tornado Scenario**

In a 1989 study<sup>1</sup> of deaths and injuries due to tornados, risk factors for injury and death were identified. Poor building anchoring, locations without a basement, people outdoors, and those over the age of 70. The findings in this study are supported by later studies that point to sheltering in buildings with adequate anchoring in an interior building or basement offer better protection during a tornado.

Vulnerable structures in a tornado are mobile homes. Although a mobile home may be structurally “tied down” to withstand strong winds, a mobile home will offer less protection from tornadoes than conventional wood frame structures on concrete footing.

According to data from the 2020 ACS data, there are an estimated 109 mobile homes in the county. The average household size is 2.39 people. An estimated 382 people reside in mobile homes in the county. A potential tornado may affect the entire county. This puts 261 people at a greater risk than others during a tornado event.

Vulnerable populations in a tornado are those over 70 years of age. For the elderly population, there are an estimated 2,682 adults greater than 65 years old which is 22% of the population in the county. Nearly 14% of the population are older adults (65 years or older) living alone. This is estimated at 375.

From this assessment, nearly 3,064 people in the county are at greater risk than others in a tornado. This accounts for older adults 65 years and older and people living in mobile homes. Both these measures account for nearly 25% of the population.

Currently, Nashua’s Welcome Center, Nashua-Plainfield Elementary, are locations where there is a FEMA certified tornado safe room that is known to exist in the planning area.

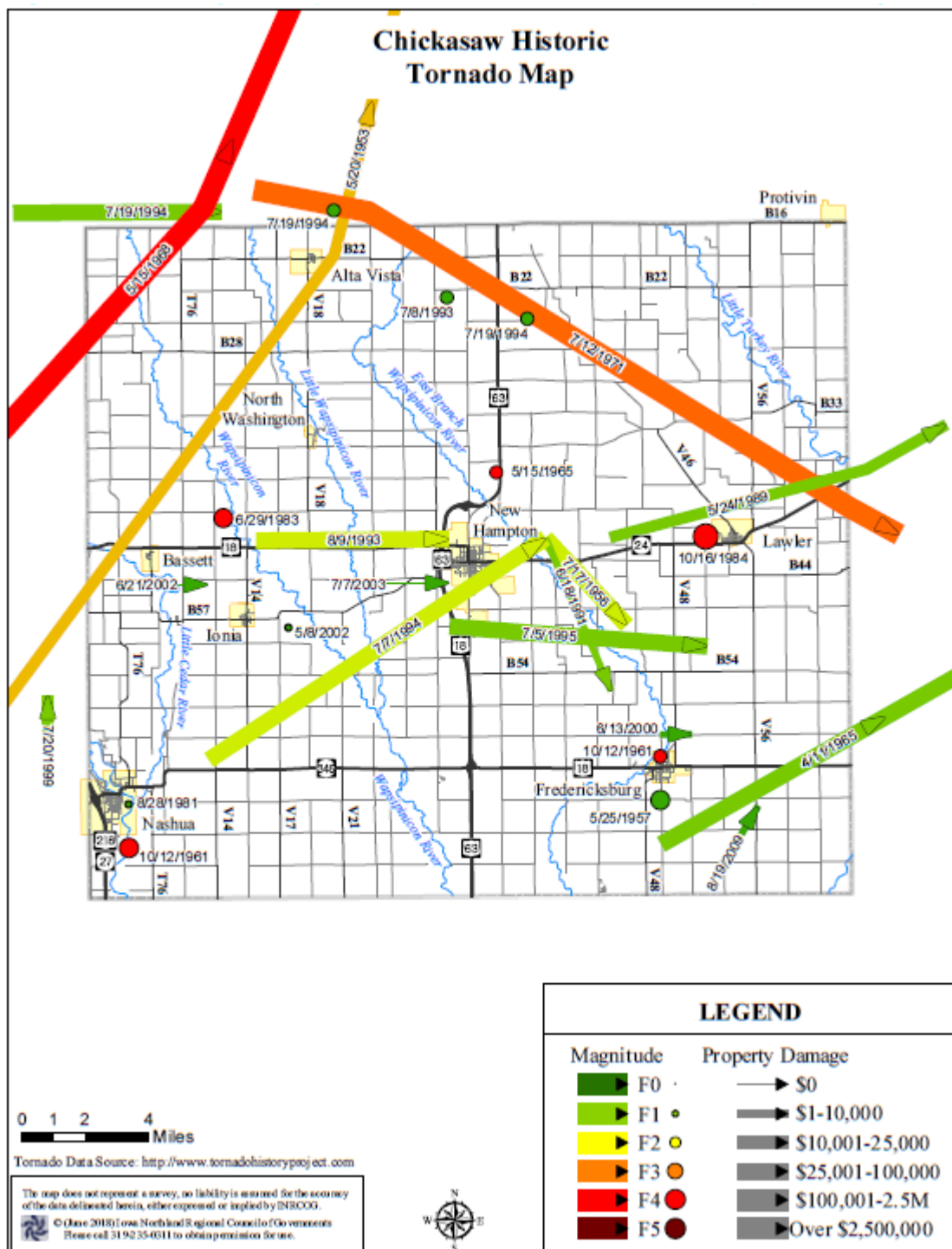
The maps below show a historical map of tornados for Chickasaw County. See Appendix Q for individual community’s tornado scenario maps.

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<sup>1</sup> Carter AO, Millson ME, Allen DE. Epidemiologic study of deaths and injuries due to tornadoes. Am J Epidemiol. 1989 Dec;130(6):1209-18.



Figure 14: Historical Tornado Map in Chickasaw County



## Future Development

Future development within identified hazard areas can change the threat level of an area by placing critical facilities, businesses, transportation networks, utilities, and populations within areas prone to risk from hazards such as floods. Such patterns in city development are curbed to mitigate predicted future hazards using mitigation tools such as state building codes and local land use regulations (zoning, subdivision, floodplain management, etc.). These tools will help to mitigate the impacts of hazards on new and future development.

Recent updates in Title 44 CFR §201.6 (c)(2)(i) require this risk assessment include a section with future conditions on the type, location, and range of anticipated intensities of natural hazards.

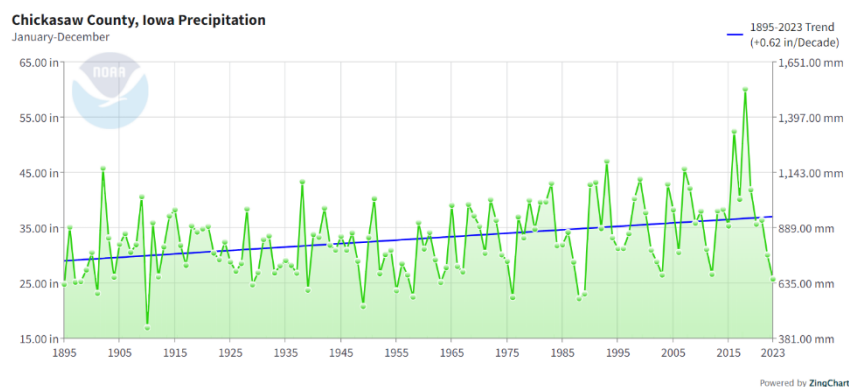
Long term trends of climate patterns for the region were summarized in the Fourth National Climate Assessment Midwest Section. The National Climate Report is mandated to be updated every 4 years and deliver results to Congress and President on the effects to agriculture, energy productions, land use, transportation, and human health.

Yearly precipitation levels and annual average temperatures offer insights into future conditions of our climate system.

### Annual Precipitation Levels in Chickasaw County

Taking the monthly precipitation records from January to December between 1895 and 2023 is shown in Figure 15. The values hover between 25 - 35 inches of precipitation levels recorded. The average precipitation level for the year is plotted and a linear trend of those values is shown in Figure 15. The trend shows a growing level of annual precipitation on average of 0.62 in more than the decade before. Based on this historical trend, precipitation is likely to continue to increase in the coming years.

**Figure 15: Historical Precipitation Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



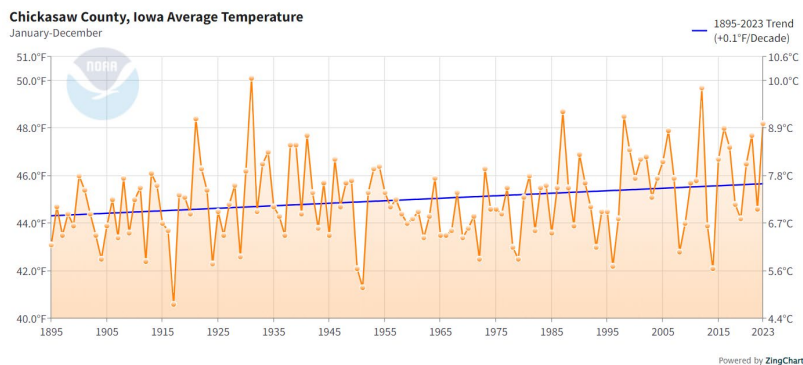
<sup>2</sup> NOAA National Centers for Environmental information, *Climate at a Glance: County Time Series*, published February 2024, retrieved on February 28, 2024 from <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>

## 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan

### Average Annual Temperatures in Chickasaw County

The monthly average temperature is plotted over a 12-month period from 1885 to 2023 in Figure 16. The annual average temperature is also shown with a linear trend in Figure 16. This trend shows the average temperature in Chickasaw County increasing at a rate of  $+0.1^{\circ}\text{F}$  every 10 years.

**Figure 16: Historical Temperature Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



### **Climate Patterns from Increasing Precipitation and Higher Temperatures**

#### Drought

The relationship between increasing precipitation, temperature, and drought is complex, and often counterintuitive at first thinking about it. While increasing precipitation may seem like it would mitigate drought

conditions, higher temperatures can exacerbate the situation in several ways:

1. **Evapotranspiration:** Higher temperatures lead to increased evaporation rates from soil, bodies of water, and plants. This means that even if there is more precipitation, it may quickly evaporate before it can effectively replenish soil moisture or water sources.
2. **Changes in precipitation patterns:** Increasing temperatures can alter precipitation patterns, leading to more intense rainfall events but also longer periods of drought between these events. This pattern can result in rapid runoff and soil erosion during heavy rain, followed by extended dry periods that contribute to drought conditions.

Overall, while increasing precipitation may provide temporary relief from drought, the combined effects of rising temperatures can outweigh this benefit, leading to more frequent and severe drought events in certain regions.

#### Pest Infestation

With more humidity, the daily minimum temperature may increase across all seasons. Warming winters can increase the survival and reproduction of existing insect pests which allow new insect pests and crop pathogens to move into the Midwest region.

### Extreme Heat Domes

A heat dome is a weather phenomenon characterized by a high-pressure system that traps hot air beneath it, leading to prolonged periods of extremely high temperatures and often causing heatwaves. Extreme heat events during the summers may occur with more frequency in the Midwest.

The human impacts of extreme heat affect socially and economically vulnerable populations the most. The higher costs of energy during heat waves disproportionately impact cost-burdened households. Heat related illness may be more severe among infants, elderly populations, and those with chronic health conditions.

### Projected Trends of Natural Hazards in Chickasaw County

- Prologued drought may occur as the atmosphere holds more moisture (even pulling moisture from plants) as the temperature increases. Longer periods

between weather events means there are dryer and longer periods in between these events.

- Floods (flash or major types) will increase in intensity as the atmosphere holds more moisture to drive stronger storms and drop heavier rainfall over a shorter period during an event.
- Extreme heat may occur more frequently. The human health impacts are higher among socially vulnerable populations (the elderly, infants, those with chronic health issues, cost burdened households).
- Agricultural pests and pathogens may increase in growing plants and stored grain. Warming temperatures in the spring and summer have led to rising humidity. Higher dew and moisture conditions may increase the presence of these pests or crop diseases.

## NFIP and Repetitive Loss Properties

This hazard mitigation plan is an attempt to reduce loss by identifying potential natural or man-made hazards. Following a natural disaster or hazard event, rebuilding the impacted area without making or addressing necessary changes or improvements to reduce future impacts from future events is not a sustainable or reasonable method for rebuilding communities. Returning to pre-disaster conditions will not improve or reduce the hazard risk for the area.

FEMA defines a repetitive loss structure as an NFIP-insured building that has experienced two paid flood losses in a 10-year period in which each loss is \$1,000 or more. Reconstructing a structure to its pre-disaster condition sets the building to the same risk of damage as before. Investments in rebuilding communities after the disaster will consider this history of damage and loss. There was no repetitive loss property in Chickasaw County.

Planning with hazard mitigation activities breaks this cycle of continuous and costly reinvestment for an area facing the same or greater risk to damage and losses. Redevelopment ensures investments can reduce future losses that protect life, property, and community life. Table 46 shows which jurisdictions participate in the

National Flood Insurance Program (NFIP). Each participating jurisdiction is responsible for implementing and enforcing the NFIP related regulations where applicable by an appropriate designee of the jurisdiction.

When structures in the Special Flood Hazard Area (SFHA) are damaged or improved, National Flood Insurance Program (NFIP) participating communities have a responsibility to assess impacts before repairs can be made, no matter the cause of damage or reason for improvements. If the cost to repair or improve is 50% or more of the marker value, the activity is considered "Substantial" and the structure must be brought into compliance with current local floodplain management standards per NFIP, 2023.

**Table 46: NFIP Status of Jurisdictions in Chickasaw County (2023)**

<b>Jurisdiction</b>	<b>NFI P</b>	<b>Initial FHBM Identified</b>	<b>Current Effective Map Date</b>	<b>Total Policy Count</b>	<b>Total Coverage</b>	<b>Total Loss</b>	<b>Total New Dollars Paid</b>
Chickasaw County	Yes	05/01/2011	12/20/2019	23	\$4,651,000	17	\$255,607
Alta Vista	Yes	08/01/1986	12/20/2019	-	-	1	-
Bassett	No	09/28/2013	12/20/2019	-	-	-	-
Lawler	Yes	08/01/1986	12/20/2019	2	\$149,000	2	\$8,999
Ionia	No	-	12/20/2019	-	-	-	-
Fredericksburg	Yes	09/29/1986	12/20/2019	3	\$1,305,000	1	\$1,666
Nashua	Yes	09/29/1978	12/20/2019	11	\$1,210,000	14	\$224,598
New Hampton	Yes	09/01/1987	-	8	\$1,522,000	7	\$7,718
North Washington	Yes	06/19/2014	12/20/2019	1	\$78,000	0	-
Protivin	Yes	08/19/1986	12/20/2019	1	\$239,000	0	-

## Section IV: Mitigation Strategy

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### Goals for Reducing Hazard Risk

The planning committee reviewed the County's Hazard Mitigation Plan Goals from the 2019 plan. The planning committee elected to continue forward with the same set of goals from the plan update (Goals 1 through 7). Goals 1 through 7 were approved by Chickasaw County's Board of Supervisors in 2019. Additional goals included in this plan update are Goals 8 and 9.

Chickasaw County's emergency management planning coordinator and the county hazard mitigation participants contributed to the formation of these goals. These goals focus on either eliminating or reducing county wide risk to hazards through actions, activities, or programs that will focus on lessening the impact of hazards on people, property, community life, and the local economy. These broad-based goals were developed to address a multitude of hazards and encompass a variety of mitigation activities.

This updated multi-jurisdictional hazard mitigation plan includes the following goals for Chickasaw County's hazard mitigation efforts are:

- Goal 1:** Minimize to the greatest possible extent the number of injuries and/or loss of life associated with all identified hazards.
- Goal 2:** Reduce or eliminate property damage due to the occurrence of disasters.
- Goal 3:** Identify ways that response operations, in the event of a disaster, can be improved.
- Goal 4:** Return the community to either pre-disaster or improved conditions in a timely manner in the wake of a disaster.
- Goal 5:** Develop strategies that can be used to reduce the community's overall risk to the negative effects of natural, technological, and man-made disasters.
- Goal 6:** Reconvene the planning committee on an annual basis to review plan documents, check for compliance with the plan goals, and track progress in achieving the mitigation strategies.

- Goal 7:** Maintain the Countywide Multi-Jurisdictional format for future plan updates.
- Goal 8:** Ensure public safety and welfare with updating planning and development documents.
- Goal 9:** Invest in updated county improvements to ensure functionality and sustainable use of public infrastructure.

*Requirement 44 CFR §201.6(c)(3)(i) [The mitigation strategy] must include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.*



## Capability Assessment

The County Emergency Management Agency Coordinator and team completed a capability assessment of county resources. The assessment includes an inventory of available or existing documents, personnel, funding, or outreach activity. The personnel, regulatory, administrative, technical, financial, and communication abilities which the county has at its disposal are shown below. Recommendations by the county staff and EMA coordinator are shown for the regulatory Using the definition of a mitigation action (i.e. any activity that is carried out to reduce risk to a hazard), the ability of the organization (County) to carry out an activity is divided into 5 different categories. No participating jurisdictions are expected to grow or expand in the near future. Given this, there is little ability to expand capabilities beyond their current capacities.

*Requirement 44 CFR §201.6(c)(3): The plan must include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.*

## Local Plans and Regulations

These are tools for the county to enact policy and enable the necessary powers to regulate development such that proposed or existing activities conform to adequate standards, procedures, or practices.

**How can these capabilities be expanded and improved to reduce risk?** The county's existing emergency plans are I.T. specific. The county may consider the development of a comprehensive Continuity of Operations Plan (COOP) as a mitigation activity to reduce risk and prepare. These capabilities may be expanded to include more comprehensive planning disaster response steps based on the type of disaster or damage to the county's capabilities (i.e. offices, I.T. servers).

<b>Document</b>	<b>In Place? (Yes, No, or In Progress)</b>	<b>Does the plan address hazards in this plan?</b>	<b>Can the plan be used to implement mitigation actions?</b>	<b>Last Update</b>	<b>Agency Responsible</b>
<i>Previous Hazard Mitigation Plan</i>	Yes	Yes	Yes	2019	County EMA
<i>IT/ GIS Disaster Plan</i>	Yes	No	No	2023	County I.T. Dept.
<i>County Basic Plan and supporting Emergency Support Functions</i>	Yes	Yes	Yes	Revolving on a 5-year rotation	County EMA
<i>County Recovery Plan and supporting Recovery Support Functions</i>	In Progress	No	Yes, in a rebuilding capacity post disaster	In Development	County EMA

## Administrative and Technical Capabilities

Administrative and technical capabilities include staff and their skills. They also include tools that can help you carry out mitigation actions. Outside entities/organizations were considered during this assessment. Each administrative position was assessed whether the position was employed in-house at the county organization or outsourced to another agency. Next, the position was assessed whether the current person in this position has participated in hazard mitigation planning. Next, the positions in the assessment were rated on a Yes/No scale whether effective tools of communication exist with the department or agency that employs the administrative position.

**Table 48: Administrative Capabilities**

<b>Position</b>	<b>Employed with County?</b>	<b>If not, position outsourced to whom?</b>	<b>Trained in Hazard Mitigation?</b>	<b>Primary Agency for Communication?</b>
Chief Building Official	Yes		Yes	Zoning Dept
Civil Engineer	Yes		Yes	Engineering Dept.
Community Planner	No	INRCOG	Yes	INRCOG
Emergency Manager	Yes		Yes	County EMA
Floodplain Manager	Yes		Limited	Coordinates with Iowa DNR
GIS Coordinator	Yes		Yes	GIS Dept
Planning Commission	Yes		No	Zoning Dept.

**Table 49: Technical Capabilities**

<b>Capability Type</b>	<b>In Place?</b>	<b>Resources Regularly Used or Updated by Technical Resource</b>
Grant Writing	No	
Hazard Data and Information	Yes	Hazard Mitigation Plans, Safety Meetings, MSDS hazard training for employees
GIS Analysis	No	
Mutual Aid Agreements	Yes	Emergency service coverage maps, emergency response plans, county dispatch office

## Financial Capabilities

This part of the capability assessment is where the county reviewed whether the organization utilizes funds available to them to implement hazard mitigation activities.

<b>Emergency Management and Mitigation Funding Sources In Place</b>	<b>Description of Current Funds Utilized for Hazard Mitigation In County</b>
Capital Improvement Project Funding	<ul style="list-style-type: none"><li>• Availability of funding is based on need or projects related to buildings, roads, land development, or trail improvement.</li></ul>
Non-FEMA Federal Funding Programs	<ul style="list-style-type: none"><li>• Secondary Road Department is a DOT agency that has access to limited bridge and road federal funds.</li><li>• ARPA funds - security lighting/locked doors/cameras for county buildings, county law enforcement center building, radios for roadway crews in DOT</li><li>• CDC Public Health Emergency Preparedness Program and Guidance - federal grant offered to Region 6 for preparedness planning, activities available to work with EMA on preparedness plans, updates, meetings, etc. CANNOT be used for emergency responses.</li></ul>
Local Public Health Services	<ul style="list-style-type: none"><li>• State grant to all county health departments to work with EMA on preparedness plans, updates, meetings, etc.</li></ul>

## Education and Outreach Capabilities

In this capability, educational and outreach activities or programs were identified by jurisdiction. These education and outreach capabilities would be used to carry out mitigation activities and communicate information about hazards.

Program or Outreach Activity In Place	Description
County Newsletter	The county prepares and sends out a newsletter for all county employees and the general public. With prior notice, the newsletter is a good way to provide information for public events.
Awareness Campaigns	The county has two annual hazard awareness activities: Extreme Weather Week and Public Health Programming for Schools. These are highly successful events/campaigns. The County is looking into pursuing StormReady® recognition and implementing programming for Chickasaw County.
Local News TV or Radio	Public Safety Radio Station for the County. This is used primarily to help friends and families of first responders to hear them responding to calls to better inform them and the public of response activities. Waterloo Area NOAA Weather Radio WXL94 - National Weather Service broadcasting serving Black Hawk, Bremer, Buchanan, Butler, Chickasaw, Franklin, Fayette, Floyd, Grundy, Howard, Mitchell, and Winneshiek counties. These are somewhat effective since news stations decide on what to broadcast. Submissions are considered but not promised or guaranteed.
Organizations that represent/advocate for/interact with underserved or vulnerable communities	Some organizations are reached out to on an as needed basis. The results are somewhat successful.
Social Media Pages	The county has a Facebook that is highly shared across multiple platforms. This is a successful resource to get out information.
Email Listservs	This is very successful at reaching a targeted audience and getting participation in county activities/events.

## Current Hazard Mitigation Actions and Updates

For this plan, all the activities or actions to be implemented can be categorized into 5 broad types:

1. **Emergency services**
2. **Education and awareness programs**
3. **Natural system protection and nature-based solutions**
4. **Structure and infrastructure projects**
5. **Local plans and regulations**

See Table 50 for definitions and examples of each category. Detailed information for each incorporated community can be found in their respective Appendix.

Each category of hazard mitigation activities is in the associated sections which includes a summary of the county's capabilities to implement these efforts such as existing departments or organizations, emergency response vehicles, and what kind of services they provide.

**Table 50: Categories of Action Types in Hazard Mitigation Strategy**

Mitigation Action Category	Description	Examples	
<b>EMERGENCY SERVICES</b>	Actions that protect people and property during and immediately after a disaster or hazard event.	<ul style="list-style-type: none"> <li>• <i>Warning Systems</i></li> <li>• <i>Emergency response services</i></li> <li>• <i>Protection of critical facilities</i></li> </ul>	
<b>EDUCATION AND AWARENESS PROGRAM</b>	These types of actions keep residents informed about potential natural disasters.	<ul style="list-style-type: none"> <li>• <i>Alert Iowa</i></li> <li>• <i>Radio or television ads</i></li> <li>• <i>Social media outreach</i></li> <li>• <i>Websites</i></li> <li>• <i>Real estate disclosures,</i></li> <li>• <i>Outreach to underserved or vulnerable communities</i></li> </ul>	
<b>NATURAL SYSTEM PROTECTION AND NATURE-BASED SOLUTIONS</b>	Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions.	<ul style="list-style-type: none"> <li>• <i>Sediment/erosion control</i></li> <li>• <i>Stream restoration</i></li> <li>• <i>Greenways</i></li> <li>• <i>Source water protection plans</i></li> <li>• <i>Wetland preservation</i></li> <li>• <i>Prairie land-controlled burns</i></li> </ul>	
<b>STRUCTURES AND INFRASTRUCTURE PROJECTS</b>	Actions that either modify existing buildings or structures to protect them from a hazard, or removal from a hazard area.	<ul style="list-style-type: none"> <li>• <i>Acquisitions of flood prone properties</i></li> <li>• <i>Installing utilities underground</i></li> <li>• <i>Safe rooms</i></li> <li>• <i>Storm drain infrastructure such as concrete culverts</i></li> <li>• <i>Structural retrofits</i></li> </ul>	
<b>LOCAL PLANS AND REGULATIONS</b>	Actions by administrative or regulatory processes which direct how land and buildings are developed and built. These actions include regulations by public entities to reduce hazard losses.	<ul style="list-style-type: none"> <li>• <i>Comprehensive land use plans</i></li> <li>• <i>Land use ordinances</i></li> <li>• <i>Development review procedures a</i></li> <li>• <i>Building codes and enforcement</i></li> <li>• <i>Open space preservation</i></li> <li>• <i>Storm water management regulations</i></li> </ul>	

# Emergency Services Activities

## *Emergency Management Agency*

Chickasaw County's Emergency Management Coordinator is based out of the city of New Hampton. The Emergency Management Coordinator works in conjunction with local fire, rescue, police, and government officials to draft and implement workable emergency action plans in the community. The current Chickasaw County Emergency Management Coordinator and contact information is:

Jeff Bernatz, Emergency Management & E911 Coordinator  
516 S Linn Ave., New Hampton, IA 50659  
Phone: (641) 394-2406  
Email: j.bernatz@chickasawcounty.iowa.gov

## *Law Enforcement*

The Chickasaw County Sheriff's Office provides law enforcement for all the unincorporated areas of the County along with providing assistance to the cities that have their own police force. The Chickasaw County Sheriff's Office has service contracts to provide law enforcement patrols with a number of smaller communities in the County.

## *Fire Protection*

There are eight independent fire departments (Alta Vista, Fredericksburg, Ionia, Lawler, Nashua, New Hampton, North Washington, and Protivin), as well as a township fire district (Chickasaw Township Fire District) in the county. Each department is responsible for providing fire protection services to a particular area within the county.

By law, every township must provide fire protection services to those citizens living within its borders. Every department within Chickasaw County has signed a mutual aid agreement with one another. This document is on file with Chickasaw County

Emergency Management and can be viewed as a portion of the Chickasaw County Contingency Plan.

## *Ambulance Services*

Chickasaw County Ambulance Service provides ambulance service to the county. It is a county management department and is located at 204 East Prospect St in New Hampton, IA. The department started in January 2023. The services can be activated by dialing the E-911 Emergency Response system.





### *Medical Facilities*

Chickasaw County is presently a regional health care center. In addition to numerous private clinics and practicing physicians, Chickasaw County has four medical facilities, all of which are located in either New Hampton or Nashua.

#### **MercyOne Family Clinic in New Hampton, Iowa**



These Facilities include:

- MercyOne Center and Mercy Family Clinic – New Hampton
- Nashua Medical Center – Nashua
- Fredericksburg Family Clinic – Fredericksburg
- Waverly Health Center – Nashua

In addition to the medical health field, Chickasaw County has services available to deal with those who require mental health assistance. Chickasaw – Pathways Behavioral Services Inc., out of Waverly, provides psychiatric and counseling services to citizens who need support.

### *HAZMAT*

All Chickasaw County jurisdictions contract with Northeast Iowa Response Group for response to hazardous material spills. The Northeast Iowa Response Group is a division of Waterloo Fire Rescue as is the Hazardous Materials Regional Training Center. The Training Center provides training to fire departments and companies from around the state and country. This center serves as a hazardous materials quick response unit to Black Hawk County, surrounding counties, and many municipalities in a ten-county region. The Unit provides local fire departments with hazardous materials emergency procedures thus reducing additional contamination. An evacuation plan is also in place in conjunction with the activities of the local department. Contact information for the facility is as follows: Hazardous Materials Regional Training Center, 1925 Newell Street, Waterloo, Iowa 50707, Phone: (319) 291-4275, Toll Free: (800) 291-4682, Fax: (319) 291-4285.

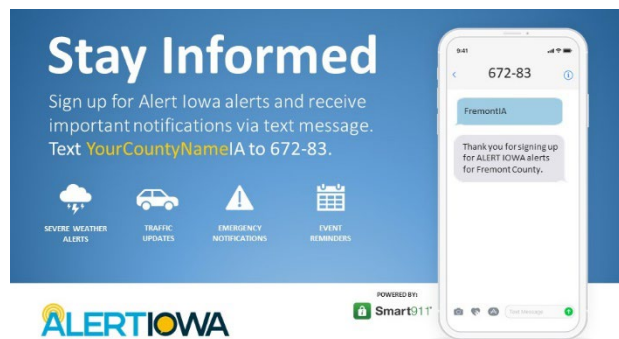
The jurisdictions also partner the Northeast Iowa Response Group for assistance in responding to any methamphetamine labs located in the city limits. The Response Group assists the Police Departments in containment of the site and disposal of hazardous chemicals.

## Warning Systems

### Alert Iowa

Chickasaw County uses the Alert Iowa notification system that is utilized statewide. Alert Iowa serves as the statewide mass notification and emergency messaging system and is operated by Iowa Homeland Security and Emergency Management. Alert Iowa's features are controlled through the Chickasaw County Emergency Management Agency and is available to all county residents. Residents can customize their alert settings including the type of alerts they would get.

Alert Iowa allows for emergency notifications via landline telephones, cell phones, email, text messages, and social media. This is useful for communities that may not have an operating warning siren or may not hear the sirens. The County will use its emergency notification network for all of the following events: **blizzards, flash flooding, severe thunderstorms, and tornadoes.** There is an optional way to receive the same alert for events such as: excessive heat warnings, hazardous materials warnings, heavy snow warning, high wind warnings, ice storm warnings, law enforcement warnings, shelter in place warnings, sleet warnings, wind chill warnings, and winter storm warnings.



### Tornado Sirens

Each city in Chickasaw County has tornado sirens that are operated and maintained by a local committee/body of people who schedule monthly tests. The activation systems of warning systems vary by city. Some cities have a digital system that activates according to wind speeds and atmospheric readings in the area that detects strong conditions for tornadoes. Other cities operate from a single source by a user.

## Education and Awareness Programs Activities

Information regarding how to protect oneself in the event of a tornado is largely publicized in the form of flyers, radio, newspaper, and television announcements. The County provides basic safety information for various hazard events (i.e., tornadoes) and what to do before, during, and after an event.

## Structure and Infrastructure Projects Activities

### County Engineer and Secondary Roads Department

The Chickasaw County Engineer's Office is tasked with the maintenance of all roads within Chickasaw County. The Code of Iowa requires that the Board of Supervisors appoint a Registered Professional Engineer as department head. The Engineer, along with the Assistant to the Engineer and Technician, Road Superintendent and Office Manager, directs both the construction and maintenance activities.

### Tornado Safe Rooms

Safe rooms are designed according to FEMA standards. They can withstand wind gusts of up to 250 mph and resist the impact

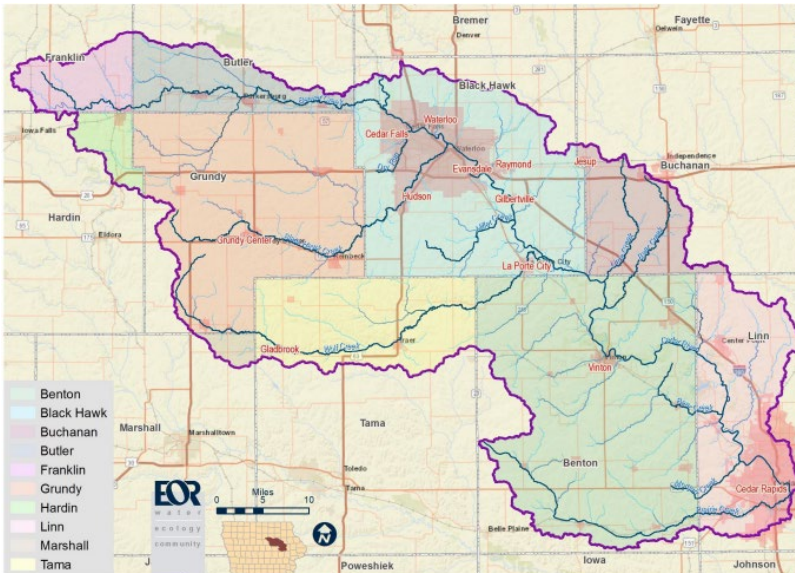
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of a 15-pound 2-by-4 board traveling horizontally at 100 miles per hour.

Currently, two safe rooms exist in Chickasaw County. They include Nashua's Welcome Center and Nashua-Plainfield Elementary School.

## Natural Resource Protection Mitigation Activities

### *Floodplain Management in Chickasaw County*



On May 1st, 2011, Chickasaw County became an active member in the National Flood Insurance Program (NFIP) by adopting its initial floodplain ordinance. The Federal Insurance Administration manages the insurance component of the NFIP and works closely with FEMA's Mitigation Directorate, which oversees the floodplain management aspect of the program.

### *Watershed Management Authority*

Chickasaw County has three watersheds that run through its county. They include the Turkey River WMA, Upper Cedar Reiver WMA, and Upper Wapsipinicon River WMA. The Watershed Management Authority to perform all the following duties:

1. Assess the flood risks in the watershed.
2. Assess the water quality in the watershed.
3. Assess the options for reducing flood risk and improving water quality in the watershed.
4. Monitor federal flood risk planning and activities.
5. Educate residents of the watershed area regarding water quality and flood risks.
6. Allocate money made available to the watershed for the purposes of flood mitigation.
7. The watershed management authority does not have the authority to acquire property by eminent domain.

Each Watershed has a Management Plan which outlines recommendations for municipalities within the watershed region.

Chickasaw County has been working to acquire and restore wetlands. Chickasaw County's Conservation Board is working on implementing and meeting the goals in the watershed management plan.

## Planning and Regulation Activities

### *Flood Protection Mitigation Actions*

Chickasaw County currently has a Floodplain Management Ordinance. All inquiries pertaining to construction areas in a floodplain are directed to the Administrator's Office and follow NFIP guidelines. The Federal Government completed new FIRM maps, as of September 2012 for Chickasaw County. Chickasaw

County does not have or enforce Zoning Ordinances. They issue building permits for the unincorporated areas only.

### ***Planning And Regulatory Documents***

The cities in Chickasaw County also use several zoning and ordinance tools. Table 51 provides a compilation of the current planning regulatory documents in place for each city in Chickasaw County.

*Requirement 44 CFR §201.6(c)(3): A mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.*

**Table 51: Current Planning and Regulatory Documents for Selected Communities**

<b>Jurisdiction Planning and Regulation Documents</b>	<b>Alta Vista</b>	<b>Fredericksburg</b>	<b>Ionia</b>	<b>Lawler</b>	<b>Nashua</b>	<b>New Hampton</b>	<b>North Washington</b>	<b>Protivin</b>	<b>Bassett</b>	<b>Unincorporated Chickasaw County</b>
<b>Previous Hazard Mitigation Plan Participant</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
<b>Comprehensive Plan</b>	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No
<b>Building Code</b>	IBC, 2009	No	No	No	No	No	No	No	No	No
<b>Zoning Ordinance</b>	No	Yes	Yes	RR	RR	Yes	No	No	No	No
<b>Subdivision Regulations</b>	No	No	Yes	No	Yes	Yes	No	No	No	No
<b>Floodplain Management Ordinance</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
<b>Tree-Trimming Ordinance</b>	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No
<b>Storm Water Ordinance</b>	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No
<b>Snow Removal Ordinance</b>	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No

Source: Community Representatives

## Hazard Mitigation Strategy for Chickasaw County

Each participating jurisdiction in this plan update created their own local hazard mitigation strategy when this plan was initially developed. The local hazard mitigation for each city and school district is in the appendices and each plan contains the associated action plan strategy for implementation.

The planning committee for this plan developed a strategy within this document which would prioritize mitigation actions based on the number of hazards address, estimated costs, timeline for completing or implementing the action or program, and priority level determined from a cost-benefit approach. Fire chiefs and ambulance services directors have a valuable understanding of existing capabilities of their local emergency response units in Chickasaw County. City leaders and staff responded to these contributing factors of their existing and new hazard mitigation activities.

### Priority Level

Committee representatives determined the priority level of all mitigation actions within this strategy based on resources and capabilities. The priority level was informed through discussions among planning committee members who considered potential benefits of implementing the activity, some hurdles that the city may face in implementing the action step, and the drawbacks of implementation.

The priority ranking for each identified mitigation activity is:

- **High**
- **Medium**
- **Low**

*Requirement 44 CFR §201.6(c)(3)(iv):* For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

### Timeline

The planning committee determined the length of time that it would take to carry out initiating the action, policy, or program. The timeframe designations describe the length of time to carry out implementing the mitigation activity. For mitigation actions that describe preparing a plan or deploying a program, the timeframe would describe the implementation process of writing the plan or starting the program such as planning, assembling staff, and gathering funding. The timeframe does not describe the length of time the program is to be administered. For example, the timeframe for developing a response plan to assist vulnerable populations needing evacuation during a flooding event would describe the time it would take to prepare an actual planning document and not carry out the specific response during said emergency.

Table 52: Mitigation Action Timeline	Timeframe Description
<b>Short Term</b>	1-5 years
<b>Mid-Term</b>	5-10 Years
<b>Long-Term</b>	More than 10 Years
<b>Completed or Active</b>	Action Item Has Been Completed (and/or implemented as a regular, ongoing service/program/policy)



If the action item was updated as completed, then the action item has been implemented. This may be one time action item or a regular, ongoing service/program/policy. The implementation strategy in this plan is focused solely on implementing any necessary mitigation measures or implementing the program/policy, etc. to be maintained and regulated by the designated agency.

### ***Estimated Cost***

Although in the long-term hazard mitigation actions will save money by avoiding the loss of lives or property damages, in the short-term each action will have an associated cost. The County will rely heavily on local funding sources to fulfill most of the plan obligations; however, they will also seek funds from State and Federal agencies for both pre- and post-disaster mitigation activities. Federal funds such as FEMA's Hazard Mitigation Assistance Program (HMGP), Building Resilient Infrastructure and Communities (BRIC), and Flood Mitigation Assistance (FMA) would be considered. State funds to help mitigate could include the State Revolving Loan fund as well as working with additional State agencies on the various grants available.

*Requirement 44 CFR §201.6(c)(3)(iii):* An action plan describing how the actions identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization will include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

The estimated cost(s) for each mitigation action, program, or project is either: Minimal, Low, Moderate, or High depending upon various factors.

<b>Table 53: Estimated Cost Level</b>	<b>Description</b>
<b>Minimal</b>	Cost estimate is \$10,000 or less based on using current staff, time commitment, continuous of current duties, proposed action/program/ project, and funding sources.
<b>Low</b>	Cost estimate for the project range from \$10,001 - \$99,999 based on existing proposed treatment, time commitment, any further study that is needed, and level of engineering, and project components (permits, acquisition, coordination, etc.).
<b>Moderate</b>	Cost estimate for the project range from \$100,000 - \$299,999 based on existing conditions, time commitment, proposed action/ program/project, any further study that is needed, and level of engineering, and project components (permits, acquisition, coordination, etc.), and funding sources.
<b>High</b>	Cost estimate for project range is \$300,000 or higher based on existing conditions, time commitment, proposed action/program/project, any further study that is needed, level of engineering, project components (permits, acquisition, coordination, etc.), and funding sources.

*Requirement 44 CFR §201.6(c)(3)(ii):* A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.

## 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan

# Hazard Mitigation Action Implementation Plan

**Table 54: Hazard Mitigation Category Descriptions and Examples**

Mitigation Category	Description	Examples
<b>Emergency Services</b>	Actions that protect people and property during and immediately after a disaster or hazard event.	Warning Systems, emergency response services, protection of critical facilities
<b>Education and Awareness Program</b>	These types of actions keep residents informed about potential natural disasters.	Alert Iowa, Radio or television ads, social media outreach, websites, real estate disclosures, outreach to underserved or vulnerable communities
<b>Natural system protection and nature-based solutions</b>	Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions.	Sediment and erosion control, stream restoration, greenways, source water protection plans, wetland preservation, prairie land-controlled burns
<b>Structures and Infrastructure Projects</b>	Actions that either modify existing buildings or structures to protect them from a hazard, or removal from a hazard area.	Acquisitions of flood prone properties, undergrounding utilities, structural retrofits, safe rooms, storm drain infrastructure such as culverts
<b>Local Plans and Regulations</b>	Actions by administrative or regulatory processes which direct how land and buildings are developed and built. These actions include regulations by public entities to reduce hazard losses.	Comprehensive land use plans, land use ordinances, development review procedures, building codes and enforcement, open space preservation, storm water management regulations

### *Notes for Mitigation action Tables*

**ALL** = All Hazards

**A/P/CD** = Animal/Plant/Crop Disease

**D/L** = Dam/Levee Failure

**D**= Drought

**E**= Earthquake

**ES**= Expansive Soils

**EH**= Extreme Heat

**GWF**= Grass/Wildland Fire

**HMI**= Hazard Materials Incident

**IF**= Infrastructure Failure

**FF**= Flash Flooding

**FR**= Flooding- River

**L**= Landslides

**PHD**= Pandemic Human Disease

**RI**= Radiological Incident

**S**= Sinkholes

**SWS**= Severe Winter Storm

**T**= Terrorism

**TI**= Transportation Incident

**T/H/L**= Thunderstorm/ Hail/ Lightning

**T/W**= Tornado/Windstorm

\* Denotes primary agency responsible

*Requirement 44 CFR §201.6(c)(3)(ii):* A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.



**Table 55: Emergency Services Mitigation Actions****Actions that protect people and property during and immediately after a disaster or hazard event.**

Priority	Mitigation Action/Program/Project	Assoc. Hazard	Primary Agency Responsible for Implementation	Timeline	Estimated Cost (s)	Hazard Mitigation Goal(s) #	Potential Funding Sources
High	Maintain Well-Trained Personnel (Fire, First Responders, Police, EMS, Weather Spotters, and other Critical Services – includes Multi-Jurisdictional Training and Cooperation for all Hazards)	FF, FR, T/H/L, T/W, HMI, T	Individual Departments*; County EMA, Ambulance Service, Police Departments,	Active; updated annually	Minimal	1, 2, 3, 4, 5, 7	County General Fund
High	Develop Plan / Procedures to Assist At-Risk Populations during an Event (Transport to Shelters, Home Visits, etc.)	EH, FF, FR, SWI, T/H/L, T/W, HMI, D/L	County EMA* and Public Health	Active	Minimal	1, 5	County General Fund
High	Establish and maintain Emergency Notification System and Conduct Drills	All	County EMA*	Ongoing	Minimal	1,2,3, 5, 7	County General Fund
Medium	Enhance emergency response time, communication, and coordination to prepare and respond to various hazards.	All	County EMA*	Ongoing	Minimal	1, 2, 4, 5, 6	County General Fund
High	Identify and Improve Security at Critical Facilities including IT Security and Data.	T	Board of Supervisors*	Active	Low	1, 5	County General Fund, Cybersecurity Grant
Medium	Develop and Maintain an Emergency Response Plan that is not IT-Specific	All	County EMA*	Active; updated annually	Minimal	1, 2, 4, 5, 6	County General Fund
Medium	Coordinate flood control efforts.	FF, FR	County EMA	Active	Minimal	1, 2, 3, 5, 6	County General Fund
Medium	Maintain Bulk Supply and Storage of Critical Elements (Fuels, Water, Nonperishable Food, etc.)	EH, FF, FR, SWS, T/H/L, T/W, D/L, T	Board of Supervisors, County EMA*	Active	Moderate	4, 5	County General Fund
Low	NOAA Weather Radio Awareness Program	All	County EMA*	Active, repetitive	Minimal	1, 2, 5, 6, 7	County General Fund
Low	Develop a Water Rationing Plan	D	County EMA and Public Health	Short-Term	Low	4	County General Fund
Low	Monitor current and emerging diseases and developed strategies to mitigate/reduce their impact	All	County EMA*	Active, repetitive	Minimal	1, 2, 5, 6, 7	County General Fund

## 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan

**Table 56: Education and Awareness Programs Mitigation Actions**

These types of actions keep residents informed about potential natural disasters.

Priority	Mitigation Action/Program/Project	Associated Hazard	Primary Agency Responsible for Implementation	Date for Completion	Estimated Cost (s)	Hazard Mitigation Goal(s) #	Potential Funding Sources
High	Create an email list serv for outreach and website postings.	All	Individual Depts.*	Short-Term	Minimal	1, 2, 4, 5, 6	County General Fund
High	Engage with the public and track social media site interactions/visits for measuring impact.	All	County EMA	Short-Term	Minimal	1, 2, 4, 5, 6	County General Fund
High	Determine ad campaign costs/estimates at movie theater and billboards for outreach posts.	All	EMA*, Individual Depts.	Short-Term	Minimal	1, 2, 4, 5, 6	County General Fund
High	Establish & Conduct a Public Awareness & Education Program (Notices, Newsletters, Brochures, Website, Warnings, Shelter Information, Importance of Vaccinations, Hazard Information, At-Home Improvements - plant trees, rain barrels, etc.).	D, EH, FF, FR, GWF, PHD, SWS, T/H/L, T/W, HMI, IF, D/L, ES, S	County EMA* and Public Health	Active	Minimal	1, 2, 4, 5, 6	County General Fund
Medium	Continue to educate public and encourage use of Iowa One Call.	All	County EMA	Ongoing	Minimal	1, 2, 4, 5, 6	County General Fund
Medium	Coordinate, organize, plan and train local jurisdictions on hazard readiness including response drills, HAZMAT reporting, and First Responder Capacity.	All	County EMA	Ongoing	Minimal	1, 2, 4, 5, 6	County General Fund
Low	Continue volunteer recruitment and training for storm spotters.	All	County EMA	Ongoing	Minimal	1, 2, 4, 5, 6	County General Fund
Low	Continue conducting incident command system training.	All	County EMA	Ongoing	Minimal	1, 2, 4, 5, 6	County General Fund

**Table 57: Natural System Protection and Nature-Based Solutions Mitigation Actions**

Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions

Priority	Mitigation Action/Program/Project	Associated Hazard	Primary Agency Responsible for Implementation	Timeline	Estimated Cost	Hazard Mitigation Goal(s) #	Potential Funding Sources
High	Develop Groundwater Protection Plan or Drinkable Water Distribution Plan (inspections, testing, security, etc.).	D, FF, FR, PHD, HMI, TI, T	County Environmental Health*	Active	Minimal	1, 5	County General Fund
High	Maintain Membership of National Flood Insurance Program.	FF, FR	Board of Supervisors*	Active	Minimal	5	County General Fund
High	Maintain a Community-Wide Household Hazardous Waste Disposal Site or Event.	HMI, PHD	Board of Supervisors*	Active	Moderate	4	County General Fund, Solid Waste Commission
Low	Maintain Roadside Vegetation Management Program.	L	County Engineer	Active	Low	5	County General Fund
High	Utilize filter strips, detention basins, wetland improvements, buffer zones to improve water quality and reduce water hazards.	HMI, PHD	Board of Supervisors*	Active	Moderate	1, 2, 4, 9	County General Fund, Hazard Mitigation Grant, Flood Mitigation Grant Program

## 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan

**Table 58: Structure and Infrastructure Projects Mitigation Actions**

Actions that either modify existing buildings or structures to protect them from hazard, or removal from the hazard area.

Priority	Mitigation Action/ Program/ Project	Associated Hazard	Primary Agency Responsible for Implementation	Timeline	Estimated Cost (\$)	Hazard Mitigation Goal #	Potential Funding Sources
High	Install Signage at Critical Transportation Sites (i.e., RR, Dangerous Intersections, etc.).	FF, FR, GWR, SWW, T/H/L, T/W, HMI, D/L, TI,	County Engineer*	Active	Minimal	1, 5	County General Fund
High	Provide an Adequate Number of Safe Rooms/Tornado Rooms for General Public Use.	T/H/L, T/W, T	Board of Supervisors*	Active	Minimal	1	County General Fund, Hazard Mitigation Grant
High	Determine a prioritized list of buildings that would need a redundant power supply in terms of need and investigate funding these projects.	T/H/L, T/W, T, RI	County EMA	Short-Term	Minimal	3, 9	Utility Providers
Low	Flood Proof Critical Facilities.	FF, FR, D/L	Board of Supervisors	Short-Term	Low	2	County General Fund, Hazard Mitigation Grant
Low	Develop & Enforce an Inspection & Repair Program for Public Infrastructure.	E, EH, FF, FR, T/W, D/L	County Engineer	Active	Moderate	1, 2, 5	County General Fund
Low	Either Purchase & Remove Structures in 100-YR Floodplain or Elevate Structures to at Least 1-FT Above 100-YR Floodplain, or both.	FF, FR, D/L	County EMA, Board of Supervisors	Active	Moderate	1, 2, 5	County General Fund, Flood Mitigation Grant
Low	Continue flood buyouts as needed.	FF, FR, D/L	Board of Supervisors	Ongoing	Low	2	County General Fund, Flood Mitigation Grant
Low	Develop & Enforce an Inspection & Repair Program for Public Infrastructure.	E, EH, FF, FR, T/W, D/L	County Engineer	Active	Moderate	1, 2, 5	County General Fund
Low	Invest in mitigation infrastructure including flood control systems, utility hardening, generators, storm shelters, and warning sirens.	E, EH, FF, FR, T/W, D/L	County Engineer	Active	Moderate	1, 2, 5	County General Fund, Hazard Mitigation Grant, Flood Mitigation Grant

**Table 59: Local Plans and Regulations Mitigation Actions**

Actions by administrative or regulatory processes which direct how land and buildings are developed and built. These actions also include regulations by public entities to reduce hazard losses.

Priority	Mitigation Action/Program/Project	Assoc. Hazard	Primary Agency Responsible for Implementation	Timeline	Estimated Cost (s)	Hazard Mitigation Goal #	Potential Funding Sources
High	Organize and hold regular Chickasaw County Disaster Planning Committee Meetings.	All	EMA, Board of Supervisors	Short-Term	Minimal	1, 2, 3, 5, 6, 7, 8	County General Fund
High	Develop and Maintain Command Procedures & Center.	All	County EMA*	Active	Minimal	1, 5	County General Fund
High	Promote County Wellness Activities and Public Health Department efforts in wellness.	PHD	County Public Health*	Active, repetitive	Minimal	1	County General Fund
High	Develop a Clean Up/Recovery Procedure / Plan.	FF, FR, SWS, T/H/L, T/W, HMI, DL, T	County EMA*	Active, updated annually	Minimal	4	County General Fund, Hazard Mitigation Planning Grant
High	Ensure Schools and Other Buildings / Structures with Large Populations have Evacuation Plans.	FF, FR, T/H/L, T/W, HMI, T	County EMA*	Active	Minimal	1, 2	County General Fund
High	Maintain updated NFIP Membership, flood maps, and ordinances.	All	Board of Supervisors, EMA*	Ongoing	Low	4, 5	County General Fund
High	Develop and Maintain Continuity of Operations Plan (COOP).	PHD, T/H/L, T/W, HMI, T	Board of Supervisors*	Active	High	4, 6	County General Fund

## Section V – Plan Maintenance

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## Future Amendments and Updates

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This is an update to the 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. A plan update is to occur every five (5) years. This 2024 plan is to be commenced upon FEMA Certification.

### **Future Amendments:**

Any future amendments to the plan shall occur only after an official Public Notice has been posted in a local publication announcing a Public Hearing on the matter.

After the public has had the opportunity to review the proposed amendments the City Council, School Board, and/or Board of Supervisors may, by resolution, choose to accept any amendment to the plan. Once a City Council and/or Board of Supervisors has adopted the amendment, the remaining elected board of each participating municipality shall hold a public hearing to receive public input on the amendment prior to local adoption.

All amendments made to this plan should be shared with each participating

jurisdiction, the Chickasaw County Emergency Management Agency and the Iowa Department of Homeland Security and Emergency Management Division.

### **Future Updates:**

At a minimum, this Plan will be evaluated for consistency with FEMA and IHSEMD requirements and formally updated every five (5) years. However, it is strongly encouraged that the mitigation strategies for each community be reviewed and revised (if necessary) following disasters to determine if the recommended actions are still appropriate given the impacts of an event.

*Requirement 44 CFR §201.6(c)(4)(ii): [The plan content must include] a plan maintenance process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.*

## The Implementation Process & Funding Recommendations

This set of recommendations are intended to provide options for local governments to incorporate hazard mitigation actions from their prospective strategies developed in this planning process. Using the capability assessments conducted for each jurisdiction. These recommendations are to support and inform city or county stakeholders with hazard mitigation planning.

### 1. Phasing Projects Over Budget Cycles

In the implementation strategies in this plan, the estimated costs varied from minimal to high costs for each action item created by the planning committee and their representatives. Phasing is a process by which the completion of a project occurs over several budget cycles. Distributing the estimated costs of each mitigation action will make each action item more attainable over time.

### 2. Capital Improvement Programs

It is recommended that this updated hazard mitigation plan be incorporated into the City's or County's annual Capital Improvements Program update procedure.

### 3. Local Match Commitments

For most grants, there are commitments required or encouraged by funders which may allow your grant applications/requests to be considered. For projects that require a local match commitment, the Council or Board of Supervisors should begin setting aside appropriate resources to meet their match liability.

### 4. Strategic Planning and Prioritization

It is recommended that projects created by each city's and/or county's planning committee participants be shared with city

clerks, managers, boards, and department heads so that projects or programs in each jurisdiction's implementation strategy may be prioritized for funding through the jurisdictions' budgeting process.

### 5. Hazard Mitigation Grant Program

The information presented in the Plan may be used as documentation for grant applications for FEMA's Hazard Mitigation Grant Program (HMGP). This grant funding is available after a presidentially declared disaster. In this program, homeowners and businesses cannot apply for a grant. However, a local community may apply for funding on their behalf. All participating jurisdictions must complete the development of each of their respective local hazard mitigation plans found in the Appendices of this plan and adopt hazard mitigation plans through resolutions to receive funding for a hazard mitigation project application. All resolutions are in the Appendices of this plan.

For more information on the HMGP application and program, visit <https://www.fema.gov/grants/mitigation/hazard-mitigation>

## Evaluation & Review Process

The Chickasaw County Emergency Management Coordinator and governing bodies from all jurisdictions are responsible for the Hazard Mitigation Plan and implementation of the goals and actions contained herein and may seek assistance from other city or county staff, Council of Governments, and consultants to accomplish mitigation projects.

*Requirement 44 CFR §201.6(c)(4)(i): [The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.*

### Reconvene Annually

The plan should be reviewed annually to determine program effectiveness or at a minimum, shall be reviewed and updated within five years of the FEMA approval date. To assist in the review process, the Hazard Mitigation Committee may reconvene annually upon the request of the Chickasaw County Emergency Management Coordinator. The planning committee would be comprised of representatives from each participating jurisdiction as well as from neighboring communities, schools, businesses, nonprofits, agencies, and other interested parties. Together they will be charged with reviewing and evaluating implementation progress of the mitigation plan. A public notice should be posted at all city and county government buildings and in the local newspapers inviting the public to participate as members of the Committee and/or to review the Plan and provide comments. Following the committee's completion of the annual review process, the findings of the review and recommended changes, if applicable, will be presented during a City Council and Board of Supervisors meeting.

### Evaluation Tools

The Chickasaw County Hazard Mitigation Plan Review Tool in Appendix R provides a public meeting evaluation form to assist in the review, evaluation, and updating process. In Appendix N, the details on the updates or progress by each jurisdiction are provided. The updates in that appendix were provided by participants from the previous plan before this updated plan. Previous participants of the 2019 Chickasaw County MJ-HMP participated and developed an updated to their local hazard mitigation plan per FEMA requirements to qualify for pre-disaster mitigation funding. Since many activities fall under the normal duties of most city governments (e.g. funding and maintaining emergency services), not many activities were deleted.

Several communities in Chickasaw County are limited both in size and capacity to implement mitigation programs. Under the confines of these limited resources, some jurisdictions chose to drop a variety of previously defined mitigation actions, as they were determined to no longer be a priority or were not feasible.

## 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan

### Continued Public Participation

Chickasaw County's emergency management coordinator has been proactive in creating working relationships among all communities and the county's emergency management resources. Cities had not typically been tasked to initiate meetings with the public to discuss hazard mitigation issues. This has been the purview of the Emergency Management Office's activities among cities to conduct meetings whereby the cities and public are invited to cover disaster response and recovery issues. Common issues discussed included tornado sirens, tornado safe rooms, emergency generators, storm spotter training, and other training needs. The coordinator ensures each jurisdiction regularly refers to their HMP in their assistance to cities. The coordinator also encourages cities to actively participate in any HMP development meetings and continue or maintain the monitoring of implementation strategy created by their participating members to their respective hazard mitigation plans.

Cities can expect Chickasaw County's EMA coordinator to reach each jurisdiction for updates in the mail and email and to check for regular updates on the county website. To ensure that the public remains involved in the future implementation of this Plan, it shall remain available at all participating city halls, school

districts, and the county courthouse. An electronic PDF copy of this plan will be posted on the Iowa Northland Regional Council of Government's website as well, at [www.inrcog.org/pub](http://www.inrcog.org/pub).

*Requirement 44 CFR §201.6(c)(4)(iii): Discussion on how the community will continue public participation in the plan maintenance process.*

This plan shall be made available to any party who requests to see it. In the event the Hazard Mitigation Committee is reconvened by the County Emergency Management Coordinator, the process of which has been previously discussed, the public will be notified and provided an opportunity to participate in planning meetings and submit comments. The public will be notified in accordance with Iowa's Open Meeting and Records Laws (Iowa Code Chapters 21 and 22), said meetings will be open to the public and all records shall be available for inspection. The coordinator will continue to work with each participating jurisdiction in ensuring the plan goals are followed and that these jurisdictions are properly prepared for any disaster that may come.

## Required Five (5) Year Update

All local jurisdictions seeking to remain eligible for mitigation project grant funding are required to review and revise their hazard mitigation plans to reflect changes in development and progress in their local mitigation efforts. All plans must be resubmitted to the State Hazard Mitigation Officer for initial review and coordination. Per the goals in this county hazard mitigation plan, future hazard mitigation plans should seek conformity to the multi-jurisdictional process. In this multi-jurisdictional hazard mitigation planning process, the Chickasaw County Emergency Management coordinator was the plan lead for effort. Designating the county EMA coordinator for future updates begins with the grant application.

## Integrating the MJ-HMP Plan into other Planning Documents

Each jurisdiction should consider the findings from this document when updating or writing new planning documents. As deemed appropriate by the community government, this plan should be incorporated into existing or proposed development of Comprehensive Plans, Land-Use Plans and other appropriate plans or programs. Each jurisdiction should integrate and consider their goals as well as their current and future mitigation action steps with existing and future jurisdictional plans. INRCOG incorporates the hazard mitigation plans with each jurisdiction's comprehensive land use plan, housing needs assessment, long term transportation plans, urban renewal plans, existing and future zoning, and subdivision ordinances, as well as building code. Schools will work to incorporate their plans within their Emergency Operations Plans through the Iowa Department of Education while also integrating into other relevant plans including capital improvement plans and facility plans.

*Regulation 44 CFR §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive plans or capital improvement plans, when appropriate.*

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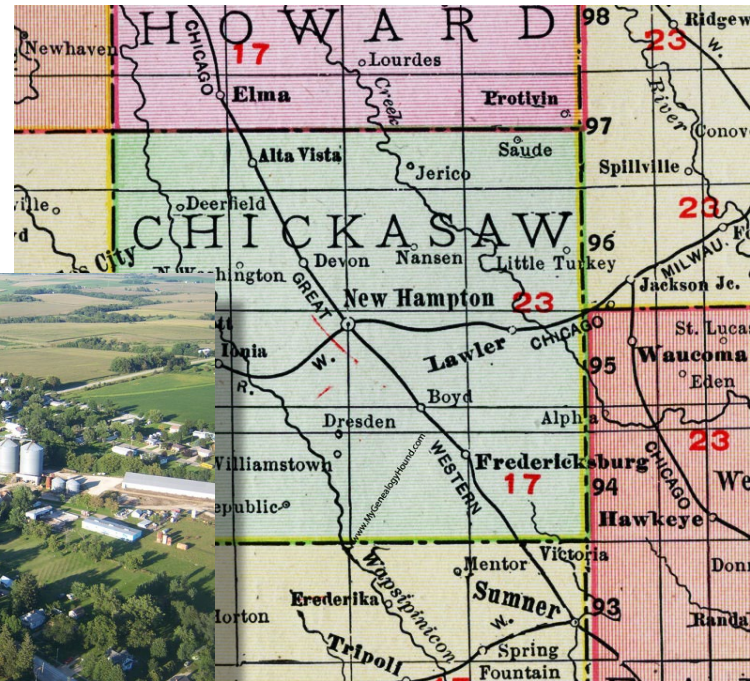
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# City of Alta Vista

## Hazard Mitigation Plan 2024 Update

### Appendix A of Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan



Funded by the Chickasaw County Emergency  
Management Agency

Prepared by Iowa Northland Regional Council of  
Governments (INRCOG)



May 2024

Photo Source: [www.city-data.com](http://www.city-data.com)

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Resolution Adopting Plan by City Council

Resolution 2024-6-5

**A RESOLUTION OF THE CITY COUNCIL OF ALTA VISTA, IOWA, ADOPTING THE CITY OF ALTA VISTA, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.**

WHEREAS, the City of Alta Vista City Council recognizes the threat that natural hazards pose to people and property within Alta Vista; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing Alta Vista served and participated in the formulation of the Plan, hereby known as the City of Alta Vista, Iowa Hazard Mitigation Plan 2024 Update, as part of the the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Alta Vista from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the Plan; and

WHEREAS adoption by the City Council of Alta Vista demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF ALTA VISTA, IOWA, THAT:

Section 1: In accordance with local regulations, the Council adopts the City of Alta Vista, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of Alta Vista may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of Alta Vista to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 10<sup>th</sup> day of June 2024.

ATTEST:

  
City Clerk Jarrett Holthaus

  
Mayor Burt Ostert

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## 2024 Alta Vista Hazard Mitigation Plan

### About

The City of Alta Vista developed this Hazard Mitigation Plan to update their previous plan. That Plan was part of the 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. The 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan is a sequential 5-year update to the previous hazard mitigation document. Federal hazard mitigation grant programs require an updated hazard mitigation plan approved by FEMA to be in good standing and remain eligible for grant funding. The Plan was developed to meet the requirements in Title 44 CFR § 201.6.

Elected officials, city clerks, planners, first responders, and other stakeholders were invited to attend planning committee meetings as participants while they completed worksheets that were returned to the Chickasaw County's Emergency Management Agency (EMA) and INRCOG. Chickasaw County's EMA initiated and funded this effort for all participating communities and contracted INRCOG to coordinate a multi-jurisdictional approach to this plan development process.

Participating communities included all nine (9) incorporated jurisdictions in Chickasaw County. Other participating members were representing their respective County departments. The school district superintendents of three public school districts participated and represented their jurisdictions. Four (4) committee meetings were held between March 19<sup>th</sup> and April 23<sup>rd</sup> wherein each participant provided data and completed work sheets to develop their hazard mitigation plans.

### FEMA's Emergency Management Cycle



#### What is Hazard Mitigation?

Hazard Mitigation is any *sustained* action taken to reduce or eliminate long-term risk to life and property from hazards.

The emergency management cycle has 4 phases:

- **Preparedness** is the assessment of potential risks, hazards, and vulnerabilities that a community may face. The development and updating of activities, programs, and systems before an event occurs is included in this phase of the cycle.
- **Response** is the immediate effects after a disaster.
- **Recovery** is a long-term phase that focuses on returning the community to normal after a disaster.
- **Mitigation** is an action that can occur at any phase.



The Benefits of Hazard Mitigation

For local governments, there are benefits in knowing hazards, their risks, and planning for mitigation strategies.

Those include:

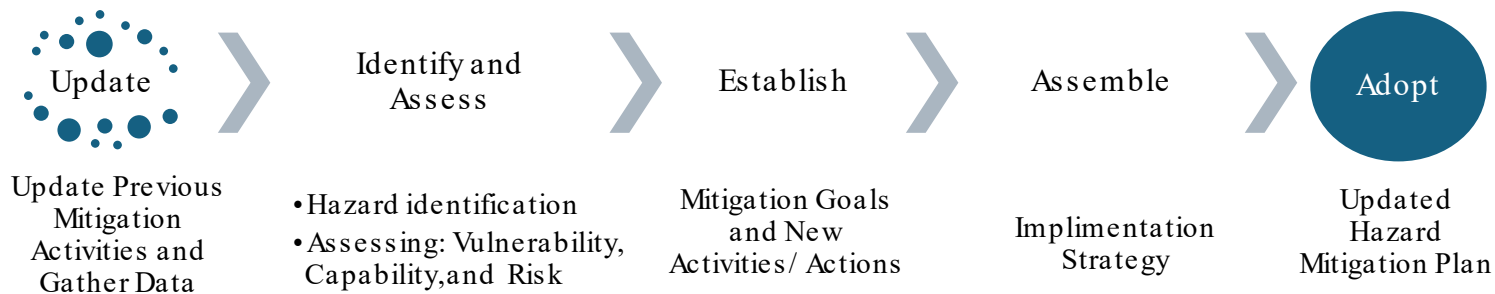
- ✓ An increased understanding of natural, technical, and human-caused hazards faced by communities.
- ✓ Taking an opportunity to create more sustainable and disaster-resistant communities.
- ✓ Participating in this collaborative intergovernmental effort is cost effective for all participants.
- ✓ Using limited resources on hazards that have the biggest impacts on a community.
- ✓ Reducing or preventing damage to existing structures, subsequently reducing repair costs.
- ✓ Identifying vulnerable populations to establish equitable outcomes.
- ✓ Setting long-term goals that can be compatible with city policies or planning documents.

The Planning Process

In emergency management planning, reducing the community’s risk to natural hazards is a multi-step process which involves collaboration among stakeholders, assessing risk and vulnerabilities of hazards facing the community, establishing actions or activities to reduce risk, and assembling an organized strategy to carry out all mitigation activities.

Participants in the Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan Planning Committee provided the information in this plan including community profile information, hazard mitigation goals, mitigation activities/action, updates to existing mitigation activities, and elements included in the strategy such as priorities, designated agencies, estimated costs, and overall strategic direction of this plan.

Participants in the Plan Followed This 5 Step Process





### Community Data Sources

Population data is based on 2020 decennial Census data. The 2022 American Community Survey 5-year estimates are the latest and most reliable survey data sets to understand what is taking place in the county and each city. Most counties, cities, and towns rely on 5-year estimates. Employment, workforce, and industry figures in this Plan are estimates that have a margin of error.

It is important to note that the ACS estimates used for rural communities will have a degree of uncertainty associated with them, called sampling error, because they are based on a sample. In general, the larger the sample, the smaller the level of sampling error. Rural communities tend to have smaller samples than larger cities, so the “margin of error”—a measure of the precision of an estimate at a given level of confidence—likely will be larger for rural areas.

Crash data along roadways within each jurisdiction is collected between the period of 2019 and 2023. Using a map tool interface, the data was taken at a city level and presented to understand incident severity, casualties, and property damage from reported accidents. Accident data is added to the site daily and accessible through an online website, <https://icat.iowadot.gov/>.

In the risk analysis section of this Plan, estimates of property loss are measured using mapping of hazardous zones. For the vulnerability risk assessment, flood prone homes were determined using the boundaries of the 100 year (1%)

annual chance flood zone. The value of potential property loss was derived from the 2023 assessed dollar value of structures and dwellings on affected parcels provided by the Chickasaw County Assessor’s Office.



*The Little Brown Church in the Vale was built in 1864 by members of the Puritan-Congregational Church. The charm of the chapel in the woods was well known in the area and influenced songs, music, and artists who visited it. Today the church remains a Congregational Church that has become a staple for weddings, bells, and renewal ceremonies.*

Photo source: [www.littlebrownchurch.org](http://www.littlebrownchurch.org)

## City Profile

**Jurisdiction: City of Alta Vista**

**County: Chickasaw County**

**Population (2020): 227**

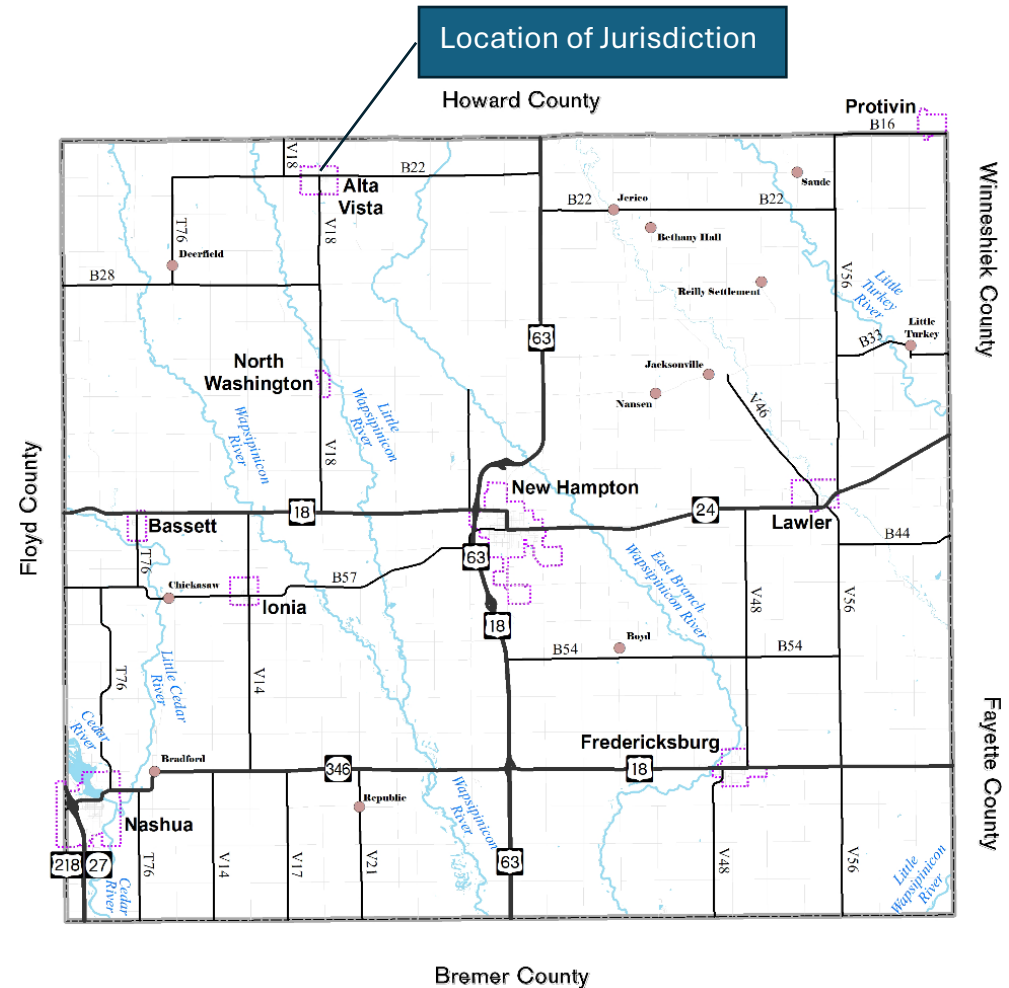
The City of Alta Vista is in the upper west quadrant of Chickasaw County. County Highways B22 and C18 intersect in Alta Vista. Two tributaries to the Wapsipinicon River flow to the west and east of the community.

The following data is presented in tables on the following page with population, employment, and industry sector data for the community based on 2020 Census data and 2022 American Community Survey 5-year Estimates.

In 2020, the city's population was 227, 92% White, and the median age was 44. Children and teens (younger than 15 years) made up 14% of Alta Vista's population while older adults (older than 65 years) made up 22%. Working aged teens and adults (ages 15 to 65) made up the remaining 66%.

The median household income in 2022 was \$56,458. The unemployment rate was basically 0%. Most people commute to work, however 8% of the workforce (9 people) work from home. The top three largest industry sectors in Alta Vista are as follows (in order from highest to lowest): 1) Educational services, and health care and social assistance; 2) Manufacturing; and 3) Construction.

**Figure 1: Map of Chickasaw County**



## 2024 Alta Vista Hazard Mitigation Plan

**Table 1: Population Data (2020)**

City of Alta Vista		
	Total	% of Pop.
Total population	227	100%
AGE		
Under 5 years	11	5%
5 to 9 years	7	3%
10 to 14 years	15	7%
15 to 19 years	18	8%
20 to 24 years	20	9%
25 to 29 years	14	6%
30 to 34 years	8	4%
35 to 39 years	11	5%
40 to 44 years	12	5%
45 to 49 years	12	5%
50 to 54 years	20	9%
55 to 59 years	14	6%
60 to 64 years	20	9%
65 to 69 years	9	4%
70 to 74 years	10	4%
75 to 79 years	9	4%
80 to 84 years	7	3%
85 years and over	10	4%
Median Age	43.8	-
RACE		
White	208	91.6%
Black or African American	5	2.2%
Hispanic or Latino (of any race)	5	2.2%
American Indian and Alaska Native	1	0.4%
Asian	0	0.0%
Native Hawaiian and Other Pacific Islander	0	0.0%
Some Other Race	4	1.8%
Two or More Races	9	4.0%
Source: 2020 Census		

**Table 2: Employment Data (2022)**

City of Alta Vista		
	#	% of Population
Median Household Income	\$56,458	-
Unemployment Rate (2022)	0.9%	-
Workers that commute to work	104	92%
Workforce that works from home	9	8%
Source: 2022 American Community Survey 5-Yr Estimates		

**Table 3: Industry Data (2022)**

	# of Workers	%
<b>Workforce</b>	114	100%
Agriculture, forestry, fishing and hunting, and mining	0	0%
Construction	12	11%
Manufacturing	26	23%
Wholesale trade	2	2%
Retail trade	5	4%
Transportation/warehousing, & utilities	7	6%
Information	0	0%
Finance and insurance, and real estate and rental and leasing	2	2%
Professional, scientific, and management, and administrative and waste management services	3	3%
Educational services, and health care and social assistance	48	42%
Arts, entertainment, and recreation, and accommodation and food services	4	4%
Other services, except public administration	5	4%
Public administration	0	0%
Source: 2022 American Community Survey 5-Yr Estimates		

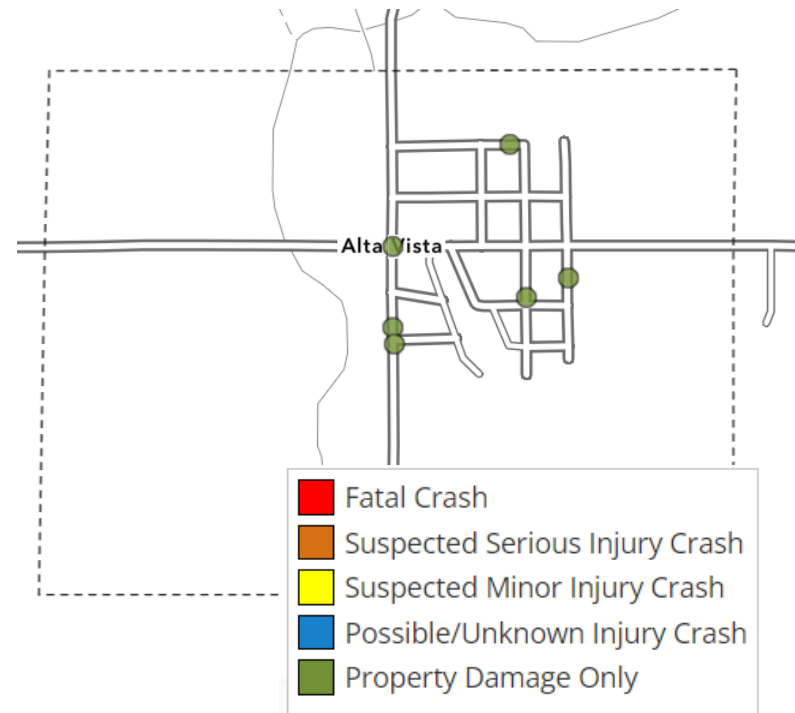
### Highway Traffic and Crash Data

Based on Iowa DOT crash data, between 2019 and 2023 there have been 6 incidents involving 11 vehicles where there was only property damage. No traffic incidents with fatalities or injuries reported. The total property damage costs of all incidents between this time are \$94,500. Based on the crash data report, all incidents were likely caused by driver error such as distracted driving. Crashes were not reported to be caused by roadway safety design involving turn outs, geometry, blind spots, etc.

**Table 4: Crash Data from 2019-2023**

<b>Total Crashes</b>	6
<b>Crash Severity</b>	
<b>Fatal</b>	0
<b>Suspected Serious Injury</b>	0
<b>Suspected Minor Injury</b>	0
<b>Unknown</b>	0
<b>Property Damage Only</b>	11
<b>Property Damage Total</b>	\$94,500

**Figure 2: Iowa Crash Analysis for All Traffic Incidents (2019-2023)**



Source: Iowa DOT

**Table 5: Housing Data (2022)**

City of Alta Vista		
	Total	% of Occupied Units
Occupied housing units	93	100.0%
Average Household Size	2.4	
Housing Unit Type	Total	% of Occupied Units
1, detached	82	88.2%
1, attached	1	1.1%
2 apartments	0	0.0%
3 or 4 apartments	6	6.5%
Mobile home or other type of housing	4	4.3%
Year Structure Built	Total	% of Occupied Units
2020 or later	0	0.0%
2010 to 2019	0	0.0%
2000 to 2009	1	1.1%
1980 to 1999	12	12.9%
1960 to 1979	21	22.6%
1940 to 1959	7	7.5%
1939 or earlier	52	55.9%
House Heating Fuel	Total	% of Occupied Units
Utility gas	0	0.0%
Bottled, tank, or LP gas	68	73.1%
Electricity	8	8.6%
Fuel oil, kerosene, etc.	11	11.8%
Coal or coke	0	0.0%
All other fuels	6	6.5%
No fuel used	0	0.0%
Source: 2022 American Community Survey 5-Year Estimates		

## Housing Data

The general housing type in the City's housing stock is largely homogenous. The City of Alta Vista has 93 occupied housing units based on 2022 ACS 5-estimates. Nearly 88% of them are single family type housing that are both attached or detached garage single family housing types. 6% of the housing stock are 3 or 4 apartment units. An estimate of less than 10 housing units are mobile homes or other types of housing.

Nearly 56% of the local housing stock was built during a pre-WWII community growth period. (i.e. Most homes heat their units with gas or liquid propane (LP), electricity, or fuel oil. There is no gas utility provider, so residents self-serve their heating gas needs and likely travel to refill them.

## Community Utility Providers

The City of Alta Vista provides its own electricity as a municipal power company. There are no natural gas or cable TV utility providers. All residents use LP gas tanks for their home heating use and use of gas stove tops, etc.

**Table 6: Utility Providers**

City of Alta Vista	
<i>Electric</i>	Alta Vista Municipal
<i>Natural Gas</i>	None
<i>Telephone/Internet</i>	Windstream
<i>Cable TV</i>	None
<i>Water Services</i>	City of Alta Vista
<i>Sewer Services</i>	City of Alta Vista
<i>Sanitation</i>	Jendro Contract Services

## Vulnerable Assets

### *People*

Vulnerability to hazard losses increases where there are larger concentrations of people. In towns where population density increases, the number of people that can be harmed during a hazard event (tornado, flood, etc.) increases. In addition, there are segments of the population that may be more susceptible to impacts and/or harm from a hazard depending on their location within the area (i.e. flood zone or near industrial plants with hazardous materials). This includes underserved or socially vulnerable populations.

### *Vulnerable Age Groups*

Both younger and older aged groups are likely to require assistance with physically moving to shelters or finding safety. Elderly residents may not have a personal vehicle to move away from a hazard quickly. Cognitive impairments among older adults may cause some to get easily confused.

### *Households Facing Poverty or With Limited Income*

Families or older adults living at, near, or below poverty are more likely to be impacted by hazards than other households with higher incomes. The impact of costly repairs to property from a tornado or heating/cooling electricity

## Alta Vista's Vulnerable Populations

**Table 7: Vulnerable Populations**

	Total	%
Households	93	100%
With one or more people in the household 60 years and over	31	33%
With householder 65+ years old and living alone	27	28%
Below poverty level	10	11%
With one or more people with a disability	35	38%
receiving food stamps/SNAP	4	4%
w/o access to a vehicle	2	2%

In Alta Vista, 11% (10 households) of occupied households are below the poverty level. Nearly a third of occupied households have elderly occupants (60 years and over). About 27 (28%) households have elderly residents (65 years and over) living alone.

Most residents have access to a vehicle, however an estimate of 2 households have no access to a vehicle. Nearly 35 (38%) households have a person living with a disability. This is broadly defined from the data estimates for Alta Vista. However, persons with mobility disabilities may be at a higher risk than others especially during unexpected natural disasters where accessibility is not always guaranteed to shelter.



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Manufactured homes are unsafe in a tornado. Fatality rates are significantly higher than sturdy buildings. An alternative shelter should be identified prior to a tornado watch or warning. There are estimated to be 4 mobile homes in Alta Vista. With an average household size of 2.4, that potentially puts 10 people with a higher risk of becoming fatal during a tornado.

### Critical Facilities

Identifying structures that may be affected from a hazard event and also serve a critical function for the community are shown in the table on the following page. Participants in the planning committee completed an assessment that would update their list of critical facilities from the previous plan and add any additional facilities to the list.

Zion Lutheran Church was noted as being sold to the Mennonite Church. This change is reflected in the critical sites map. The wastewater treatment lagoons were constructed and in use now. Those are located just south of the community and serve an important function to clean wastewater through a controlled and treated method before it is released into the waterways.

Schukey's Bar and Grill was chosen as a critical facility because it is centrally located in town and provides a gathering space for residents. In the event of a natural hazard occurring, this may provide a centralized and accessible location for shelter or alternative sites in the event that city hall/fire department is destroyed.

List Critical Facilities in Alta Vista	
1	Alta Vista V.F.W.
2	Alta Vista Maintenance Shop
3	Alta Vista Express - Gas Station
4	Communication's Tower
5	City Library
6	City Well
7	WWTP Lagoon
8	Terminal Lift Station #1
9	Lift Station #2
10	Mennonite Church
11	Alta Vista City Hall and Fire Station
12	St. Bernard Catholic Church
13	Schucky's Bar and Grill

Groundwater wells provide the municipal water supply. This is drawn from the Devonian aquifer from a city well that was constructed in 1910 with a depth of 150 ft. The wastewater outflow is located downstream from the aquifer and not at risk of contamination. The groundwater discharge is an average rate of 23,300 gallons/day.

In the next 20 years, Alta Vista is not likely to see development pressure that would need additional capacity for critical facilities such as the wastewater treatment lagoons or city hall. Future hazard mitigation efforts will note additional facilities related to the assets here shown within the vulnerability assessment.

**Figure 3: Critical Facilities Map**



## Measuring Vulnerability to Selected Hazards

### Tornado Hazard

All dwellings in the City of Alta Vista are at risk from a tornado.

To find the potential losses due to a tornado, the valuation of all parcels in the City of Alta Vista was added up based on the latest valuations for dwellings or structures on each parcel. Using Chickasaw County assessor data, the City of Alta Vista has potentially \$6,750,400 in property losses due to a tornado.

The potential losses of homes prone to flooding was determined by adding up all the parcels that are affected by a 100-year annual chance (1%) flood based on the latest effective flood insurance rate map (FIRM).

Table 8: Structural Valuation of All Parcels in City of Alta Vista (2023)	
Percent of City at Risk of a Tornado	100%
# of Parcels	171
Total Value (Buildings and Dwellings)	\$6,750,400
Source: Chickasaw County Assessor's Valuations as of Dec 2023	

### Flooding Hazard

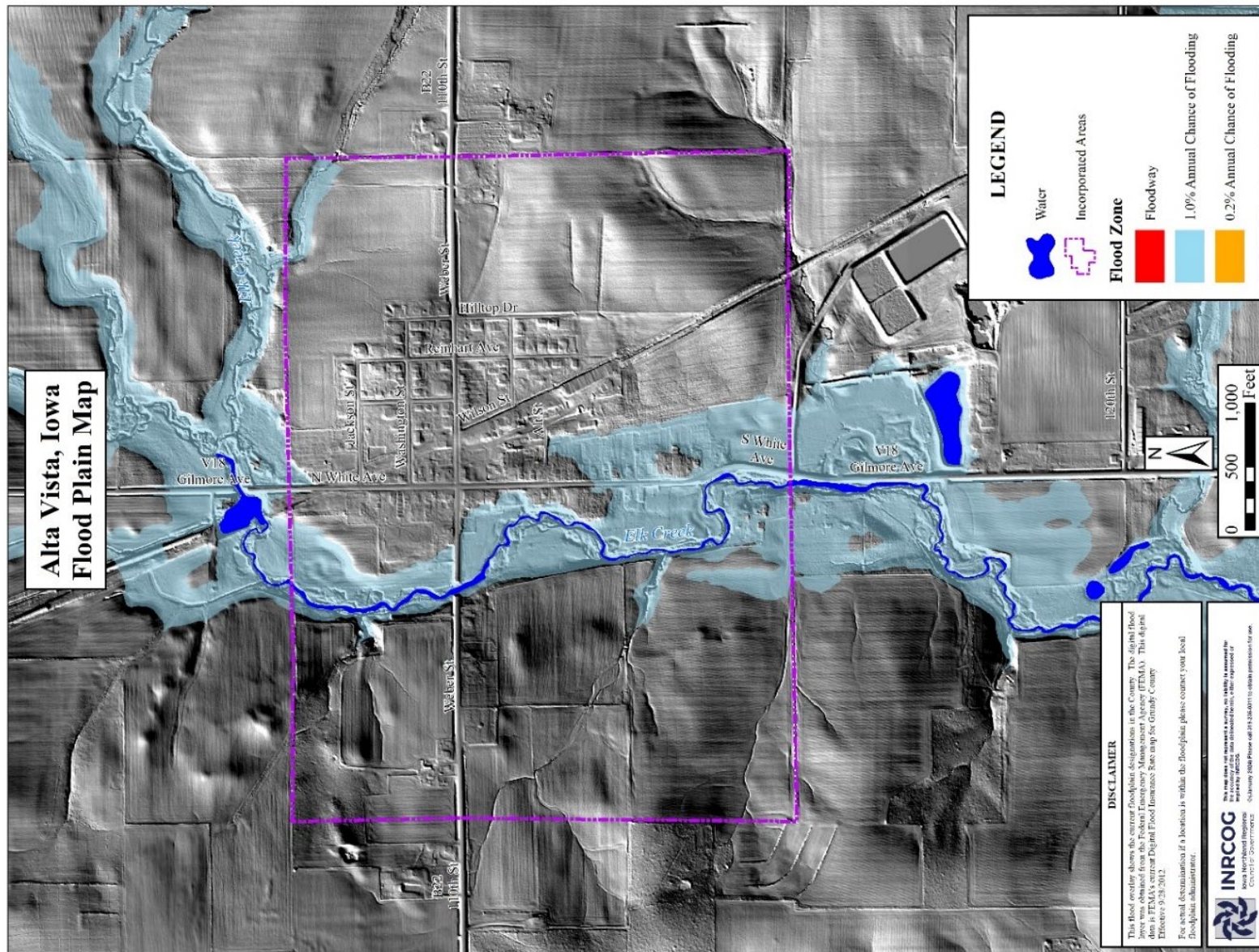
In Figure 5, the flood plain map shows the 1% annual chance of flooding in and around the City of Alta Vista. The river basin is depicted in the topography shown on the map.

The parcels that are impacted with the 1% annual chance of flood are highlighted in Figure 6. There are 42 parcels within Alta Vista potentially affected. The value of all buildings and dwellings on the affected parcels is \$1,444,100, based on the latest Chickasaw County assessor information.

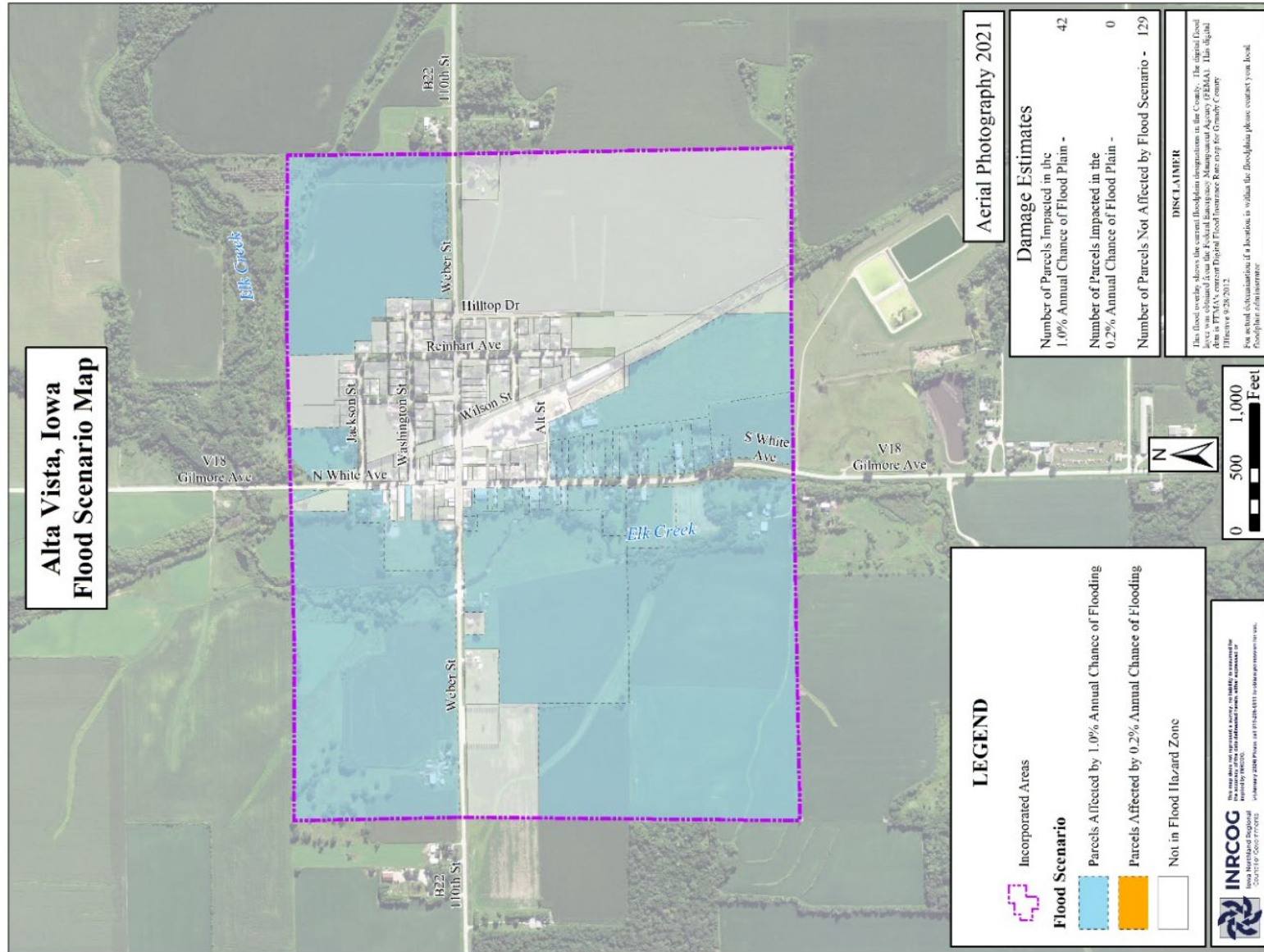
Table 9: Potential Property Losses from the 1% Annual Chance Flood	
Percent of City Affected	21.4%
# of Parcels	42
Total Value (Building and Dwelling)	\$1,444,100
Source: Chickasaw County Assessor's Valuations as of Dec 2023	



### Figure 4: Flood Plain Map



**Figure 5: Flood Scenario Map**





## Future Development

Recent updates in Title 44 CFR §201.6 (c) (2) (i) require this risk assessment include a section with future conditions on the type, location, and range of anticipated intensities of natural hazards.

Long term trends of climate patterns for the region were summarized in the Fourth National Climate Assessment Midwest Section.<sup>1</sup> The National Climate Report is mandated to be updated every 4 years and deliver results to Congress and President on the effects to agriculture, energy productions, land use, transportation, and human health.

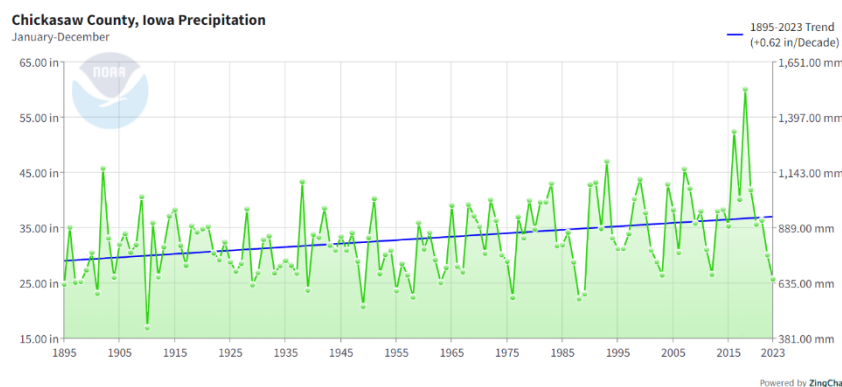
Yearly precipitation levels and annual average temperatures offer insights into future conditions of our climate system.

### Annual Precipitation Levels in Chickasaw County

Taking the monthly precipitation records from January to December between 1895 and 2023 is shown in Figure 6. The values hover between 25 – 35 inches of precipitation levels recorded. The average precipitation level for the year is plotted and a linear trend of those values is shown in Figure 6. The trend shows a growing level of annual precipitation on average of 0.62 in more than the decade before. Based on

this historical trend, precipitation is likely to continue to increase in the coming years.

**Figure 6: Historical Precipitation Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



### Average Annual Temperatures in Chickasaw County

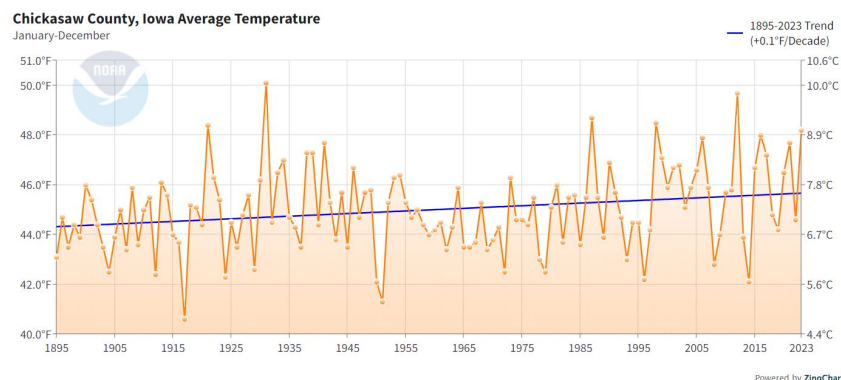
The monthly average temperature is plotted over a 12-month period from 1885 to 2023 in Figure 7. The annual average temperature is also shown with a linear trend in Figure 7. This trend shows the average temperature in Chickasaw County increasing at a rate of +0.1° F every 10 years.

<sup>1</sup> USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

<sup>2</sup> NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published February 2024, retrieved on April 15, 2024 from <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>



**Figure 7: Historical Temperature Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



## Climate Patterns from Increasing Precipitation and Higher Temperatures

### Drought

The relationship between increasing precipitation, temperature, and drought is complex, and often counterintuitive at first thinking about it. While increasing precipitation may seem like it would mitigate drought conditions, higher temperatures can exacerbate the situation in several ways:

1. **Evapotranspiration:** Higher temperatures lead to increased evaporation rates from soil, bodies of water, and plants. This means that even if there is more precipitation, it may quickly evaporate before it can effectively replenish soil moisture or water sources.

2. **Changes in precipitation patterns:** Increasing temperatures can alter precipitation patterns, leading to more intense rainfall events but also longer periods of drought between these events. This pattern can result in rapid runoff and soil erosion during heavy rain, followed by extended dry periods that contribute to drought conditions.

Overall, while increasing precipitation may provide temporary relief from drought, the combined effects of rising temperatures can outweigh this benefit, leading to more frequent and severe drought events in certain regions.

### Pest Infestation

With more humidity, the daily minimum temperature may increase across all seasons. Warming winters can increase the survival and reproduction of existing insect pests which allow new insect pests and crop pathogens to move into the Midwest region.

### Extreme Heat Domes

A heat dome is a weather phenomenon characterized by a high-pressure system that traps hot air beneath it, leading to prolonged periods of extremely high temperatures and often causing heatwaves. Extreme heat events during the summers may occur with more frequency in the Midwest.

The human impacts of extreme heat affect socially and economically vulnerable populations the most. The higher costs of energy during heat waves disproportionately impact

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cost-burdened households. Heat related illness may be more severe among infants, elderly populations, and those with chronic health conditions.

### Projected Trends of Natural Hazards in Chickasaw County

- Prologued drought may occur as the atmosphere holds more moisture (even pulling moisture from plants) and the temperatures increase. Longer periods between wet weather events mean that there are dryer and longer periods in between these events.
- Floods (flash or major types) will increase in intensity as the atmosphere holds more moisture to drive stronger storms and drop heavier rainfall over a shorter period during an event.
- Extreme heat may occur more frequently. The human health impacts are higher among socially vulnerable populations (the elderly, infants, those with chronic health issues, cost burdened households).
- Agricultural pests and pathogens may increase in growing plants and stored grain. Warming temperatures in the spring and summer have led to rising humidity. Higher dew and moisture conditions may increase the presence of these pests or crop diseases.

## National Flood Insurance Program

The City of Alta Vista participates in the National Flood Insurance Program. FEMA defines a repetitive loss property as an insurable building that has experienced two losses in a 10-year period in which each loss is \$1,000 or more. There are no reported repetitive loss properties.

The flood map effective date for Alta Vista is 09/28/2012. The city clerk is the designated person to implement the National Flood Insurance Program. There is no data for the total policies, coverage, losses, and net dollars paid out through the NFIP.

**Table 10: National Flood Insurance Program Information**

<b>Community Name</b>	City of Alta Vista
<b>NFIP Participant (Yes/No)</b>	Yes
<b>Designee / Agency to implement NFIP Requirements</b>	City Clerk
<b>Participant in CRS (Yes/No)</b>	No
<b>Current Effective Map Date</b>	09/28/2012(M)
<b>Regular-Emergency Program Entry Date</b>	August 1, 1986
<b>Total Policy Count</b>	N/A
<b>Total Coverage</b>	N/A
<b>Total Losses</b>	N/A
<b>Total Net Dollars Paid</b>	N/A
<i>(M) = No flood elevations determined - All Zone A, C, and X</i>	
<i>Source: Source: FEMA National Flood Insurance Program, Data and Analytics, HUDEX Report. <a href="https://nfipservices.floodsmart.gov/reports-flood-insurance-data">https://nfipservices.floodsmart.gov/reports-flood-insurance-data</a></i>	

### Hazard Risk Assessment

The top three hazards from the risk assessment are:

1. Tornado/ Windstorm
2. Severe Winter Storm
3. Extreme Heat

#### Methodology

This risk assessment identifies how people, property, and structures would be harmed or damaged by one of the listed hazard events. Iowa Homeland Security and Emergency Management Department (Iowa H.E.S.M.D.) provided the hazard risk score formula for determining the level of risk used in this analysis.

#### Factors of Hazard Risk

Risks to a hazard event may differ across geographical locations or even differ based on certain times of year. For example, tornado season in Iowa is usually in May and tornados have the highest risk during this time due to change in weather patterns from the western and central Gulf of Mexico causing higher chances of extreme weather.

For this analysis, four hazard risk factors are rated on a scale between 1 and 4 by committee participants after reviewing profiles of each hazard with the planning coordinator. Information was shared with the committee which described the hazard, historical occurrences, impact, duration, and

warning time. Participants used this information to strengthen their understanding to rate each hazard factor.

#### Hazard Risk Score Formula

$$\begin{aligned} &[\text{Probability}] \times 45\% + [\text{Magnitude or Severity}] \times 30\% \\ &+ [\text{Warning Time}] \times 15\% + [\text{Duration}] \times 10\% \\ &= \text{Final Hazard Assessment} \end{aligned}$$

Hazard scores were collected during the second committee meeting. INRCOG planners calculated the hazard risk score for each hazard based on the formula in this section. Results for Alta Vista are on page 21.

Score Value vs. Hazard Risk Level	Description of hazard with this rating
Scores with a value closer to 1: <u>Low risk hazard</u>	Hazard is not likely to affect people or property because the likelihood is minimal.
Scores with a value closer to 4: <u>High risk hazard</u>	The hazard has historically occurred and may have significant impacts to people and property.

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### Probability

The probability score reflects the likelihood of the hazard occurring soon. Historical data of the hazard event occurring in Chickasaw County or Iowa informed the likelihood of future occurrence

Probability Score Definitions		
Score	Description	
<b>1</b>	Unlikely	<i>Less than 10% probability in any given year (up to 1 in 10 chance of occurring), a history of events is less than 10% likely or the event is unlikely but there is a possibility of its occurrence.</i>
<b>2</b>	Occasional	<i>Between 10% and 20% probability in any given year (up to 1 in 5 chance of occurring), history of events is greater than 10% but less than 20% or the event could possibly occur.</i>
<b>3</b>	Likely	<i>Between 20% and 33% probability in any given year (up to 1 in 3 chance of occurring), history of events if greater than 20% but less than 33% or the event is likely to occur.</i>
<b>4</b>	Highly Likely	<i>More than 33% probability in any given year (event has up to a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.</i>

### Magnitude or Severity

The magnitude or severity of the hazard event is measured by the level of impact on the human environment. Property damage is assessed by the whole planning area.

Magnitude or Severity Score Definitions		
Score	Description	
<b>1</b>	Negligible	Less than 10% of property severely damaged, the shutdown of facilities and services for less than 24 hours, and/or injuries/illnesses treatable with first aid
<b>2</b>	Limited	10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
<b>3</b>	Critical	25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
<b>4</b>	Catastrophic	More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.

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### Warning Time

This should be taken as an anticipated warning time.

The warning time score assesses the ability to warn a population before the hazard occurs. The values of the score range from 1 (at least 24 hours) to 4 (minimal or no warning time).

For many of the climate hazards, there is a considerable amount of warning time as opposed to the human-caused hazards (transportation and hazardous materials incidents) that occur instantaneously or without any significant warning time.

Warning Time Score Definitions		
Score	Description	
1	Forecasted	More than 24 hours warning time.
2	Likely	12 to 24 hours warning time.
3	High Chance	6 to 12 hours warning time
4	Imminent	Minimal or no warning time (up to 6 hours warning)

### Duration

The duration is the time of a typical or expected hazard event to occur. For an earthquake or traffic accident that is a score of 1. For infrastructure failure, it is likely a 4.

Table 11 displays rated risk scores for each associated hazard. This assessment was completed by city representatives based on hazard profiles prepared for the planning committee.

Duration Score Definitions	
Score	Description
1	Less than 6 hours
2	Less than 1 day
3	Less than 1 week
4	More than 1 week

<b>Table 11: Hazard Risk Assessment</b>					
<b>Hazards</b>	<b>Probability</b>	<b>Magnitude</b>	<b>Warning Time</b>	<b>Duration</b>	<b>Score</b>
Tornado/Windstorm	4	2.5	4	1	3.3
Severe Winter Storm	4	2	1	3	2.9
Extreme Heat	4	1	1	4	2.7
Grass/Wildland Fire	3	1	4	1	2.4
Thunderstorm/ Lighting/ Hail	4	1	1	1	2.4
Pandemic/ Endemic Human Disease	1	4	1	4	2.2
Flooding - Riverine	2	2	3	2	2.2
Earthquake*	1	3	4	1	2.1
Drought	2	1.5	1	4	1.9
Animal/ Crop/ Plant Disease	1	1	4	4	1.8
Infrastructure Failure	1	2	4	1	1.8
Flooding - Flash	1.5	1	4	1.5	1.7
Transportation Incidents	1	2	3	1	1.6
Landslide	1	1	4	1	1.5
Sinkholes*	1	1	4	1	1.5
Hazardous Materials	1	1	4	1	1.5
Radiological	1	1	4	1	1.5
Terrorism	1	1	4	1	1.5
Expansive Soils*	1	1	1	4	1.3
Levee/Dam Failure	1	1	1	1	1.0

Source: Completed by City Representative.

\*The following hazards were identified as not being considered a threat needing a specific mitigation activity given the specific jurisdictional situation.



## Hazard Mitigation Goals

### For the City of Alta Vista, Iowa

The following list of goals was developed by planning committee participants from the associated jurisdiction. Goals 1 through 7 were developed in the previous 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. The planning committee participants chose to adopt the same goals and add additional goals. Goals 8 through 10 were developed with the problem statement exercise during the planning stage.

**Goal #1** Reduce the chance of and impact of flooding in the community.

**Goal #2** Take measures to minimize the occurrence of injuries and loss of life due to hazards.

**Goal #3** Take measures to minimize or eliminate damage that may occur as a result of hazards.

**Goal #4** Increase the city's ability to respond to natural disasters and human-caused hazards.

**Goal #5** Return the community to similar or improved pre-event conditions as quickly as possible following a disaster event.

**Goal #6** Incorporate the City Plan into the proposed Multi-Jurisdictional Plan.

**Goal #7** Continually re-assess and re-evaluate the plan and mitigation activities.

**Goal #8** Replace city tornado sirens with sirens that can be heard throughout town.

**Goal #9** Acquire an emergency electrical generator for the city hall/fire department building.

**Goal #10** Develop a sustainable ash tree removal program to prevent property damage and personal harm efficiently and affordable.

### **Previous Mitigation Activities by Type**

Mitigation actions and activities in this Plan will be organized according to these 5 categories: Emergency Services, Education and Outreach Projects, Natural Resource Protection, Structural Projects, and Local Plans and Regulations.

#### **Emergency Services in Alta Vista**

##### Chickasaw County Emergency Management Agency

Alta Vista works with the Chickasaw County Emergency Management Coordinator, based out of the City of New Hampton, on various safety and emergency events. The Emergency Management Coordinator works in conjunction with local fire, rescue, police, and government officials to draft and implement workable emergency action plans in the community. The Chickasaw County Emergency Management Coordinator is Jeff Bernatz.

##### Law Enforcement

The community has a 28E agreement in place with Chickasaw County Sheriff's Department that will provide law enforcement services. Services include patrol in the city. The sheriff deputies provide a response time to the city up to 30 minutes and will provide extra people power when notified by the city.

##### Fire Protection and EMS Services

Fire protection for the City of Alta Vista is provided by the Alta Vista Fire Department. The station is located at 108 E. Weber, Alta Vista, IA. There are 18 volunteer fire fighters that serve in the department currently. The 18 members of the department meet monthly and take training in fire suppression, hazardous materials, and emergency medical services. Dispatch is provided via a paging system through the Chickasaw County Sheriff's Office. The EMS Departments of the City have written plans of action for natural disasters.

Equipment used by the Alta Vista Fire Department includes the following:

- 2022 Can AM (55-gallon water, 5, gallon foam)
- 2018 Ford 250 Super Duty Utility Truck
- 2004 Pumper (1,250 gpm pump)
- 1988 Pumper (1,500 gpm pump)
- 2008 Tanker (3,000 gallons)
- 1985 Brush Truck
- 10 Self-Contained Breathing Apparatus
- Thermal Imaging Camera

##### EMS Services

The Regional Health Services of Howard County (RSHHC) provides ambulatory services for residents within the city limits. RSHHC is located in Elma, Iowa which is about 4 miles northwest. For residents outside of the city limits, Chickasaw Ambulance Service serves as the emergency responses

## 2024 Alta Vista Hazard Mitigation Plan

provider. The company is based out of New Hampton, approximately 14 miles southeast of Alta Vista.

Chickasaw County Rescue Squad also provides service in Alta Vista. There are 42 EMT certified individuals who volunteer to respond to emergency calls on a need basis in the county.

### Medical Facilities

There are no medical facilities in Alta Vista. The closest facility is the MercyOne New Hampton Medical Center in New Hampton, IA. This is the only medical facility with an ER unit located in the county. MercyOne has 11 private inpatient rooms and cares for over 20,000 outpatients each year.

MercyOne New Hampton offers a full range of services in an inpatient and outpatient setting as well as 24-hour emergency care, surgical services, primary care clinic, therapy and rehabilitation, diagnostic services, speech and occupational therapy, Senior Life Solutions and specialty clinics.

### HAZMAT Response Teams

Alta Vista contracts with Northeast Iowa Response Group for response to hazardous material spills. The Northeast Iowa Response Group is a division of Waterloo Fire Rescue as is the Hazardous Materials Regional Training Center. The Training Center provides training to fire departments and companies from around the state and country. Not only is this a training center, but it also serves as a hazardous

materials quick response unit to Black Hawk County, surrounding counties, and many municipalities in a ten-county region. The Unit provides local fire departments with hazardous materials emergency procedures thus reducing additional contamination. An evacuation plan is also in place in conjunction with the activities of the local department. Contact information for the facility is as follows: Hazardous Materials Regional Training Center, 1925 Newell Street, Waterloo, Iowa 50707, Phone: (319) 291-4275, Toll Free: (800) 291-4682, Fax: (319) 291-4285

The jurisdiction also partners with the Northeast Iowa Response Group for assistance in responding to any methamphetamine labs located in the city limits. The Response Group assists the Police Departments in containment of the site and disposal of hazardous chemicals.

### Warning Systems in Alta Vista

#### 1. Tornado Sirens

Alta Vista has 1 operating tornado warning siren for the community.

The activation systems of warning systems are activated and operated by a central command system operated by the Chickasaw County Rescue Squad in New Hampton, IA.

The city has an outdoor warning siren. The siren is activated at the site of a tornado, or in case of an imminent threat of any kind. The fire chief sends a crew of

## 2024 Alta Vista Hazard Mitigation Plan

firefighters out at the request of the sheriff if the National Weather Forecasts a chance of severe weather. The sheriff and fire chief communicate by radio during severe weather.

### 2) Alert Iowa Mass Communication System

Chickasaw County has implemented the use of Alert Iowa, a mass communication notification system. The system features are controlled through the Chickasaw County Emergency Management Agency. Residents can customize their alert settings including the type of alerts they would get.

Alert Iowa allows for emergency notifications via landline telephones, cell phones, email, text messages, and social media. This is useful for communities that may not have an operating warning siren or may not hear the sirens. The County will use its emergency notification network for all the following events: blizzards, flash flooding, severe thunderstorms, and tornadoes. There is an optional way to receive the same alert for events such as: excessive heat warnings, hazardous materials warnings, heavy snow warning, high wind warnings, ice storm warnings, law enforcement warnings, shelter in place warnings, sleet warnings, wind chill warnings, and winter storm warnings.

### Public Works/Street Department

The city has one plow truck for snow and ice removal. A full-time city employee removes snow in the community. In an

ideal winter storm scenario, the city roads would be adequately cleared within hours.

### Previous Education and Outreach Projects in Alta Vista

Alta Vista does not have any education and outreach projects mitigation actions.

### Previous Natural Resource Protection in Alta Vista

Alta Vista does not have any natural resource protection mitigation actions.

### Previous Structural Projects in Alta Vista

The City of Alta Vista has a FEMA-certified tornado safe room.

### Local Plans and Regulations in Alta Vista

Table 12: Local Regulatory Assessment	
Community	City of Alta Vista
Previous HMP Participant?	Yes
Comprehensive Plan?	Yes
Building Code?	Yes
Zoning Ordinance? RR=restricted residential	No
Subdivision Regulations?	No
Floodplain Management Ordinance?	Yes
Tree-Trimming Ordinance?	Yes
Storm Water Ordinance?	Yes
Snow Removal Ordinance?	Yes

### Strategy for Implementing the Plan

Presented below are tables prepared in consultation with the Alta Vista's planning committee's representative and INRCOG. This is a guide for a strategic approach when implementing the city's efforts in hazard mitigation. The tasks in these tables are drawn from the city's capabilities, goals, and hazard risks presented in previous sections of this Plan. The designated agency or staff presented with each line item was written by Alta Vista's planning committee.

Notes about the tasks (listed as line items) in each table.

- Each task (line item) stands on its own so it can be completed whenever possible.
- Each action item is not limited to the details presented below and may change based on future conditions.
- The tasks were categorized based on mitigation type. The mitigation types are not shown in any order (no priority over the other). This is presented to help with the general understanding of how hazard mitigation may feed into the City's existing or future priorities.

### Priority Level

The priority level was informed through discussions among planning committee members who considered potential benefits of implementing the activity, some hurdles that the city may face in implementing the action step, and the drawbacks of implementation. *Committee representatives considered a cost-benefit approach.*

### Timeframe

Timeframe	Description
Immediate	1 - 6 months
Short Term	1-5 years
Mid-Term	5-10 Years
Long-Term	More than 10 Years

### Estimated Costs

Cost estimates are based on the associated costs of additional staffing that may or may not be needed, time for planning/meetings/coordinating, and cost of the proposed action/program/ project.

Cost	Estimated Cost Range
Minimal	Less than \$10,000
Low	\$10K to \$99K
Moderate	\$100K to \$299K
High	Greater than \$300K

<b>Table 13: 'Emergency Services' Type Mitigation Activities</b>						
<b>Description:</b> Actions that protect people and property during and immediately after a disaster or hazard event.						
<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (\$)</b>	<b>Funding Source</b>
High	Conduct a needs assessment of additional tornado sirens based on audible reach of the current sirens, and existing equipment conditions (age, working, etc).	Tornado/ windstorm	City Council, County EMA	Immediate (1 month - 6 months)	Minimal \$0	If needed, city general fund
High	Backup critical city data and stored off-site.	All	City Council, City owned utility	Immediate (1 month - 6 months)	Low to Moderate	City general fund, State and Local Cybersecurity Grant Program
Low	Purchase NOAA Weather Radios for vulnerable population and critical locations in the community.	All	City Council, County Emergency Management	Long Term (5-10 years)	Minimal \$0 - \$10K	Hazard mitigation grant program

<b>Table 14: Natural System Protection and Nature-Based Mitigation Type</b>						
<b>Description:</b> Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions						
<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (\$)</b>	<b>Funding Source</b>
Low	Construct detention ponds, dike, and/or filter strips along upstream Elk Creek.	Flash Flood, River Flood	City Council, Private Property Owners	Mid-term (3-5 Years)	Minimal \$0 - \$10K	Stormwater BMP Loans with Iowa Dept of Ag & Land Stewardship
Medium	Address impoundment and sediment from upstream to reduce flood risk.	Flash Flood, River Flood	City Council, Private Property Owners	Mid-term (3-5 Years)	High	City General Fund, Grant funding
Medium	Improve stormwater runoff through curb and gutter.	Flash Flood, River Flood	City Council, Private Property Owners	Mid-term (3-5 Years)	High	City General Fund, Grant funding



**Table 15: Structure and Infrastructure Project Type Mitigation Activities**

Description: Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
High	Gather information to determine the cost of purchasing an emergency generator for the city hall/fire department building.	All	City Council	Mid-term (3-5 Years)	High	City general fund and mitigation grant funding
Medium	If needed, purchase a replacement or an additional siren in the community based on need assessment.	Tornado/windstorm	City Council, County EMA, FEMA	Short Term (1-3years)	Moderate \$10K-\$30K	City general fund and mitigation grant funding
Low	Meet with Chickasaw County flood plain manager and determine the necessary permits/studies/plans for flood mitigating dike along east bank of Elk Creek.	Flash Flood, River Flood, Levee	City Council, Private Property Owners	Mid-to-Long Term	Low	City general fund
Low	Bury overhead power lines.	Severe Winter Storm, Hailstorm, Thunderstorm and Lightning, Tornado, Windstorm, Infrastructure Failure	City Council, City-Owned Utility	Long Term (5-10 Years)	High	City General Fund, Utility provider, Hazard Mitigation Grant Program.
Low	Gather information to determine the cost of constructing an emergency safe room.	All	City Council	Long Term (5-10 Years)	High	City general fund and mitigation grant funding

**Table 16: 'Education and Awareness' Type Mitigation Activities**

Description: These types of actions keep residents informed about potential natural disasters.

<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (\$)</b>	<b>Funding Source</b>
Low	Prepare and schedule an outreach campaign to inform residents about Alert Iowa and Tornado Safety.	ALL	County Emergency Management, Library, City Clerk, Red Cross, Schools,	Immediate (1- 6 months)	Minimal \$0 - \$10K	City general fund
Low	Meet with fire department and prepare educational materials, share social media feeds, contact information, updates for community outreach.	ALL	Fire Department, City Council	Immediate (1-6 months)	Minimal \$0-\$10K	City general fund
Low	Design a response plan for drought conditions that reduce water usage during drought scenarios.	Drought	City Council	Mid-to-Long Term	Minimal \$0-\$10K	City general fund

**Table 17: Local Plans and Regulations Mitigation Activities**

Description: Actions by administrative or regulatory processes which direct how land and buildings are developed and built. These actions include regulations by public entities to reduce hazard losses.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
High	Enforce floodplain ordinance per National Flood Insurance Program and discourage development within the floodplain.	Flash Flood, River Flood	City Council, City Clerk	Mid-term (3-5 Years)	Minimal \$0 - \$10K	City General Fund
Low	Review local ordinance regarding nuisance properties.	Hazardous Materials	City Council	Short Term (1-3 years)	Minimal \$0-\$10K	City general fund
High	Prepare communication response plan for ambulance, fire, city personnel, and citizens of response during a disaster or hazardous event.	All	City Council	Short Term (1-3 years)	Minimal \$0-\$10K	City general fund
High	Create ash tree removal program to prevent property damage and personal harm from dead trees.	Severe Storm	City Council	Short Term (1-3 years)	Minimal \$0-\$10K	City general fund

# **City of Bassett**

## Hazard Mitigation Plan 2024 Update

2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan Update Appendix B

Prepared by Iowa Northland Regional Council of Governments (INRCOG)

For Chickasaw County, Iowa

April 2024

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## About

The City of Bassett Hazard Mitigation Plan 2024 update was formed as an appendix to a county-wide planning effort by multiple communities, school districts, and Chickasaw County departments. The 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan is a sequential update to the previous hazard mitigation plan. FEMA requires a 5-year update for approved hazard mitigation plans to be in good standing and eligible for grant funding. The Plan was developed to meet the requirements in 44 CFR § 201.6. The Plan was submitted to the Iowa Homeland Security and Emergency Management Department (IHSEMD) office and then submitted to FEMA for approval. Chickasaw County's Emergency Management Agency initiated and funded this effort for all participating communities and contracted INRCOG to coordinate this multi-jurisdictional planning process. An approved and adopted hazard mitigation plan qualifies participating jurisdictions with pre-disaster grant programs that may fund projects for the entire community.

Participating communities included all nine incorporated communities in the County, Chickasaw County's departments, and three public school districts. Four committee

meetings were held between March 19<sup>th</sup> and April 23<sup>rd</sup> wherein each jurisdiction provided data and completed work sheets to develop their hazard mitigation plans.



*FEMA's Emergency Management Cycle*

The emergency management cycle has 4 phases:

- **Preparedness** is the assessment of potential risks, hazards, and vulnerabilities that a community may face. The development and updating of activities, programs, and systems before an event occurs is included in this phase of the cycle.
- **Response** is the immediate effects after a disaster.
- **Recovery** is a long-term phase that focuses on returning the community to normal after a disaster.
- **Mitigation** is an action that can occur at any phase.

## The Benefits of Hazard Mitigation

Benefits of mitigation planning for local governments include:

- ✓ An increased understanding of natural, technical, and man-made hazards faced by communities.
- ✓ Taking an opportunity to create more sustainable and disaster-resistant communities.
- ✓ Participating in this collaborative intergovernmental effort is cost effective for all participants.
- ✓ Using limited resources on hazards that have the biggest impacts on a community.
- ✓ Reducing or preventing damage to existing structures, subsequently reducing repair costs.
- ✓ Identifying vulnerable populations to establish equitable outcomes.
- ✓ Setting long-term goals that can be compatible with city policies or planning documents.

## The Planning Process

In emergency management planning, reducing the community's risk to natural hazards is a multi-step process which involves collaboration among stakeholders, assessing risk and vulnerabilities of hazards facing the community, establishing actions or activities to reduce risk, and assembling an organized strategy to carry out all mitigation activities.

Participants in the Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan Planning Committee provided the information in this plan including community profile information, hazard mitigation goals, mitigation activities/action, updates to existing mitigation activities, and elements included in the strategy such as priorities, designated agencies, estimated costs, and overall strategic direction of this plan.

## Participants in the Plan Followed This 5 Step Process



## City Profile

Jurisdiction: City of Bassett

County: Chickasaw County

Population (2020): 45

The City of Bassett is in the upper west quadrant of Chickasaw County. State Highway 18 and County Highway T76 intersect in Bassett. The Little Cedar River flows to the south of Bassett.

The following data presented in tables on the following page include population, employment, and industry sector data for the community based on 2020 Census data and 2022 American Community Survey 5-year Estimates.

In 2020, the city's population was 45 and 98% White where the median age is 53. Children and teens (younger than 15 years) make up 4% of Bassett's population while older adults (older than 65 years) make up 29%.

The median household income in 2022 was \$51,250. The unemployment rate is very low at 0%. Most people commute to work, and it is estimated 0% of the workforce work from home. The top three largest industry sectors in Bassett are as follows (in order from highest to lowest): 1) Manufacturing; 2) Finance and insurance, and real estate and rental and leasing and 3) Construction.

**Figure 1: Map of Chickasaw County**

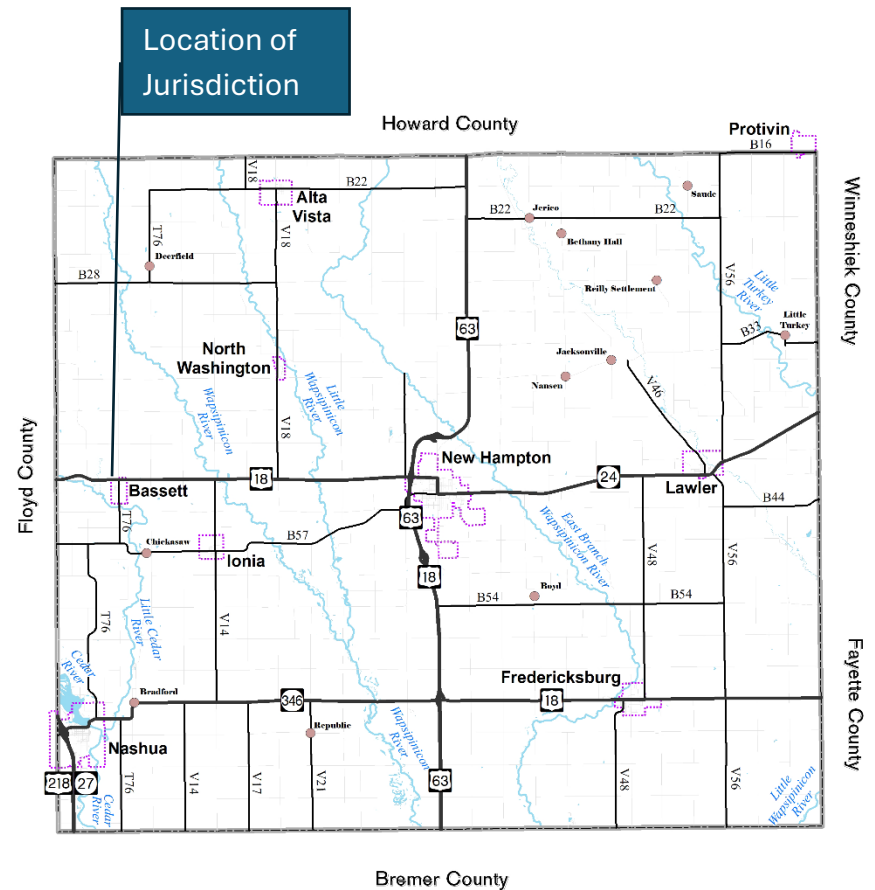


Table 1: Population Data (2020)		
City of Bassett		
	Total	% of Population
Total population	45	100.0%
AGE		
Under 5 years	1	2%
5 to 9 years	1	2%
10 to 14 years	0	0%
15 to 19 years	5	11%
20 to 24 years	1	2%
25 to 29 years	0	0%
30 to 34 years	0	0%
35 to 39 years	2	4%
40 to 44 years	6	13%
45 to 49 years	4	9%
50 to 54 years	7	16%
55 to 59 years	3	7%
60 to 64 years	2	4%
65 to 69 years	5	11%
70 to 74 years	6	13%
75 to 79 years	0	0%
80 to 84 years	0	0%
85 years and over	2	4%
Median Age	52.5	-
RACE		
White	44	98%
Black or African American	0	0%
Hispanic or Latino (of any race)	1	2%
American Indian and Alaska Native	0	0%
Asian	0	0%
Native Hawaiian and Other Pacific Islander	0	0%
Some Other Race	1	2%
Two or More Races	0	0%
Source: 2020 Census		

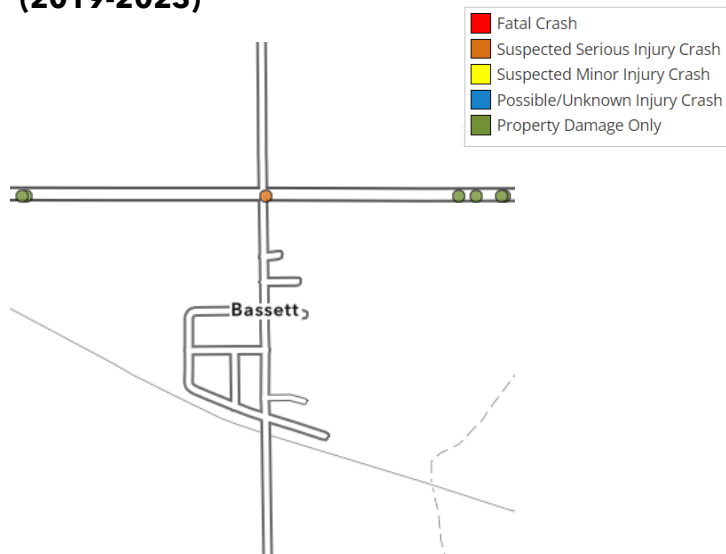
Table 2: Employment Data (2022)		
City of Bassett		
	Value	% of Population
Median Household Income	\$51,250	-
Unemployment Rate (2022)	0%	-
Workers that commute to work	14	100%
Workforce that works from home	0	0%
Source: 2022 American Community Survey 5-Yr Estimates		

Table 3: Industry Data (2022)		
City of Bassett		
Industry	# of Workers	% of Workforce
Agriculture, forestry, fishing and hunting, and mining	0	0%
Construction	1	7%
Manufacturing	8	57%
Wholesale trade	0	0%
Retail trade	0	0%
Transportation and warehousing, and utilities	0	0%
Information	0	0%
Finance and insurance, and real estate and rental and leasing	2	14%
Professional, scientific, and management, and administrative and waste management services	0	0%
Educational services, and health care and social assistance	0	0%
Arts, entertainment, and recreation, and accommodation and food services	0	0%
Other services, except public administration	3	21%
Public administration	0	0%
Source: 2022 American Community Survey 5-Yr Estimates		

## Highway Traffic and Crash Data

Based on Iowa DOT crash data, between 2019 and 2023 there has been 1 incident involving a suspected serious injury crash reported.

**Figure 2: Iowa Crash Analysis for All Traffic Incidents (2019-2023)**



Source: Iowa DOT

## Housing Data

The City of Bassett has 36 occupied housing units. Nearly 100% of them are single family detaching housing. An estimated 0 housing units are mobile homes.

Nearly 56% of the local housing stock is older than 80 years. Most homes heat their units with gas or liquid propane (LP),

electricity, or fuel oil. There is no gas utility provider, so residents self-serve their heating gas needs and likely travel to refill them.

<b>Table 4: Housing Data (2022)</b>		
City of Bassett		
	Total	% of Occupied Units
Occupied housing units	36	100%
<b>Housing Unit Type</b>	Total	% of Occupied Units
1, detached	36	100%
1, attached	0	0%
2 apartments	0	0%
3 or 4 apartments	0	0%
Mobile home or other type of housing	0	0%
<b>Year Structure Built</b>	Total	% of Occupied Units
2020 or later	0	0%
2010 to 2019	0	0%
2000 to 2009	0	0%
1980 to 1999	0	0%
1960 to 1979	0	0%
1940 to 1959	5	14%
1939 or earlier	31	86%
<b>House Heating Fuel</b>	Total	% of Occupied Units
Utility gas	0	0%
Bottled, tank, or LP gas	32	89%
Electricity	0	0%
Fuel oil, kerosene, etc.	3	8%
Coal or coke	0	0%
All other fuels	1	3%
No fuel used	0	0%
Source: 2022 American Community Survey 5-Year Estimates		

## Community Utility Providers

Interstate Power and Light Company provides the City of Bassett with electricity. There are no natural gas or cable TV utility providers. All residents use LP gas tanks for their home heating use and use of gas stove tops, etc. Quest Corp. IA provides telephone services and CenturyLink, Inc. provides broadband internet services. Residents have private wells for their water and use septic tanks for their sewer. Jendro Sanitation provides garbage removal services for residents.

<b>Table 5: Utility Providers</b>	
City of Bassett	
<i>Electric</i>	Interstate Power and Light Company
<i>Natural Gas</i>	None
<i>Telephone/Internet</i>	Quest Corp-IA/CenturyLink, Inc.
<i>Cable TV</i>	None
<i>Water Services</i>	Individual Wells
<i>Sewer Services</i>	Septic Tanks
<i>Sanitation</i>	Jendro Contract Services



## **Vulnerable Assets**

### **People**

Vulnerability to hazard losses increases where there are larger concentrations of people. In towns where population density increases, the amount of people that can be harmed during a hazard event (tornado, flood, etc) increases. In addition, there are segments of the population that may be more susceptible to impacts and/or harm from a hazard depending on their location within the area (ie. flood zone or near industrial plants with hazardous materials). This includes underserved or socially vulnerable populations.

### *Vulnerable Age Groups*

Both younger and older aged groups are likely to require assistance with physically moving to shelters or finding safety. Elderly residents may not have a personal vehicle to move away from a hazard quickly. Cognitive impairments among older adults may cause some to get easily confused.

### *Households Facing Poverty or With Limited Income*

Families or older adults living at, near, or below poverty are more likely to be impacted by hazards than other households with higher incomes. The impact of costly repairs to property from a tornado or heating/cooling electricity costs from extreme weather is greater for low-income families.

## **Bassett's Vulnerable Populations**

In Bassett, 11% of occupied households are below the poverty level. Over two-thirds (78%) of occupied households have elderly occupants. About 19% have elderly residents (65 years and over) living alone. Most residents have access to a vehicle. Nearly 17% of households have a person living with a disability. This is broadly defined from the data estimates for Bassett but note that persons with mobility disabilities or severe intellectual disabilities with dependent needs are the most at risk to hazard events when they occur without much warning.

## **Critical Facilities**

Identifying structures that may be affected from a hazard event and also serve a critical function for the community are shown in the map on the following page.

Two groundwater wells provide the municipal water supply. This is drawn from the Devonian aquifer from 2 city wells that were constructed in 1963 with a depth of 95 ft.

In the next 20 years, Bassett is not likely to see development pressure that would need additional capacity for critical facilities such as the wastewater treatment lagoons or city hall. Future hazard mitigation efforts will note additional facilities related to the assets here shown within the vulnerability assessment.

# Bassett, Iowa Critical Sites Map



## Existing Structures

All structures have some level of risk to hazards. The hazard risk may differ based on building characteristics such as location, age, construction type, condition, or use. Buildings with a high level of concern are homes within a hazard zone prone to flooding. The 100-year annual chance (1%) flood zone is determined with flood studies and mapped in the latest effective flood maps distributed by FEMA.

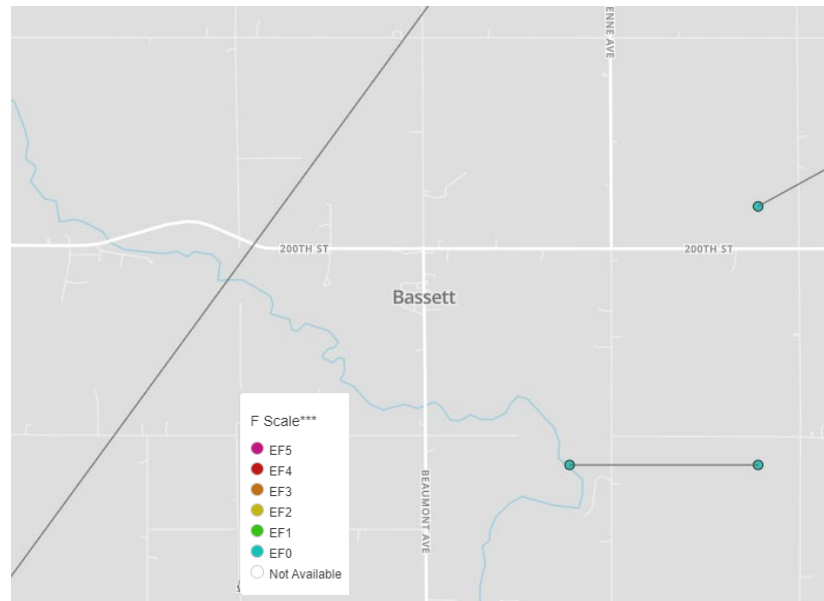
In Figure 5, the flood plain map shows the 1% annual chance of flooding in and around the City of Bassett. The river basin is depicted in the topography shown in the map.

The parcels that are impacted with the 1% annual chance of flood are highlighted in Figure 6. There are 2 parcels within Bassett affected. These parcels are agricultural or crop land and no dwelling or buildings are inundated or affected by a potential 1% annual chance flood.

Potential Damage Estimates based on Property Values of Affected Parcels from 1% Annual Chance Flood Zone	
# of Parcels	2
Total Value (land)	\$279,300
Percent of City Affected	24%

All dwellings in the City of Bassett are at risk from a tornado. Based on historical data, the nearest a tornado has gotten to the city was an EF3 on May 20, 1953, that passed to the east.

**Figure 4: Map of Historical Tornadoes**



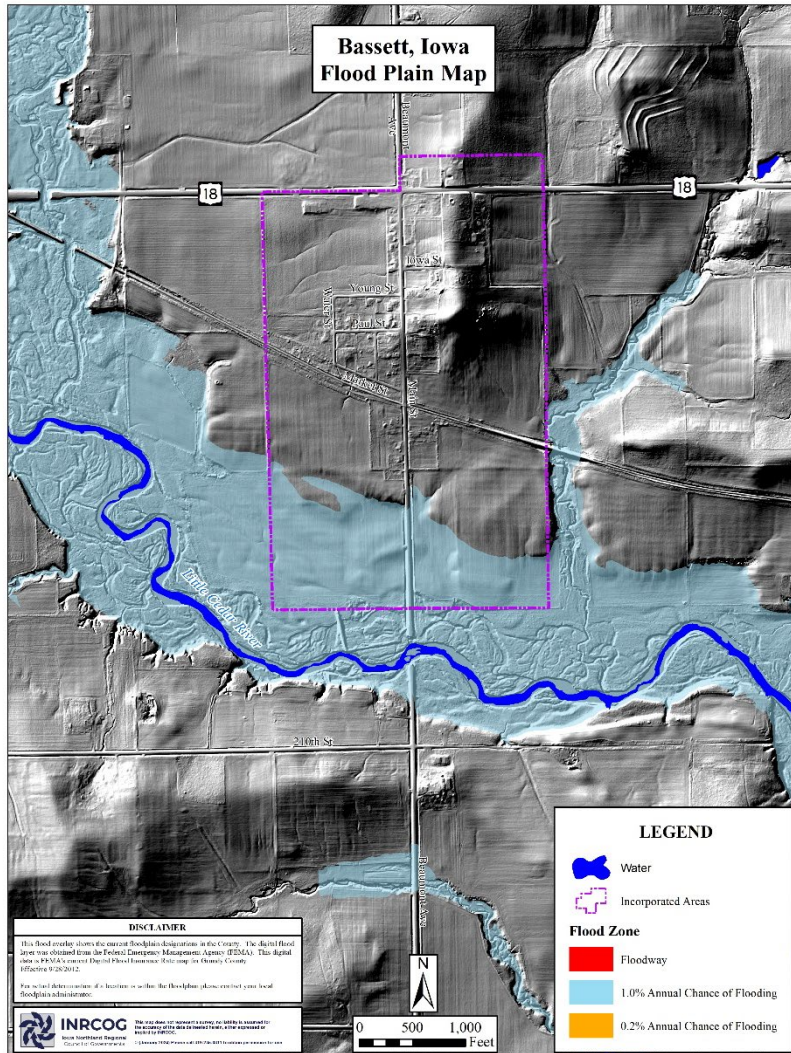
**Valuation of All Parcels in City of Bassett (2023)**

Percent of City at Risk of a Tornado	100%
# of Parcels	49
Total Value (Buildings and Dwellings)	\$1,158,500

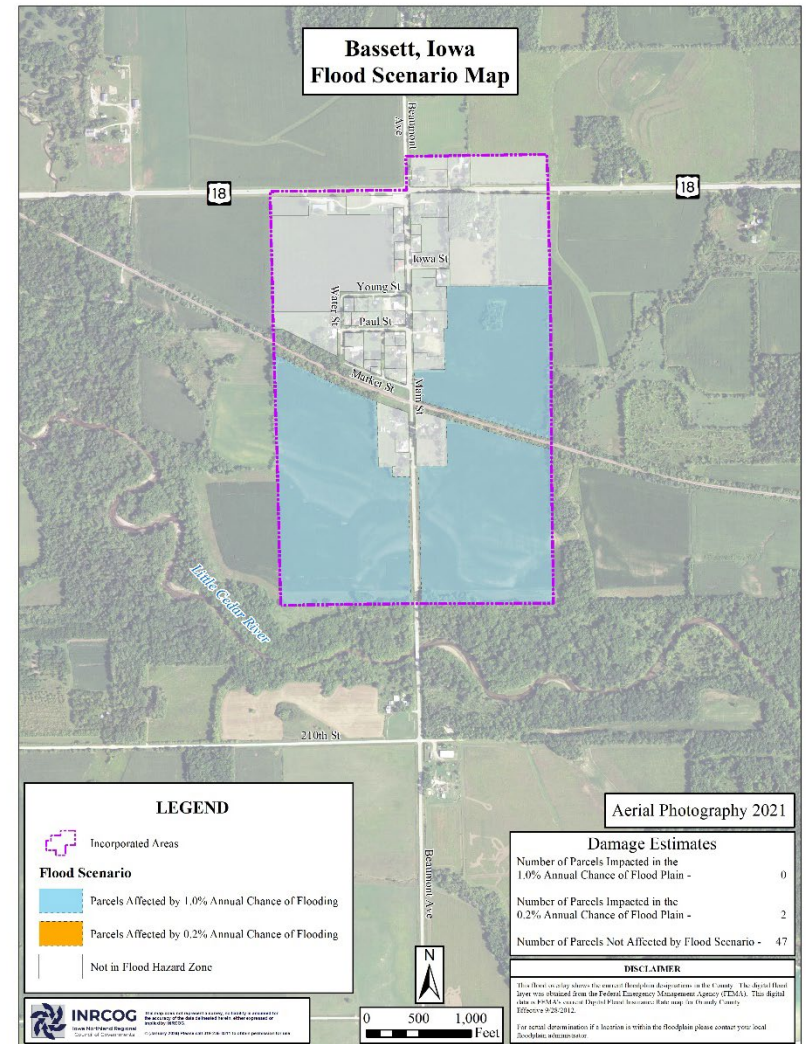
The valuation of all parcels in the City of Bassett is \$1,158,500 based on the latest valuations from the Chickasaw County assessor. The City of Bassett has a hazard risk of \$1,158,500 that may be damaged by tornadoes.



**Figure 5: Flood Plain Map**



**Figure 6: Flood Scenario Map**



## Future Development

Recent updates in Title 44 CFR §201.6 (c) (2) (i)) require this risk assessment include a section with future conditions on the type, location, and range of anticipated intensities of natural hazards.

Long term trends of climate patterns for the region were summarized in the Fourth National Climate Assessment Midwest Section<sup>1</sup>. The National Climate Report is mandated to be updated every 4 years and deliver results to Congress and President on the effects to agriculture, energy productions, land use, transportation, and human health.

Yearly precipitation levels and annual average temperatures drive intensities of climate systems.

### Annual Precipitation Levels in Chickasaw County

Chickasaw County's monthly precipitation records from 1895 are shown in Figure 10A.

Yearly precipitation has been increasing at a rate of +0.62 in every decade. Based on this historical trend, precipitation is likely to continue to increase in the coming years.

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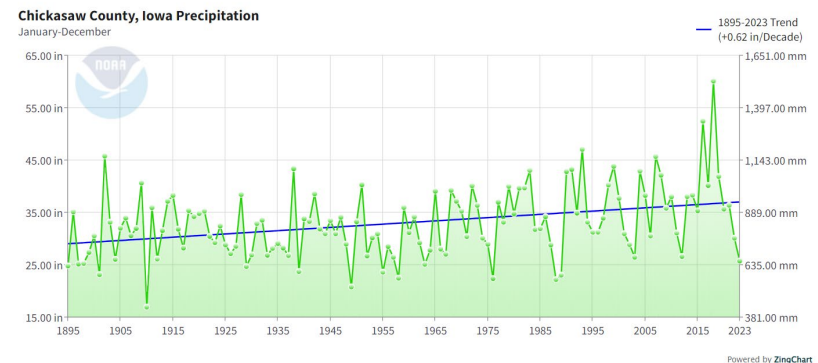
<sup>1</sup> USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

The more likely scenario in the National Climate Assessment is that average yearly precipitation will grow by 30% by the end of the century.

Managing this projected change in climate may increase more hazard mitigation efforts to reduce property damage and soil erosion from frequent flooding.

City infrastructure may become overwhelmed and require repairs, renovation, upgrades, or replacement such as the storm water systems and berms, dikes, or dams.

**Figure 7: Historical Precipitation Data and Trend for Chickasaw County, Iowa<sup>2</sup>**

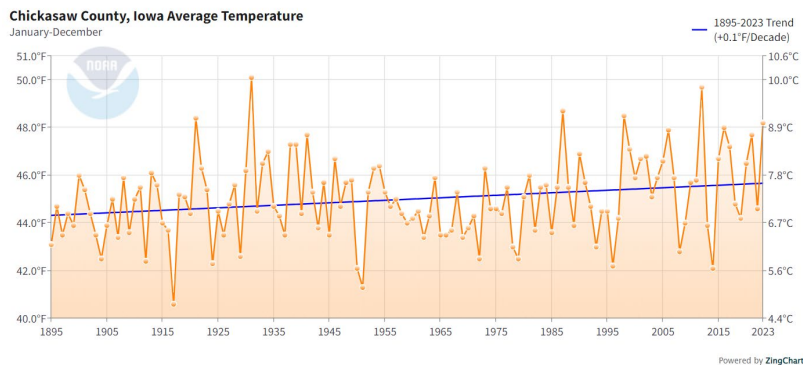


### Average Annual Temperatures in Chickasaw County

<sup>2</sup> NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published February 2024, retrieved on April 15, 2024 from <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>

The annual average temperature is plotted over a 12-month period from 1885 to 2023 in Figure 7. This trend shows the average temperature in Chickasaw County increasing at a rate of  $+0.1^{\circ}\text{F}$  every 10 years.

**Figure 7: Historical Temperature Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



#### With higher average temperatures,

Extreme heat events during the summers may occur with more frequency in the Midwest, especially in more urbanized areas.

The human impacts of extreme heat affect socially and economically vulnerable populations the most. Higher costs in energy use during extreme heat events harder for cost burdened households. Heat related illnesses are more severe among infants, elderly populations, and those with chronic health conditions.

Daily minimum temperatures will increase across all seasons due to an increase in humidity.

Warming winters have increased the survival and reproduction of existing insect pests which are allowing new insect pests and crop pathogens to move into the Midwest region.

#### Projected Trends of Natural Hazards in Chickasaw County

- Drought is likely to occur more frequently as the atmosphere holds more moisture (even pulling moisture from plants) as the temperature increases. Longer periods between weather events means there are dryer and longer periods in between these events.
- Floods (flash or major types) will increase in intensity as the atmosphere holds more moisture to drive stronger storms and drop heavier rainfall over a shorter period during an event.
- Extreme heat may occur more frequently. The human health impacts are higher among socially vulnerable population (the elderly, infants, those with chronic health issues, cost burdened households).
- Agricultural pests and pathogens may increase in growing plants and stored grain. Warming temperatures in the spring and summer have led to rising humidity. Higher dew and moisture conditions may increase the presence of these pests or crop diseases.



## National Flood Insurance Program

The City of Bassett does not participate in the National Flood Insurance Program. Since the parcels affected by a potential 1% annual chance flood do not have buildings or dwellings at risk of inundation, the City of Bassett does not plan to participate in the National Flood Insurance Program.

FEMA defines a repetitive loss property as an insurable building that has experienced two losses in a 10-year period in which each loss is \$1,000 or more. There are no reported repetitive loss properties.

## Hazard Risk Assessment

The top three hazards from the risk assessment are:

1. Tornado/ Windstorm
2. Pandemic/ Endemic Human Disease
3. Severe Winter Storm

### Methodology

This risk assessment identifies how people, property, and structures would be harmed or damaged by one of the listed hazard events. IHESMD provided the formula below.

### Hazard Risk Score Formula

$$\begin{aligned} &[\text{Probability}] \times 45\% + [\text{Magnitude or Severity}] \times 30\% \\ &+ [\text{Warning Time}] \times 15\% + [\text{Duration}] \times 10\% \\ &= \text{Final Hazard Assessment} \end{aligned}$$

Score= 1      Description: hazard is not likely to affect people or property because the likelihood is minimal.

Score= 4;      Description: the hazard is imminent with devastating impacts.

Score =0      Description: hazard was considered but the threat is nonexistent due to geographical reasons such as - probability of river flooding hazard in city not in proximity to rivers, streams, waterways nearby.

Source: Provided by Iowa HSEMD during scope of work

The factors in the hazard risk calculation are defined and the score values for each part is summarized in the following sections:

### A. Probability

The probability score reflects the likelihood of the hazard occurring in the near future. Historical data of the hazard event occurring in Chickasaw County or Iowa informed the likelihood of future occurrence.

Probability Score Definitions		
Score	Description	
1	Unlikely	<i>Less than 10%</i> probability in any given year (up to 1 in 10 chance of occurring), a history of events is less than 10% likely or the event is unlikely but there is a possibility of its occurrence.
2	Occasional	<i>Between 10% and 20%</i> probability in any given year (up to 1 in 5 chance of occurring), history of events is greater than 10% but less than 20% or the event could possibly occur.
3	Likely	<i>Between 20% and 33%</i> probability in any given year (up to 1 in 3 chance of occurring), history of events if greater than 20% but less than 33% or the event is likely to occur.
4	Highly Likely	<i>More than 33%</i> probability in any given year (event has up to a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.

## B. Magnitude or Severity

The magnitude or severity of the hazard event is measured by the level of impact on the human environment. Property damage is assessed by the whole planning area.

Magnitude or Severity Score Definitions		
Score	Description	
1	Negligible	Less than 10% of property severely damaged, the shutdown of facilities and services for less than 24 hours, and/or injuries/illnesses treatable with first aid
2	Limited	10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
3	Critical	25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
4	Catastrophic	More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.

## C. Warning Time

This should be taken as an average warning time.

The warning time score assesses the ability to warn a population before the hazard occurs. The values of the score range from 1 (no warning time) to at least 24 hours.

For many of the climate hazards, there is a considerable amount of warning time as opposed to the human-

caused hazards that occur instantaneously or without any significant warning time.

Warning Time Score Definitions		
Score	Description	
1	Forecasted	More than 24 hours warning time.
2	Likely	12 to 24 hours warning time.
3	High Chance	6 to 12 hours warning time
4	Imminent	Minimal or no warning time (up to 6 hours warning)

## D. Duration

The duration is the time of a typical or expected hazard event to occur. For an earthquake or traffic accident that is a score of 1. For infrastructure failure, it is likely a 4.

Duration Score Definitions	
Score	Description
1	Less than 6 hours
2	Less than 1 day
3	Less than 1 week
4	More than 1 week

Table 6 displays rated risk scores for each associated hazard. This assessment was completed by city representatives based on hazard profiles prepared for the planning committee.

Table 6: Hazard Risk Assessment					
Hazards	Probability	Magnitude	Warning Time	Duration	Score
Tornado/Windstorm	3	3	4	1	3.0
Pandemic/ Endemic Human Disease	2	4	2	4	2.8
Severe Winter Storm	2	3	4	2	2.6
Thunderstorm/ Lighting/ Hail	2	3	4	1	2.5
Extreme Heat	2	2	3	4	2.4
Hazardous Materials	1	4	4	1	2.4
Transportation Incidents	2	1	4	1	1.9
Flooding - Flash	1	2	4	2	1.9
Grass/Wildland Fire	1	2	4	1	1.8
Flooding - Riverine*	1	2	3	2	1.7
Earthquake*	1	1	4	2	1.6
Expansive Soils*	1	1	2	4	1.5
Animal/ Crop/ Plant Disease	1	1	2	4	1.5
Infrastructure Failure	1	1	3	2	1.4
Landslide	1	1	1	4	1.3
Sinkholes*	1	1	1	4	1.3
Terrorism	1	1	1	4	1.3
Radiological	1	1	1	3	1.2
Drought	1	1	1	2	1.1
Levee/Dam Failure*	1	1	1	1	1.0

Source: Completed by City Representative. Calculated score completed by INRCOG

\*The following hazards were identified as not being considered a threat needing a specific mitigation activity.

## **Hazard Mitigation Strategy**

### **Goals for Hazard Mitigation in Bassett, Iowa**

The following list of goals was developed by planning committee participants from the associated jurisdiction. Goals 1 through 7 were developed in the previous 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. The planning committee participants chose to adopt the same goals and add additional goals.

- Goal #1** Reduce the chance of and impact of flooding in the community.
- Goal #2** Take measures to minimize the occurrence of injuries and loss of life due to hazards.
- Goal #3** Take measures to minimize or eliminate damage that may occur as a result of hazards.
- Goal #4** Increase the city's ability to respond to natural disasters and man-made hazards.
- Goal #5** Return to the community to similar or improved pre-event conditions as quickly as possible following a disaster event.
- Goal #6** Incorporate the City Plan into the proposed Multi-Jurisdictional Plan.
- Goal #7** Continually re-assess and re-evaluate the plan and mitigation activities.

## **Previous Mitigation Activities by Type**

Going forward, the strategy and plan will be organized according to 5 categories.

### Emergency Services in Bassett

#### a. Chickasaw County Emergency Management Agency

Bassett works with the Chickasaw County Emergency Management Coordinator, based out of the City of New Hampton, on various safety and emergency events. The Emergency Management Coordinator works in conjunction with local fire, rescue, police, and government officials to draft and implement workable emergency action plans in the community. The Grundy County Emergency Management Coordinator is Jeff Bernatz.

#### b. Law Enforcement

The community has a 28E agreement in place with Chickasaw County Sheriff's Department that will provide law enforcement services. Services include patrol in the city. The sheriff deputies provide a response time to the city up to 30 minutes and will provide extra people power when notified by the city.

#### c. Fire Protection and EMS Services

Fire protection for the City of Bassett is provided by Chickasaw County's Rescue Squad. The station is located in New Hampton, Iowa. There are 18 volunteer fire

fighters that serve in the department currently. The 18 members of the department meet monthly and take training in fire suppression, hazardous materials, and emergency medical services. Dispatch is provided via a paging system through the Chickasaw County Rescue Squad.

#### d. Medical Facilities Near Bassett

There are no medical facilities in Bassett. The closest facility is the MercyOne New Hampton Medical Center in New Hampton, IA. This is the only medical facility with an ER unit located in the county. MercyOne has 11 private inpatient rooms and cares for over 20,000 outpatients each year.

MercyOne New Hampton offers a full range of services in an inpatient and outpatient setting as well as 24-hour emergency care, surgical services, primary care clinic, therapy and rehabilitation, diagnostic services, speech and occupational therapy, Senior Life Solutions and specialty clinics.

#### e. HAZMAT Response Teams

Bassett contracts with Northeast Iowa Response Group for response to hazardous material spills. The Northeast Iowa Response Group is a division of Waterloo Fire Rescue as is the Hazardous Materials Regional Training Center. The Training Center provides training to fire departments and companies from around the state and country. Not only is this a training center, it also serves as

a hazardous materials quick response unit to Black Hawk County, surrounding counties, and many municipalities in a ten county region. The Unit provides local fire departments with hazard materials emergency procedures thus reducing additional contamination. An evacuation plan is also in place in conjunction with the activities of the local department. Contact information for the facility is as follows: Hazardous Materials Regional Training Center, 1925 Newell Street, Waterloo, Iowa 50707, Phone: (319) 291-4275, Toll Free: (800) 291-4682, Fax: (319) 291-4285

The jurisdiction also partners with the Northeast Iowa Response Group for assistance in responding to any methamphetamine labs located in the city limits. The Response Group assists the Police Departments in containment of the site and disposal of hazardous chemicals.

f. Warning Systems in Bassett

Bassett has 1 operating tornado warning siren for the community.

The activation systems of warning systems are activated and operated by a central command system operated by the Chickasaw County Rescue Squad in New Hampton, IA.

2) Alert Iowa Mass Communication System

Chickasaw County has implemented the use of Alert Iowa, a mass communication notification system. The system features are controlled through the Chickasaw County Emergency Management Agency. Residents can customize their alert settings including the type of alerts they would get.

Alert Iowa allows for emergency notifications via landline telephones, cell phones, email, text messages, and social media. This is useful for communities that may not have an operating warning siren or may not hear the sirens. The County will use its emergency notification network for all the following events: blizzards, flash flooding, severe thunderstorms, and tornadoes. There is an optional way to receive the same alert for events such as: excessive heat warnings, hazardous materials warnings, heavy snow warning, high wind warnings, ice storm warnings, law enforcement warnings, shelter in place warnings, sleet warnings, wind chill warnings, and winter storm warnings.

Education and Outreach Projects in Bassett

Bassett does not have any education and outreach projects mitigation actions.

Natural Resource Protection in Bassett

Bassett does not have any natural resource protection mitigation actions.



### Structural Projects in Bassett

Bassett does not have nor done any structural projects mitigation actions.

### Local Plans and Regulations in Bassett

Bassett completed a local plan and regulation assessment. The results are shown in the table below.

<b>Table 7: Local Capability Assessment</b>	
<b>Community</b>	City of Bassett
<b>Previous HMP Participant?</b>	No
<b>Comprehensive Plan?</b>	No
<b>Building Code?</b>	No
<b>Zoning Ordinance?</b> <b>RR=restricted residential</b>	No
<b>Subdivision Regulations?</b>	No
<b>Floodplain Management Ordinance?</b>	No
<b>Tree-Trimming Ordinance?</b>	No
<b>Storm Water Ordinance?</b>	No
<b>Snow Removal Ordinance?</b>	No

### **Strategy for Implementing the Plan**

Presented below are tables prepared in consultation with the Bassett's planning committee's representative and INRCOG. This is a guide for a strategic approach when implementing the city's efforts in hazard mitigation. The tasks in these tables are drawn from the city's capabilities, goals, and hazard risks presented in previous sections of this Plan. The designated agency or staff presented with each line item was written by Bassett's planning committee.

Notes about the tasks (listed as line items) in each table.

- Each task (line item) stands on its own so it can be completed whenever possible.
- Each action item is not limited to the details presented below and may change based on future conditions.
- The tasks were categorized based on mitigation type. The mitigation types are not shown in any order (no priority over the other). This is presented to help with the general understanding of how hazard mitigation may feed into the City's existing or future priorities.

### Priority Level

High	The priority level was informed through discussions among planning committee members who considered potential benefits of implementing the activity, some hurdles that the city may face in implementing the action step, and the drawbacks of implementation. <i>Committee representatives considered a cost-benefit approach.</i>
Medium	
Low	

### Timeframe

Timeframe	Description
Short Term	1-5 years
Mid-Term	5-10 Years
Long-Term	More than 10 Years

### Estimated Costs

Cost	Description
Minimal	Cost estimate is \$10,000 or less based on using current staff, time commitment, continuous of current duties, proposed action/program/ project, and funding sources.
Low	Cost estimate for the project range from \$10,001 - \$99,999 based on existing proposed treatment, time commitment, any further study that is needed, and level of engineering, and project components (permits, acquisition, coordination, etc.).
Moderate	Cost estimate for the project range from \$100,000 - \$299,999 based on existing conditions, time commitment, proposed action/ program/project, any further study that is needed, and level of engineering, and project components (permits, acquisition, coordination, etc.), and funding sources.
High	Cost estimate for project range is \$300,000 or higher based on existing conditions, time commitment, proposed action/program/project, any further study that is needed, level of engineering, project components (permits, acquisition, coordination, etc), and funding sources

<b>Table 8: 'Emergency Services' Type Mitigation Activities</b>						
Description: Actions that protect people and property during and immediately after a disaster or hazard event.						
<i>Priority</i>	<i>Tasks</i>	<i>Hazard(s)</i>	<i>Primary Agency Responsible for Implementation</i>	<i>Time Frame to Complete</i>	<i>Estimated Cost (s)</i>	<i>Funding Source</i>
High	Initiate a study to see if a siren needs to be replaced or an additional siren needs to be purchased.	Tornado/ windstorm	City Council, County EMA	Immediate (1 month - 6 months)	Minimal \$0 - \$10K	City general fund
High	Purchase and install early warning siren to be a replacement or an additional siren in the community	Tornado/ windstorm	City Council, County EMA, FEMA	Immediate (1 month - 6 months)	Moderate \$10K- \$30K	City general fund and mitigation grant funding

<b>Table 9: 'Education and Awareness' Type Mitigation Activities</b>						
Description: These types of actions keep residents informed about potential natural disasters.						
<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
High	Educate the public on proper steps to protect their property and self during an event	ALL	County Emergency Management, Library, City Clerk, Red Cross, Schools,	Mid-term (3-5 Years)	Minimal \$0 - \$10K	City general fund

**Table 10: Natural System Protection and Nature-Based Mitigation Type**

Description: Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
Low	Identify opportunities to improve drought resiliency within the City.	Drought	City Council	Mid-term (3-5 Years)	Minimal \$0 - \$10K	City general fund
Low	Identify and promote the planting of trees to increase shade around the City.	Excessive Heat	City Council; Local Citizens	Mid-term (3-5 Years)	Minimal \$0 - \$10K	City general fund
Low	Ensure drainage is able to handle flash/heavy rain events.	Flash Flood	City Council; Local Citizens	Mid-term (3-5 Years)	Minimal \$0 - \$10K	City general fund

**Table 11: Structure and Infrastructure Project Type Mitigation Activities**

Description: Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
Low	Bury overhead power lines	Severe Winter Storm, Hailstorm, Thunderstorm and Lightning, Tornado, Windstorm, Infrastructure Failure, Grass/Wildfire, Landslide	City Council, City-Owned Utility	Short-Term (6 months - 3 years)	Moderate \$10K-\$30K	City General Fund, Utility provider

**Table 12: Local Plans and Regulations Mitigation Activities**

Description: Actions by administrative or regulatory processes which direct how land and buildings are developed and built. These actions include regulations by public entities to reduce hazard losses.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
Low	Continue participation in the County Hazard Mitigation Plan and future planning sessions.	All	City Council; Board of Supervisors	Mid-term (3-5 Years)	Minimal \$0 - \$10K	City General Fund; County General Fund

# City of Fredericksburg, Iowa

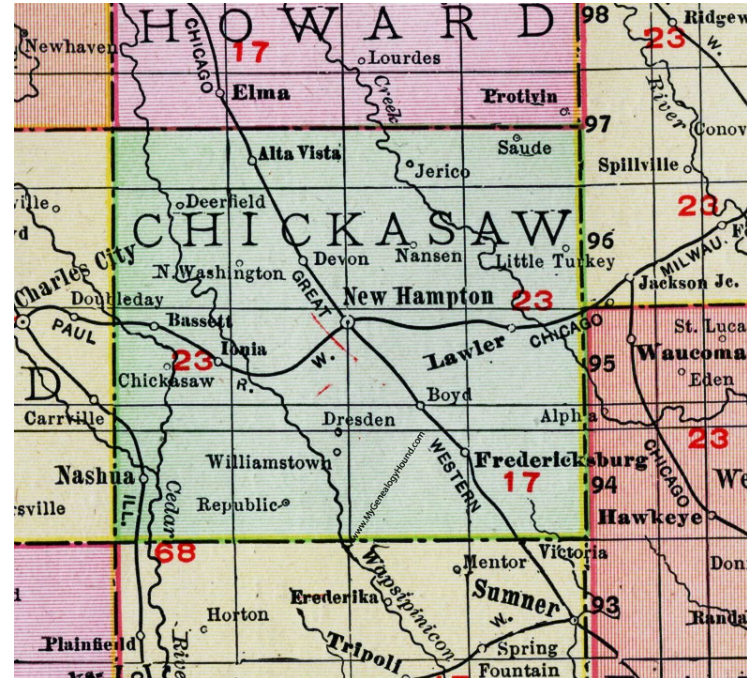
## Hazard Mitigation Plan 2024 Update

### Appendix C of Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan

Funded by the Chickasaw County Emergency  
Management Agency

Prepared by Iowa Northland Regional Council  
of Governments (INRCOG)

April 2024





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**A RESOLUTION OF THE CITY COUNCIL OF FREDERICKSBURG, IOWA, ADOPTING  
THE CITY OF FREDERICKSBURG, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.**

WHEREAS, the City of Fredericksburg City Council recognizes the threat that natural hazards pose to people and property within Fredericksburg; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing Fredericksburg served and participated in the formulation of the Plan, hereby known as the City of Fredericksburg, Iowa Hazard Mitigation Plan 2024 Update, as part of the the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Fredericksburg from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the Plan; and

WHEREAS adoption by the City Council of Fredericksburg demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF FREDERICKSBURG,  
IOWA, THAT:

Section 1: In accordance with local regulations, the Council adopts the City of Fredericksburg, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of Fredericksburg may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of Fredericksburg to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 19<sup>th</sup> day of June 2024.

  
Mayor

ATTEST:

  
City Clerk

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## About

The City of Fredericksburg developed this local Hazard Mitigation Plan to update their previous plan. That Plan was part of the 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. The 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan is a sequential 5-year update to the previous hazard mitigation document. Federal hazard mitigation grant programs require an updated hazard mitigation plan approved by FEMA to be in good standing and remain eligible for grant funding. The Plan was developed to meet the requirements in Title 44 CFR § 201.6.

Elected officials, city clerks, planners, first responders, and other stakeholders were invited to attend planning committee meetings as participants while they completed worksheets that were returned to the Chickasaw County's Emergency Management Agency (EMA) and INRCOG. Chickasaw County's EMA initiated and funded this effort for all participating communities and contracted INRCOG to coordinate a multi-jurisdictional approach to this plan development process.

Participating communities included all nine (9) incorporated jurisdictions in Chickasaw County. Other participating members were representing their respective County departments. The school district superintendents of three public school districts participated and represented their jurisdictions. Four (4) committee meetings were held between March 19<sup>th</sup> and April 23<sup>rd</sup> wherein each participant provided data and completed work sheets to develop their hazard mitigation plans.

## FEMA's Emergency Management Cycle



### What is Hazard Mitigation?

Hazard Mitigation is any *sustained* action taken to reduce or eliminate long-term risk to life and property from hazards.

The emergency management cycle has 4 phases:

- **Preparedness** is the assessment of potential risks, hazards, and vulnerabilities that a community may face. The development and updating of activities, programs, and systems before an event occurs is included in this phase of the cycle.
- **Response** is the immediate effects after a disaster.
- **Recovery** is a long-term phase that focuses on returning the community to normal after a disaster.
- **Mitigation** is an action that can occur at any phase.

## The Benefits of Hazard Mitigation

For local governments, there are benefits in knowing hazards, their risks, and planning for mitigation strategies.

Those include:

- ✓ An increased understanding of natural, technical, and man-made hazards faced by communities.
- ✓ Taking an opportunity to create more sustainable and disaster-resistant communities.
- ✓ Participating in this collaborative intergovernmental effort is cost effective for all participants.
- ✓ Using limited resources on hazards that have the biggest impacts on a community.
- ✓ Reducing or preventing damage to existing structures, subsequently reducing repair costs.
- ✓ Identifying vulnerable populations to establish equitable outcomes.
- ✓ Setting long-term goals that can be compatible with city policies or planning documents.

## The Planning Process

In emergency management planning, reducing the community's risk to natural hazards is a multi-step process which involves collaboration among stakeholders, assessing risk and vulnerabilities of hazards facing the community, establishing actions or activities to reduce risk, and assembling an organized strategy to carry out all mitigation activities.

Participants in the Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan Planning Committee provided the information in this plan including community profile information, hazard mitigation goals, mitigation activities/action, updates to existing mitigation activities, and elements included in the strategy such as priorities, designated agencies, estimated costs, and overall strategic direction of this plan.

### *Participants in the Plan Followed This 5 Step Process*



## Community Data Sources

Population data is based on 2020 decennial Census data. The 2022 American Community Survey 5-year estimates are the latest and most reliable survey data sets to understand what is taking place in the county and each city. Most counties, cities, and towns rely on 5-year estimates. Employment, workforce, and industry figures in this Plan are estimates that have a margin of error.

It is important to note that the ACS estimates used for rural communities will have a degree of uncertainty associated with them, called sampling error, because they are based on a sample. In general, the larger the sample, the smaller the level of sampling error. Rural communities tend to have smaller samples than larger cities, so the “margin of error”—a measure of the precision of an estimate at a given level of confidence—likely will be larger for rural areas.

Crash data along roadways within each jurisdiction is collected between the period of 2019 and 2023. Using a map tool interface, the data was taken at a city level and presented to understand incident severity, casualties, and property damage from reported accidents. Accident data is added to the site daily and accessible through an online website, <https://icat.iowadot.gov/>.

In the risk analysis section of this Plan, estimates of property loss are measured using mapping of hazardous zones. For the vulnerability risk assessment, flood prone homes were determined using the boundaries of the 100 year (1%) annual chance flood zone. The value of potential property loss was derived from the 2023 assessed dollar value of

structures and dwellings on affected parcels provided by the Chickasaw County Assessor’s Office.



## City Profile

**Jurisdiction: City of Fredericksburg**

**County: Chickasaw County**

**Population (2020): 987**

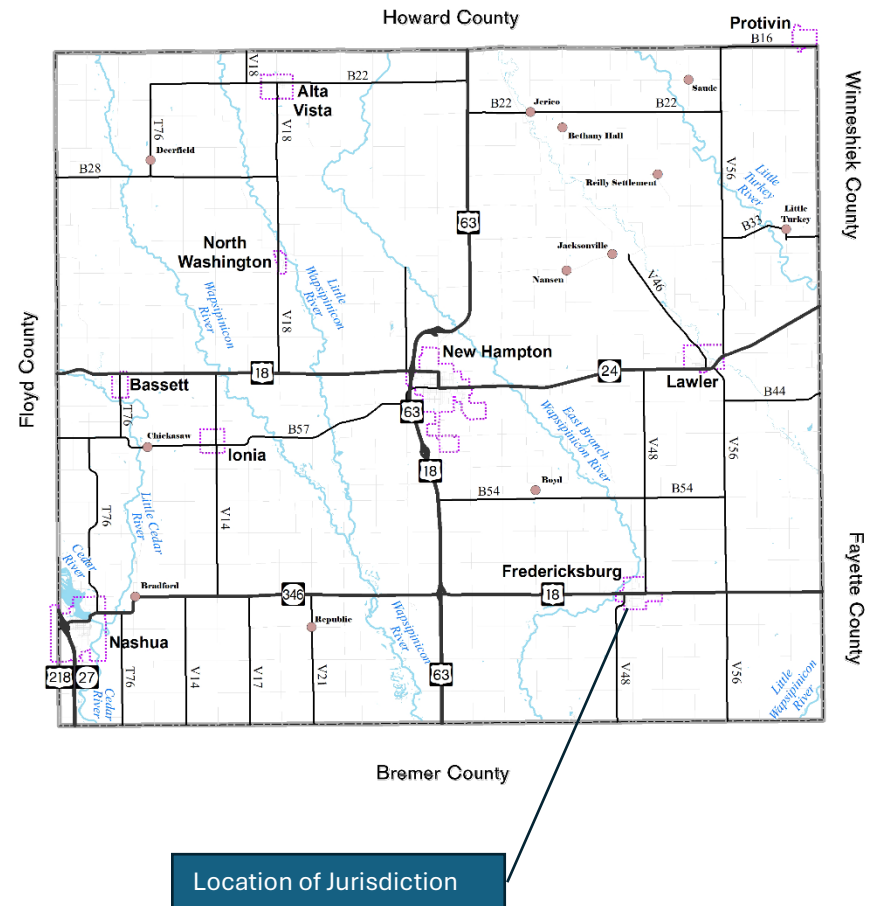
The City of Fredericksburg is in the lower east quadrant of Chickasaw County. State Highway 18 and County Highway V48 intersect in Fredericksburg. The east branch of the Wapsipinicon River is west of Fredericksburg.

The following data presented in tables on the following page include population, employment, and industry sector data for the community based on 2020 Census data and 2022 American Community Survey 5-year estimates.

In 2020, the city's population was 987 and 93% White with a median age is 44. Working aged residents (15-65 years) made up 55% of the population. Children and teens (younger than 15 years) made up 20% of Fredericksburg's population while older adults (older than 65 years) made up 25%.

The median household income in 2022 was \$62,583. The unemployment rate was very low at 1%. Most people (93%) commuted to work and 38 people or 7% of the workforce worked from home. The top three largest industry sectors in Fredericksburg are as follows (in order from highest to lowest): 1) Manufacturing; 2) Educational Services, and health care, and social assistance, and 3) Retail Trade.

**Figure 1: Map of Chickasaw County**





**Table 1: Population Data (2020)**

City of Fredericksburg		
	Total	% of Pop.
Total population	987	100%
AGE		
Under 5 years	57	6%
5 to 9 years	76	8%
10 to 14 years	69	7%
15 to 19 years	49	5%
20 to 24 years	32	3%
25 to 29 years	40	4%
30 to 34 years	47	5%
35 to 39 years	82	8%
40 to 44 years	50	5%
45 to 49 years	43	4%
50 to 54 years	54	6%
55 to 59 years	65	7%
60 to 64 years	78	8%
65 to 69 years	60	6%
70 to 74 years	49	5%
75 to 79 years	59	6%
80 to 84 years	38	4%
85 years and over	39	4%
Median Age	43.7	-
RACE		
White	918	93%
Black or African American	9	1%
Hispanic or Latino (of any race)	39	4%
American Indian and Alaska Native	3	0%
Asian	3	0%
Native Hawaiian/Other Pacific Islander	0	0%
Some Other Race	18	2%
Two or More Races	36	4%
Source: 2020 Census		

**Table 2: Employment Data (2022)**

City of Fredericksburg		
	Value	% of Population
Median Household Income	\$62,583	-
Unemployment Rate (2022)	1%	-
Workers that commute to work	474	93%
Workforce that works from home	38	7.40%
Source: 2022 American Community Survey 5-Yr Estimates		

**Table 3: Employment Industry Data (2022)**

City of Fredericksburg		
Workforce Industry	# of Workers	% of Workforce
Workforce	512	100%
Agriculture, forestry, fishing and hunting, and mining	22	4%
Construction	10	2%
Manufacturing	154	30%
Wholesale trade	27	5%
Retail trade	57	11%
Transportation -warehousing, utilities	4	1%
Information	0	0%
Finance and insurance, and real estate and rental and leasing	32	6%
Professional, scientific, and management, and administrative and waste management services	13	3%
Educational services, and health care and social assistance	111	22%
Arts, entertainment, and recreation, and accommodation and food services	17	3%
Other services, except public administration	39	8%
Public administration	26	5%

Source: 2022 American Community Survey 5-Yr Estimates

## Highway Traffic and Crash Data

Based on Iowa DOT crash data, between 2019 and 2023 there have been 18 incidents. There were 13 accidents involving property damage totaling \$264,700.

**Table 4: Crash Data in Fredericksburg (2019 to 2023)**

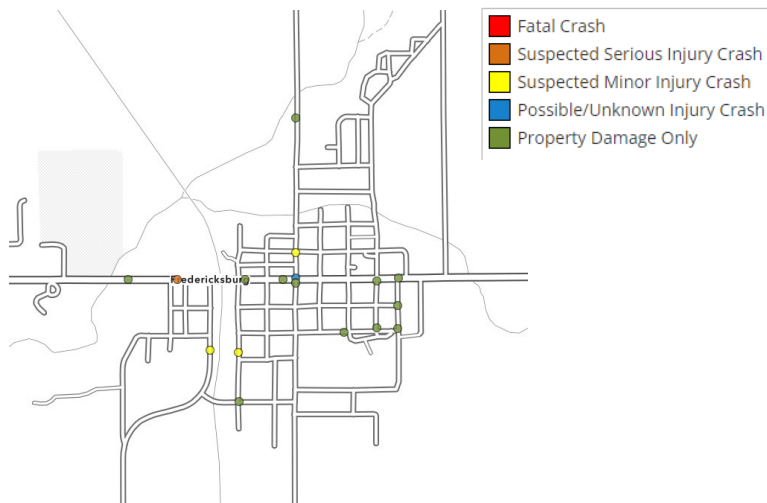
Total Crashes	18
Crash Severity	
Fatal	0
Suspected Serious Injury	1
Suspected Minor Injury	3
Unknown	1
Property Damage Only	13
Property Damage Total	\$264,700

## Housing Data

The City of Fredericksburg has 451 occupied housing units. Nearly 91% of them are single family detaching housing. An estimated 5 housing units are mobile homes.

A large portion of the housing stock was built between 1960-79 (27%). About 65% of the housing stock is under 60 years old and was built after 1960. Most homes heat their units with gas (73%).

**Figure 2: Iowa Crash Analysis for All Traffic Incidents (2019-2023)**



Source: Iowa DOT

<b>Table 5: Housing Data (2022)</b>		
City of Fredericksburg		
	Total	% of Occupied Units
Occupied housing units	451	100%
<b>Housing Unit Type</b>	Total	% of Occupied Units
1, detached	408	91%
1, attached	0	0%
2 apartments	3	1%
3 or 4 apartments	35	7%
Mobile home or other type of housing	5	1%
<b>Year Structure Built</b>	Total	% of Occupied Units
2020 or later	0	0%
2010 to 2019	14	3%
2000 to 2009	81	18%
1980 to 1999	80	18%
1960 to 1979	120	27%
1940 to 1959	70	16%
1939 or earlier	86	19%
<b>House Heating Fuel</b>	Total	% of Occupied Units
Utility gas	327	73%
Bottled, tank, or LP gas	8	2%
Electricity	116	26%
Fuel oil, kerosene, etc.	0	0%
Coal or coke	0	0%
All other fuels	0	0%
No fuel used	0	0%
Source: 2022 American Community Survey 5-Year Estimates		

### Community Utility Providers

Fredericksburg Municipal provides utility electric services. Black Hills Energy is the natural gas service provider. Windstream telephone services and broadband internet services. Residents receive water, sewer, and waste/recycling collection services from the city.

<b>Table 6: Utility Providers</b>	
City of Fredericksburg	
<i>Electric</i>	Fredericksburg Municipal
<i>Natural Gas</i>	Black Hills Energy
<i>Telephone/Internet</i>	Windstream
<i>Cable TV</i>	Mediacom
<i>Water Services</i>	City of Fredericksburg
<i>Sewer Services</i>	City of Fredericksburg
<i>Waste Collection</i>	City of Fredericksburg
<i>Recycling</i>	Jendro Sanitation

## **Vulnerable Assets**

### **People**

Vulnerability to hazard losses increases where there are larger concentrations of people. In towns where population density increases, the number of people that can be harmed during a hazard event (tornado, flood, etc.) increases. In addition, there are segments of the population that may be more susceptible to impacts and/or harm from a hazard depending on their location within the area (i.e. flood zone or near industrial plants with hazardous materials). This includes underserved or socially vulnerable populations.

### *Vulnerable Age Groups*

Both younger and older aged groups are likely to require assistance with physically moving to shelters or finding safety. Elderly residents may not have a personal vehicle to move away from a hazard quickly. Cognitive impairments among older adults may cause some to get easily confused.

### *Households Facing Poverty or With Limited Income*

Families or older adults living at, near, or below poverty are more likely to be impacted by hazards than other households with higher incomes. The costly repairs from a tornado or derecho for a low-income households may be more adversely affected than another household that has the same damage but may be able to afford the repairs without much change to their lifestyles or needs. That disparity is also different during extreme weather events such as a heat wave. Low-income households may not be able to afford the electricity to run air conditioning and many may face

complications that involve heat stroke, fatigue, or death due to their age (infants or the infirm) and health conditions (obesity, heart conditions, diabetes).

### *Fredericksburg's Vulnerable Populations*

In Fredericksburg, 7% (30 of 451) of occupied households are below the poverty level. About 255 (57%) of occupied households have elderly occupants (60 years and over). About 124 (29%) households have elderly residents (65 years and over) living alone.

Most residents have access to a vehicle, however an estimate of 11 households have no access to a vehicle. Nearly 184 (41%) households have a person living with a disability. This is broadly defined from the data estimates for Fredericksburg. However, persons with mobility disabilities may be at a higher risk than others especially during unexpected natural disasters where accessibility is not always guaranteed to shelter.

Manufactured homes are unsafe in a tornado. Fatality rates are significantly higher than sturdy buildings. An alternative shelter should be identified prior to a tornado watch or warning. There are 5 mobile homes estimated in Fredericksburg. With an average household size of 2.1, that potentially puts 10 people at a greater fatality risk than others.

## **Critical Facilities**

Identifying structures that may be affected from a hazard event and also serve a critical function for the community are shown in the table on the following page.

There are 400 housing units that are connected to the municipal water service, while the remaining 13 used privately drilled wells. The City's water is supplied by local wells, with an elevated storage capacity of 250,000 gallons. The capacity of the water plant is 230,000 gallons. Average consumption is 85,000 gallons per day (gpd), while the peak consumption is 110,000 gpd. The capacity of the municipal water system currently exceeds peak demands. Therefore, the system has the capacity to accommodate additional residential development.

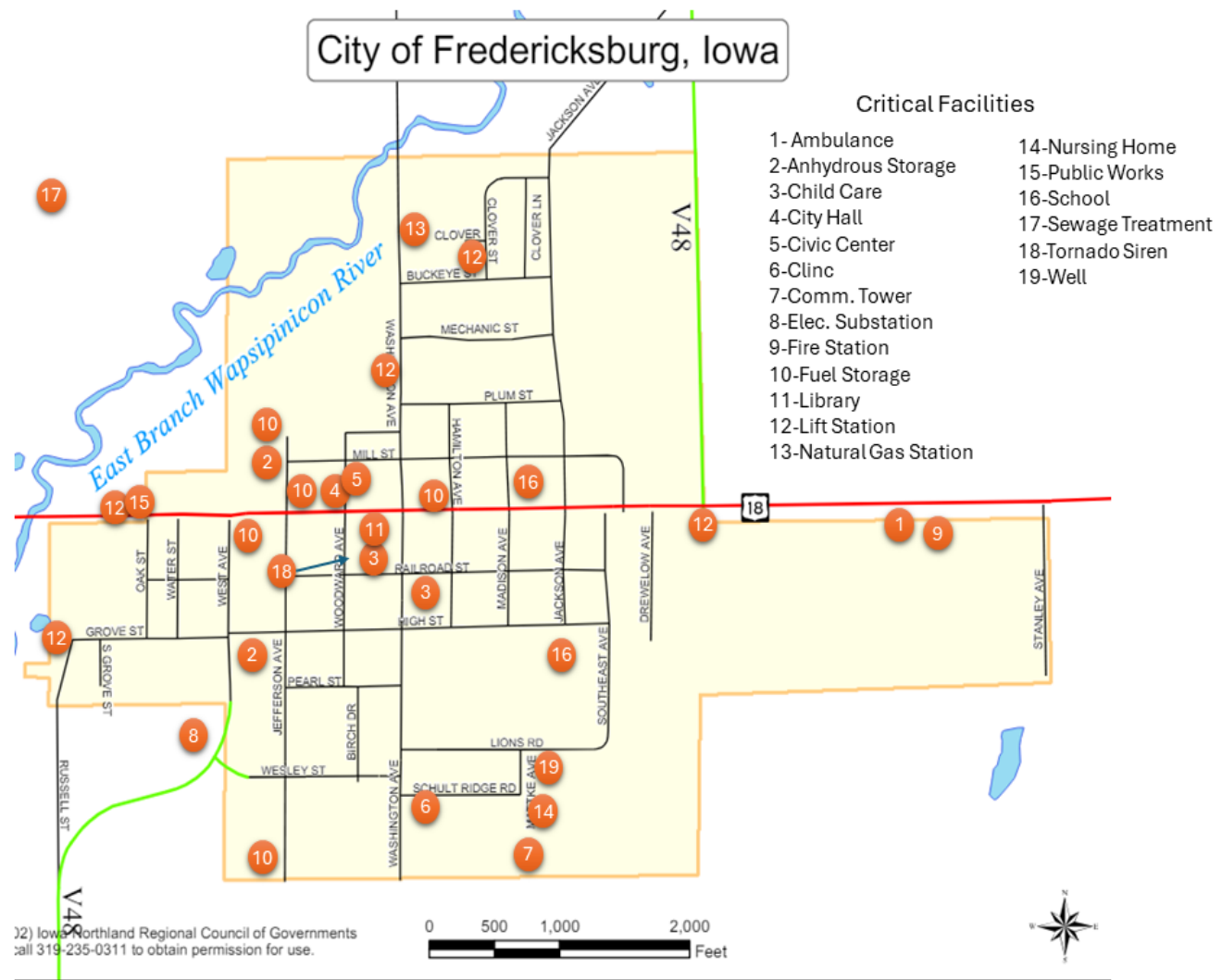
The City of Fredericksburg is served by a primary sewage treatment plant. The average load is 180,000 gpd, with a

peak load of 260,000 gpd. The design capacity of the facility is 337,000 gpd.

The existing wastewater treatment facility consists of wastewater treatment ponds located west of the city's limits. Wastewater is transported to the ponds with the assistance of five wastewater lift stations strategically located throughout the city. The locations of these wastewater stations are shown on the Critical Sites Map (See Figure 3).

In the next 20 years, Fredericksburg is likely to see population growth and the existing water plant and wastewater treatment lagoons have the capacity to manage slow steady growth. Future hazard mitigation efforts will note additional facilities related to the assets here shown within the vulnerability assessment.

**Figure 3: Critical Facilities Map**



## Measuring Vulnerability to Selected Hazards

### Tornado Hazard

Since 2000, there have been 2 recorded tornadoes in and around Fredericksburg. On June 13, 2000, an EF0 touched down and caused \$15,000 worth of property damage. On August 19, 2009, an EF0 caused \$20,000 worth of property damage and \$10,000 worth of crop damage.

All buildings in Fredericksburg are prone to being damaged by a tornado. Therefore, the vulnerability of the community was determined by the assessed valuation of all buildings and dwellings on all parcels within the city's limits.

Using the assessed value from December 2023, the valuation of all 550 parcels in the City of Fredericksburg is \$37,620,810 based on Chickasaw County assessor data. The City of Fredericksburg has a potential property loss of \$37,620,810 from a tornado disaster.

**Table 7: Valuation of All Parcels in City of Fredericksburg (2023)**

Percent of City at Risk of a Tornado	100%
# of Parcels	550
Total Value (Buildings and Dwellings)	\$37,620,810
Source: Chickasaw County Assessor's Values in 2023	

### Flood Prone Areas

The potential property losses of structures prone to flooding was calculated using the effective flood insurance rate map (FIRM) flood hazard zones for a 100-year (1%) annual chance flood.

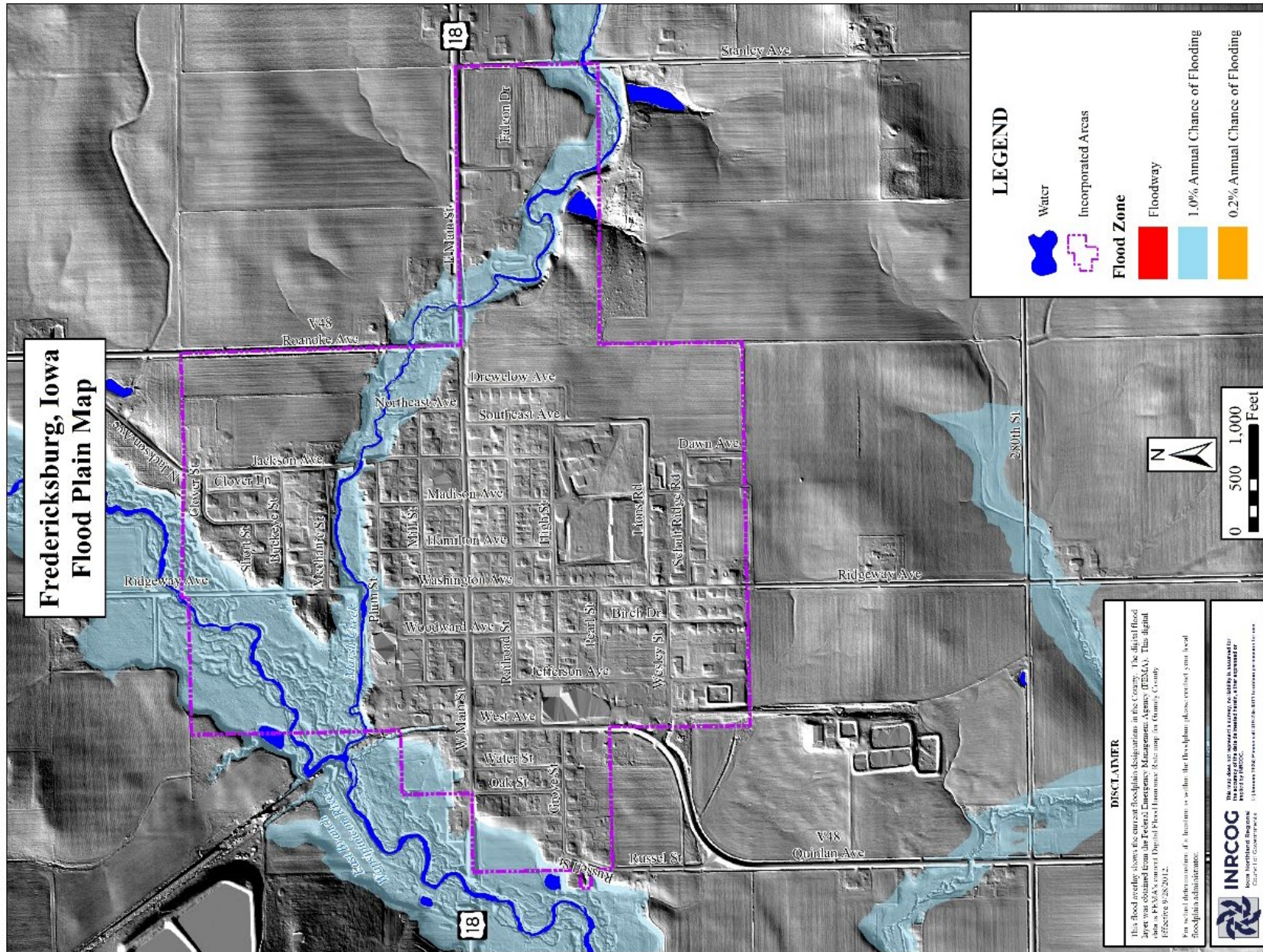
In Figures 4 and 5, the maps show the flood hazard zone in and around the City of Fredericksburg. The river basin is depicted in the topography shown in Figure 4. The parcels that are impacted by the 1% annual chance of flood are highlighted in Figure 5. There are 61 parcels within Fredericksburg potentially affected. The value of all buildings and dwellings on the affected parcels is \$5,099,525 based on the latest Chickasaw County assessor information. This covers 13.5 % of the city's total parcels.

**Table 8: Potential Property Losses from the 1% Annual Chance Flood**

Percent of City Affected	13.6%
# of Parcels	61
Total Value (Building and Dwelling)	\$5,099,525
Source: Chickasaw County Assessor's Values in 2023	

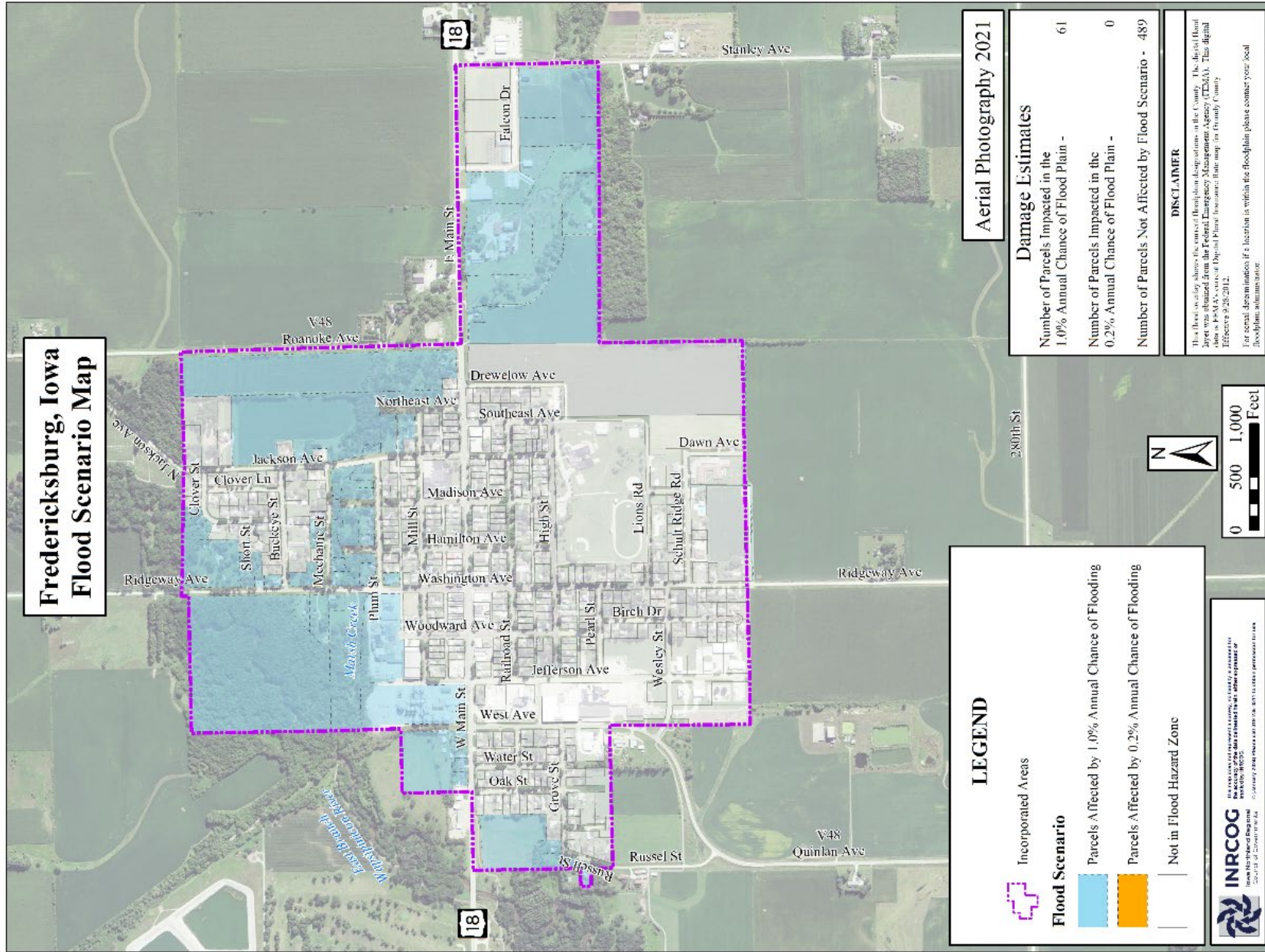


**Figure 4: Flood Plain Map**





**Figure 5: Flood Scenario Map**



## Future Development

Recent updates in Title 44 CFR §201.6 (c) (2) (i) require this risk assessment include a section with future conditions on the type, location, and range of anticipated intensities of natural hazards.

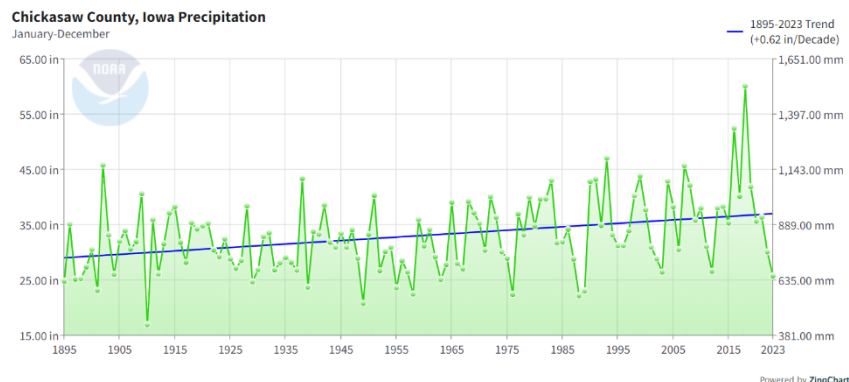
Long term trends of climate patterns for the region were summarized in the Fourth National Climate Assessment Midwest Section.<sup>1</sup> The National Climate Report is mandated to be updated every 4 years and deliver results to Congress and President on the effects to agriculture, energy productions, land use, transportation, and human health.

Yearly precipitation levels and annual average temperatures offer insights into future conditions of our climate system.

### Annual Precipitation Levels in Chickasaw County

Taking the monthly precipitation records from January to December between 1895 and 2023 is shown in Figure 6. The values hover between 25 – 35 inches of precipitation levels recorded. The average precipitation level for the year is plotted and a linear trend of those values is shown in Figure 6. The trend shows a growing level of annual precipitation on average of 0.62 in more than the decade before. Based on this historical trend, precipitation is likely to continue to increase in the coming years.

**Figure 6: Historical Precipitation Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



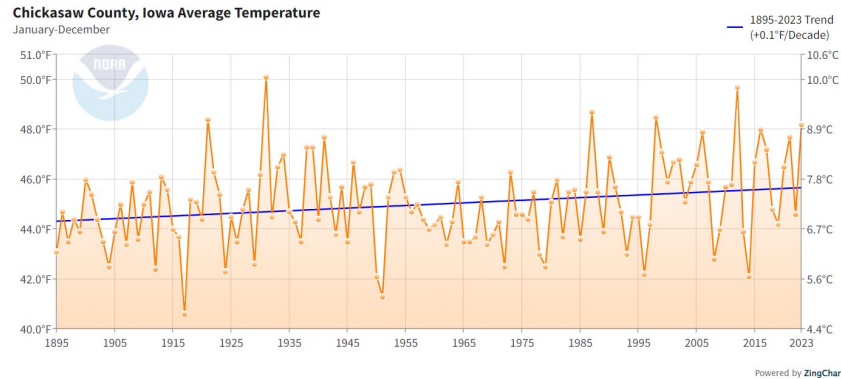
### Average Annual Temperatures in Chickasaw County

The monthly average temperature is plotted over a 12-month period from 1885 to 2023 in Figure 7. The annual average temperature is also shown with a linear trend in Figure 7. This trend shows the average temperature in Chickasaw County increasing at a rate of +0.1° F every 10 years.

<sup>1</sup> USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

<sup>2</sup> NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published February 2024, retrieved on April 15, 2024 from <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>

**Figure 7: Historical Temperature Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



## Climate Patterns from Increasing Precipitation and Higher Temperatures

### Drought

The relationship between increasing precipitation, temperature, and drought is complex, and often counterintuitive at first thinking about it. While increasing precipitation may seem like it would mitigate drought conditions, higher temperatures can exacerbate the situation in several ways:

1. **Evapotranspiration:** Higher temperatures lead to increased evaporation rates from soil, bodies of water, and plants. This means that even if there is more precipitation, it may quickly evaporate before it can effectively replenish soil moisture or water sources.
2. **Changes in precipitation patterns:** Increasing temperatures can alter precipitation patterns, leading to more intense rainfall events but also longer periods of drought between these events. This

pattern can result in rapid runoff and soil erosion during heavy rain, followed by extended dry periods that contribute to drought conditions.

Overall, while increasing precipitation may provide temporary relief from drought, the combined effects of rising temperatures can outweigh this benefit, leading to more frequent and severe drought events in certain regions.

### Pest Infestation

With more humidity, the daily minimum temperature may increase across all seasons. Warming winters can increase the survival and reproduction of existing insect pests which allow new insect pests and crop pathogens to move into the Midwest region.

### Extreme Heat Domes

A heat dome is a weather phenomenon characterized by a high-pressure system that traps hot air beneath it, leading to prolonged periods of extremely high temperatures and often causing heatwaves. Extreme heat events during the summers may occur with more frequency in the Midwest.

The human impacts of extreme heat affect socially and economically vulnerable populations the most. The higher costs of energy during heat waves disproportionately impact cost-burdened households. Heat related illness may be more severe among infants, elderly populations, and those with chronic health conditions.

### Projected Trends of Natural Hazards in Chickasaw County

- Prologued drought is probably as the atmosphere holds more moisture (even pulling moisture from plants) as the temperature increases. Longer periods between weather events means there are dryer and longer periods in between these events.
- Floods (flash or major types) will increase in intensity as the atmosphere holds more moisture to drive stronger storms and drop heavier rainfall over a shorter period during an event.
- Extreme heat may occur more frequently. The human health impacts are higher among socially vulnerable populations (the elderly, infants, those with chronic health issues, cost burdened households).
- Agricultural pests and pathogens may increase in growing plants and stored grain. Warming temperatures in the spring and summer have led to rising humidity. Higher dew and moisture conditions may increase the presence of these pests or crop diseases.

### **National Flood Insurance Program**

The City of Fredericksburg participates in the National Flood Insurance Program. The current effective FIRM map date is September 28, 2012.<sup>3</sup> There are 3 policies within the community with a total coverage of \$1,305,000. There was 1 loss reported with a net of \$1,666 paid.

FEMA defines a repetitive loss property as an insurable building that has experienced two losses in a 10-year period in which each loss is \$1,000 or more. There are no reported repetitive loss properties.

**Table 9: National Flood Insurance Program Information**

<b>Community Name</b>	City of Fredericksburg
<b>NFIP Participant (Yes/No)</b>	Yes
<b>Designee / Agency to implement NFIP Requirements</b>	City Clerk
<b>Participant in CRS (Yes/No)</b>	No
<b>Current Effective Map Date</b>	09/28/2012(M)
<b>Regular-Emergency Program Entry Date</b>	09/29/1986
<b>Total Policy Count</b>	3
<b>Total Coverage</b>	\$1,305,000
<b>Total Losses</b>	1
<b>Total Net Dollars Paid</b>	\$1,666
<i>(M) = No flood elevations determined - All Zone A, C, and X</i>	
Source: Source: FEMA National Flood Insurance Program, Data and Analytics, HUDEX Report. <a href="https://nfipservices.floodsmart.gov/reports-flood-insurance-data">https://nfipservices.floodsmart.gov/reports-flood-insurance-data</a>	

<sup>3</sup> FEMA Community Status Book Report, 04/16/2024  
<https://www.fema.gov/cis/IA.pdf>



## Hazard Risk Assessment

The top three hazards from the risk assessment are:

1. River Flooding
2. Flash Flooding
3. Tornadoes/ Windstorm



### Methodology

This risk assessment identifies how people, property, and structures would be harmed or damaged by one of the listed hazard events. Iowa Homeland Security and Emergency Management Department (Iowa H.E.S.M.D.) provided the hazard risk score formula for determining the level of risk used in this analysis.

### Factors of Hazard Risk

Risks to a hazard event may differ across geographical locations or even differ based on certain times of year. For example, tornado season in Iowa is usually in May and tornadoes have the highest risk during this time due to change in weather patterns from the western and central Gulf of Mexico causing higher chances of extreme weather.

For this analysis, four hazard risk factors are rated on a scale between 1 and 4 by committee participants after reviewing profiles of each hazard with the planning coordinator. Information was shared with the committee which described the hazard, historical occurrences, impact, duration, and

warning time. Participants used this information to strengthen their understanding to rate each hazard factor.

### Hazard Risk Score Formula

$$\begin{aligned} &[\text{Probability}] \times 45\% + [\text{Magnitude or Severity}] \times 30\% \\ &+ [\text{Warning Time}] \times 15\% + [\text{Duration}] \times 10\% \\ &= \text{Final Hazard Assessment} \end{aligned}$$

Source: Provided by Iowa H.S.E.M.D.

Hazard scores were collected during the 2<sup>nd</sup> county committee meeting. INRCOG planners calculated the hazard risk score for each hazard based on the formula in this section. Results for Fredericksburg are on page 21.

Score Value vs. Hazard Risk Level	Description of hazard with this rating
Scores with a value closer to 1: <u>Low risk hazard</u>	Hazard is not likely to affect people or property because the likelihood is minimal.
Scores with a value closer to 4: <u>High risk hazard</u>	The hazard has historically occurred and may have significant impacts to people and property.

### Probability

The probability score reflects the likelihood of the hazard occurring in the near future. Historical data of the hazard event occurring in Chickasaw County or Iowa informed the likelihood of future occurrence.

Probability Score Definitions		
Score	Description	
<b>1</b>	Unlikely	<i>Less than 10% probability in any given year (up to 1 in 10 chance of occurring), a history of events is less than 10% likely or the event is unlikely but there is a possibility of its occurrence.</i>
<b>2</b>	Occasional	<i>Between 10% and 20% probability in any given year (up to 1 in 5 chance of occurring), history of events is greater than 10% but less than 20% or the event could possibly occur.</i>
<b>3</b>	Likely	<i>Between 20% and 33% probability in any given year (up to 1 in 3 chance of occurring), history of events if greater than 20% but less than 33% or the event is likely to occur.</i>
<b>4</b>	Highly Likely	<i>More than 33% probability in any given year (event has up to a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.</i>

### Magnitude or Severity

The magnitude or severity of the hazard event is measured by the level of impact on the human environment. Property damage is assessed by the whole planning area.

Magnitude or Severity Score Definitions		
Score	Description	
<b>1</b>	Negligible	Less than 10% of property severely damaged, the shutdown of facilities and services for less than 24 hours, and/or injuries/illnesses treatable with first aid
<b>2</b>	Limited	10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
<b>3</b>	Critical	25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
<b>4</b>	Catastrophic	More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.



### Warning Time

This should be taken as an anticipated warning time. The warning time score assesses the ability to warn a population before the hazard occurs. The values of the score range from 1 (at least 24 hours) to 4 (minimal or no warning time).

For many of the climate hazards, there is a considerable amount of warning time as opposed to the human-caused hazards (transportation and hazardous materials incidents) that occur instantaneously or without any significant warning time.

Warning Time Score Definitions		
Score	Description	
1	Forecasted	More than 24 hours warning time.
2	Likely	12 to 24 hours warning time.
3	High Chance	6 to 12 hours warning time
4	Imminent	Minimal or no warning time (up to 6 hours warning)

### Duration

The duration is the time of a typical or expected hazard event to occur. For an earthquake or traffic accident that is a score of 1. For infrastructure failure, it is likely a 4.

Duration Score Definitions	
Score	Description
1	Less than 6 hours
2	Less than 1 day
3	Less than 1 week
4	More than 1 week

### Conclusion for Hazard Risk Assessment

Table 10 displays rated risk scores for each associated hazard. This assessment was completed by city representatives based on hazard profiles prepared for the planning committee. Fredericksburg's representatives did not feel that radiological incidents should have placed high on their risk assessment. After consideration of top hazards from their risk assessment score sheets, the top three hazards for Fredericksburg were re-evaluated to include 1) River Flooding 2) Flash Flooding 3) Tornado/Windstorm.

Table 10: Hazard Risk Assessment					
Hazards	Probability	Magnitude	Warning Time	Duration	Score
Flooding - Riverine	2	3	4	4	2.8
Flooding - Flash	3	2	3	3	2.7
Tornado/Windstorm	1	4	4	4	2.7
Thunderstorm/ Lighting/ Hail	3	2	3	2	2.6
Extreme Heat	3	2	1	4	2.5
Radiological	2	3	4	1	2.5
Drought	2	3	1	4	2.4
Animal/ Crop/ Plant Disease	2	3	1	4	2.4
Pandemic/ Endemic Human Disease	2	3	1	4	2.4
Grass/Wildland Fire	2	2	4	1	2.2
Hazardous Materials	2	2	4	1	2.2
Transportation Incidents	2	2	4	1	2.2
Severe Winter Storm	2	2	1	3	2.0
Infrastructure Failure	1	2	4	3	2.0
Terrorism	1	2	4	2	1.9
Landslide	1	1	3	4	1.6
Sinkholes*	1	1	4	2	1.6
Earthquake*	1	1	4	1	1.5
Expansive Soils*	1	1	1	4	1.3
Levee/Dam Failure*	1	1	1	4	1.3

Source: Completed by City Representative. Calculated score completed by INRCOG

\*The following hazard were identified as not being considered a threat needing a specific mitigation activity given the specific jurisdictional situation.

## Hazard Mitigation Goals

### for Hazard Mitigation in Fredericksburg, Iowa

The following list of goals was developed by planning committee participants from the associated jurisdiction. Goals 1 through 7 were developed in the previous 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. The planning committee participants chose to adopt the same goals and add additional goals. Goals 8 and 9 were added by community representatives on the planning committee.

**Goal #1** Reduce the chance of and impact of flooding in the community.

**Goal #2** Take measures to minimize the occurrence of injuries and loss of life due to hazards.

**Goal #3** Take measures to minimize or eliminate damage that may occur as a result of hazards.

**Goal #4** Increase the city's ability to respond to natural disasters and man-made hazards.

**Goal #5** Return to the community to similar or improved pre-event conditions as quickly as possible following a disaster event.

**Goal #6** Incorporate the City Plan into the proposed Multi-Jurisdictional Plan.

**Goal #7** Continually re-assess and re-evaluate the plan and mitigation activities.

**Goal #8** Increase safety throughout the community with tree trimming and vegetation management by utility companies.

**Goal #9** Protect low lying, vulnerable areas from runoff and flooding damage.

**Goal #10** Replace tornado siren to make residents aware of threats.

## **Previous Mitigation Activities by Type**

Mitigation actions and activities in this Plan will be organized according to 5 categories: Emergency Services, Education and Outreach Projects, Natural Resource Protection or Natural Based Solutions, Structural Projects, or Local Plans and Regulations.

### **Emergency Services in Fredericksburg**

#### Chickasaw County Emergency Management Agency

Fredericksburg works with the Chickasaw County Emergency Management Coordinator, based out of the City of New Hampton, on various safety and emergency events. The Emergency Management Coordinator works in conjunction with local fire, rescue, police, and government officials to draft and implement workable emergency action plans in the community. The Chickasaw County Emergency Management Coordinator is Jeff Bernatz.

#### Law Enforcement

The community has a 28E agreement in place with Chickasaw County Sheriff's Department that will provide law enforcement services. Services include patrol in the city. The Sheriff's dept. provides law enforcement services 80 hours/week. The sheriff deputies provide a response time to the city up to 30 minutes and will provide extra people power when notified by the city.

#### Fire Protection and EMS Services

Fire protection for the City of Fredericksburg is provided by the Fredericksburg Fire Department. The station is located at

100 Falcon Drive Fredericksburg, IA. There are 27 volunteer fire fighters that serve in the department currently. Each of the volunteers is HAZMAT certified, with 24 at Firefighter I status. The members of the department meet monthly and take training in fire suppression, hazardous materials, and emergency medical services. Dispatch is provided via a paging system through the Chickasaw County Sheriff's office.

The Fredericksburg Fire Department maintains 28E agreements with the following communities: Sumner, Frederika, Waucoma, Alta Vista, Bassett, Ionia, Lawler, Nashua, New Hampton, and North Washington

Equipment used by the Fredericksburg Fire Department includes the following:

- 1991 Pumper Truck
- 1998 Rescue Truck
- 2023 UTV
- 1995 Tanker Truck
- 2018 Freightliner Tanker w/ pump
- 1999 Pickup/ Brush Truck
- 2012 Freightliner Pumper
- 2024 Brush/Rescue Truck
- 3 Drones for Search and Rescue with night vision

#### EMS Services

Chickasaw County EMS provides ambulance service to area hospitals. Chickasaw County EMS is managed by the county and located at 204 East Prospect, Net Hampton. The county-run department started in January 2023. There is one ambulance stationed in Fredericksburg at the Fire Station.

### Medical Facilities

Fredericksburg Medical Clinic is located at 115 Schult Ridge Road in Fredericksburg. The facility is open 8am to 5pm M-Th and 8am to 12pm on Fridays only.

The closest ER facility is the MercyOne New Hampton Medical Center in New Hampton, IA. This is the only medical facility with an ER unit located in the county. MercyOne has 11 private inpatient rooms and cares for over 20,000 outpatients each year.

MercyOne New Hampton offers a full range of services in an inpatient and outpatient setting as well as 24-hour emergency care, surgical services, primary care clinic, therapy and rehabilitation, diagnostic services, speech and occupational therapy, Senior Life Solutions, and specialty clinics.

### HAZMAT Response Teams

Fredericksburg contracts with Northeast Iowa Response Group for response to hazardous material spills. The Northeast Iowa Response Group is a division of Waterloo Fire Rescue as is the Hazardous Materials Regional Training Center. The Training Center provides training to fire departments and companies from around the state and country. Not only is this a training center, but it also serves as a hazardous materials quick response unit to Black Hawk County, surrounding counties, and many municipalities in a ten-county region. The Unit provides local fire departments with hazard materials emergency procedures thus reducing

additional contamination. An evacuation plan is also in place in conjunction with the activities of the local department. Contact information for the facility is as follows: Hazardous Materials Regional Training Center, 1925 Newell Street, Waterloo, Iowa 50707, Phone: (319) 291-4275, Toll Free: (800) 291-4682, Fax: (319) 291-4285

The jurisdiction also partners with the Northeast Iowa Response Group for assistance in responding to any methamphetamine labs located in the city limits. The Response Group assists the Police Departments in containment of the site and disposal of hazardous chemicals.

### Warning Systems in Fredericksburg

#### 1. Tornado Sirens

Fredericksburg has 1 operating tornado warning siren for the community.

The activation systems of warning systems are activated and operated by a central command system operated by the Chickasaw County Rescue Squad in New Hampton, IA.

#### 2) Alert Iowa Mass Communication System

Chickasaw County has implemented the use of Alert Iowa, a mass communication notification system. The system features are controlled through the Chickasaw County Emergency Management Agency. Residents can customize their alert settings including the type of alerts they would get.

Alert Iowa allows for emergency notifications via landline telephones, cell phones, email, text messages, and social media. This is useful for communities that may not have an operating warning siren or may not hear the sirens. The County will use its emergency notification network for all the following events: blizzards, flash flooding, severe thunderstorms, and tornadoes.

#### Public Works/Street Department

The Public Works Department is located at 151 West Main Street in Fredericksburg.

#### **Previous Education and Outreach Projects in Fredericksburg**

The city has a public awareness plan for natural gas. Citizens receive a detailed letter regarding what to do in case of a gas emergency. The city also informs citizens of Iowa One Call.

#### **Previous Natural Resource Protection in Fredericksburg**

Fredericksburg does not have any natural resource protection mitigation actions.

#### **Previous Structural Projects in Fredericksburg**

Fredericksburg does not have any structural projects mitigation actions.

#### **Local Plans and Regulations in Fredericksburg**

Fredericksburg completed a local plan and regulation assessment. The results are shown in the following table.

Table 11: Local Capability Assessment	
Community	City of Fredericksburg
Previous HMP Participant?	Yes
Comprehensive Plan?	Yes
Building Code?	No
Zoning Ordinance? RR=restricted residential	Yes
Subdivision Regulations?	No
Floodplain Management Ordinance?	Yes
Tree-Trimming Ordinance?	Yes
Storm Water Ordinance?	Yes
Snow Removal Ordinance?	Yes



## Components of the Strategy

Presented below are tables prepared in consultation with the Fredericksburg's planning committee's representative and INRCOG. This is a guide for a strategic approach when implementing the city's efforts in hazard mitigation. The tasks in these tables are drawn from the city's capabilities, goals, and hazard risks presented in previous sections of this Plan.

The designated agency or staff presented with each line item was written by Fredericksburg's planning committee.

Notes about the tasks (listed as line items) in each table.

- Each task (line item) stands on its own so it can be completed whenever possible.
- Each action item is not limited to the details presented below and may change based on future conditions.
- The tasks were categorized based on mitigation type. The mitigation types are not shown in any order (no priority over the other). This is presented to help with the general understanding of how hazard mitigation may feed into the City's existing or future priorities.

## Priority Level

The priority level was informed through discussions among planning committee members who considered potential benefits of implementing the activity, some hurdles that the city may face in implementing the action step, and the

drawbacks of implementation. *Committee representatives considered a cost-benefit approach.*

## Timeframe

Timeframe	Description
Immediate	1-6 months
Short Term	1-5 years
Mid-Term	5-10 Years
Long-Term	More than 10 Years

## Estimated Costs

Cost estimates are based on the associated costs of additional staffing that may or may not be needed, time for planning/meetings/coordinating, and cost of the proposed action/program/ project.

Cost	Estimated Cost Range
Minimal	Less than \$10,000
Low	\$10K to \$99K
Moderate	\$100K to \$299K
High	Greater than \$300K

## Implementation Strategy by Type of Hazard Mitigation Activity

Table 12: 'Education and Awareness' Type Mitigation Activities						
Description: These types of actions keep residents informed about potential natural disasters.						
<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
High	Prepare outreach materials (video, online social media flyers, city website) to inform residents to register online for Alert Iowa mass emergency notification system	ALL	County Emergency Management, Library, City Clerk, Red Cross, Schools,	Mid-term (3-5 Years)	Minimal \$0 - \$10K	City general fund
Medium	Ensure all new city clerks know how to remain an active participant in the National Flood Insurance Program.	Flooding	City Clerk	Immediate 1 - 6 months	Minimal \$0-\$10K	None needed
Low	Continue to fund annual HAZMAT training for fire dept personnel, law enforcement personnel, and ambulance crews. Training by Northeast Iowa Response Group	All	Fire Dept, City Council, County EMA	Short term 1-3 years	Medium \$100K to \$299K	City general fund

<b>Table 13: 'Emergency Services' Type Mitigation Activities</b>						
Description: Actions that protect people and property during and immediately after a disaster or hazard event.						
<i>Priority</i>	<i>Tasks</i>	<i>Hazard(s)</i>	<i>Primary Agency Responsible for Implementation</i>	<i>Time Frame to Complete</i>	<i>Estimated Cost (s)</i>	<i>Funding Source</i>
High	Purchase and install early warning siren to be a replacement or an additional siren in the community	Tornado/ windstorm	City Council, County EMA	Immediate (1 month - 6 months)	Minimal \$0 - \$10K	City general fund, Hazard Mitigation Grant Program
Low	Maintain firefighting equipment and purchase needed equipment	All	Fire Department, City Council	Midterm 3-5 years	Moderate \$100K to \$299K	City general fund, Hazard Mitigation Grant Program
Medium	Maintain existing 28E agreements with surrounding communities for mutual aid assistance	All	City Council, County Board of Supervisors, County Fire Association, County Sheriff, Ambulance Service, Fire Dept	Short term 1-3 years	Moderate \$100K to \$299K	City General fund
Medium	Consider forming 28E agreement among County cities to leverage price of affordable translation services for emergency personnel	All	City Council, City Clerk, Fire Dept, County EMA	Short Term 1-3 years	Moderate \$100 to \$299K	City General Fund
Low	Purchase Geiger counters for first responders for HAZMAT and radiological incidents	Transportation Incidents, Radiological	City Council, Fire Dept, County EMA	Mid term 3-5 Years	Moderate \$100K to \$299K	City general fund, hazard mitigation grant program

**Table 14: Structure and Infrastructure Project Type Mitigation Activities**

Description: Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
High	Bury overhead power lines	Severe Winter Storm, Hailstorm, Thunderstorm and Lightning, Tornado, Windstorm, Infrastructure Failure, Grass/Wildfire	City Council, Municipal Utility	Short-Term (6 months - 3 years)	Low \$10K-\$99K	City General Fund, Utility provider
Medium	Develop community based initiative to mitigate heat and reduce energy consumption from extreme heat by applying for Black Hills tree planting program grant	Extreme Heat	City Council, Municipal Utility	Short Term 1-3 years	Low \$10K - \$99 K	Black Hills tree planning program grant
Medium	Develop community initiative to improve the conservation of water during times of drought.	Drought	City Council,	Mid term 3-5 Years	Low \$10K - \$99 K	City General Fund

**Table 15: Local Plans and Regulations Mitigation Activities**

Description: Actions by administrative or regulatory processes which direct how land and buildings are developed and built. These actions include regulations by public entities to reduce hazard losses.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
Medium	Ensure all new city clerks know how to remain an active participant in the National Flood Insurance Program.	Flooding	City Clerk	Immediate 1 - 6 months	Minimal \$0-\$10K	None needed
Medium	Ensure hazardous materials are reported (Tier II reports) in accordance with applicable laws	Hazardous Materials	City Council	Immediate 1-6 months	Minimal \$0-\$10K	None needed
Low	Continue implementing storm fee to fund storm water management program	Flash Flooding, Landslides	Public works	Long Term 5-10 years	Minimal \$0-\$10K	City general fund
Low	Continue enforcement of open burning laws and coordinate public safety notices with Alert Iowa capabilities	Grass/Wildfire	Fire Department, County EMA, city council	Immediate 1-6 months	Minimal \$0-\$10K	City general fund
Low	Incentivize commercial and industrial businesses to maintain updated, regular building fire inspection certification by the city	Infrastructure Failure, Grass/ Wildfire	Fire Department, City Council	Short Term 1-3 months	Low \$10K-\$99K	City general fund
Medium	Ensure enforcement of tree ordinance to prevent overgrowth of electrical lines.	All	City Clerk	Immediate 1 - 6 months	Minimal \$0-\$10K	None needed

**Table 16: Natural System Protection and Nature-Based Mitigation Type**

Description: Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimate d Cost (\$)</b>	<b>Funding Source</b>
Medium	Improve field runoff water by improving natural watersheds to prevent storm runoff in lower portions of town.	Flash Flooding, Landslides, Riverine Flooding	Public Works Department	Long Term 5-10 years	Low \$10K- \$99K	City general fund

# City of Ionia, Iowa

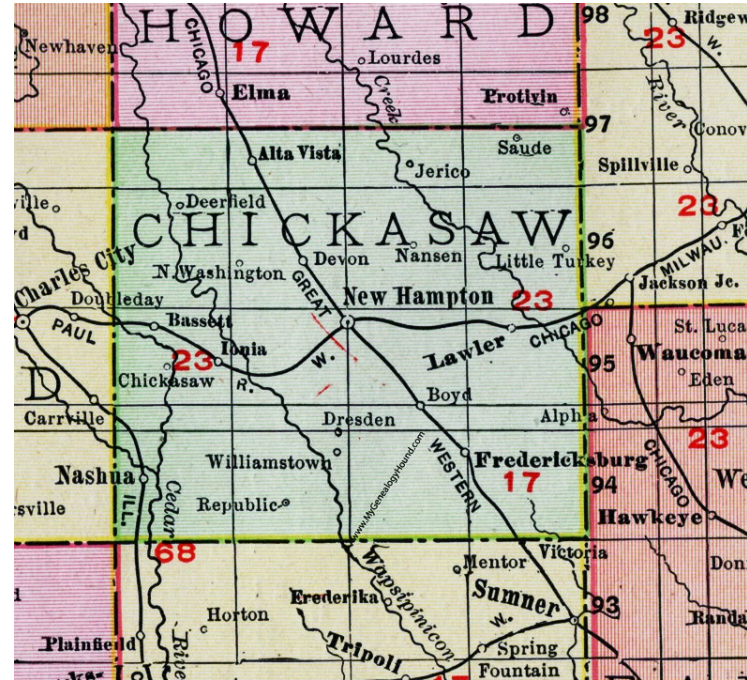
## Hazard Mitigation Plan 2024 Update

### Appendix D of Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan

Funded by the Chickasaw County Emergency  
Management Agency

Prepared by Iowa Northland Regional Council  
of Governments (INRCOG)

April 2024





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## RESOLUTION 24-11

RESOLUTION OF THE CITY COUNCIL OF IONIA, IOWA, ADOPTING THE CITY OF IONIA, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.

WHEREAS, the City of Ionia City Council recognizes the threat that natural hazards pose to people and property within Ionia; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing Ionia served and participated in the formulation of the Plan, hereby known as the City of Ionia, Iowa Hazard Mitigation Plan 2024 Update, as part of the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Ionia from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the Plan; and

WHEREAS adoption by the City Council of Ionia demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF IONIA, IOWA, THAT:

Section 1: In accordance with local regulations, the Council adopts the City of Ionia, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of Ionia may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of Ionia to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 3<sup>rd</sup> day of June 2024.

 Mayor

ATTEST:

 City Clerk

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## About

The City of Ionia Hazard Mitigation Plan 2024 update was formed as an apprentice to a county-wide planning effort by multiple communities, school districts, and Chickasaw County departments. The 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan is a sequential update to the previous hazard mitigation plan. FEMA requires a 5-year update for approved hazard mitigation plans to be in good standing and eligible for grant funding. The Plan was developed to meet the requirements in 44 CFR § 201.6. The Plan was submitted to the Iowa Homeland Security and Emergency Management Department (IHSEMD) office and then submitted to FEMA for approval. Chickasaw County's Emergency Management Agency initiated and funded this effort for all participating communities and contracted INRCOG to coordinate this multi-jurisdictional planning process. An approved and adopted hazard mitigation plan qualifies participating jurisdictions with pre-disaster grant programs that may fund projects for the entire community.

Participating communities included all nine incorporated communities in the County, Chickasaw County's departments, and three public school districts. Four committee meetings were held between March 19<sup>th</sup> and April 23<sup>rd</sup> wherein each jurisdiction provided data and completed work sheets to develop their hazard mitigation plans.



*FEMA's Emergency Management Cycle*

The emergency management cycle has 4 phases:

- **Preparedness** is the assessment of potential risks, hazards, and vulnerabilities that a community may face. The development and updating of activities, programs, and systems before an event occurs is included in this phase of the cycle.
- **Response** is the immediate effects after a disaster.
- **Recovery** is a long-term phase that focuses on returning the community to normal after a disaster.
- **Mitigation** is an action that can occur at any phase.

## What is Hazard Mitigation?

Hazard Mitigation is any sustained action taken to reduce or eliminate long-term risk to life and property from hazards.

## The Benefits of Hazard Mitigation

For local governments, there are benefits in knowing hazards, their risks, and planning for mitigation strategies.

Those include:

- ✓ An increased understanding of natural, technical, and man-made hazards faced by communities.
- ✓ Taking an opportunity to create more sustainable and disaster-resistant communities.
- ✓ Participating in this collaborative intergovernmental effort is cost effective for all participants.
- ✓ Using limited resources on hazards that have the biggest impacts on a community.
- ✓ Reducing or preventing damage to existing structures, subsequently reducing repair costs.
- ✓ Identifying vulnerable populations to establish equitable outcomes.
- ✓ Setting long-term goals that can be compatible with city policies or planning documents.

## The Planning Process

In emergency management planning, reducing the community's risk to natural hazards is a multi-step process which involves collaboration among stakeholders, assessing risk and vulnerabilities of hazards facing the community, establishing actions or activities to reduce risk, and assembling an organized strategy to carry out all mitigation activities.

Participants in the Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan Planning Committee provided the information in this plan including community profile information, hazard mitigation goals, mitigation activities/action, updates to existing mitigation activities, and elements included in the strategy such as priorities, designated agencies, estimated costs, and overall strategic direction of this plan.

### *Participants in the Plan Followed This 5 Step Process*



## Community Data Sources

Population data is based on 2020 decennial Census data. The 2022 American Community Survey 5-year estimates are the latest and most reliable survey data sets to understand what is taking place in the county and each city. Most counties, cities, and towns rely on 5-year estimates. Employment, workforce, and industry figures in this Plan are estimates that have a margin of error.

It is important to note that the ACS estimates used for rural communities will have a degree of uncertainty associated with them, called sampling error, because they are based on a sample. In general, the larger the sample, the smaller the level of sampling error. Rural communities tend to have smaller samples than larger cities, so the “margin of error”—a measure of the precision of an estimate at a given level of confidence—likely will be larger for rural areas.

Crash data along roadways within each jurisdiction is collected between the period of 2019 and 2023. Using a map tool interface, the data was taken at a city level and presented to understand incident severity, casualties, and property damage from reported accidents. Accident data is added to the site daily and accessible through an online website, <https://icat.iowadot.gov/>.

In the risk analysis section of this Plan, estimates of property loss are measured using mapping of hazardous zones. For the vulnerability risk assessment, flood prone homes were determined using the boundaries of the 100 year (1%) annual chance flood zone. The value of potential property loss was derived from the 2023 assessed dollar value of

structures and dwellings on affected parcels provided by the Chickasaw County Assessor’s Office.



*Ionia Fire Department located in Ionia, Iowa has fire protection provided by the Chickasaw Township Fire District with 23 volunteer firefighters.*

## City Profile

**Jurisdiction: City of Ionia**

**County: Chickasaw County**

**Population (2020): 226**

The City of Ionia is in the lower east quadrant of Chickasaw County. County Highway B57 and County Highway V14 intersect in Ionia. The Little Cedar River flows to the west of Ionia.

The following data presented in tables on the following page include population, employment, and industry sector data for the community based on 2020 Census data and 2022 American Community Survey 5-year estimates.

In 2020, the city's population was 226 and 98% White where the median age is 48. Working aged residents (15-60 years) make up 65% of the population. Children and teens (younger than 15 years) make up 17% of Ionia's population while older adults (older than 65 years) make up 18%.

The median household income in 2022 was \$69,107. The unemployment rate is very low at 2%. Most of the workforce (98%) commute to work, and about 4 people (2-3% of the workforce) work from home. The top three largest industry sectors in Ionia are as follows (in order from highest to lowest): 1) Manufacturing; 2) Educational Services, and health care, and social assistance, and 3) Transportation and warehousing, and utilities.

**Figure 1: Map of Chickasaw County**

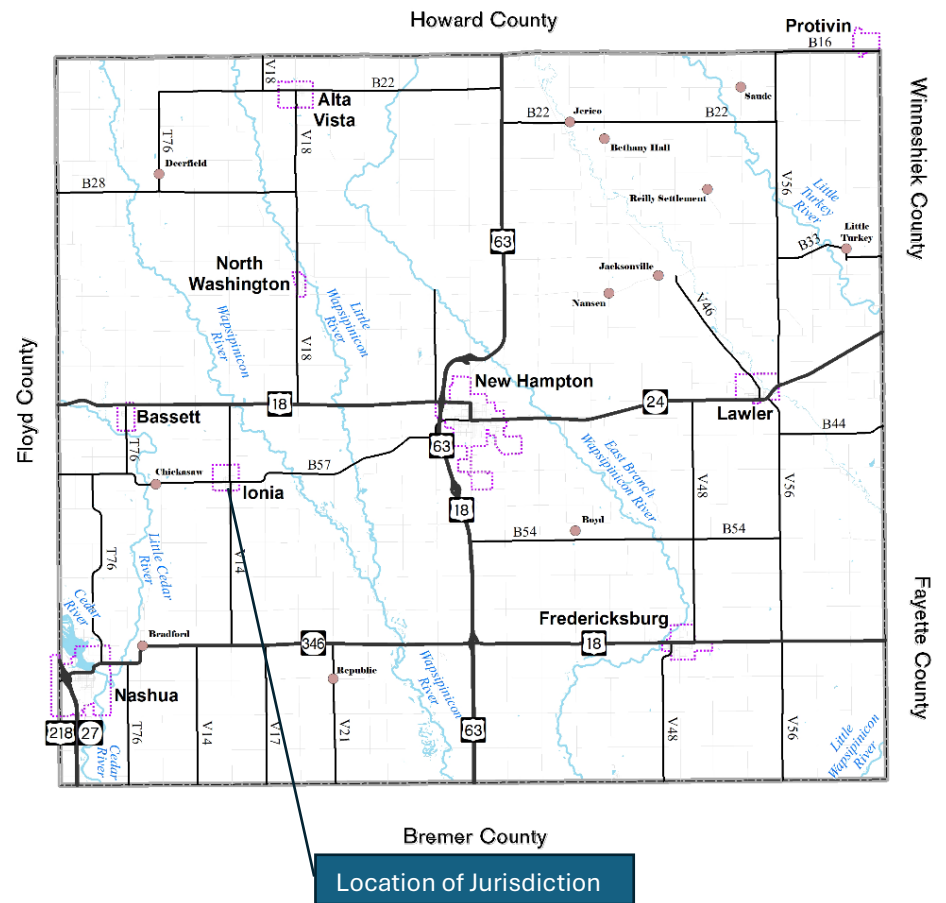




Table 1: Population Data (2020)		
City of Ionia		
	Total	% of Pop.
Total population	226	100%
AGE		
Under 5 years	14	6%
5 to 9 years	14	6%
10 to 14 years	12	5%
15 to 19 years	15	7%
20 to 24 years	7	3%
25 to 29 years	11	5%
30 to 34 years	15	7%
35 to 39 years	6	3%
40 to 44 years	13	6%
45 to 49 years	12	5%
50 to 54 years	16	7%
55 to 59 years	19	8%
60 to 64 years	32	14%
65 to 69 years	12	5%
70 to 74 years	8	4%
75 to 79 years	8	4%
80 to 84 years	5	2%
85 years and over	7	3%
Median Age	47.5	-
RACE		
White	222	98%
Black or African American	0	0%
Hispanic or Latino (of any race)	1	0%
American Indian and Alaska Native	2	1%
Asian	0	0%
Native Hawaiian/Other Pacific Islander	1	0%
Some Other Race	0	0%
Two or More Races	1	0%
Source: 2020 Census		

Table 2: Employment Data (2022)		
City of Ionia		
	Value	% of Population
Median Household Income	\$69,107	-
Unemployment Rate (2022)	1.8%	-
Workers that commute to work	156	98%
Workforce that works from home	4	2%
Source: 2022 American Community Survey 5-Yr Estimates		
Table 3: Workforce Industry Data (2022)		
City of Ionia		
Workforce Industry	# of Workers	% of Workforce
Workforce	165	100%
Agriculture, forestry, fishing and hunting, and mining	0	0%
Construction	13	8%
Manufacturing	63	38%
Wholesale trade	0	0%
Retail trade	9	6%
Transportation -warehousing, utilities	21	13%
Information	0	0%
Finance and insurance, and real estate and rental and leasing	0	0%
Professional, scientific, and management, and administrative and waste management services	2	1%
Educational services, and health care and social assistance	50	30%
Arts, entertainment, and recreation, and accommodation and food services	3	2%
Other services, except public administration	0	0%
Public administration	4	2%
Source: 2022 American Community Survey 5-Yr Estimates		

## Highway Traffic and Crash Data

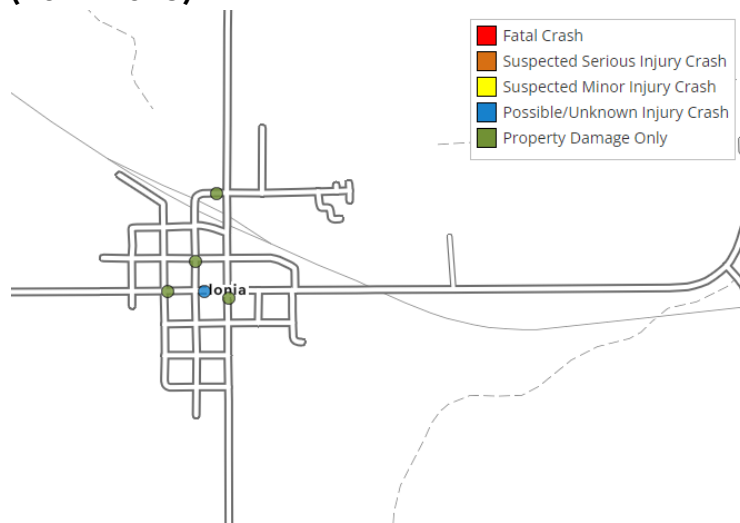
Based on Iowa DOT crash data, between 2019 and 2023 there have been 5 incidents.

**Table 4: Crash Data in Ionia (2019 to 2023)**

Total Crashes	5
Crash Severity	
Fatal	0
Suspected Serious Injury	0
Suspected Minor Injury	0
Unknown	1
Property Damage Only	4
Property Damage Total	\$82,700

Source: Iowa Crash Analysis Tool

**Figure 2: Iowa Crash Analysis for All Traffic Incidents (2019-2023)**



Source: Iowa DOT

## Housing Data

The City of Ionia has 138 occupied housing units. Nearly 93 % of them are single family detaching housing. An estimate of 2 housing units are mobile homes.

A large portion of the housing stock was built before 1940 (43%). About 65% of the housing stock is under 60 years old. Most homes heat their units with gas (81%). Black Hills Energy is the gas utility provider.

Table 5: Housing Data (2022)		
City of Ionia		
	Total	% of Occupied Units
Occupied housing units	138	100%
<b>Housing Unit Type</b>	Total	% of Occupied Units
1, detached	128	93%
1, attached	0	0%
2 apartments	0	0%
3 or 4 apartments	4	3%
Mobile home or other type of housing	2	1%
<b>Year Structure Built</b>	Total	% of Occupied Units
2020 or later	0	0%
2010 to 2019	0	0%
2000 to 2009	3	2%
1980 to 1999	18	13%
1960 to 1979	44	32%
1940 to 1959	14	10%
1939 or earlier	59	43%
<b>House Heating Fuel</b>	Total	% of Occupied Units
Utility gas	112	81%
Bottled, tank, or LP gas	2	1%
Electricity	23	17%
Fuel oil, kerosene, etc.	0	0%
Coal or coke	0	0%
All other fuels	0	0%
No fuel used	1	1%
Source: 2022 American Community Survey 5-Year Estimates		

## Community Utility Providers

Ionia Municipal provides utility electric services. Black Hills Energy is the natural gas service provider. Windstream telephone services and broadband internet services. Residents receive water and wastewater services from the city. Jendro Sanitation provides solid waste management for residents.

Table 6: Utility Providers	
City of Ionia	
<i>Electric</i>	Alliant Energy
<i>Natural Gas</i>	Black Hills
<i>Telephone/Internet</i>	Windstream
<i>Cable TV</i>	None
<i>Water Services</i>	City of Ionia
<i>Sewer Services</i>	City of Ionia
<i>Sanitation</i>	Jendro Sanitation

## **Vulnerable Assets**

### **People**

Vulnerability to hazard losses increases where there are larger concentrations of people. In towns where population density increases, the number of people that can be harmed during a hazard event (tornado, flood, etc) increases. In addition, there are segments of the population that may be more susceptible to impacts and/or harm from a hazard depending on their location within the area (ie. flood zone or near industrial plants with hazardous materials). This includes underserved or socially vulnerable populations.

### *Vulnerable Age Groups*

Both younger and older aged groups are likely to require assistance with physically moving to shelters or finding safety. Elderly residents may not have a personal vehicle to move away from a hazard quickly. Cognitive impairments among older adults may cause some to get easily confused.

### *Households Facing Poverty or With Limited Income*

Families or older adults living at, near, or below poverty are more likely to be impacted by hazards than other households with higher incomes. The impact of costly repairs to property from a tornado or heating/cooling electricity costs from extreme weather is greater for low-income families.

### *Ionia's Vulnerable Populations*

In Ionia, 3.6% of occupied households are below the poverty level. About 41% of occupied households have elderly occupants (60 years and over). About 31% have elderly residents (65 years and over) living alone.

Most residents have access to a vehicle with 2 households approximately not without access to a vehicle. Nearly 22.5% of households have a person living with a disability. This is broadly defined from the data estimates for Ionia. However, persons with mobility disabilities may be at a higher risk than others especially during unexpected natural disasters where accessibility is not always guaranteed to shelter.

Manufactured homes are unsafe in a tornado. Fatality rates are significantly higher than sturdy buildings. An alternative shelter should be identified prior to a tornado watch or warning. There are 2 mobile homes estimated in North Washington. With an average household size of 1.6, that puts potentially 3 people at a greater fatality risk than others.

## Critical Facilities

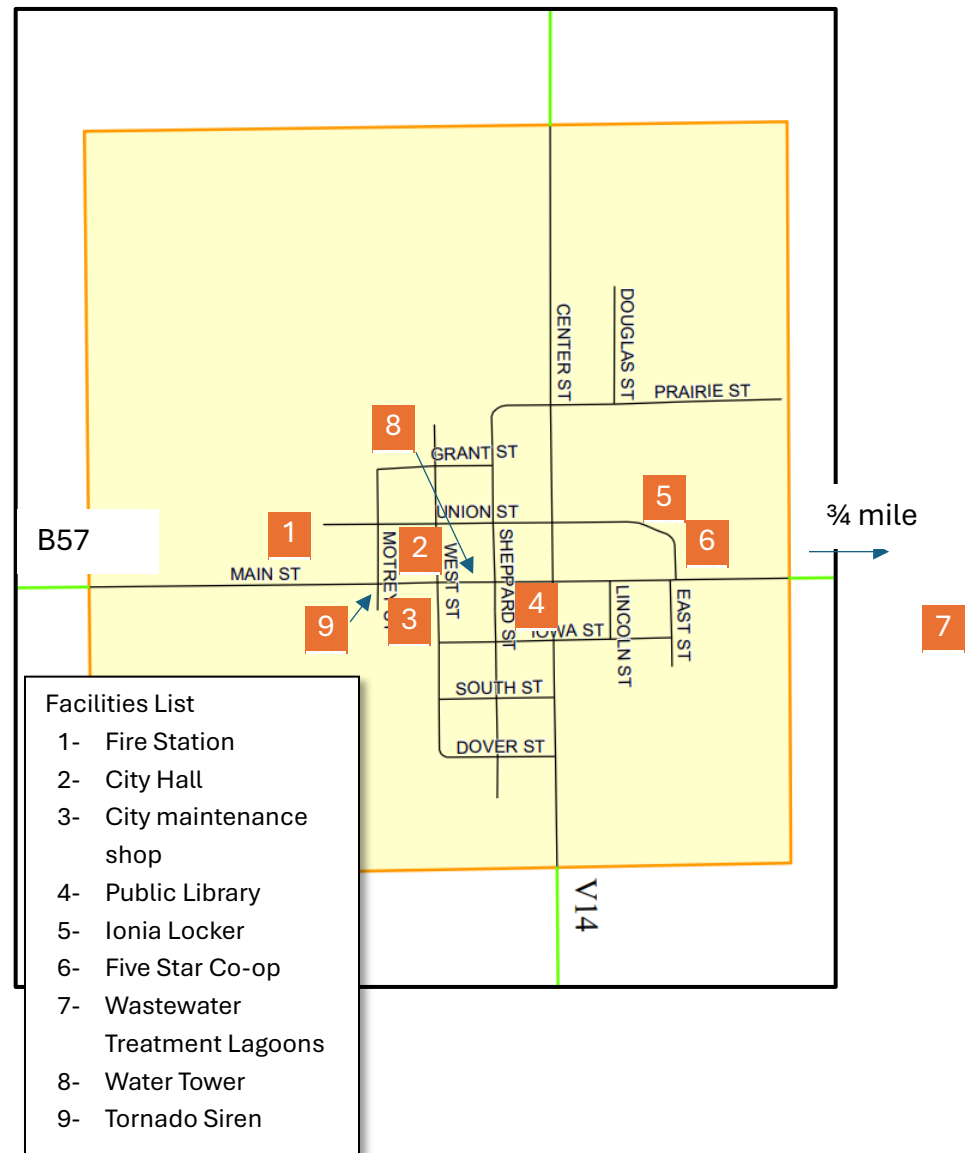
Identifying structures that may be affected from a hazard event and also serve a critical function for the community are shown in the table on the following page.

The community of Ionia relies on their municipally owned public water system. The system is supplied by two wells. The first well is 280 feet deep and was built in 1983. It is equipped with a submersible pump to produce approximately 100 GPM. The second well is 20 feet deep and was constructed in 1950. This well also has a submersible pump that produces water at a rate of approximately 300 GPM. The pressure and storage of the water from this well is provided by a 3,000-gallon pressure tank located in the second well house. The city doesn't have an elevated storage tower. Instead, there is a 75,000-gallon storage tank.

The City of Ionia is currently in the process of renovating the existing wastewater treatment plant. Renovations include work to the lagoon sludge removal, parshall flume and vault structure, wooden shed, flow meter readout, manhole, and sewer line replacement. The project is funded using the State Revolving Loan Funds (SRF).

In the next 20 years, Ionia is likely to see population growth and the existing water plant and wastewater treatment lagoons have capacity to manage slow steady growth. Future hazard mitigation efforts will note additional facilities related to the assets here shown within the vulnerability assessment.

**Figure 3: Critical Facilities Map**



## Measuring Vulnerability to Selected Hazards

### Tornado Hazard

On May 8, 2002, and June 21, 2002, an EF0 tornado was sighted touching down just outside of Ionia in open fields. No reports of damage from this tornado.

All buildings in Ionia are prone to being damaged by a tornado. Therefore, the vulnerability of the community was determined by the assessed valuation of all buildings and dwellings on all parcels within the city's limits.

Using the assessed value from December 2023, the valuation of all 173 parcels in the City of Ionia is \$7,860,400 based on Chickasaw County assessor data. The City of Ionia has a potential property loss of \$7,860,400 from a tornado disaster.

**Table 7: Valuation of All Parcels in City of Ionia (2023)**

Percent of City at Risk of a Tornado	100%
# of Parcels	173
Total Value (Buildings and Dwellings)	\$7,860,400

### Flood Prone Areas

The potential property losses of structures prone to flooding was calculated using the effective flood insurance rate map (FIRM) flood hazard zones for a 100-year (1%) annual chance flood.

In Figures 4 and 5, the maps show no special flood hazard zone in and around Ionia. There are no parcels within Ionia potentially affected. There is no potential property loss from a 100-year annual chance flood in Ionia based on the FIRM maps.

**Table 8: Potential Property Losses from the 1% Annual Chance Flood**

Percent of City Affected	0%
# of Parcels	0
Total Value (Building and Dwelling)	\$0
<i>Source: Chickasaw County Assessor's Office</i>	



**Figure 4: Flood Plain Map**

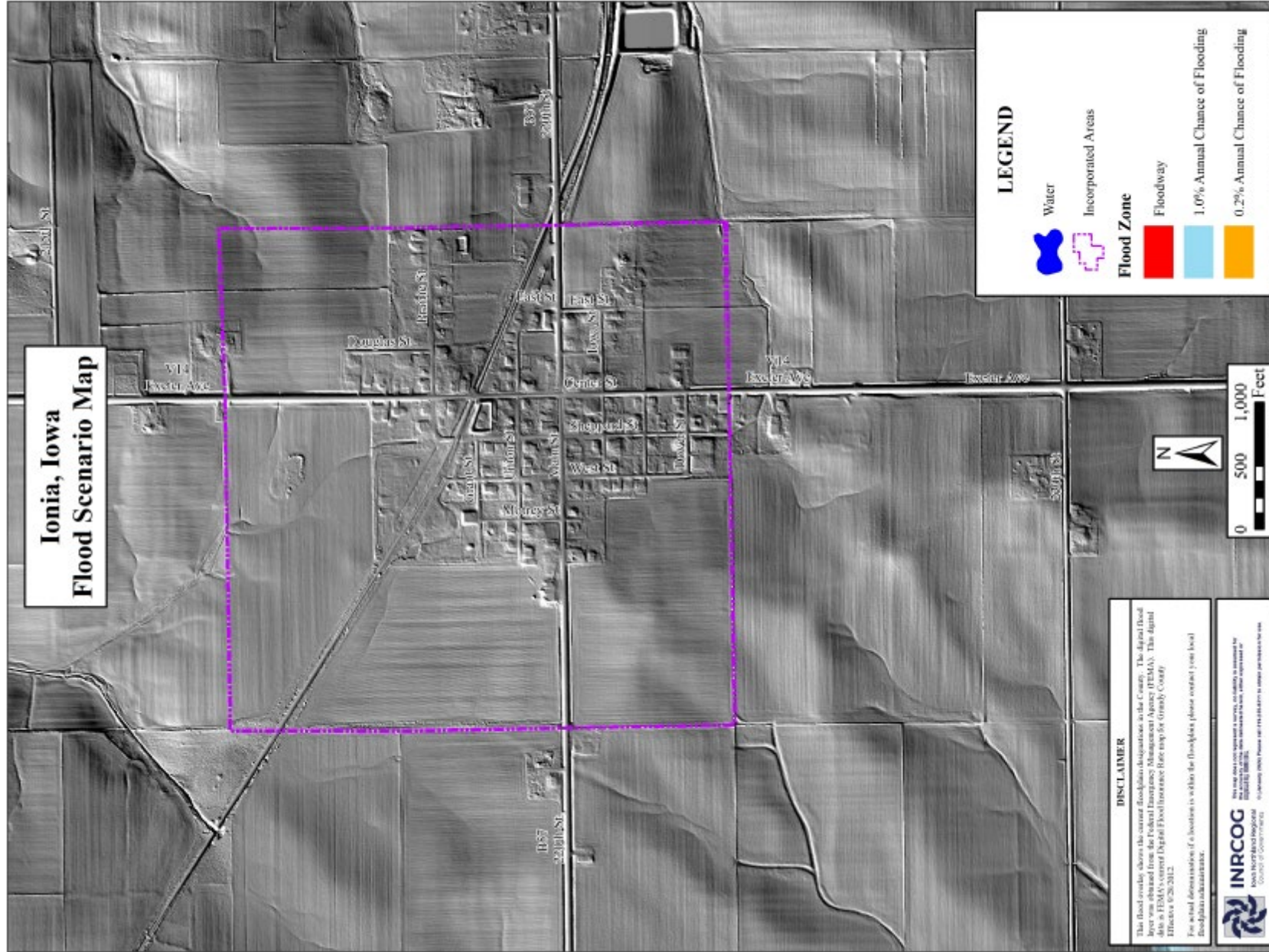
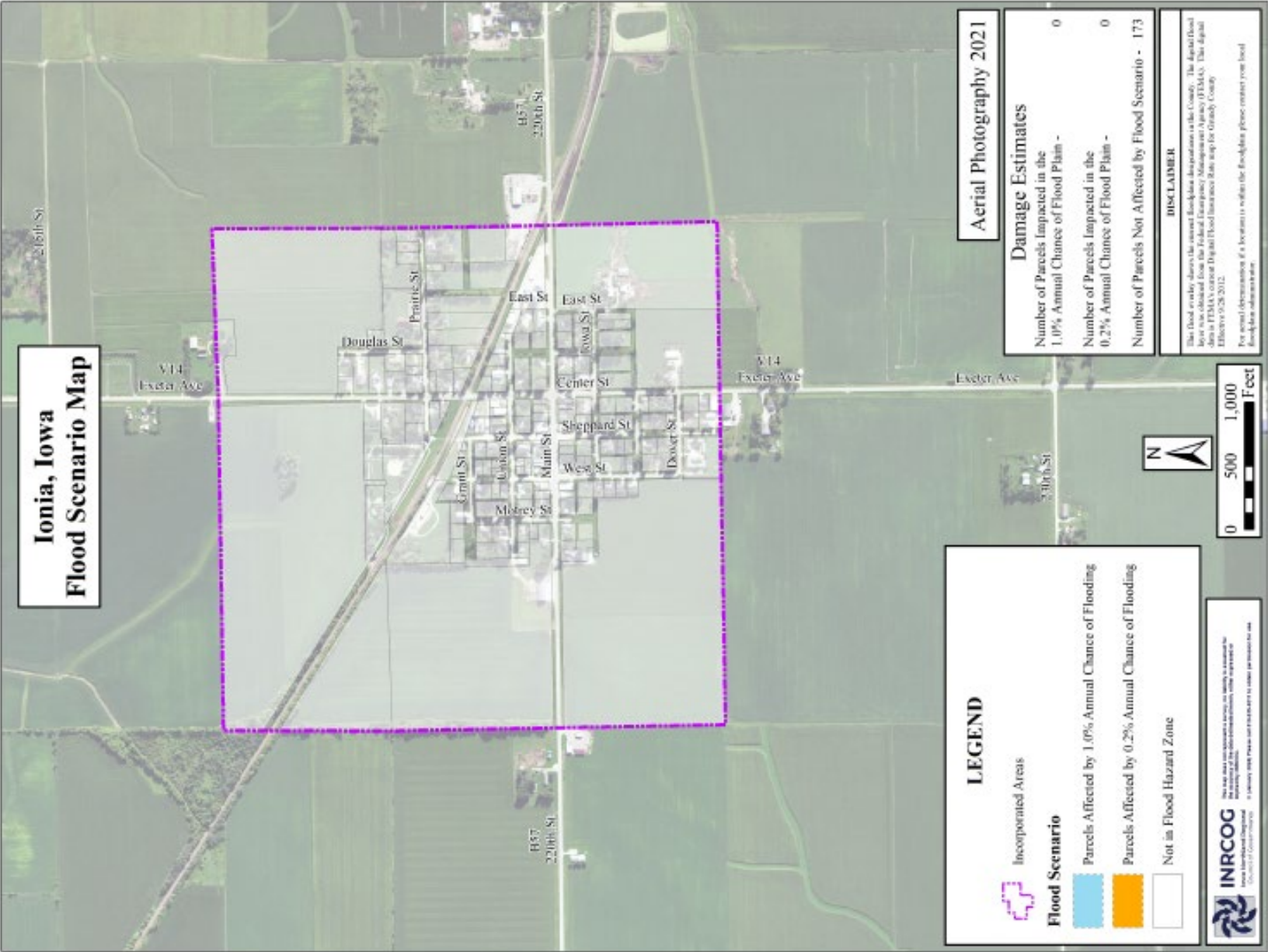




Figure 5: Flood Scenario Map



## Future Development

Recent updates in Title 44 CFR §201.6 (c) (2) (i) require this risk assessment include a section with future conditions on the type, location, and range of anticipated intensities of natural hazards.

Long term trends of climate patterns for the region were summarized in the Fourth National Climate Assessment Midwest Section.<sup>1</sup> The National Climate Report is mandated to be updated every 4 years and deliver results to Congress and President on the effects to agriculture, energy productions, land use, transportation, and human health.

Yearly precipitation levels and annual average temperatures offer insights into future conditions of our climate system.

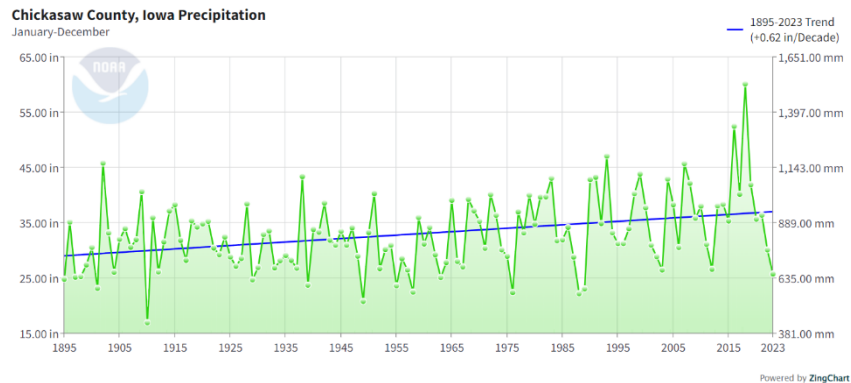
### Annual Precipitation Levels in Chickasaw County

Taking the monthly precipitation records from January to December between 1895 and 2023 is shown in Figure 6. The values hover between 25 – 35 inches of precipitation levels recorded. The average precipitation level for the year is plotted and a linear trend of those values is shown in Figure 7. The trend shows a growing level of annual precipitation on average of 0.62 in more than the decade before. Based on this historical trend, precipitation is likely to continue to increase in the coming years.

---

<sup>1</sup> USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

**Figure 6: Historical Precipitation Data and Trend for Chickasaw County, Iowa<sup>2</sup>**

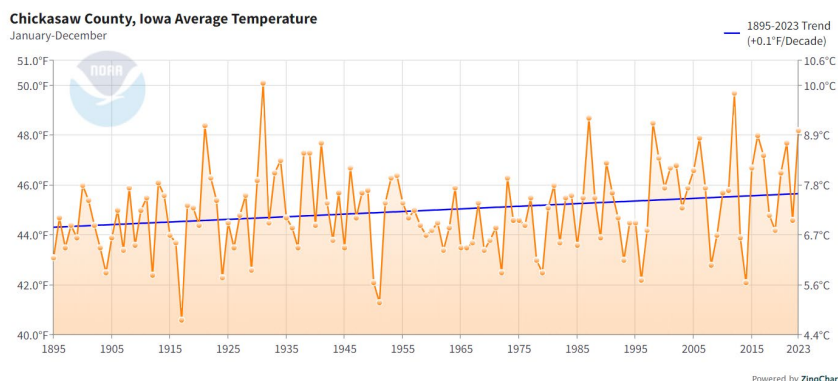


### Average Annual Temperatures in Chickasaw County

The monthly average temperature is plotted over a 12-month period from 1885 to 2023 in Figure 7. The annual average temperature is also shown with a linear trend in Figure 7. This trend shows the average temperature in Chickasaw County increasing at a rate of +0.1° F every 10 years.

**Figure 7: Historical Temperature Data and Trend for Chickasaw County, Iowa<sup>2</sup>**

<sup>2</sup> NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published February 2024, retrieved on April 15, 2024 from <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>



## Climate Patterns from Increasing Precipitation and Higher Temperatures

### Drought

The relationship between increasing precipitation, temperature, and drought is complex, and often counterintuitive at first thinking about it. While increasing precipitation may seem like it would mitigate drought conditions, higher temperatures can exacerbate the situation in several ways:

1. **Evapotranspiration:** Higher temperatures lead to increased evaporation rates from soil, bodies of water, and plants. This means that even if there is more precipitation, it may quickly be evaporated before it can effectively replenish soil moisture or water sources.
2. **Changes in precipitation patterns:** Increasing temperatures can alter precipitation patterns, leading to more intense rainfall events but also longer periods of drought between these events. This

pattern can result in rapid runoff and soil erosion during heavy rain, followed by extended dry periods that contribute to drought conditions.

Overall, while increasing precipitation may provide temporary relief from drought, the combined effects of rising temperatures can outweigh this benefit, leading to more frequent and severe drought events in certain regions.

### Pest Infestation

With more humidity, the daily minimum temperature may increase across all seasons. Warming winters can increase the survival and reproduction of existing insect pests which allow new insect pests and crop pathogens to move into the Midwest region.

### Extreme Heat Domes

A heat dome is a weather phenomenon characterized by a high-pressure system that traps hot air beneath it, leading to prolonged periods of extremely high temperatures and often causing heatwaves. Extreme heat events during the summers may occur with more frequency in the Midwest.

The human impacts of extreme heat affect socially and economically vulnerable populations the most. The higher costs of energy during heat waves disproportionately impact cost-burdened households. Heat related illness may be more severe among infants, elderly populations, and those with chronic health conditions.

### Projected Trends of Natural Hazards in Chickasaw County

- Prologued drought is probably as the atmosphere holds more moisture (even pulling moisture from plants) as the temperature increases. Longer periods between weather events means there are dryer and longer periods in between these events.
- Floods (flash or major types) will increase in intensity as the atmosphere holds more moisture to drive stronger storms and drop heavier rainfall over a shorter period during an event.
- Extreme heat may occur more frequently. The human health impacts are higher among socially vulnerable populations (the elderly, infants, those with chronic health issues, cost burdened households).
- Agricultural pests and pathogens may increase in growing plants and stored grain. Warming temperatures in the spring and summer have led to rising humidity. Higher dew and moisture conditions may increase the presence of these pests or crop diseases.

## National Flood Insurance Program

The City of Ionia does not participate in the National Flood Insurance Program, because there is no flood risk. There is no special flood hazard area mapped for the areas in and around the community. There are no reported repetitive loss properties reported for the community.

FEMA defines a repetitive loss property as an insurable building that has experienced two losses in a 10-year period in which each loss is \$1,000 or more.

**Table 9: National Flood Insurance Program Information**

<b>Community Name</b>	City of Ionia
<b>NFIP Participant (Yes/No)</b>	No
<b>Designee / Agency to implement NFIP Requirements</b>	None
<b>Participant in CRS (Yes/No)</b>	No
<b>Current Effective Map Date</b>	N/A
<b>Regular-Emergency Program Entry Date</b>	N/A
<b>Total Policy Count</b>	N/A
<b>Total Coverage</b>	N/A
<b>Total Losses</b>	N/A
<b>Total Net Dollars Paid</b>	N/A
<i>(M) = No flood elevations determined - All Zone A, C, and X</i>	
Source: Source: FEMA National Flood Insurance Program, Data and Analytics, HUDEX Report. <a href="https://nfipservices.floodsmart.gov/reports-flood-insurance-data">https://nfipservices.floodsmart.gov/reports-flood-insurance-data</a>	

## Hazard Risk Assessment

The top three hazards from the risk assessment are:

1. Severe Winter Storm
2. Thunderstorms with Heavy Lighting/Hail
3. Tornado/ Windstorms



### Methodology

This risk assessment identifies how people, property, and structures would be harmed or damaged by one of the listed hazard events. Iowa Homeland Security and Emergency Management Department (Iowa H.E.S.M.D.) provided the hazard risk score formula for determining the level of risk used in this analysis.

### Factors of Hazard Risk

Risks to a hazard event may differ across geographical locations or even differ based on certain times of year. For example, tornado season in Iowa is usually in May and tornados have the highest risk during this time due to change in weather patterns from the western and central Gulf of Mexico causing higher chances of extreme weather.

For this analysis, four hazard risk factors are rated on a scale between 1 and 4 by committee participants after reviewing profiles of each hazard with the planning coordinator.

Information was shared with the committee which described the hazard, historical occurrences, impact, duration, and warning time. Participants used this information to strengthen their understanding to rate each hazard factor.

### Hazard Risk Score Formula

$$\begin{aligned} &[\text{Probability}] \times 45\% + [\text{Magnitude or Severity}] \times 30\% \\ &+ [\text{Warning Time}] \times 15\% + [\text{Duration}] \times 10\% \\ &= \text{Final Hazard Assessment} \end{aligned}$$

Source: Provided by Iowa H.S.E.M.D.

Hazard scores were collected during the 2<sup>nd</sup> county committee meeting. INRCOG planners calculated the hazard risk score for each hazard based on the formula in this section. Results for North Washington are on page 21.

Score Value vs. Hazard Risk Level	Description of hazard with this rating
Scores with a value closer to 1: <u>Low risk hazard</u>	Hazard is not likely to affect people or property because the likelihood is minimal.
Scores with a value closer to 4: <u>High risk hazard</u>	The hazard has historically occurred and may have significant impacts to people and property.

## Probability

The probability score reflects the likelihood of the hazard occurring in the near future. Historical data of the hazard event occurring in Chickasaw County or Iowa informed the likelihood of future occurrence.

Probability Score Definitions		
Score	Description	
1	Unlikely	<i>Less than 10% probability in any given year (up to 1 in 10 chance of occurring), a history of events is less than 10% likely or the event is unlikely but there is a possibility of its occurrence.</i>
2	Occasional	<i>Between 10% and 20% probability in any given year (up to 1 in 5 chance of occurring), history of events is greater than 10% but less than 20% or the event could possibly occur.</i>
3	Likely	<i>Between 20% and 33% probability in any given year (up to 1 in 3 chance of occurring), history of events if greater than 20% but less than 33% or the event is likely to occur.</i>
4	Highly Likely	<i>More than 33% probability in any given year (event has up to a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.</i>

## Magnitude or Severity

The magnitude or severity of the hazard event is measured by the level of impact on the human environment. Property damage is assessed by the whole planning area.

Magnitude or Severity Score Definitions		
Score	Description	
1	Negligible	Less than 10% of property severely damaged, the shutdown of facilities and services for less than 24 hours, and/or injuries/illnesses treatable with first aid
2	Limited	10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
3	Critical	25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
4	Catastrophic	More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.

### Warning Time

This should be taken as an anticipated warning time.

The warning time score assesses the ability to warn a population before the hazard occurs. The values of the score range from 1 (at least 24 hours) to 4 (minimal or no warning time).

For many of the climate hazards, there is a considerable amount of warning time as opposed to the human-caused hazards (transportation and hazardous materials incidents) that occur instantaneously or without any significant warning time.

Warning Time Score Definitions		
Score	Description	
1	Forecasted	More than 24 hours warning time.
2	Likely	12 to 24 hours warning time.
3	High Chance	6 to 12 hours warning time
4	Imminent	Minimal or no warning time (up to 6 hours warning)

### Duration

The duration is the time of a typical or expected hazard event to occur. For an earthquake or traffic accident that is a score of 1. For infrastructure failure, it is likely a 4.

Table 6 displays rated risk scores for each associated hazard. This assessment was completed by city representatives based on hazard profiles prepared for the planning committee.

Duration Score Definitions	
Score	Description
1	Less than 6 hours
2	Less than 1 day
3	Less than 1 week
4	More than 1 week



Table 10: Hazard Risk Assessment					
Hazards	Probability	Magnitude	Warning Time	Duration	Score
Severe Winter Storm	4	1	2	3	2.7
Thunderstorm/ Lighting/ Hail	4	1	2	3	2.7
Tornado/Windstorm	4	1	2	3	2.7
Grass/Wildland Fire	3	2	4	1	2.7
Extreme Heat	4	1	1	3	2.6
Drought	3	1	1	4	2.2
Transportation Incidents	2	1	4	2	2.0
Flooding - Flash	2	1	4	1	1.9
Hazardous Materials	1	2	4	1	1.8
Infrastructure Failure	1	2	4	1	1.8
Landslide	1	1	4	1	1.5
Levee/Dam Failure*	1	1	4	1	1.5
Flooding - Riverine	1	1	4	1	1.5
Sinkholes	1	1	4	1	1.5
Animal/ Crop/ Plant Disease	1	1	4	1	1.5
Pandemic/ Endemic Human Disease	1	1	4	1	1.5
Radiological	1	1	4	1	1.5
Terrorism	1	1	4	1	1.5
Earthquake	1	1	1	1	1.0
Expansive Soils	1	1	1	1	1.0

Source: Completed by City Representative. Calculated score completed by INRCOG

\*The following hazards were identified as not being considered a threat needing a specific mitigation activity given the specific jurisdictional situation.

## Hazard Mitigation Goals

### for Hazard Mitigation in Ionia, Iowa

The following list of goals was developed by planning committee participants from the associated jurisdiction. Goals 1 through 5 were developed in the previous 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan and re-adopted to this updated plan. Goals 6 and 7 were revised to be more effective and sensible to local level scopes. The planning committee participants chose to adopt the same goals and add additional goals. Goals 8 through 11 were created by the city's committee representatives which provided updated and additional mitigation goals and activities.

**Goal #1** Reduce the chance of and impact of flooding in the community.

**Goal #2** Take measures to minimize the occurrence of injuries and loss of life due to hazards.

**Goal #3** Take measures to minimize or eliminate damage that may occur as a result of hazards.

**Goal #4** Increase the city's ability to respond to natural disasters and man-made hazards.

**Goal #5** Return to the community to similar or improved pre-event conditions as quickly as possible following a disaster event.

**Goal #6** Incorporate the City Plan into the proposed Multi-Jurisdictional Plan.

**Goal #7** Continually re-assess and re-evaluate the plan and mitigation activities.

**Goal #8** Improve Ionia's construction permit process for fairness and clarity, benefiting contractors, residents, and the construction sector.

**Goal #9** Develop a sustainable Ash tree removal program in Ionia to prevent property damage and personal harm efficiently and affordably.

**Goal #10** Distribute a monthly newsletter to Ionia residents for better communication and outreach.

**Goal #11** Enhance Ionia residents' safety with a modern warning system, including updated tornado sirens and online registration for Alert Iowa.

## **Previous Mitigation Activities by Type**

Mitigation actions and activities in this Plan will be organized according to these 5 categories: Emergency Services, Education and Outreach Projects, Natural Resource Protection, Structural Projects, and Local Plans and Regulations,

### **Emergency Services in Ionia**

#### Chickasaw County Emergency Management Agency

Ionia works with the Chickasaw County Emergency Management Coordinator, based out of the City of New Hampton, on various safety and emergency events. The Emergency Management Coordinator works in conjunction with local fire, rescue, police, and government officials to draft and implement workable emergency action plans in the community. The Chickasaw County Emergency Management Coordinator is Jeff Bernatz.

#### Law Enforcement

The community has a 28E agreement in place with Chickasaw County Sheriff's Department that will provide law enforcement services. Services include patrol in the city. The sheriff deputies provide a response time to the city up to 30 minutes and will provide extra people power when notified by the city.

#### Fire Protection and EMS Services

Fire protection is provided by the Chickasaw Township Fire District with a force of 21 volunteer firemen. The District has the following equipment:

- 2010 pumper truck (1,500 GPM)
- 2006 tanker pumper (3,000 Gallon, 500 GPM)
- 2010 pickup 250 GPM pump
- 2-UTV's for grass fires and wooded areas
- 2000 equipment truck

#### EMS Services

Chickasaw Ambulance Service provides ambulance service to area hospitals. Chickasaw Ambulance Service is a private company that contracts service with local entities. The company is based out of New Hampton, approximately 14 miles southeast of Ionia.

Chickasaw County Rescue Squad also provides service in Ionia. There are 42 EMT certified individuals who volunteer to respond to emergency calls on a needed basis in the county.

#### Medical Facilities

There are no medical facilities in Ionia. The closest facility is the MercyOne New Hampton Medical Center in New Hampton, IA. This is the only medical facility with an ER unit located in the county. MercyOne has 11 private inpatient rooms and cares for over 20,000 outpatients each year.

MercyOne New Hampton offers a full range of services in an inpatient and outpatient setting as well as 24-hour emergency care, surgical services, primary care clinic,

therapy and rehabilitation, diagnostic services, speech and occupational therapy, Senior Life Solutions and specialty clinics.

#### HAZMAT Response Teams

Ionía contracts with Northeast Iowa Response Group for response to hazardous material spills. The Northeast Iowa Response Group is a division of Waterloo Fire Rescue as is the Hazardous Materials Regional Training Center. The Training Center provides training to fire departments and companies from around the state and country. Not only is this a training center, but it also serves as a hazardous materials quick response unit to Black Hawk County, surrounding counties, and many municipalities in a ten county region. The Unit provides local fire departments with hazard materials emergency procedures thus reducing additional contamination. An evacuation plan is also in place in conjunction with the activities of the local department. Contact information for the facility is as follows: Hazardous Materials Regional Training Center, 1925 Newell Street, Waterloo, Iowa 50707, Phone: (319) 291-4275, Toll Free: (800) 291-4682, Fax: (319) 291-4285

The jurisdiction also partners with the Northeast Iowa Response Group for assistance in responding to any methamphetamine labs located in the city limits. The Response Group assists the Police Departments in containment of the site and disposal of hazardous chemicals.

#### Warning Systems in Ionía

##### 1. Tornado Sirens

Ionía has 1 operating tornado warning siren for the community. The siren is 50 years old and beyond the equipment's lifetime. A new replacement siren is urgently needed.

The activation systems of warning systems are activated and operated by a central command system operated by the Chickasaw County Rescue Squad in New Hampton, IA.

##### 2) Alert Iowa Mass Communication System

Chickasaw County has implemented the use of Alert Iowa, a mass communication notification system. The system features are controlled through the Chickasaw County Emergency Management Agency. Residents can customize their alert settings including the type of alerts they would get.

Alert Iowa allows for emergency notifications via landline telephones, cell phones, email, text messages, and social media. This is useful for communities that may not have an operating warning siren or may not hear the sirens.

#### Public Works/Street Department

There is one city employee that does repairs to streets and facilities.

### **Previous Education and Outreach Projects in Ionia**

The City of Ionia funds annual training opportunities for fire department personnel, law enforcement personnel, and ambulance crews to address all hazards. Ionia keeps first responders trained in weather spotting.

### **Previous Natural Resource Protection in Ionia**

The City of Ionia regularly cleans out their storm drain system.

### **Previous Structural Projects in Ionia**

The City of Ionia has no recent structural projects as mitigation activities.

### **Local Plans and Regulations in Ionia**

Ionia completed a local plan and regulation assessment. The results are shown in the table below.

Table 11: Local Capability Assessment	
Community	City of Ionia
Previous HMP Participant?	Yes
Comprehensive Plan?	Yes
Building Code?	No
Zoning Ordinance? RR=restricted residential	Yes
Subdivision Regulations?	No
Floodplain Management Ordinance?	No
Tree-Trimming Ordinance?	Yes
Storm Water Ordinance?	Yes
Snow Removal Ordinance?	Yes

## Components of the Strategy

Presented below are tables prepared in consultation with the Ionia's planning committee's representative and INRCOG. This is a guide for a strategic approach when implementing the city's efforts in hazard mitigation. The tasks in these tables are drawn from the city's capabilities, goals, and hazard risks presented in previous sections of this Plan.

The designated agency or staff presented with each line item was written by Ionia's planning committee.

Notes about the tasks (listed as line items) in each table.

- Each task (line item) stands on its own so it can be completed whenever possible.
- Each action item is not limited to the details presented below and may change based on future conditions.
- The tasks were categorized based on mitigation type. The mitigation types are not shown in any order (no priority over the other). This is presented to help with the general understanding of how hazard mitigation may feed into the City's existing or future priorities.

## Priority Level

The priority level was informed through discussions among planning committee members who considered potential

benefits of implementing the activity, some hurdles that the city may face in implementing the action step, and the drawbacks of implementation. *Committee representatives considered a cost-benefit approach.*

## Timeframe

Timeframe	Description
Immediate	1-6 months
Short Term	1-5 years
Mid-Term	5-10 Years
Long-Term	More than 10 Years

## Estimated Costs

Cost estimates are based on the associated costs of additional staffing that may or may not be needed, time for planning/meetings/coordinating, and cost of the proposed action/program/ project.

Cost	Estimated Cost Range
Minimal	Less than \$10,000
Low	\$10K to \$99K
Moderate	\$100K to \$299K
High	Greater than \$300K

## Implementation Guides (by Mitigation Type) for Hazard Mitigation Activities in Ionia

<b>Table 12: 'Education and Awareness' Type Mitigation Activities</b>						
Description: These types of actions keep residents informed about potential natural disasters.						
<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (\$)</b>	<b>Funding Source</b>
High	Provide continued training for first responders and fire department.	All	Fire Department, City Council	Ongoing	Minimal 0-\$10K	City general fund
High	Continue to educate the public on hazard response and preparation.	All	City Council, Hazard Mitigation Team	Ongoing	Minimal 0-\$10K	City general fund
Medium	Maintain training opportunities for weather spotting for first responders	Tornado/ Windstorm, Thunderstorm w/ Hail or Lighting, Winter storms	Fire Department, City Council	Short term 1 year - 3 years	Minimal 0-\$10K	City General Fund, Hazard Mitigation Grant Program
Low	Distribute a monthly newsletter to Ionia residents for better communication and outreach.	All	City Clerk	Immediate: 1 month - 6 months	Minimal 0-\$10K	City general fund
Low	Assess first responders' equipment needs to be able to handle wildfire response.	Grass/Wildfire	Fire Department, City Council	Short term 1 year - 3 years	Minimal 0-\$10K	City general fund



<b>Table 13: 'Emergency Services' Type Mitigation Activities</b>						
Description: Actions that protect people and property during and immediately after a disaster or hazard event.						
<i>Priority</i>	<i>Tasks</i>	<i>Hazard(s)</i>	<i>Primary Agency Responsible for Implementation</i>	<i>Time Frame to Complete</i>	<i>Estimated Cost (s)</i>	<i>Funding Source</i>
High	Acquire funds to purchase new siren	Tornado	City Council	Short term 1-3 years	Medium \$10K to \$199K	Hazard Mitigation Grant Program
High	Ensure 28E Agreements are in place and updated for County Sheriff police services	All	City Council, Chickasaw County Board of Supervisors	Immediate 1-6 months	Minimal	County EMA
Low	Get residents to register on Alert IOWA with outreach and education initiatives	Tornado	City Council	Immediate 1 - 6 months	Minimal 0-\$10K	County EMA, City General Fund

**Table 14: Natural System Protection and Nature-Based Mitigation Type**

Description: Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
Medium	<i>Adopt the "No Additional Cost" 6 Year Community Tree Maintenance Plan provided in the 2014 Urban Forest Management Plan for Ionia, Iowa</i>	Pest, Windstorms, Winter storms.	City Council	6 -10 years	Minimal	No additional costs other than available city services and equipment
Low	<i>Continue cleaning out storm drains</i>	Flooding	City clerk	Immediate 1-6 months	Minimal	City General Fund
Low	<i>Develop plan to upgrade green infrastructure (e.g. urban trees, water reduction plan) to reduce impacts of drought and excessive heat conditions.</i>	Drought, Excessive Heat	City Council	6 -10 years	Minimal	City General Fund
Low	<i>Enhance the community resilience to wildfires through the implementation of nature-based solutions, such as controlled burns and restoration of native vegetation to reduce fire risk and improve biodiversity.</i>	Grass/Wildfire	Fire Department, City Council	Short term 1 year - 3 years	Minimal 0-\$10K	City general fund

**Table 15: Structure and Infrastructure Project Type Mitigation Activities**

Description: Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
High	Prepare city demolition strategy to address severely dilapidated/dangerous structures (657A acquisition). Strategize how to acquire, demo, and redevelop site as infill opportunity	Tornado/ Windstorms, Thunderstorms with Strong Hail, Winter Storm, Earthquake, Landslide	City council	For Strategic planning activity: Short term 1-3 years	Minimal	City general fund
Medium	Find housing partners (developers, nonprofits, regional planning org) to develop infill housing	Tornado/ Windstorms, Thunderstorms with Strong Hail, Winter storm	City council	Immediate 1 -6 months	Moderate	City general fund
Medium	Incorporate demolition costs with loan programs or other revitalization programs where applicable, if possible	Infrastructure failure	City Council	Short term 1-3 years	Moderate	City general fund CBDG revit, urban renewal grants, revolving loan programs

**Table 15: Structure and Infrastructure Project Type Mitigation Activities**

Description: Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
Medium	Prioritize dilapidated housing that poses the greatest threat to health, safety, and welfare and pursue property acquisition through 657A	Infrastructure failure, Tornado/ Windstorms, Thunderstorms with Strong Hail, Winter storm	City council	Long Term 5-10 years	High \$300K +	City general fund, CBDG funding, Revitalization grants, USDA rural development programs, Iowa Nuisance Property & Abandoned Building Remediation Loan Program
Medium	Continue maintenance of a functional gravity Sewer system including lift stations	Earthquake, Expansive Soils, Sinkholes, Infrastructure Failure, Flooding (River and Flash)	City council	Long Term 5-10 years	High \$300K +	State Revolving Loan Fund (SRF): Planning and Design
Low	Continue to improve (repair as needed) City Hall	Infrastructure Failure, Tornado/ Windstorms, Thunderstorms with Strong Hail, Winter Storms, Flooding, Expansive Soils, Sinkholes	City council	Long Term 5-10 years	High \$300K +	City General Fund, Hazard Mitigation Grant Program

**Table 16: Local Plans and Regulations Mitigation Activities**

Description: Actions by administrative or regulatory processes which direct how land and buildings are developed and built. These actions include regulations by public entities to reduce hazard losses.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
Medium	Upload the city's building permitting process to the city's website.	Tornado, Windstorm, Sinkholes, Expansive Soils	City Council	Long Term 5-10 years	Minimal 0-\$10K	City general fund
Medium	Update the city's emergency response plan	All	City Council and Fire Department	Short Term 1-3 Years	Minimal 0-\$10K	City general fund

# City of Lawler, Iowa

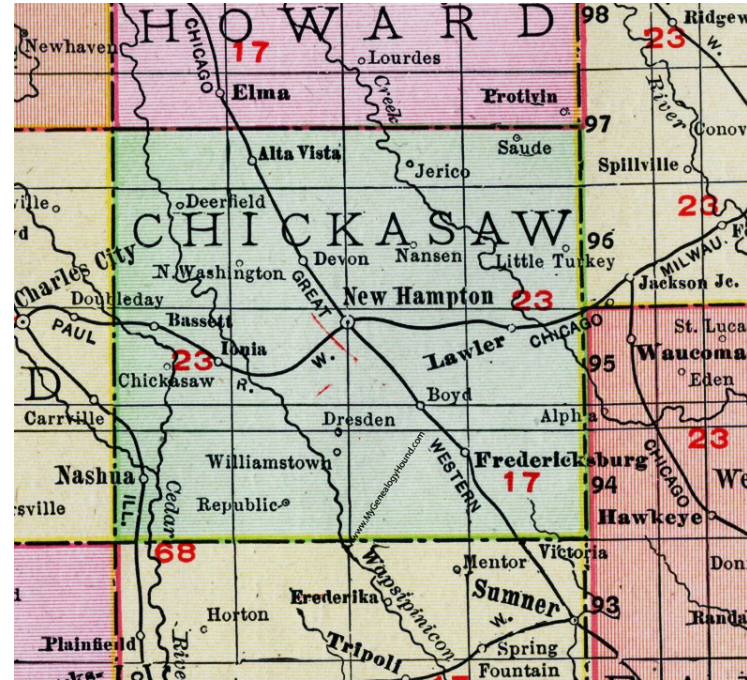
## Hazard Mitigation Plan 2024 Update

### Appendix E of Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan

Funded by the Chickasaw County Emergency  
Management Agency

Prepared by Iowa Northland Regional Council  
of Governments (INRCOG)

April 2024



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**A RESOLUTION OF THE CITY COUNCIL OF LAWLER, IOWA, ADOPTING THE CITY OF LAWLER, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.**

WHEREAS, the City of Lawler City Council recognizes the threat that natural hazards pose to people and property within Lawler; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing the City of Lawler served and participated in the formulation of said Plan as part of the the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare the hazard mitigation plan, hereby known as the City of Lawler, Iowa Hazard Mitigation Plan 2024 Update in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the City of Lawler, Iowa Hazard Mitigation Plan 2024 Update identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Lawler from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the City of Lawler, Iowa Hazard Mitigation Plan 2024 Update; and

WHEREAS adoption by the City of Lawler demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF LAWLER, IOWA, THAT:

Section 1: In accordance with local regulations, the City of Lawler adopts the City of Lawler, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of Lawler may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of Lawler to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 6<sup>th</sup> day of May, 2024.

ATTEST:

  
Suzette Bryne, City Clerk

  
Mayor Mark Muetterthies

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## About

The City of North Washington developed this local Hazard Mitigation Plan to update their previous plan. That Plan was part of the 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. The 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan is a sequential 5-year update to the previous hazard mitigation document. Federal hazard mitigation grant programs require an updated hazard mitigation plan approved by FEMA to be in good standing and remain eligible for grant funding. The Plan was developed to meet the requirements in Title 44 CFR § 201.6.

Elected officials, city clerks, planners, first responders, and other stakeholders were invited to attend planning committee meetings as participants while they completed worksheets that were returned to the Chickasaw County's Emergency Management Agency (EMA) and INRCOG. Chickasaw County's EMA initiated and funded this effort for all participating communities and contracted INRCOG to coordinate a multi-jurisdictional approach to this plan development process.

Participating communities included all nine (9) incorporated jurisdictions in Chickasaw County. Other participating members were representing their respective County departments. The school district superintendents of three public school districts participated and represented their jurisdictions. Four (4) committee meetings were held between March 19<sup>th</sup> and April 23<sup>rd</sup> wherein each participant provided data and completed work sheets to develop their hazard mitigation plans.

## FEMA's Emergency Management Cycle



### What is Hazard Mitigation?

Hazard Mitigation is any *sustained* action taken to reduce or eliminate long-term risk to life and property from hazards.

The emergency management cycle has 4 phases:

- **Preparedness** is the assessment of potential risks, hazards, and vulnerabilities that a community may face. The development and updating of activities, programs, and systems before an event occurs is included in this phase of the cycle.
- **Response** is the immediate effects after a disaster.
- **Recovery** is a long-term phase that focuses on returning the community to normal after a disaster.
- **Mitigation** is an action that can occur at any phase.

## The Benefits of Hazard Mitigation

For local governments, there are benefits in knowing hazards, their risks, and planning for mitigation strategies.

Those Include:

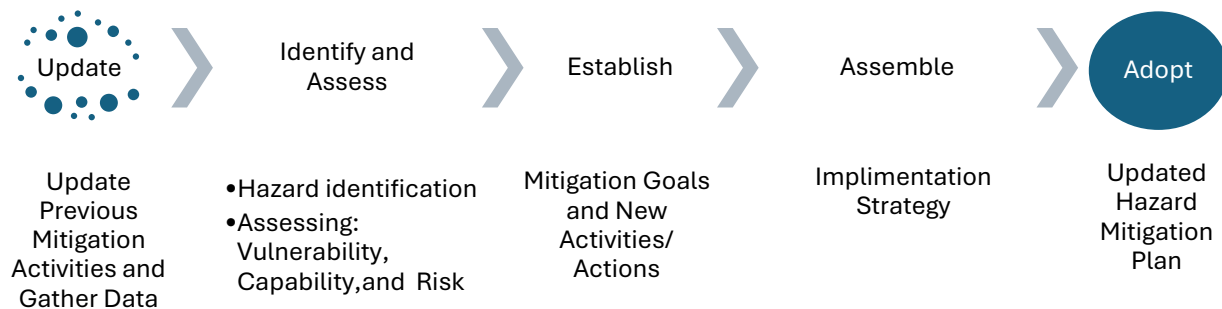
- ✓ An increased understanding of natural, technical, and man-made hazards faced by communities.
- ✓ Taking an opportunity to create more sustainable and disaster-resistant communities.
- ✓ Participating in this collaborative intergovernmental effort is cost effective for all participants.
- ✓ Using limited resources on hazards that have the biggest impacts on a community.
- ✓ Reducing or preventing damage to existing structures, subsequently reducing repair costs.
- ✓ Identifying vulnerable populations to establish equitable outcomes.
- ✓ Setting long-term goals that can be compatible with city policies or planning documents.

## The Planning Process

In emergency management planning, reducing the community's risk to natural hazards is a multi-step process which involves collaboration among stakeholders, assessing risk and vulnerabilities of hazards facing the community, establishing actions or activities to reduce risk, and assembling an organized strategy to carry out all mitigation activities.

Participants in the Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan Planning Committee provided the information in this plan including community profile information, hazard mitigation goals, mitigation activities/action, updates to existing mitigation activities, and elements included in the strategy such as priorities, designated agencies, estimated costs, and overall strategic direction of this plan.

### Participants in the Plan Followed This 5 Step Process



## Community Data Sources

Population data is based on 2020 decennial Census data. The 2022 American Community Survey 5-year estimates are the latest and most reliable survey data sets to understand what is taking place in the county and each city. Most counties, cities, and towns rely on 5-year estimates. Employment, workforce, and industry figures in this Plan are estimates that have a margin of error.

It is important to note that the ACS estimates used for rural communities will have a degree of uncertainty associated with them, called sampling error, because they are based on a sample. In general, the larger the sample, the smaller the level of sampling error. Rural communities tend to have smaller samples than larger cities, so the “margin of error”—a measure of the precision of an estimate at a given level of confidence—likely will be larger for rural areas.

Crash data along roadways within each jurisdiction is collected between the period of 2019 and 2023. Using a map tool interface, the data was taken at a city level and presented to understand incident severity, casualties, and property damage from reported accidents. Accident data is added to the site daily and accessible through an online website, <https://icat.iowadot.gov/>.

In the risk analysis section of this Plan, estimates of property loss are measured using mapping of hazardous zones. For the vulnerability risk assessment, flood prone homes were determined using the boundaries of the 100 year (1%) annual chance flood zone. The value of potential property loss was derived from the 2023 assessed dollar value of structures and dwellings on affected parcels provided by the Chickasaw County Assessor’s Office.

Chickasaw County’s Freedom Rock (right) is located in Lawler’s Veteran’s Memorial Park. (center)

*Photo Source: Google Maps and Darrin Oschner*





## City Profile

**Jurisdiction: City of Lawler**

**County: Chickasaw County**

**Population (2020): 406**

The City of Lawler lies between the upper and lower east quadrants of Chickasaw County. State Highway 24 and County Highway V56 intersect in Lawler.

The following data presented in tables on the following page include population, employment, and industry sector data for the community based on 2020 Census data and 2022 American Community Survey 5-year Estimates.

In 2020, the city's population was 406 and 91% White where the median age is 42. Working aged residents (15-60 years) make up 58% of the population. Children and teens (younger than 15 years) make up 19% of Lawler's population while older adults (older than 65 years) make up 23%.

The median household income in 2022 was \$58,750. The unemployment rate is 5.2%. Most people commute to work, and 19 people or 10% of the workforce work from home. The top three largest industry sectors in Lawler are as follows (in order from highest to lowest): 1) Construction; 2) Educational Services, and health care, and social assistance, and 3) Manufacturing.

**Figure 1: Map of Chickasaw County**

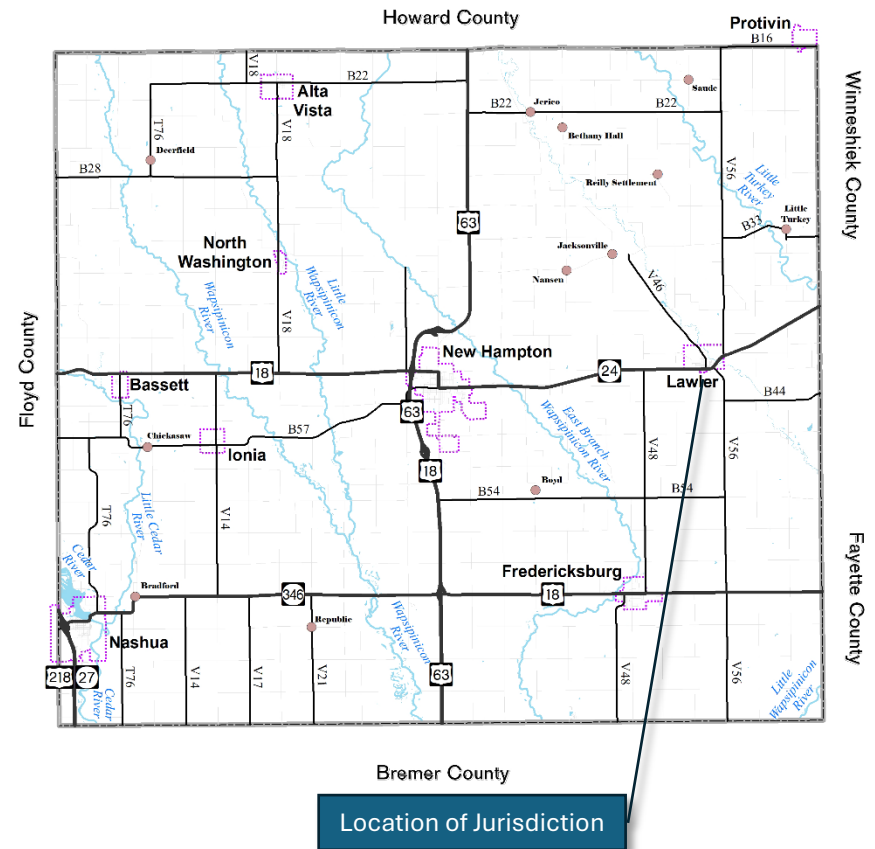


Table 1: Population Data (2020)		
City of Lawler		
	Total	% of Pop.
Total population	406	100%
AGE		
Under 5 years	23	6%
5 to 9 years	24	6%
10 to 14 years	30	7%
15 to 19 years	14	3%
20 to 24 years	26	6%
25 to 29 years	44	11%
30 to 34 years	11	3%
35 to 39 years	22	5%
40 to 44 years	17	4%
45 to 49 years	20	5%
50 to 54 years	13	3%
55 to 59 years	32	8%
60 to 64 years	38	9%
65 to 69 years	33	8%
70 to 74 years	14	3%
75 to 79 years	16	4%
80 to 84 years	7	2%
85 years and over	22	5%
Median Age	42	-
RACE		
White	370	91%
Black or African American	0	0%
Hispanic or Latino (of any race)	22	5%
American Indian and Alaska Native	3	1%
Asian	0	0%
Native Hawaiian/Other Pacific Islander	0	0%
Some Other Race	14	3%
Two or More Races	19	5%
Source: 2020 Census		

Table 2: Employment Data (2022)		
City of Lawler		
	Value	% of Population
Median Household Income	\$58,750	-
Unemployment Rate (2022)	5.2%	-
Workers that commute to work	182	91%
Workforce that works from home	19	10%
Source: 2022 American Community Survey 5-Yr Estimates		

Table 3: Employment Industry Data (2022)		
City of Lawler		
Workforce Industry	# of Workers	% of Workforce
Workforce	201	100%
Agriculture, forestry, fishing and hunting, and mining	15	8%
Construction	43	21%
Manufacturing	29	14%
Wholesale trade	5	3%
Retail trade	20	10%
Transportation -warehousing, utilities	9	5%
Information	0	0%
Finance and insurance, and real estate and rental and leasing	3	2%
Professional, scientific, and management, and administrative and waste management services	17	9%
Educational services, and health care and social assistance	36	18%
Arts, entertainment, and recreation, and accommodation and food services	5	3%
Other services, except public administration	11	6%
Public administration	8	4%
Source: 2022 American Community Survey 5-Yr Estimates		

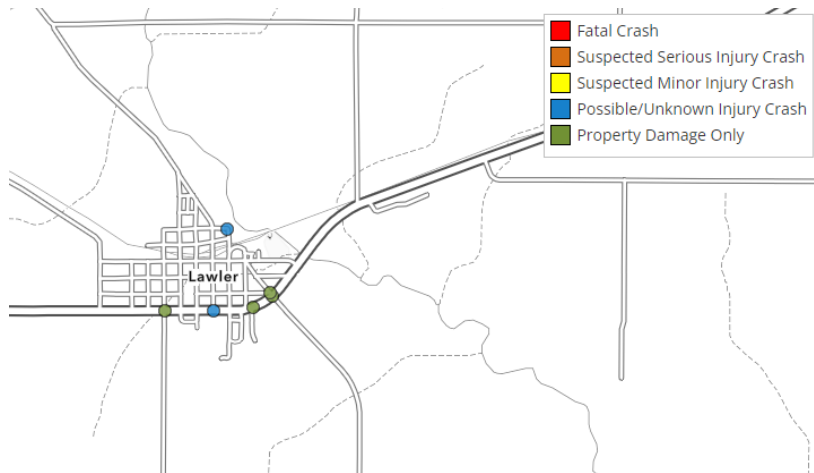


## Highway Traffic and Crash Data

Based on Iowa DOT crash data, between 2019 and 2023 there have been 6 incidents. No fatalities or casualties were reported. However, there was \$39,300 in property damage from 4 of these crashes.

Total Crashes	6
Crash Severity	
Fatal	0
Suspected Serious Injury	0
Suspected Minor Injury	0
Unknown	2
Property Damage Only	4
Property Damage Total	\$39,300

**Figure 2: Iowa Crash Analysis for All Traffic Incidents (2019-2023)**



Source: Iowa DOT

Table 4: Housing Data (2022)		
City of Lawler		
	Total	% of Occupied Units
Occupied housing units	177	100%
<b>Housing Unit Type</b>	Total	% of Occupied Units
1, detached	152	86%
1, attached	0	0%
Duplex (2)	3	2%
More than 2 apartments	20	11%
Mobile home or other type of housing	2	1%
<b>Year Structure Built</b>	Total	% of Occupied Units
2020 or later	0	0%
2010 to 2019	1	1%
2000 to 2009	11	6%
1980 to 1999	23	13%
1960 to 1979	69	39%
1940 to 1959	16	9%
1939 or earlier	57	32%
<b>House Heating Fuel</b>	Total	% of Occupied Units
Utility gas	101	57%
Bottled, tank, or LP gas	56	32%
Electricity	18	10%
Fuel oil, kerosene, etc.	0	0%
Coal or coke	0	0%
All other fuels	2	1%
No fuel used	0	0%
Source: 2022 American Community Survey 5-Year Estimates		

## Housing Data

The City of Lawler has 177 occupied housing units. Nearly 86% of them are single family detaching housing. Approximately 2 housing units are mobile homes.

A large portion of the housing stock was built between the years 1960-79 (39%). About 59% of the housing stock is under 60 years old. Most homes heat their units with utility gas (57%).

## Community Utility Providers

Lawler Municipal provides utility electric services. Black Hills Energy is the natural gas service provider. Windstream telephone services and broadband internet services. Residents receive water and sewer utility services from the city. Sanitation is contracted to Jendro Services.

Table 5: Utility Providers	
City of Lawler	
<i>Electric</i>	Lawler Municipal
<i>Natural Gas</i>	Black Hills Energy
<i>Telephone/Internet</i>	Windstream
<i>Cable TV</i>	Windstream
<i>Water Services</i>	City of Lawler
<i>Sewer Services</i>	City of Lawler
<i>Sanitation</i>	Jendro Contract Services

## **Vulnerable Assets**

### **People**

Vulnerability to hazard losses increases where there are larger concentrations of people. In towns where population density increases, the number of people that can be harmed during a hazard event (tornado, flood, etc) increases. In addition, there are segments of the population that may be more susceptible to impacts and/or harm from a hazard depending on their location within the area (ie. flood zone or near industrial plants with hazardous materials). This includes underserved or socially vulnerable populations.

### *Vulnerable Age Groups*

Both younger and older aged groups are likely to require assistance with physically moving to shelters or finding safety. Elderly residents may not have a personal vehicle to move away from a hazard quickly. Cognitive impairments among older adults may cause some to get easily confused.

### *Households Facing Poverty or With Limited Income*

Families or older adults living at, near, or below poverty are more likely to be impacted by hazards than other households with higher incomes. The costly repairs from a tornado or deracho for a low income household is the reason why they may be more adversely affected than another household that has the same damage but may be able to afford the repairs without much change to their lifestyles or needs. That disparity is also different during extreme weather events such as a heat wave. Low income households who may not be able to afford the electricity

have to turn off air conditioning and many may face complications that involve heat stroke, fatigue, or death due to their age (infants or the infirm) and health conditions (obesity, heart conditions, diabetes).

### *Lawler's Vulnerable Populations*

In Lawler, 16% of occupied households are below the poverty level. About 43% of occupied households have elderly occupants (60 years and over). About 57% have elderly residents (65 years and over) living alone. Most (91%) residents have access to a vehicle but 9% do not. Nearly 27% of households have a person living with a disability. This is broadly defined from the data estimates for Lawler but note that persons with mobility disabilities or severe intellectual disabilities with dependent needs are the most at risk to hazard events when they occur without much warning.

Manufactured homes are unsafe in a tornado. Fatality rates are significantly higher than sturdy buildings. An alternative shelter should be identified prior to a tornado watch or warning. There are 1 or 2 mobile homes estimated in North Washington. With an average household size of 2.3 persons, that puts potentially 4-5 people at a greater fatality risk than others based on their housing type.

## Critical Facilities

Identifying structures that may be affected from a hazard event and also serve a critical function for the community are shown in the table on the following page.

The City of Lawler has a municipal water system with a 50,000-gallon storage capacity. The community's water is taken from two local wells, and supplies water to approximately 250 users. The system has an average use of approximately 42,000 gallons per day with a peak demand of 48,000 gallons. It provides water for fire protection within the City of Lawler and surrounding rural areas. The City of Lawler's wastewater is treated through a lagoon stem.

These treatment lagoons are located northeast of the City on the opposite side of Crane Creek. Treated water is then drained into Crane Creek, a process that is allowed only by permit. According to the City, the existing system can handle a population of approximately 700 persons. The 2020 Census showed that Lawler had a population of 406 people.

In the next 20 years, Lawler is likely to see small population changes and the existing water plant and wastewater treatment lagoons have capacity to manage existing demands or steady growth.

**Figure 3: Critical Facilities Map**



## Measuring Vulnerability to Selected Hazards

Assessing the community's vulnerability to both tornado and flood hazards is determined with values collected from the county assessor office.

### Tornado Hazard

All buildings in Lawler are prone to being damaged by a tornado. Therefore, the vulnerability of the community was determined by the assessed valuation of all buildings and dwellings on all parcels within the city's limits.

Since 2000, there have been no recent tornados recorded in or around Lawler. In 1984 and 1989, two EF 1 tornado events occurred each year causing \$250,000 and \$25,000 in property damage for the tornado in 1984 and 1989, respectively.

Lawler's vulnerability to a tornado hazard is determined with a summation of all structures susceptible to damage from a tornado. There are 303 parcels in Lawler and all buildings and dwellings in Lawler have a summation in value of \$14,768,300. The City of Lawler's vulnerability from a

tornado is measured as the potential property loss totaling \$14,768,300 (in 2023 dollars).

### Flood Hazard

The potential property losses of structures prone to flooding was calculated using the effective flood insurance rate map (FIRM) flood hazard zones for a 100-year (1%) annual chance flood.

In Figure 5, the flood plain map shows the 1% annual chance of flooding in and around the City of Lawler. The river basin is depicted in the topography shown on the map.

There are 32 parcels affected by the 1% annual chance flood hazard. This hazardous zone covers 8.5% of the city's total number of parcels. The assessed value of all structures on those affected parcels is \$1,263,100 in 2023 dollars. Therefore, the value of potential losses from a 100 year flood (1% annual chance) in Lawler is \$1,263,100.

**Table 6: Valuation of All Parcels in City of Lawler (2023)**

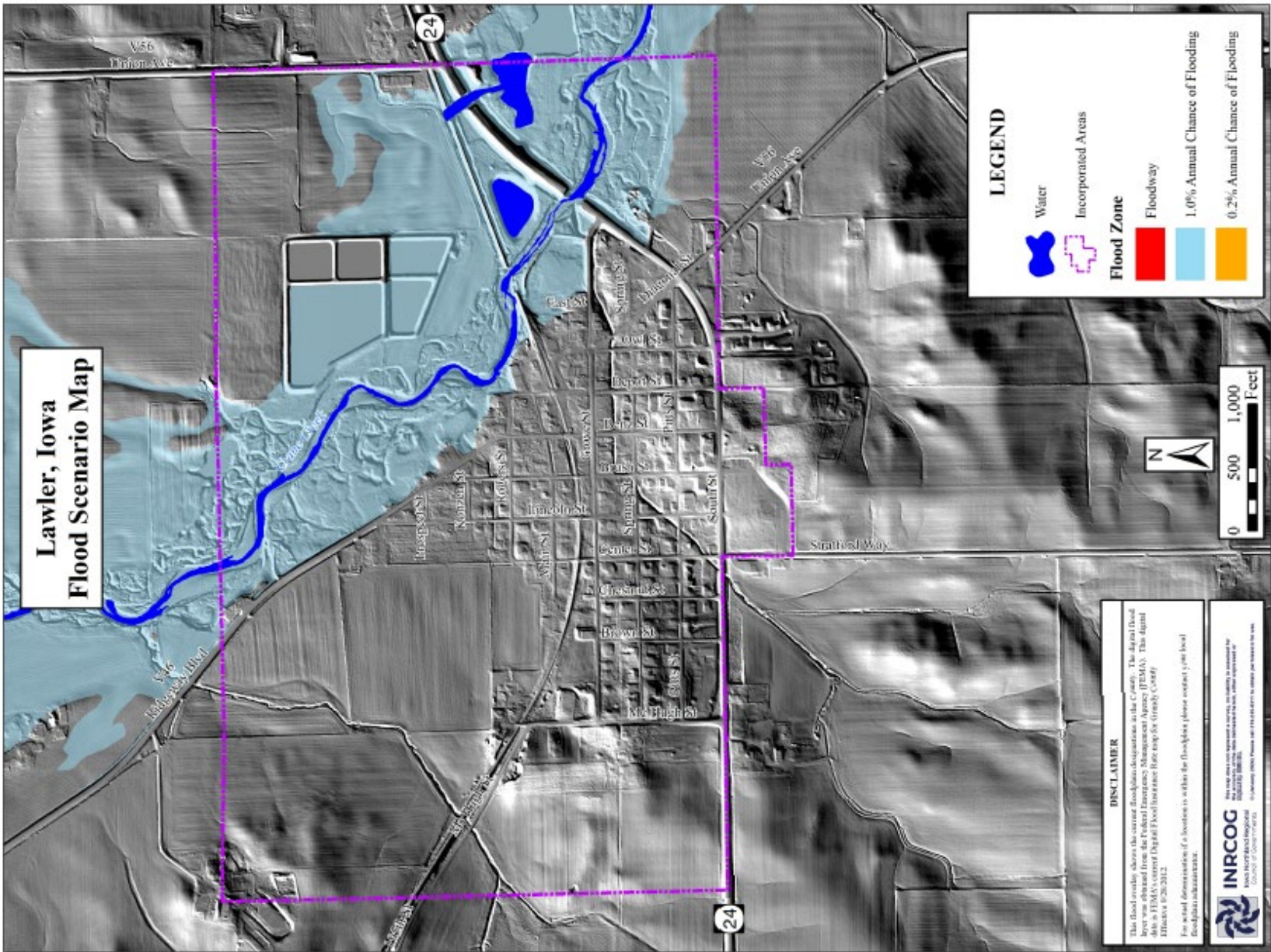
Percent of City at Risk to a Tornado	100%
# of Parcels	303
Total Value in 2023 (Structures and Dwellings)	\$14,768,300
Source: Chickasaw County Assessor's Office	

**Table 7: Potential Property Losses from the  
1% Annual Chance Flood**

Percent of City Affected by 1% Annual Chance Flood	8.5%
# of Affected Parcels	32
Total Assessed Value of Buildings and Dwellings on Affected Parcels in 2023	\$1,263,100
Source: Chickasaw County Assessor's Office	



Figure 5: Flood Plain Map







## Future Development

Recent updates in Title 44 CFR §201.6 (c) (2) (i) require this risk assessment include a section with future conditions on the type, location, and range of anticipated intensities of natural hazards.

Long term trends of climate patterns for the region were summarized in the Fourth National Climate Assessment Midwest Section.<sup>1</sup> The National Climate Report is mandated to be updated every 4 years and deliver results to Congress and President on the effects to agriculture, energy productions, land use, transportation, and human health.

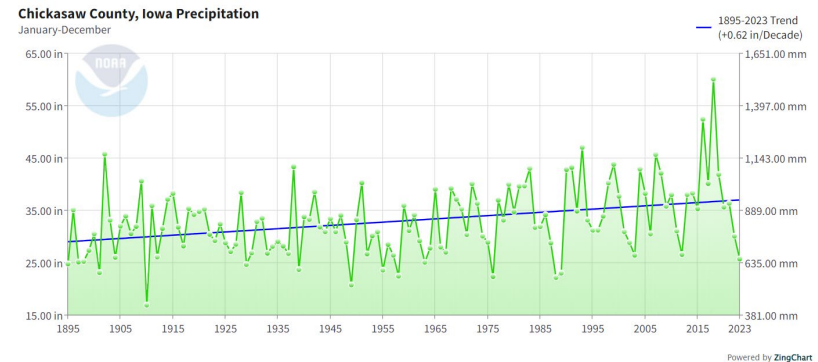
Yearly precipitation levels and annual average temperatures offer insights into future conditions of our climate system.

### Annual Precipitation Levels in Chickasaw County

Taking the monthly precipitation records from January to December between 1895 and 2023 is shown in Figure 6. The values hover between 25 – 35 inches of precipitation levels recorded. The average precipitation level for the year is plotted and a linear trend of those values is shown in Figure 7. The trend shows a growing level of annual precipitation on average of 0.62 in more than the decade before. Based on

this historical trend, precipitation is likely to continue to increase in the coming years.

**Figure 7: Historical Precipitation Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



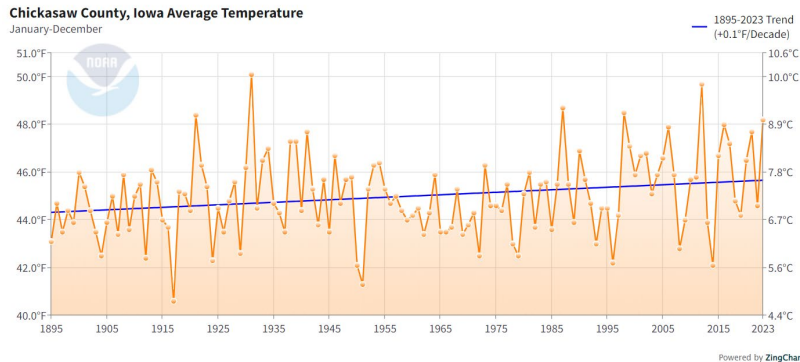
### Average Annual Temperatures in Chickasaw County

The monthly average temperature is plotted over a 12-month period from 1885 to 2023 in Figure 8. The annual average temperature is also shown with a linear trend in Figure 7. This trend shows the average temperature in Chickasaw County increasing at a rate of +0.1° F every 10 years.

<sup>1</sup> USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

<sup>2</sup> NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published February 2024, retrieved on April 15, 2024 from <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>

**Figure 8: Historical Temperature Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



## Climate Patterns from Increasing Precipitation and Higher Temperatures

### Drought

The relationship between increasing precipitation, temperature, and drought is complex, and often counterintuitive at first thinking about it. While increasing precipitation may seem like it would mitigate drought conditions, higher temperatures can exacerbate the situation in several ways:

- **Evapotranspiration:** Higher temperatures lead to increased evaporation rates from soil, bodies of water, and plants. This means that even if there is more precipitation, it may quickly be evaporated before it can effectively replenish soil moisture or water sources.
- **Changes in precipitation patterns:** Increasing temperatures can alter precipitation patterns, leading

to more intense rainfall events but also longer periods of drought between these events. This pattern can result in rapid runoff and soil erosion during heavy rain, followed by extended dry periods that contribute to drought conditions.

Overall, while increasing precipitation may provide temporary relief from drought, the combined effects of rising temperatures can outweigh this benefit, leading to more frequent and severe drought events in certain regions.

### Pest Infestation

With more humidity, the daily minimum temperature may increase across all seasons. Warming winters can increase the survival and reproduction of existing insect pests which allow new insect pests and crop pathogens to move into the Midwest region.

### Extreme Heat Domes

A heat dome is a weather phenomenon characterized by a high-pressure system that traps hot air beneath it, leading to prolonged periods of extremely high temperatures and often causing heatwaves. Extreme heat events during the summers may occur with more frequency in the Midwest.

The human impacts of extreme heat affect socially and economically vulnerable populations the most. The higher costs of energy during heat waves disproportionately impact cost-burdened households. Heat related illness may be more severe among infants, elderly populations, and those with chronic health conditions.

### Projected Trends of Natural Hazards in Chickasaw County

- Prologued drought is probably as the atmosphere holds more moisture (even pulling moisture from plants) as the temperature increases. Longer periods between weather events means there are dryer and longer periods in between these events.
- Floods (flash or major types) will increase in intensity as the atmosphere holds more moisture to drive stronger storms and drop heavier rainfall over a shorter period during an event.
- Extreme heat may occur more frequently. The human health impacts are higher among socially vulnerable populations (the elderly, infants, those with chronic health issues, cost burdened households).
- Agricultural pests and pathogens may increase in growing plants and stored grain. Warming temperatures in the spring and summer have led to rising humidity. Higher dew and moisture conditions may increase the presence of these pests or crop diseases.

### **National Flood Insurance Program**

The City of Lawler participates in the National Flood Insurance Program. The current effective map date is Sept. 28, 2012. No baseline elevations were determined for the flood hazard zones in the latest FIRM map.

Lawler has 2 policies. Those policies provide \$149,000 in coverage. There have been 2 claims for losses that had a net payout of \$9,000.

FEMA defines a repetitive loss property as an insurable building that has experienced two losses in a 10-year period in which each loss is \$1,000 or more. Lawler has 2 repetitive loss properties. The address of those properties is known to the City and not shown in this report due to privacy. However, the City will incorporate those properties in future considerations for buy back programs, or raising the ground footing out of the flood zone.

**Table 10: National Flood Insurance Program Information**

<b>Community Name</b>	City of North Washington
<b>NFIP Participant (Yes/No)</b>	Yes
<b>Designee / Agency to implement NFIP Requirements</b>	City Clerk
<b>Participant in CRS (Yes/No)</b>	No
<b>Current Effective Map Date</b>	September 28, 2012 (M)
<b>Regular-Emergency Program Entry Date</b>	August 1, 1986
<b>Total Policy Count</b>	2
<b>Total Coverage</b>	\$149,000
<b>Total Losses</b>	2
<b>Total Net Dollars Paid</b>	\$8,999

(M) = No flood elevations determined - All Zone A, C, and X

Source: Source: FEMA National Flood Insurance Program, Data and Analytics, HUDEX Report. <https://nfipservices.floodsmart.gov/reports-flood-insurance-data>

## Hazard Risk Assessment

The top three hazards from the risk assessment are:

1. Flash Flooding
2. Levee/ Dam Failure
3. Extreme Heat



### Methodology

This risk assessment identifies how people, property, and structures would be harmed or damaged by one of the listed hazard events. Iowa Homeland Security and Emergency Management Department (Iowa H.E.S.M.D.) provided the hazard risk score formula for determining the level of risk used in this analysis.

Risks to a hazard event may differ across geographical locations or even differ based on certain times of year. For example, tornado season in Iowa is usually in May and tornadoes have the highest risk during this time due to change in weather patterns from the western and central Gulf of Mexico causing higher chances of extreme weather.

For this analysis, four hazard risk factors are rated on a scale between 1 and 4 by committee participants after reviewing profiles of each hazard with the planning coordinator. Information was shared with the committee which described the hazard, historical occurrences, impact, duration, and

warning time. Participants used this information to strengthen their understanding to rate each hazard factor.

### Hazard Risk Score Formula

$$\begin{aligned} &[\text{Probability}] \times 45\% + [\text{Magnitude or Severity}] \times 30\% \\ &+ [\text{Warning Time}] \times 15\% + [\text{Duration}] \times 10\% \\ &= \text{Final Hazard Assessment} \end{aligned}$$

*Source: Provided by Iowa H.S.E.M.D.*

Hazard scores were collected during the 2<sup>nd</sup> county committee meeting. INRCOG planners calculated the hazard risk score for each hazard based on the formula in this section. Results for North Washington are on page 21.

The factors in the hazard risk calculation are defined and the score values for each part is summarized in the following sections:

Score Value vs. Hazard Risk Level	Description of hazard with this rating
Scores with a value closer to 1: <u>Low risk hazard</u>	Hazard is not likely to affect people or property because the likelihood is minimal.
Scores with a value closer to 4: <u>High risk hazard</u>	The hazard has historically occurred and may have significant impacts to people and property.

### Probability

The probability score reflects the likelihood of the hazard occurring in the near future. Historical data of the hazard event occurring in Chickasaw County or Iowa informed the likelihood of future occurrence.

Probability Score Definitions		
Score	Description	
<b>1</b>	Unlikely	<i>Less than 10% probability in any given year (up to 1 in 10 chance of occurring), a history of events is less than 10% likely or the event is unlikely but there is a possibility of its occurrence.</i>
<b>2</b>	Occasional	<i>Between 10% and 20% probability in any given year (up to 1 in 5 chance of occurring), history of events is greater than 10% but less than 20% or the event could possibly occur.</i>
<b>3</b>	Likely	<i>Between 20% and 33% probability in any given year (up to 1 in 3 chance of occurring), history of events if greater than 20% but less than 33% or the event is likely to occur.</i>
<b>4</b>	Highly Likely	<i>More than 33% probability in any given year (event has up to a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.</i>

### Magnitude or Severity

The magnitude or severity of the hazard event is measured by the level of impact on the human environment. Property damage is assessed by the whole planning area.

Magnitude or Severity Score Definitions		
Score	Description	
<b>1</b>	Negligible	Less than 10% of property severely damaged, the shutdown of facilities and services for less than 24 hours, and/or injuries/illnesses treatable with first aid
<b>2</b>	Limited	10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
<b>3</b>	Critical	25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
<b>4</b>	Catastrophic	More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.

### Warning Time

This should be taken as an anticipated warning time.

The warning time score assesses the ability to warn a population before the hazard occurs. The values of the score range from 1 (at least 24 hours) to 4 (minimal or no warning time).

For many of the climate hazards, there is a considerable amount of warning time as opposed to the human-caused hazards (transportation and hazardous materials incidents) that occur instantaneously or without any significant warning time.

Warning Time Score Definitions		
Score	Description	
1	Forecasted	More than 24 hours warning time.
2	Likely	12 to 24 hours warning time.
3	High Chance	6 to 12 hours warning time
4	Imminent	Minimal or no warning time (up to 6 hours warning)

### Duration

The duration is the time of a typical or expected hazard event to occur. For an earthquake or traffic accident that is a score of 1. For infrastructure failure, it is likely a 4.

Table 6 displays rated risk scores for each associated hazard. This assessment was completed by city representatives based on hazard profiles prepared for the planning committee.

Duration Score Definitions	
Score	Description
1	Less than 6 hours
2	Less than 1 day
3	Less than 1 week
4	More than 1 week

Table 6: Hazard Risk Assessment					
Hazards	Probability	Magnitude	Warning Time	Duration	Score
Flooding - Flash	3	3	4	2	3.1
Levee/Dam Failure	2	3	4	4	2.8
Extreme Heat	3	2	1	4	2.5
Severe Winter Storm	3	2	1	3	2.4
Flooding - Riverine	2	2	2	4	2.2
Thunderstorm/ Lighting/ Hail	3	2	1	1	2.2
Tornado/Windstorm	3	2	1	1	2.2
Drought	2	2	1	4	2.1
Hazardous Materials	1	2	4	4	2.1
Earthquake	1	1	1	1	1.0
Expansive Soils	1	1	1	1	1.0
Grass/Wildland Fire	1	1	1	1	1.0
Landslide	1	1	1	1	1.0
Sinkholes	1	1	1	1	1.0
Animal/ Crop/ Plant Disease	1	1	1	1	1.0
Pandemic/ Endemic Human Disease	1	1	1	1	1.0
Infrastructure Failure	1	1	1	1	1.0
Radiological	1	1	1	1	1.0
Terrorism	1	1	1	1	1.0
Transportation Incidents	1	1	1	1	1.0

Source: Completed by City Representative. Calculated score completed by INRCOG



## Hazard Mitigation Goals

### Goals for Hazard Mitigation in Lawler, Iowa

The following list of goals was developed by planning committee participants from the associated jurisdiction. Goals 1 through 7 were developed in the previous 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. The planning committee participants chose to adopt the same goals and add additional goals. Goals 8 through 11 were developed by planning committee members of which Lawler representatives provided the components that developed this Plan and Implementation Strategy.

**Goal #1** Reduce the chance of and impact of flooding in the community.

**Goal #2** Take measures to minimize the occurrence of injuries and loss of life due to hazards.

**Goal #3** Take measures to minimize or eliminate damage that may occur as a result of hazards.

**Goal #4** Increase the city's ability to respond to natural disasters and man-made hazards.

**Goal #5** Return to the community to similar or improved pre-event conditions as quickly as possible following a disaster event.

**Goal #6** Incorporate the City Plan into the proposed Multi-Jurisdictional Plan.

**Goal #7** Continually re-assess and re-evaluate the plan and mitigation activities.

**Goal #8** Create a hazard mitigation strategy for flood plain properties.

**Goal #9** Enhance local transportation safety by installing or replacing railroad crossing systems/signage in Lawler.

**Goal #10** Enhance the safety of Lawler residents with a modern warning system, including updated tornado sirens and register for Alert Iowa notifications through the online registration portals.

**Goal #11** Ensure safe construction of all buildings in Lawler by adopting State Building Codes per Iowa Code Chapter 103A as the local construction standards for all building improvements: newly constructed, renovated, repaired work that may need a permit.

**Goal #12** Ensure mutual aid agreements for all emergency response services are renewed and up to date.

## **Mitigation Activities by Type**

Mitigation actions and activities in this Plan will be organized according to these 5 categories.

### **Emergency Services in Alta Vista**

#### Chickasaw County Emergency Management Agency

Lawler works with the Chickasaw County Emergency Management Coordinator, based out of the City of New Hampton, on various safety and emergency events. The Emergency Management Coordinator works in conjunction with local fire, rescue, police, and government officials to draft and implement workable emergency action plans in the community. The Chickasaw County Emergency Management Coordinator is Jeff Bernatz.

#### Law Enforcement

The community has a 28E agreement in place with Chickasaw County Sheriff's Department that will provide law enforcement services. Services include patrol in the city. The sheriff deputies provide a response time to the city up to 30 minutes and will provide extra people power when notified by the city.

#### Fire Protection and EMS Services

Fire protection is provided by Lawler's Fire Department located at 302 E. Grove Street in Lawler, Iowa. There are 16 volunteer firefighters that have fire, first response, HAZMAT, and emergency management training.

Equipment used by the Lawler Fire Department include the following:

- 1975 Ambulance
- 1982 Chevy Truck/Grass Buggy
- 1985 Chevy Blazer
- 1995 Ford/Central States Pumper
- 2007 Fouts Tanker with Pump
- 2016 Peirce Tanker with Pump
- 2001 Ford F350 Grass Buggy

#### EMS Services

Chickasaw Ambulance Service provides ambulance service to area hospitals. Chickasaw Ambulance Service is a private company that contracts service with local entities. The company is based out of New Hampton, approximately 14 miles southeast of Lawler.

Chickasaw County Rescue Squad also provides service in Lawler. There are 42 EMT certified individuals who volunteer to respond to emergency calls on a needed basis in the county.

#### Medical Facilities

There are no medical facilities in Lawler. The closest facility is the MercyOne New Hampton Medical Center in New Hampton, IA. This is the only medical facility with an ER unit located in the county. MercyOne has 11 private inpatient rooms and cares for over 20,000 outpatients each year.

MercyOne New Hampton offers a full range of services in an inpatient and outpatient setting as well as 24-hour

emergency care, surgical services, primary care clinic, therapy and rehabilitation, diagnostic services, speech and occupational therapy, Senior Life Solutions and specialty clinics.

#### HAZMAT Response Teams

Lawler contracts with Northeast Iowa Response Group for response to hazardous material spills. The Northeast Iowa Response Group is a division of Waterloo Fire Rescue as is the Hazardous Materials Regional Training Center. The Training Center provides training to fire departments and companies from around the state and country. Not only is this a training center, but it also serves as a hazardous materials quick response unit to Black Hawk County, surrounding counties, and many municipalities in a ten county region. The Unit provides local fire departments with hazard materials emergency procedures thus reducing additional contamination. An evacuation plan is also in place in conjunction with the activities of the local department. Contact information for the facility is as follows: Hazardous Materials Regional Training Center, 1925 Newell Street, Waterloo, Iowa 50707, Phone: (319) 291-4275, Toll Free: (800) 291-4682, Fax: (319) 291-4285

The jurisdiction also partners with the Northeast Iowa Response Group for assistance in responding to any methamphetamine labs located in the city limits. The Response Group assists the Police Departments in containment of the site and disposal of hazardous chemicals.

#### Warning Systems in Lawler

1. *Tornado Sirens*

The outdoor early warning system consists of one siren that is activated either by the Sheriff's Department or the Emergency Management Office. The existing siren was installed in 2011 and has a battery backup.

2. *NOAA Weather Radio* broadcasts are also available in the community. NOAA Radio's provide up to the minute weather related alerts. Other locations that warnings and watches can be found are television, Internet, and radio.

3. *AlertIowa notification system*

AlertIowa is a mass emergency notifications system for all residents through an online registration process. Chickasaw County's Alert Iowa system is managed by the Chickasaw County Emergency Management Agency. The County will use their emergency notification network for all of the following events: blizzards, flash flooding, severe thunderstorms, and tornadoes.

#### **Previous Education and Outreach Projects in Lawler**

The City of Lawler provides annual training for fire department personnel, law enforcement personnel, and ambulance crews to address all hazards.

Lawler developed a NOAA weather radio awareness program, tree inspection and trimming program for dead Ash trees from EAB infestation in 2014,

### Previous Natural Resource Protection in Lawler

The City of Lawler is regularly impacted by flood events, which have resulted in property damage and the loss of a bridge. The City established a levee on the eastern edge of town designed to keep the Crane Creek within its banks and protect the local park on that side of the community. Sandbagging has also been successful in preventing major flooding from Crane Creek.

### Previous Structural Projects in Lawler

The City completed the installation of improved warning equipment at railroad crossings.

### Local Plans and Regulations in Lawler

Lawler completed a local plan and regulation assessment. The results are shown in the table below.

Table 7: Local Capability Assessment	
Community	City of Lawler
Previous HMP Participant?	Yes
Comprehensive Plan?	No
Building Code?	No
Zoning Ordinance? RR=restricted residential	No
Subdivision Regulations?	No
Floodplain Management Ordinance?	Yes
Tree-Trimming Ordinance?	No
Storm Water Ordinance?	No
Snow Removal Ordinance?	No

### Components for Implementing the Plan

Presented below are tables prepared in consultation with the Lawler's planning committee's representative and INRCOG. This is a guide for a strategic approach when implementing the city's efforts in hazard mitigation. The tasks in these tables are drawn from the city's capabilities, goals, and hazard risks presented in previous sections of this Plan.

The designated agency or staff presented with each line item was written by Lawler's planning committee.

Notes about the tasks (listed as line items) in each table.

- Each task (line item) stands on its own so it can be completed whenever possible.
- Each action item is not limited to the details presented below and may change based on future conditions.
- The tasks were categorized based on mitigation type. The mitigation types are not shown in any order (no priority over the other). This is presented to help with the general understanding of how hazard mitigation may feed into the City's existing or future priorities.

### Priority Level

The priority level was informed through discussions among planning committee members who considered potential benefits of implementing the activity, some hurdles that the city may face in implementing the action step, and the drawbacks of implementation. *Committee representatives considered a cost-benefit approach.*

## Timeframe

Timeframe	Description
Immediate	1-12 months
Short Term	1-5 years
Mid-Term	5-10 Years
Long-Term	More than 10 Years

## Estimated Costs

Cost estimates are based on the associated costs of additional staffing that may or may not be needed, time for planning/meetings/coordinating, and cost of the proposed action/program/ project.

Cost	Estimated Cost Range
Minimal	Less than \$10,000
Low	\$10K to \$99K
Moderate	\$100K to \$299K
High	Greater than \$300K

## Hazard Mitigation Implementation Strategy by Type

**Table 9: 'Education and Awareness' Type Mitigation Activities**

Description: These types of actions keep residents informed about potential natural disasters.

<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
Low	Distribute a monthly newsletter to Lawler residents for better communication and outreach.	All	City Clerk	Immediate: 1 month - 12 months	Minimal 0-\$10K	City general fund
Low	Get residents to register on Alert Iowa with outreach and education initiatives	Tornado	City Council	Immediate 1 - 12 months	Minimal 0-\$10K	County EMA, City General Fund
Medium	Ensure proper training and certification of floodplain manager	River flooding, flash flooding	City Clerk	Short Term 1-3 years	Minimal 0-\$10K	County EMA, City General Fund

**Table 8: 'Emergency Services' Type Mitigation Activities**

Description: Actions that protect people and property during and immediately after a disaster or hazard event.

<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
High	Submit an application to receive grant funds to purchase new siren	Tornado	City Council	Short term 1-3 years	Low \$10K - \$99K	Hazard Mitigation Grant Program
High	Work with County to adopt the mutual aid agreements for Lawler's Fire Response Services	Wild/grass fire	Fire Dept, EMA	Immediate 1 month - 6 months	Medium \$100K- \$300K	City general fund

**Table 11: Structure and Infrastructure Project Type Mitigation Activities**

Description: Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
High	Prepare city demolition strategy to address severely dilapidated/dangerous structures (657A acquisition). Strategize how to acquire, demo, and redevelop site as infill opportunity	Tornado/ Windstorms, Thunderstorms with Strong Hail, Winter storm	City council	For Strategic planning activity: Short term 1-3 years	Minimal 0-\$10K	City general fund
Medium	Find housing partners (developers, nonprofits, regional planning org) to develop infill housing	Tornado/ Windstorms, Thunderstorms with Strong Hail, Winter storm	City council	Immediate 1 -6 months	Moderate 100K-300K	City general fund
Medium	Incorporate demolition costs with CBDG revitalization districts, urban renewal districts, or loan programs	Infrastructure failure	City Council	Short term 1-3 years	Moderate 100K-300K	City general fund CBDG revit, urban renewal grants, revolving loan programs



**Table 11: Structure and Infrastructure Project Type Mitigation Activities**

Description: Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
Medium	Prioritize dilapidated housing that poses the greatest threat to health, safety, and welfare and pursue one property acquisition through 657A	Infrastructure failure, Tornado/ Windstorms, Thunderstorms with Strong Hail, Winter storm	City council	Long Term 5-10 years	High \$300K +	City general fund, CBDG funding, Revitalization grants, USDA rural development programs, Iowa Nuisance Property & Abandoned Building Remediation Loan Program
Medium	Perform upkeep services for new railroad crossing improvements	Transportation Incidents	City Council	Moderate 5-10 years	High \$300K +	City general fund
Low	Widen and clear the southwest drainage channel of Crane Creek and widen Bush Street culver	Riverine Flooding, Flash Flooding	City Council	Long Term 5-10 years	High \$300K +	City general fund

**Table 12: Local Plans and Regulations Mitigation Activities**

Description: Actions by administrative or regulatory processes which direct how land and buildings are developed and built. These actions include regulations by public entities to reduce hazard losses.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
High	Control flooding of vulnerable low lying areas within Lawler with flood plain mitigation strategy	River flooding, flash flooding	City Council	Short term 1-3 years	High \$300K +	City general fund
Low	Create an annual fire inspection program for commercial and industrial properties	Fire, Infrastructural Failure	City Council and Lawler Fire	Short term 1-3 years	Medium \$100K - \$300K	City general fund
Medium	Work with local utility provider on how to prevent/prepare, respond, and recover from hazard events.	Windstorm/ Tornado, Thunderstorm with Heavy Hail and Lightning, Winterstorms	City Council and Lawler Municipal	Long Term 5-10 Years	High \$300K	Utility Provider

# City of Nashua, Iowa

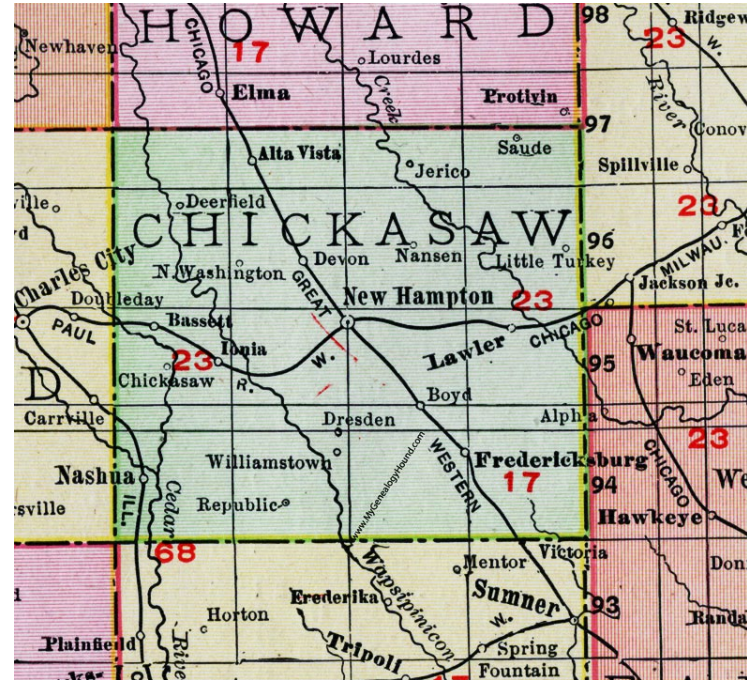
## Hazard Mitigation Plan 2024 Update

### Appendix F of Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan

Funded by the Chickasaw County Emergency  
Management Agency

Prepared by Iowa Northland Regional Council  
of Governments (INRCOG)

May 2024



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## Adopting Plan by City Council

### Resolution 24-34

#### **A RESOLUTION OF THE CITY COUNCIL OF NASHUA, IOWA, ADOPTING THE CITY OF NASHUA, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.**

WHEREAS, the City of Nashua City Council recognizes the threat that natural hazards pose to people and property within Nashua; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of this Plan, hereby known as the City of Nashua, Iowa Hazard Mitigation Plan 2024 Update (or Plan), in order to remain eligible for federal hazard mitigation grant programs; and

WHEREAS, the participants representing the City of Nashua served and participated in the formulation of said Plan as part of the the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Nashua from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the Plan; and


WHEREAS adoption by the City of Nashua demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.


NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF NASHUA, IOWA, THAT:

Section 1: In accordance with local regulations, the City of Nashua adopts the City of Nashua, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of Nashua may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of Nashua to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 3rd day of June 2024.

ATTEST:

  
City Clerk, John Ott

  
Mayor Harold Kelleher



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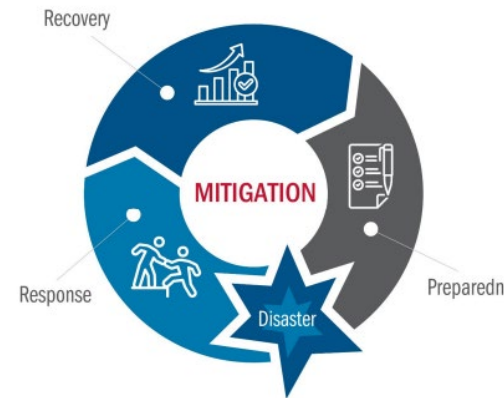
## About

The City of Nashua developed this Hazard Mitigation Plan to update their previous plan. That Plan was part of the 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. The 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan is a sequential 5-year update to the previous hazard mitigation strategy that was approved by FEMA in 2019. Federal hazard mitigation grant programs require an updated hazard mitigation plan approved by FEMA to be in good standing to remain eligible for grant funding. The Plan was developed to meet the regulations for hazard mitigation plans in Title 44 CFR § 201.6.

Elected officials, city clerks, planners, first responders, and other stakeholders were invited to attend planning committee meetings as participants while they completed worksheets that were returned to the Chickasaw County's Emergency Management Agency (EMA) and INRCOG. Chickasaw County's EMA initiated and funded this effort for all participating communities and contracted INRCOG to coordinate a multi-jurisdictional approach to this plan development process.

Participating communities included all nine (9) incorporated jurisdictions in Chickasaw County. Other participating members were representing their respective County departments. The school district superintendents of three public school districts participated and represented their jurisdictions. Four (4) committee meetings were held between March 19<sup>th</sup> and April 23<sup>rd</sup> wherein each participant provided data and completed worksheets to develop their hazard mitigation plans.

## FEMA's Emergency Management Cycle



### What is Hazard Mitigation?

Hazard Mitigation is any *sustained* action taken to reduce or eliminate long-term risk to life and property from hazards.

The emergency management cycle has 4 phases:

- **Preparedness** is the assessment of potential risks, hazards, and vulnerabilities that a community may face. The development and updating of activities, programs, and systems before an event occurs is included in this phase of the cycle.
- **Response** is the immediate effects after a disaster.
- **Recovery** is a long-term phase that focuses on returning the community to normal after a disaster.
- **Mitigation** is an action that can occur at any phase.

## The Benefits of Hazard Mitigation

For local governments, there are benefits in knowing hazards, their risks, and planning for mitigation strategies.

Those include:

- ✓ An increased understanding of natural, technical, and man-made hazards faced by communities.
- ✓ Taking an opportunity to create more sustainable and disaster-resistant communities.
- ✓ Participating in this collaborative intergovernmental effort is cost effective for all participants.
- ✓ Using limited resources on hazards that have the biggest impacts on a community.
- ✓ Reducing or preventing damage to existing structures, subsequently reducing repair costs.
- ✓ Identifying vulnerable populations to establish equitable outcomes.
- ✓ Setting long-term goals that can be compatible with city policies or planning documents.

## The Planning Process

In emergency management planning, reducing the community's risk to natural hazards is a multi-step process which involves collaboration among stakeholders, assessing risk and vulnerabilities of hazards facing the community, establishing actions or activities to reduce risk, and assembling an organized strategy to carry out all mitigation activities.

Participants in the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee provided the information in this plan including community profile information, hazard mitigation goals, mitigation activities/action, updates to existing mitigation activities, and components that make up the implementation strategy such as prioritization, designated agencies/persons, estimated costs, and overall strategic direction of this plan.

### *Participants in the Plan Followed This 5 Step Process*



## Community Data Sources

Population data is based on 2020 decennial Census data. The 2022 American Community Survey 5-year estimates are the latest and most reliable survey data sets to understand what is taking place in the county and each city. Most counties, cities, and towns rely on 5-year estimates. Employment, workforce, and industry figures in this plan are estimates that have a margin of error.

It is important to note that the ACS estimates used for rural communities will have a degree of uncertainty associated with them, called sampling error, because they are based on a sample. In general, the larger the sample, the smaller the level of sampling error. Rural communities tend to have smaller samples than larger cities, so the “margin of error” – a measure of the precision of an estimate at a given level of confidence – likely will be larger for rural areas.

Crash data along roadways within each jurisdiction is collected between the period of 2019 and 2023. Using a map tool interface, the data was taken at a city level and presented to understand incident severity, casualties, and property damage from reported accidents. Accident data is added to the site daily and accessible through an online website, <https://icat.iowadot.gov/>.

In the risk analysis section of this Plan, estimates of property loss are measured using mapping of hazardous zones. For the vulnerability risk assessment, flood prone homes were determined using the boundaries of the 100 year (1%) annual chance flood zone. The value of potential property loss was derived from the 2023 assessed dollar value of

structures and dwellings on affected parcels provided by the Chickasaw County Assessor’s Office.



*The Cedar Lake Dam was completed in March 1990. The Cedar Lake Dam replaced an original dam that was left to age and could no longer function correctly. The original dam eventually failed and drained the Cedar Lake leaving Nashua without its iconic lake. Today, the lake is full once more and flowing over the dam. Residents celebrate the Cedar Lake Dam every year during the Water Over Our Dam Days.*

## City Profile

**Jurisdiction: City of Nashua**

**County: Chickasaw County**

**Population (2020): 1,551**

The City of Nashua is in the lower west quadrant of Chickasaw County. US Highway 218 and Iowa Highway 346 intersect in Nashua. The Little Cedar River converges with the Cedar River at a confluence point located in Nashua.

In 2020, the city's population was 1,551 with 96% being White and the median age of 41. Working aged residents (15-60 years) made up 59% of the population. Children and teens (younger than 15 years) made up 20% of Nashua's population while older adults (older than 65 years) made up 21%.

The median household income in 2022 was \$60,000. The unemployment rate was 1.2%. Most people (94%) commuted to work, and about 54 people (6% of the workforce), worked from home. The top three industry sectors in Nashua with the largest workforce are as follow (in order from highest to lowest): 1) Construction; 2) Educational Services, and health care, and social assistance; and 3) Professional, scientific, management or administrative, and waste management services.

**Figure 1: Map of Chickasaw County**

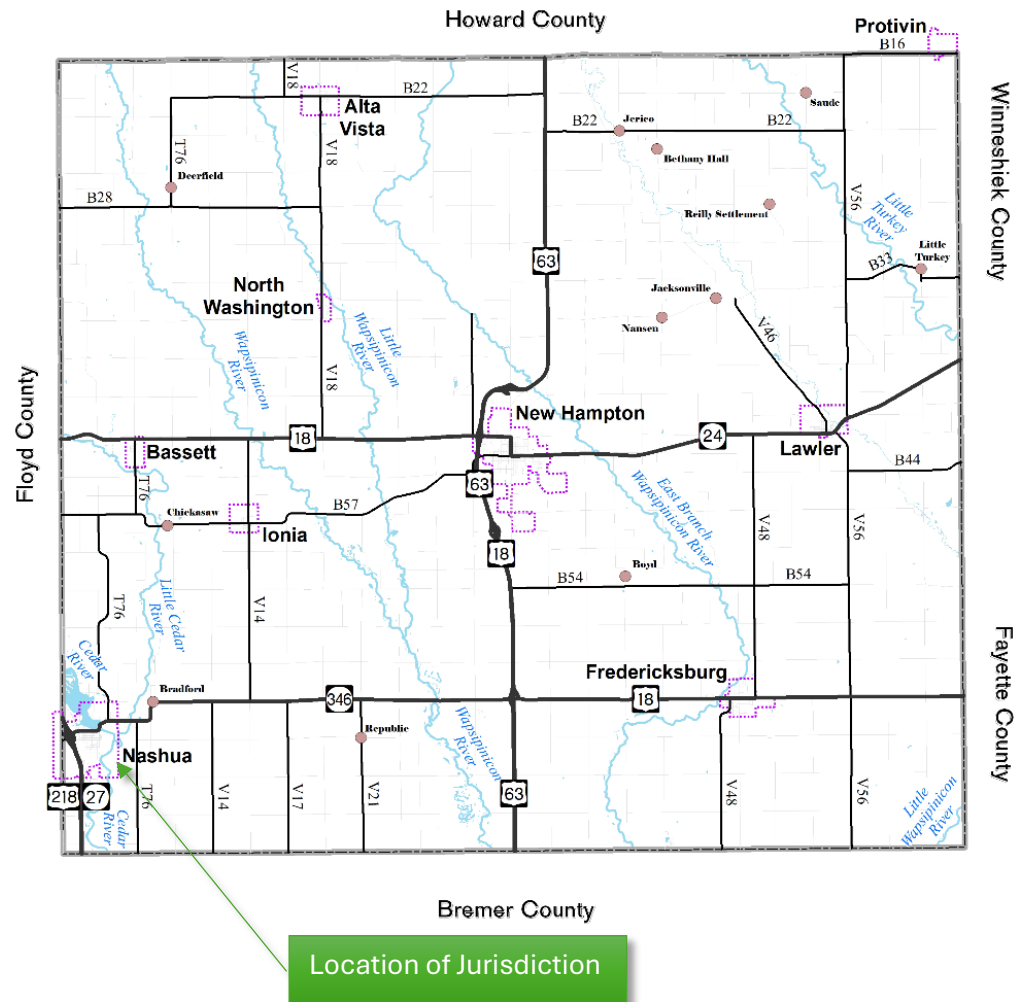


Table 1: Population Data (2020)		
City of Nashua		
	Total	% of Population
Total population	1,551	100%
AGE		
Under 5 years	99	6%
5 to 9 years	98	6%
10 to 14 years	121	8%
15 to 19 years	95	6%
20 to 24 years	72	5%
25 to 29 years	91	6%
30 to 34 years	93	6%
35 to 39 years	94	6%
40 to 44 years	80	5%
45 to 49 years	90	6%
50 to 54 years	80	5%
55 to 59 years	117	8%
60 to 64 years	95	6%
65 to 69 years	89	6%
70 to 74 years	80	5%
75 to 79 years	56	4%
80 to 84 years	49	3%
85 years and over	52	3%
Median Age	40.8	-
RACE		
White	1,483	96%
Black or African American	5	0%
Hispanic or Latino (of any race)	8	1%
American Indian and Alaska Native	1	0%
Asian	1	0%
Native Hawaiian/Other Pacific Islander	0	0%
Some Other Race	2	0%
Two or More Races	59	4%
Source: 2020 Census		

Table 2: Employment Data (2022)		
City of Nashua		
	Value	% of Population
Median Household Income	\$60,000	-
Unemployment Rate (2022)	1.2%	-
Workers that commute to work	775	94%
Workforce that works from home	54	6%
Source: 2022 American Community Survey 5-Yr Estimates		

Table 3: Employment Industry Data (2022)		
City of Nashua		
Workforce Industry	# of Workers	% of Workforce
Workforce	838	100%
Agriculture, forestry, fishing and hunting, and mining	43	5%
Construction	24	3%
Manufacturing	242	29%
Wholesale trade	21	3%
Retail trade	69	8%
Transportation -warehousing, utilities	61	7%
Information	7	1%
Finance and insurance, and real estate and rental and leasing	59	7%
Professional, scientific, and management, and administrative and waste management services	70	8%
Educational services, and health care and social assistance	150	18%
Arts, entertainment, and recreation, and accommodation and food services	26	3%
Other services, except public administration	46	6%
Public administration	20	2%
Source: 2022 American Community Survey 5-Yr Estimates		

## Highway Traffic and Crash Data

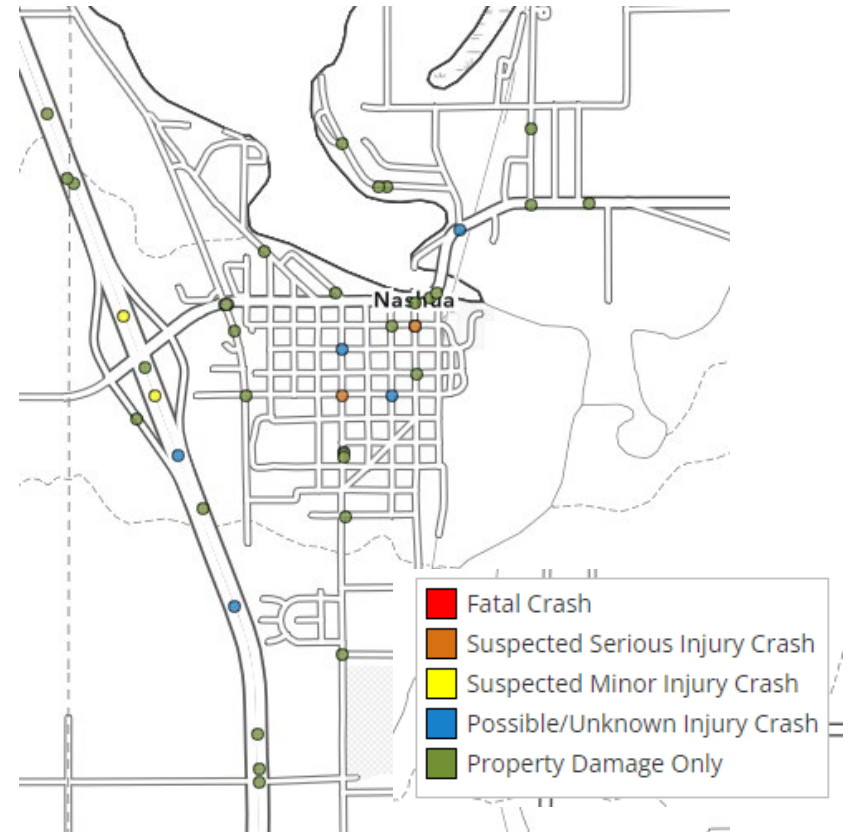
Based on Iowa DOT crash data, between 2019 and 2023 there have been 44 incidents. No fatalities or serious injury crashes occurred. There were 33 incidents involving property damage that totaled \$247,800 over the 5-year period. See Figure 2 for a map of the types of car crashes that occurred within Nashua over this 5-year time period.

**Table 4: Crash Data from 2019-2024**

<b>Total Crashes</b>	44
<b>Crash Type by Severity or Causalities</b>	
<b>Fatal</b>	0
<b>Suspected Serious Injury</b>	2
<b>Suspected Minor Injury</b>	2
<b>Unknown</b>	6
<b>Property Damage Only</b>	33
<b>Property Damage Total</b>	\$247,800

Source: Iowa Crash Analysis Tool (ICAT) provided by Iowa DOT

**Figure 2: Iowa Crash Analysis for All Traffic Incidents (2019-2023)**



Source: Iowa DOT



## Housing Data

The City of Nashua has 646 occupied housing units. Nearly 83% of the existing occupied housing stock are single family type housing. About 11 housing units (2% of housing stock) are 2-unit type apartments. About 29 housing units (5%) are multi-family apartment type housing that have 3 or more

**Table 5: Housing Data (2022)**

City of Nashua		
	Total	% of Occupied Units
Occupied housing units	646	100%
<b>Housing Unit Type</b>		
1, detached	535	83%
1, attached	26	4%
2 apartments	11	2%
3 or 4 apartments	29	5%
Mobile home or other type of housing	21	3%
<b>Year Structure Built</b>	Total	% of Occupied Units
2020 or later	7	1%
2010 to 2019	12	2%
2000 to 2009	43	7%
1980 to 1999	69	11%
1960 to 1979	172	27%
1940 to 1959	94	15%
1939 or earlier	249	39%
<b>House Heating Fuel</b>	Total	% of Occupied Units
Utility gas	461	71%
Bottled, tank, or LP gas	7	1%
Electricity	172	27%
Fuel oil, kerosene, etc.	0	0%
Coal or coke	0	0%
All other fuels	6	1%
No fuel used	0	0%

Source: 2022 American Community Survey 5-Year Estimates

units. About 21 housing units (3%) are either mobile homes or other types of housing.

The biggest portion of Nashua's housing stock was built before 1940 (39%). About 47% of the housing stock is under 60 years old. Most homes heat their units with gas (87%). Black Hills Energy is the gas utility provider. See Table 5 on the following page for more housing data.

## Community Utility Providers

MidAmerican Energy provides utility electric services and natural gas services to Nashua. Quest is the service provider for telephones and broadband internet services. Residents receive water service from the City of Nashua. The City contracts sewer services to PeopleService, Inc. Jendro Sanitation provides refuse / recycling collection services for Nashua.

**Table 6: Utility Providers**

City of Nashua	
<i>Electric</i>	MidAmerican Energy
<i>Natural Gas</i>	MidAmerican Energy
<i>Telephone/Internet</i>	Butler-Bremer Communications
<i>Cable TV</i>	Butler-Bremer Communications
<i>Water Services</i>	City of Nashua
<i>Sewer Services</i>	Ion (Contracted)
<i>Sanitation</i>	Jendro Sanitation



## Vulnerable Assets

### People

#### *Vulnerable Age Groups*

Both younger and older aged groups are likely to require assistance with physically moving to shelters or finding safety. Elderly residents may not have a personal vehicle to move away from a hazard quickly. Cognitive impairments among older adults may cause some to get easily confused.

#### *Households Facing Poverty or With Limited Income*

Families or older adults living at, near, or below poverty are more likely to be impacted by hazards than other households with higher incomes. The costly repairs from a tornado or derecho for a low-income household may be more adversely affected than another household that has the same damage but may be able to afford the repairs without much change to their lifestyles or needs. That disparity is also different during extreme weather events such as a heat wave. Low-income households may not be able to afford the electricity to run air conditioning and many may face complications that involve heat stroke, fatigue, or death due to their age (infants or the infirm) and health conditions (obesity, heart conditions, diabetes).

#### *Nashua's Vulnerable Populations*

In Nashua, 56 (8.7% of occupied households) households live below the poverty level. About 38% of occupied households have at least one elderly occupant (60 years and over). About 150 households have an elderly resident (65 years and over) live alone.

Most households in Nashua have access to a vehicle. However, 41 households (6%) lack access to any vehicle. Of those with lack of access to a vehicle, 23 are owner-occupied and 18 are renter-occupied. Nearly 29% of households have a person living with a disability. This is broadly defined from the data estimates for Nashua. Persons with mobility disabilities may have higher risks to sudden natural hazards such as tornados or earthquakes than others.

Manufactured homes are unsafe in a tornado. Fatality rates during tornados are higher for those that occur in mobile/manufactured homes than those that occur in homes with permanent foundations<sup>1</sup>. An alternative shelter should be identified prior to a tornado watch or warning. There are possibly 21 mobile homes estimated in Nashua. With an average household size of 2.2 persons, that potentially puts 4 people at a greater fatality risk than others.

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<sup>1</sup> 1: S.M. Strader, W.S. Ashley, Fine-scale assessment of mobile-home tornado vulnerability in the Central and Southeast U.S, Weather Clim. Soc. (2018)

## Critical Facilities

### Water Supply and Distribution

The City of Nashua draws its water from three active wells and draw two aquifers: the Jordan and Devonian aquifer. These wells produce approximately 1,625 gallons of water per minute. The City has elevated water supply with a total capacity of 300,000 gallons. Typical daily usage is approximately 140,000 gallons per day, and just over 50 million gallons are used annually in the city. Peak consumption is approximately 0.25 million gallons per day (MGD). The rated capacity of the water plant is 1.296 MGD.

### Wastewater Treatment Plant

The Nashua wastewater treatment plant is located along the Cedar River near the southern part of the city's boundary area. The facility is a Grade III active sludge sewage treatment plant with two aeration tanks. Chemical disinfection is used in the summer before the treated disinfected water is discharged into the Cedar River.

The average dry load (demand) of the system is designed at 122,000 gallons per day. Peak load is approximately 300,000 gallons per day. The design capacity of the system is 720,000 gallons per day. Inflow and infiltration account for the increase from average to peak flows in the system.

### Cedar Lake Dam

In 2023, Iowa DNR Dam Safety Division contracted Houston Engineering, Inc. to develop a report titled the Iowa High Hazard Dam Assessments: Dam Risk Reviews and Rankings.

Thirty-nine (39) dams were assessed in Iowa for potential failure modes. The objective of this study was to collect dam data from inspection reports, as-built plan sets, geotechnical reports, hydrology and hydraulic reports, and other studies. An overview of the Cedar Lake Dam is located below in Table 7.

**Table 7: Cedar Lake Dam Information**

<b>Owner:</b>	City of Nashua	<b>Last Inspection Date</b>	08/31/2023
<b>National Inventory ID</b>	IA01314	<b>Condition Assessment</b>	Fair
<b>Hazard Classification</b>	Significant	<b>Dam Height (ft)</b>	20
<b>Structure Classification</b>	Major	<b>Surface Area (acres)</b>	405
<b>DNR Permit</b>	1989-209	<b>Normal Storage (acre-ft)</b>	3,245
<b>County</b>	Chickasaw	<b>Storage at Emergency Spillway (acre-ft)</b>	0
<b>Designer</b>	Warzyn Engineering	<b>Maximum Storage (acre-ft)</b>	5,242
<b>Year Completed</b>	1917	<b>Drainage Area (sq mi)</b>	1,113
<b>Year Modified</b>	1990	<b>Dam Length (ft)</b>	1,170

*Source: Iowa DNR Dam Inventory*

Reports and studies were obtained through the Iowa Online Dam Inventory site or provided directly from Iowa Dam Safety.

***The Cedar Lake Dam was not designated as a high hazard dam.***

In the next 20 years, Nashua is likely to see slow population growth and the existing water plant and wastewater treatment lagoons have capacity to manage slow steady growth. Future hazard mitigation efforts will note additional facilities related to the assets here shown within the vulnerability assessment.

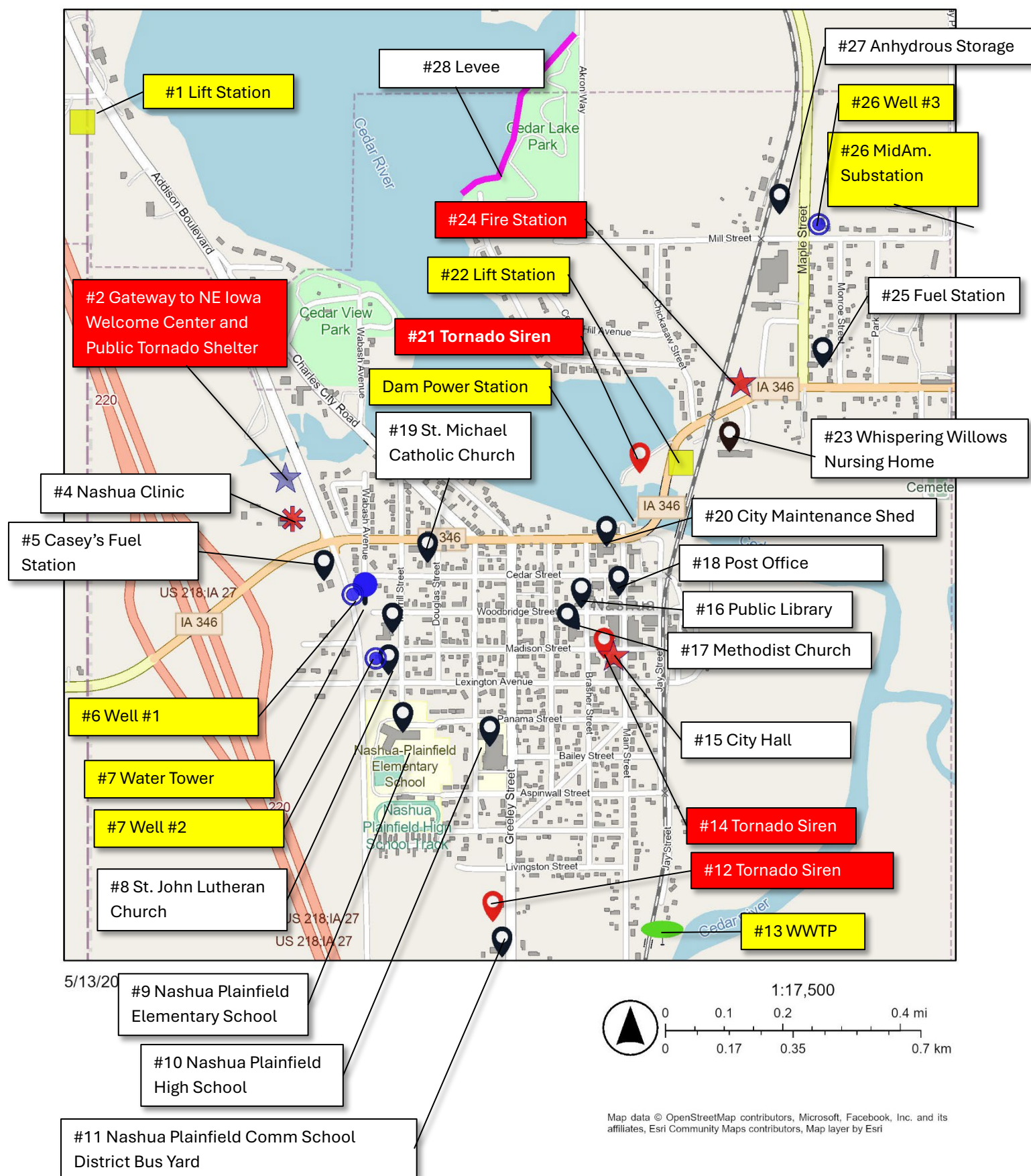
Table 8: Critical Facilities	
Gateway to Northeast Iowa Welcome Center (tornado shelter)	Assisted Living Center
Fire Station	Nashua Plainsfield Elementary School
City Hall	Nashua Plainsfield Middle/High School
City Maintenance Shed	Taylor Therapy
Lift Stations (2)	United Methodist Church
Wastewater Treatment Plant (WWTP)	Saint John Lutheran Church
Potable Water Wells (3)	Saint Michaels Catholic Church
Water tower	Cedar Point Church
Mid-American substation	Tornado Sirens (3)
Dam Power Station	Waverly Health Center Nashua Clinic
USPS Post Office	Nashua Library
*Little Brown Church (not w/in city limits but notable local significance)	

See Figure 3 for a map depicting the location of critical facilities within Nashua.

Critical facilities are structures that serve a vital and critical part of life, safety, and economy. The operation of these critical sites is crucial during and after a natural disaster. When disrupted, the operation or function of these structures have an impact on the life and safety of residents. These are considered community lifelines which include those that classify as structures that provide services for safety/security, food/water/shelter, health and medical, energy (power and fuel), communication, transportation, and hazardous materials.

Other critical facilities include those that house vulnerable populations such as nursing homes, day cares, or schools. The operation of these facilities also serves an important part of the local economy and way of life. Historical and cultural sites are also important to community life and the local economy. Those are listed in Table 8.

Figure 3: Critical Sites Map



## Measuring Vulnerability to Selected Hazards

### Tornado Hazard

In 1992, an EF2 tornado passed through south of the city. The tornado caused \$500,000 in property damage. In 2003, an EF0 caused \$20,000 in property damage.

All buildings in Nashua are prone to being damaged by a tornado. Therefore, the vulnerability of the community was determined by the assessed valuation of all buildings and dwellings on all parcels within the city's limits.

Using the assessed value from December 2023, the valuation of all 1,771 parcels in the City of Nashua is \$195,397,445 based on Chickasaw County assessor data. The City of Nashua has a potential property loss of \$3,155,600 from a tornado disaster.

**Table 9: Valuation of All Parcels in City of Nashua (2023)**

Percent of City at Risk to a Tornado	100%
# of Affected Parcels	1,771
Total Assessed Value of Buildings and Dwellings on Affected Parcels in 2023	\$195,397,445
Source: Chickasaw County Assessor's Office	

### Flood Prone Areas

The potential property losses of structures prone to flooding was calculated using the effective flood insurance rate map (FIRM) flood hazard zones for a 100-year (1%) annual chance flood.

In Figures 4 and 5, the maps show the flood hazard zone in and around the City of Nashua. The river basin is depicted in the topography shown in Figure 5. The parcels that are impacted by the 1% annual chance of flood are highlighted in Figure 6. There are 190 parcels within Nashua potentially affected. The value of all buildings and dwellings on the affected parcels is \$85,787,611 based on the latest Chickasaw County assessor information. This covers 13.7% of the city's total parcels.

**Table 10: Potential Property Losses from the 1% Annual Chance Flood**

Percent of City Affected	13.7%
# of Parcels	190
Total Value (Building and Dwelling)	\$85,787,611
Source: Chickasaw County Assessor's Office	



**Nashua, Iowa  
Flood Plain Map**

**LEGEND**

- Water
- Incorporated Areas
- Flood Zone**
  - Floodway
  - 100% Annual Chance of Flooding
  - 1% Annual Chance of Flooding

**DISCLAIMER**

This flood overlay shows the current floodplain designations in the County. The digital flood layer was obtained from the Federal Emergency Management Agency (FEMA). This digital data is FEMA's current Digital Flood Insurance Rate map for Grady County, effective 12/28/2012.

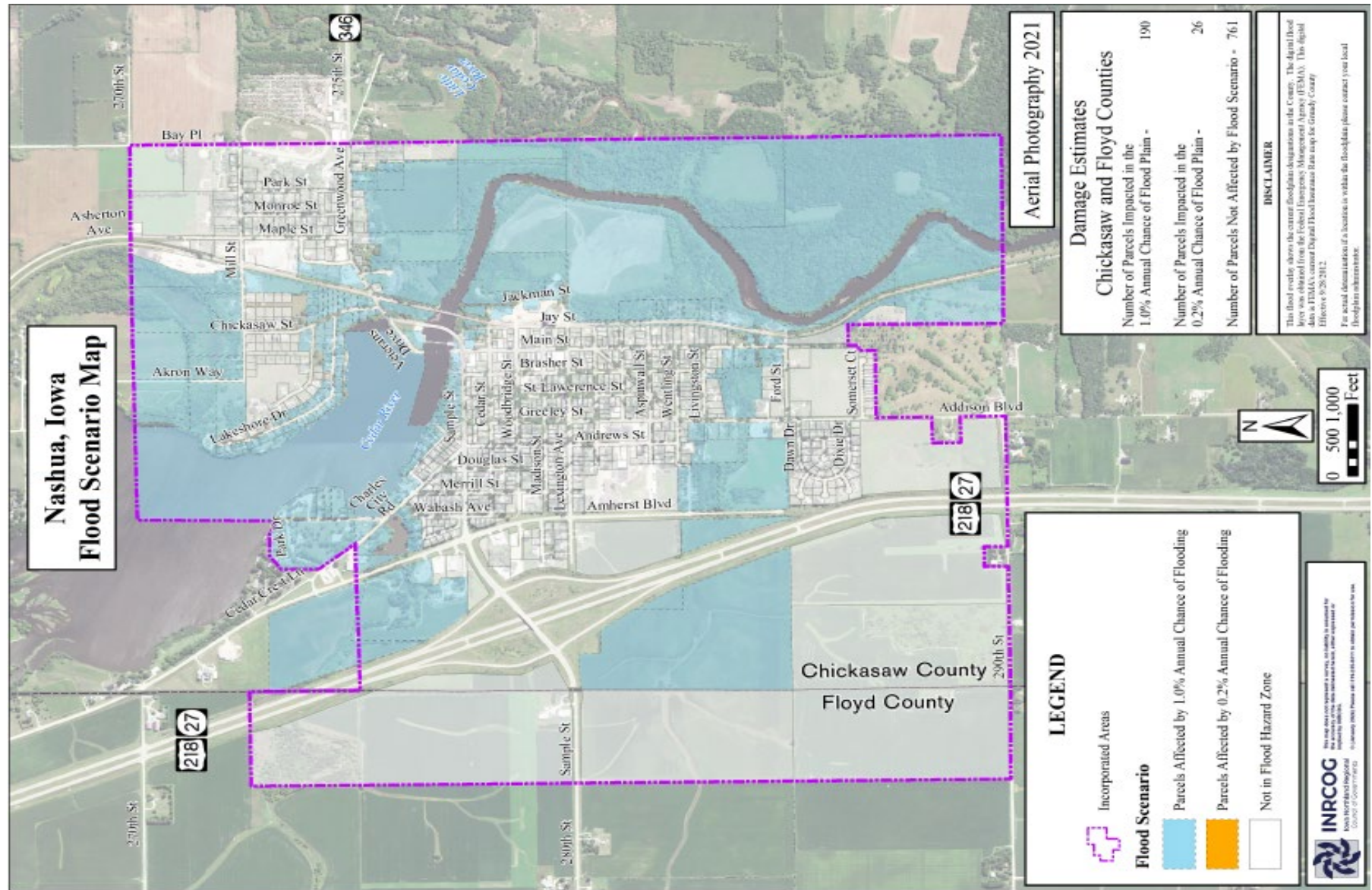
No actual determination of a location is within the floodplain phone center from local floodplain administration.

**INRCOG**  
Iowa Nonpoint Runoff Control Organization

0 500 1,000 Feet



**Figure 5: Flood Scenario Map**





## Future Development

Recent updates in Title 44 CFR §201.6 (c) (2) (i) require this risk assessment include a section with future conditions on the type, location, and range of anticipated intensities of natural hazards.

Long term trends of climate patterns for the region were summarized in the Fourth National Climate Assessment Midwest Section.<sup>2</sup> The National Climate Report is mandated to be updated every 4 years and deliver results to Congress and President on the effects to agriculture, energy productions, land use, transportation, and human health.

Yearly precipitation levels and annual average temperatures provide trends that may help determine future intensities of climate systems.

### Annual Precipitation Levels in Chickasaw County

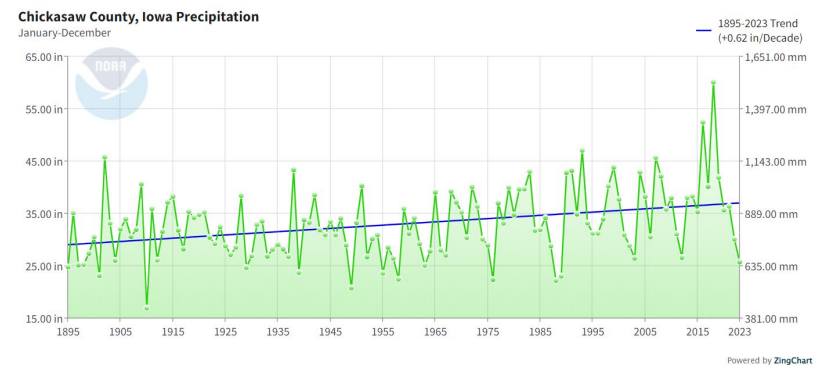
Chickasaw County's monthly precipitation records from 1895 are shown in Figure 6.

Yearly precipitation has been increasing at a rate of +0.62 in every decade. Based on this historical trend, precipitation is likely to continue to increase in the coming years.

Managing this projected change in climate may increase more hazard mitigation efforts to reduce property damage and soil erosion from frequent flooding.

City infrastructure may become overwhelmed and require repairs, renovation, upgrades, or replacement such as the storm water systems and berms, dikes, or dams.

**Figure 6: Historical Precipitation Data and Trend for Chickasaw County, Iowa<sup>3</sup>**



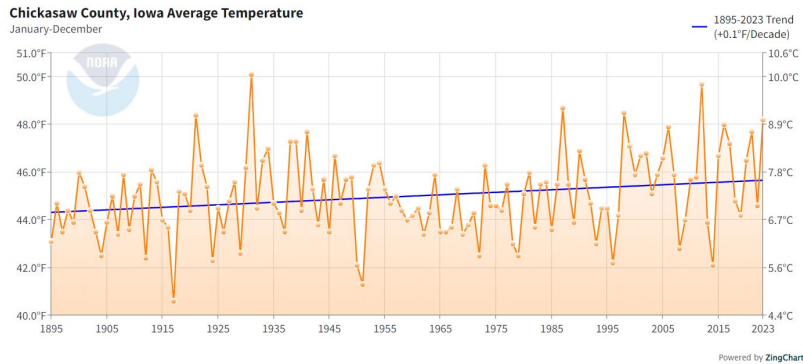
### Average Annual Temperatures in Chickasaw County

The annual average temperature is plotted over a 12-month period from 1885 to 2023 in Figure 7. This trend shows the average temperature in Chickasaw County increasing at a rate of +0.1° F every 10 years.

<sup>2</sup> USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

<sup>3</sup> NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published February 2024, retrieved on April 15, 2024, from <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>

**Figure 7: Historical Temperature Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



### Climate Patterns from Higher Average Temperatures

Extreme heat events during the summers may occur with more frequency in the Midwest.

The human impacts of extreme heat affect socially and economically vulnerable populations the most. The higher costs of energy during heat waves disproportionately impact cost-burdened households. Heat related illness may be more severe among infants, elderly populations, and those with chronic health conditions.

Daily minimum temperatures may increase across all seasons due to an increase in humidity.

Warming winters can increase the survival and reproduction of existing insect pests which allow new insect pests and crop pathogens to move into the Midwest region.

### Climate Patterns from Increasing Precipitation and Higher Temperatures

The relationship between increasing precipitation, temperature, and drought is complex and often counterintuitive. While increasing precipitation may seem like it would mitigate drought conditions, higher temperatures can exacerbate the situation in several ways:

1. **Evapotranspiration:** Higher temperatures lead to increased evaporation rates from soil, bodies of water, and plants. This means that even if there is more precipitation, it may quickly evaporate before it can effectively replenish soil moisture or water sources.
2. **Changes in precipitation patterns:** Increasing temperatures can alter precipitation patterns, leading to more intense rainfall events but also longer periods of drought between these events. This pattern can result in rapid runoff and soil erosion during heavy rain, followed by extended dry periods that contribute to drought conditions.

Overall, while increasing precipitation may provide temporary relief from drought, the combined effects of rising temperatures can outweigh this benefit, leading to more frequent and severe drought events in certain regions.

### Projected Trends of Natural Hazards in Chickasaw County

- Drought is likely to occur more frequently as the atmosphere holds more moisture (even pulling moisture from plants) as the temperature increases. Longer periods between weather events means there are dryer and longer periods in between these events.
- Floods (flash or major types) will increase in intensity as the atmosphere holds more moisture to drive stronger storms and drop heavier rainfall over a shorter period during an event.
- Extreme heat may occur more frequently. The human health impacts are higher among socially vulnerable populations (the elderly, infants, those with chronic health issues, cost burdened households).
- Agricultural pests and pathogens may increase in growing plants and stored grain. Warming temperatures in the spring and summer have led to rising humidity. Higher dew and moisture conditions may increase the presence of these pests or crop diseases.

### **National Flood Insurance Program**

The City of Nashua participates in the National Flood Insurance Program. The current effective FIRM map date is September 28, 2012. There are 11 policies within the community with a total coverage of \$1,210,000. There were 14 losses reported with a net of \$224,598 paid.

FEMA defines a repetitive loss property as an insurable building that has experienced two losses in a 10-year period in which each loss is \$1,000 or more. There is 1 reported repetitive loss properties. The location of these properties is known by city request to FEMA data records.

## Hazard Risk Assessment

The top three hazards from the risk assessment are:

1. Tornado/ Windstorm
2. Pandemic/ Endemic Human Disease
3. Thunderstorm/ Lighting/ Hail

### Methodology

This risk assessment identifies how people, property, and structures would be harmed or damaged by one of the listed hazard events. IHESMD provided the formula below.

### Hazard Risk Score Formula

$$\begin{aligned} &[\text{Probability}] \times 45\% + [\text{Magnitude or Severity}] \times 30\% \\ &+ [\text{Warning Time}] \times 15\% + [\text{Duration}] \times 10\% \\ &= \text{Final Hazard Assessment} \end{aligned}$$

Source: Provided by Iowa HSEMD during scope of work

Score Value and Hazard Risk Level	Description of hazard with this rating
<b>Scores with a value closer to 1:</b> <b><u>Low risk hazard</u></b>	Hazard is not likely to affect people or property because the likelihood is minimal.
<b>Scores with a value closer to 4:</b> <b><u>High risk hazard</u></b>	The hazard has historically occurred and may have significant impacts to people and property.

The factors in the hazard risk calculation are defined and the score values for each part is summarized in the following sections:

### Probability

The probability score reflects the likelihood of the hazard occurring in the near future. Historical data of the hazard event occurring in Chickasaw County or Iowa informed the likelihood of future occurrence.

Probability Score Definitions		
Score	Description	
<b>1</b>	Unlikely	<i>Less than 10%</i> probability in any given year (up to 1 in 10 chance of occurring), a history of events is less than 10% likely or the event is unlikely but there is a possibility of its occurrence.
<b>2</b>	Occasional	<i>Between 10% and 20%</i> probability in any given year (up to 1 in 5 chance of occurring), history of events is greater than 10% but less than 20% or the event could possibly occur.
<b>3</b>	Likely	<i>Between 20% and 33%</i> probability in any given year (up to 1 in 3 chance of occurring), history of events if greater than 20% but less than 33% or the event is likely to occur.
<b>4</b>	Highly Likely	<i>More than 33%</i> probability in any given year (event has up to a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.

### Magnitude or Severity

The magnitude or severity of the hazard event is measured by the level of impact on the human environment. Property damage is assessed by the whole planning area.

Magnitude or Severity Score Definitions		
Score	Description	
1	Negligible	Less than 10% of property severely damaged, the shutdown of facilities and services for less than 24 hours, and/or injuries/illnesses treatable with first aid
2	Limited	10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
3	Critical	25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
4	Catastrophic	More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.

### Warning Time

This should be taken as an anticipated warning time.

The warning time score assesses the ability to warn a population before the hazard occurs. The values of the score range from 1 (at least 24 hours) to 4 (minimal or no warning time).

For many of the climate hazards, there is a considerable amount of warning time as opposed to the human-caused hazards (transportation and hazardous materials incidents) that occur instantaneously or without any significant warning time.

Warning Time Score Definitions		
Score	Description	
1	Forecasted	More than 24 hours warning time.
2	Likely	12 to 24 hours warning time.
3	High Chance	6 to 12 hours warning time
4	Imminent	Minimal or no warning time (up to 6 hours warning)

### Duration

The duration is the time of a typical or expected hazard event to occur. For an earthquake or traffic accident that is a score of 1. For infrastructure failure, it is likely a 4.

Table 11 displays rated risk scores for each associated hazard. This assessment was completed by city representatives based on hazard profiles prepared for the planning committee.

Duration Score Definitions	
Score	Description
1	Less than 6 hours
2	Less than 1 day
3	Less than 1 week
4	More than 1 week

Table 11: Hazard Risk Assessment

Hazard Risk Assessment					
Hazards	Probability	Magnitude	Warning Time	Duration	Score
Tornado/Windstorm	4	4	4	1	3.7
Pandemic/ Endemic Human Disease	4	4	2	4	3.7
Thunderstorm/ Lighting/ Hail	4	2	4	1	3.1
Flooding - Flash	4	2	3	2	3.1
Infrastructure Failure	3	2	4	4	3.0
Hazardous Materials	3	2	4	3	2.9
Transportation Incidents	3	2	4	2	2.8
Animal/ Crop/ Plant Disease	4	1	1	4	2.7
Severe Winter Storm	4	1	1	2	2.5
Earthquake*	1	4	4	1	2.4
Grass/Wildland Fire	3	1	4	1	2.4
Drought	3	1	1	4	2.2
Extreme Heat	3	1	1	4	2.2
Terrorism	1	1	4	2	1.6
Sinkholes	1	1	4	1	1.5
Expansive Soils*	1	1	1	4	1.3
Landslide	1	1	1	1	1.0
Levee/Dam Failure	1	1	1	1	1.0
Flooding - Riverine	1	1	1	1	1.0
Radiological	1	1	1	1	1.0

Source: Completed by City Representative. Score calculation completed by INRCOG.

\*The following hazards were identified as not being considered a threat needing a specific mitigation activity given the specific jurisdictional situation.

## Hazard Mitigation Goals

### for Nashua, Iowa

The following list of goals was developed by planning committee participants from the associated jurisdiction. Goals 1 through 7 were developed in the previous 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. The planning committee participants chose to adopt the same goals and add additional goals. Goals 8 through 9 were created by the city's committee representatives which provided updated and additional mitigation goals and activities.

**Goal #1** Reduce the chance of and impact of flooding in the community.

**Goal #2** Take measures to minimize the occurrence of injuries and loss of life due to hazards.

**Goal #3** Take measures to minimize or eliminate damage that may occur as a result of hazards.

**Goal #4** Increase the city's ability to respond to natural disasters and man-made hazards.

**Goal #5** Return the community to similar or improved pre-event conditions as quickly as possible following a disaster event.

**Goal #6** Incorporate the City Plan into the proposed Multi-Jurisdictional Plan.

**Goal #7** Continually re-assess and re-evaluate the plan and mitigation activities.

**Goal #8** Invest in a flood resistant community with storm water management planning.

**Goal #9** Invest in updated city improvements to ensure functionality and sustainable use of public infrastructure.



## **Existing or Previous Mitigation Activities by Type**

Mitigation actions and activities in this Plan will be organized according to these 5 categories: Emergency Services, Education and Outreach Projects, Natural Resource Protection or Natural Based Solutions, Structural Projects, or Local Plans and Regulations.

### **Emergency Services in Nashua**

#### Chickasaw County Emergency Management Agency

Nashua works with the Chickasaw County Emergency Management Coordinator, based out of the City of New Hampton, on various safety and emergency events. The Emergency Management Coordinator works in conjunction with local fire, rescue, police, and government officials to draft and implement workable emergency action plans in the community. The Chickasaw County Emergency Management Coordinator is Jeff Bernatz.

#### Law Enforcement

The City of Nashua no longer has a police department. All police services are contracted through the Chickasaw County Sheriff's Office. The Sheriff and deputies are available 24/7 to respond to emergency and non-emergency calls.

The City of Nashua has partnered with the Chickasaw County Sheriff's Office to abide by the mission statement for serving the people of Nashua. Community policing is part of the mission of the City of Nashua. The mission and other police programs have continued through a partnership with the Chickasaw County Sheriff's Department.

#### Fire Protection and EMS Services

Fire protection for the City of Nashua is provided by the Nashua Fire Department. The station is located at 125 Greenwood Avenue, Nashua, IA 50658.

There are approximately 30 volunteer fire fighters that serve the community. All members must be HAZMAT certified. Dispatch is provided via a paging system through the Chickasaw County Rescue Squad.

The Nashua Fire Department maintains 28E agreements with the following communities: Floyd County, City of Ionia, City of New Hampton, City of Fredericksburg, City of Lawler, City of North Washington, City of Alta Vista, City of Plainfield, City of Greene, and City of Clarksville.

Equipment used by the Nashua Fire Department includes the following:

- 1993 GMC Pumper
- 1977 Ford Pumper
- 1975 Ford Tanker
- 1965 Ford Tanker
- 1984 Chevy 1-ton Rescue Truck
- 1984 Chevy 1-ton, 4x4 Grass/Rescue Truck
- 17 ft. Rescue Boat w/ 40 hp outboard
- Jaws of Life (vehicle extraction device)

### EMS Services

EMS Services are provided by Nashua Area EMS based in Nashua, Iowa.

### Medical Facilities

Waverly Health Center operates the Nashua Medical Center in the city. The closest facility and only with an ER unit located in the county is MercyOne in New Hampton. MercyOne has 11 private inpatient rooms and cares for over 20,000 outpatients each year.

MercyOne New Hampton offers a full range of services in an inpatient and outpatient setting as well as 24-hour emergency care, surgical services, primary care clinic, therapy and rehabilitation, diagnostic services, speech and occupational therapy, Senior Life Solutions, and specialty clinics.

### HAZMAT Response Teams

Nashua contracts with Northeast Iowa Response Group for response to hazardous material spills. The Northeast Iowa Response Group is a division of Waterloo Fire Rescue as is the Hazardous Materials Regional Training Center. The Training Center provides training to fire departments and companies from around the state and country. Not only is this a training center, but it also serves as a hazardous materials quick response unit to Black Hawk County, surrounding counties, and many municipalities in a ten-county region. The Unit provides local fire departments with hazard materials emergency procedures thus reducing additional contamination. An evacuation plan is also in place

in conjunction with the activities of the local department. Contact information for the facility is as follows: Hazardous Materials Regional Training Center, 1925 Newell Street, Waterloo, Iowa 50707, Phone: (319) 291-4275, Toll Free: (800) 291-4682, Fax: (319) 291-4285

The jurisdiction also partners with the Northeast Iowa Response Group for assistance in responding to any methamphetamine labs located in the city limits. The Response Group assists the Police Departments in containment of the site and disposal of hazardous chemicals.

### City Warning Systems

#### 1) Tornado Sirens

Nashua current tornado warning siren system is past its current 30-year useful life. It is estimated the siren was built in the early 80's. It has recently undergone some equipment replacements to address a radio channel, bushing, brush, and battery issue. In 2024, the city will be working with a contractor to study its current effectiveness and the possibility of needing an additional siren in the Northeast corner of town.

The activation systems of warning systems are activated and operated by a central command system operated by the Chickasaw County Rescue Squad in Nashua, IA.

#### 2) Alert Iowa Mass Communication System

Alert Iowa allows for emergency notifications via landline telephones, cell phones, email, text messages, and social media. This is useful for communities that may not have

an operating warning siren or may not hear the sirens. The County will use its emergency notification network for all the following events: blizzards, flash flooding, severe thunderstorms, and tornadoes.

### Public Works/Street Department

The Department has 2 employees and is responsible for snow removal, minor road maintenance, grass mowing and miscellaneous projects throughout the city.

### Education and Outreach Projects in Nashua

The City of Nashua provides annual training for fire department personnel and ambulance crews to address all hazards. Equipment they have available include snowplows, a road grader, end loader and pickup trucks.

### Natural Resource Protection in Nashua

Nashua has a floodplain ordinance (Chapter 160) that charges the City Clerk as the flood plain administrator to carry out enforcement of the floodplain ordinance in addition to his/her other duties. The ordinance allows for new construction within the floodplain if conditions are met that would demonstrate minimized flood damage including construction methods and practices over the flood elevation.

The city has encouraged the use of monitoring wells. The city treats and monitors the water supply to provide publicly available water monitoring results.

### Structural Projects in Nashua

The city constructed a Welcome Center which also serves as a public storm shelter open 24/7. The shelter is a FEMA-certified tornado safe room.

### Local Plans and Regulations in Nashua

The city has required back flow valves on sanitary sewer connections in all new building construction.

The city has been enforcing designated truck routes for the transport of hazardous materials.

Nashua completed a local plan and regulation assessment. The results are shown in the table below.

Table 12: Local Capability Assessment	
Community	City of Nashua
Previous HMP Participant?	Yes
Comprehensive Plan?	Yes
Building Code?	No
Zoning Ordinance? RR=restricted residential	RR
Subdivision Regulations?	Yes
Floodplain Management Ordinance?	Yes
Tree-Trimming Ordinance?	Yes
Storm Water Ordinance?	Yes
Snow Removal Ordinance?	Yes

## Strategy for Implementing the Plan

The end of this section has strategic implementation tables prepared in consultation with the Nashua's planning committee's representative and INRCOG. This is a guide for a strategic approach when implementing the city's efforts in hazard mitigation. The tasks in these tables are drawn from the city's capabilities, goals, and hazard risks presented in previous sections of this Plan.

The designated agency or staff presented with each line item was written by Nashua's planning committee.

Notes about the tasks (listed as line items) in each table.

- Each task (line item) stands on its own so it can be completed whenever possible.
- Each action item is not limited to the details presented below and may change based on future conditions.
- The tasks were categorized based on mitigation type. The mitigation types are not shown in any order (no priority over the other).

This implementation strategy is presented to help with the general understanding of how hazard mitigation may feed into the City's existing or future priorities.

## Priority Level

The priority level was informed through discussions among planning committee members who considered potential benefits of implementing the activity, some hurdles that the city may face in implementing the action step, and the

drawbacks of implementation. *Committee representatives considered a cost-benefit approach.*

## Timeframe

Timeframe	Description
Immediate	1 - 6 months
Short Term	1-5 years
Mid-Term	5-10 Years
Long-Term	More than 10 Years

## Estimated Costs

Cost estimates are based on the associated costs of additional staffing that may or may not be needed, time for planning/meetings/coordinating, and cost of the proposed action/program/ project.

Cost	Estimated Cost Range
Minimal	Less than \$10,000
Low	\$10K to \$99K
Moderate	\$100K to \$299K
High	Greater than \$300K

## Strategic Implementation Plan by Mitigation Activity Type

**Table 13: 'Education and Awareness' Type Mitigation Activities**

Description: These types of actions keep residents informed about potential natural disasters.

<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
High	Prepare an outreach strategy to get residents to sign up for Alert Iowa.	All	EMA, Fire Dept, Police Dept, City Council	Short Term 1-3 years	Minimal 0-\$10K	Hazard mitigation grant program
High	Evaluate and make improvements to outdoor warning siren network.	All	EMA, Fire Department, Police, City Council	Short Term 1 - 3 years	Low \$10K to 99K	Hazard mitigation grant program, City gen fund
Medium	Ensure up to date annual HAZMAT response training for first responders.	Hazardous Materials, Transportation Incidents, Infrastructure Failure	Fire Department, Police Department, City Council	Short Term 1-3 years	Medium \$100K to \$300K	City general fund, hazard mitigation grant program
Medium	Maximize investment opportunity by partnering with local businesses/orgs that will pitch in to build a public shelter in town especially for vulnerable populations (mobile homes, elderly, schools, incarcerated).	Tornado/ Windstorm	County EMA, Fire Dept, City Council	Long Term 5-10 Years	High Greater than \$300K	Hazard mitigation grant program, City general fund

**Table 14: 'Emergency Services' Type Mitigation Activities**

Description: Actions that protect people and property during and immediately after a disaster or hazard event.

<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
Low	Maintain a backup fuel supply for necessary equipment.	All	City Council, Public Works	Mid Term 3-5 Years	Moderate \$100K to \$299K	City General Fund
High	Explore the need for an additional siren to ensure effective coverage of warning system.	All	City Council, Fire Department	Short Term 1-3 years	Low \$10K to 99K	City General Fund

**Table 15: Structure and Infrastructure Project Type Mitigation Activities**

Description: Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
High	Install a security surveillance system at critical infrastructure from crime and disaster.	All	Police Chief, Public Works Director	Long Term 5-10 years	High \$300k or greater	Hazard Mitigation Grant Program, State and Local Cybersecurity Grant Program
High	Partner with MidAmerican Energy to develop a plan for relocating overhead power lines underground.	Severe Winter Storm, Hailstorm, Thunderstorm and Lightning, Tornado, Windstorm, Infrastructure Failure, Grass/Wildfire, Landslide	City Council, MidAmerican Energy	Short-Term (6 months - 3 years)	Moderate \$10K-\$30K	City General Fund, Utility provider
Medium	Seek additional funding to replace current siren warning system.	Tornado	City Council	Mid Term 3-5 Years	Moderate \$10K-\$30K	City General Fund, HMGP Funding



**Table 16: Natural System Protection and Nature-Based Mitigation Type**

Description: Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
High	Apply for a planning grant to prepare a flood mitigation plan that may address riverbank erosion and retention basins to mitigate storm water pollution.	River Flooding, Flash Flooding	City Council, County EMA	Medium Term 3-5 years	Low \$10K-\$100K	Flood Mitigation Assistance Program (Planning Grants)
Medium	Implement Iowa DNR BMPs for erosion control measures.	River flooding, flash flooding, Tornado/ Windstorm	City Council, Public Works	Medium Term 3-5 years	High \$300K +	Flood Mitigation Assistance Program
Low	Continue to monitor and treat municipal water.	Flooding, hazardous materials, sinkholes	City Council, Public Works	Long Term 5-10 years	Medium \$100K to \$299K	City general fund
Low	Enhance green infrastructure plan (i.e. urban trees, permeable pavers, natural plantings, etc.) that help mitigate drought and excessive heat conditions.	Drought, Excessive Heat	City Council, Public Works	Long Term 5-10 years	Medium \$100K to \$299K	City general fund

**Table 17: Local Plans and Regulations Mitigation Activities**

Description: Actions by administrative or regulatory processes which direct how land and buildings are developed and built. These actions include regulations by public entities to reduce hazard losses.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
High	Develop a storm water management plan.	Flooding (river and flash)	County EMA, City Council	Short Term 1-3 Years	Medium \$100K-\$299K	Flood Mitigation Assistance Program - Planning Grants
Medium	Implement wellhead protection program.	Flooding (river and flash)	City Council, Public Works	Short Term 1-3 Years	Low \$10K - \$99K	City general fund, state revolving loan fund
Low	Coordinate with County EMA Coordinator to ensure Tier II reports are being regularly sent out.	Hazardous Materials	County EMA, City Council	Short Term 1-3 Years	Minimal 0-\$10K	City general fund
Low	Enforce back flow valves in all new construction per updated code.	Wild/ Grass fire	City Council	Immediate 1-6 months	Minimal 0-\$10K	City General Fund
Medium	Ensure the dam is regularly inspected and maintained to prevent structural failure and mitigate the risk of catastrophic failure.	Dam/Levee Failure	Public Works	Short Term 1-3 Years	Minimal 0-\$10K	City General Fund

# City of New Hampton, Iowa

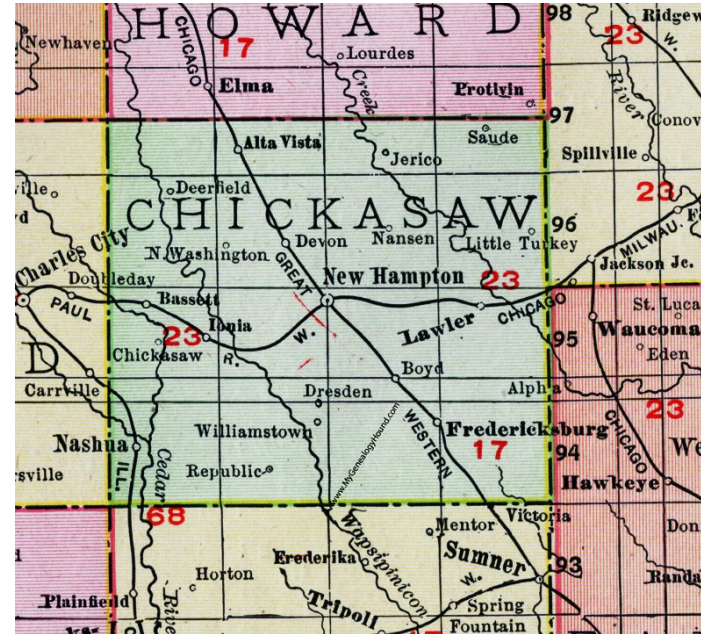
## Hazard Mitigation Plan 2024 Update

### Appendix G of Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan

Funded by the Chickasaw County Emergency  
Management Agency

Prepared by Iowa Northland Regional Council  
of Governments (INRCOG)

May 2024



**INRCOG**

Iowa Northland Regional  
Council of Governments

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# 2024 New Hampton Hazard Mitigation Plan

## Resolution Adopting Plan by City Council

### RESOLUTION NO. 6642

A RESOLUTION OF THE CITY COUNCIL OF NEW HAMPTON, IOWA, ADOPTING THE CITY OF NEW HAMPTON, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.

WHEREAS, the City of New Hampton City Council recognizes the threat that natural hazards pose to people and property within New Hampton; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing New Hampton served and participated in the formulation of the Plan, hereby known as the City of New Hampton, Iowa Hazard Mitigation Plan 2024 Update, as part of the the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in New Hampton from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the Plan; and

WHEREAS adoption by the City Council of New Hampton demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF NEW HAMPTON, IOWA, THAT:

Section 1: In accordance with local regulations, the Council adopts the City of New Hampton, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of New Hampton may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of New Hampton to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 3<sup>rd</sup> day of June 2024.

ATTEST:



KAREN CLEMENS, City Clerk



STEVE GEERTS, Mayor

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## 2024 New Hampton Hazard Mitigation Plan

### About

The City of New Hampton developed this Plan as part of the 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan update process. The 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan is a sequential 5-year update to the previous document. Federal regulations regarding how local governments may receive funding from FEMA require that the specified jurisdiction (city, school district, county) have an approved hazard mitigation plan that is in good standing (updated and FEMA approved) to remain eligible for grant funding. This Plan was developed to meet the requirements in Title 44 CFR § 201.6.

Elected officials, city clerks, planners, first responders, and other stakeholders were invited to attend planning committee meetings as participants to learn about hazard mitigation and complete data gathering assignments. These assignments were submitted to the plan development coordinators: Chickasaw County's Emergency Management Agency (EMA) and Iowa Northland Regional Council of Government (INRCOG). Chickasaw County's EMA initiated and funded this effort for all participating communities and contracted INRCOG to coordinate the plan development process with a multi-jurisdictional approach.

Participating communities included all nine (9) incorporated municipalities of Chickasaw County. County staff participating in the committee were representing their respective County departments. School district superintendents for three public school districts attended and completed the data gathering assignments for their district communities. Four (4) committee

### FEMA's Emergency Management Cycle



#### What is Hazard Mitigation?

Hazard Mitigation is any *sustained* action taken to reduce or eliminate long-term risk to life and property from hazards.

The emergency management cycle has 4 phases:

- **Preparedness** is the assessment of potential risks, hazards, and vulnerabilities that a community may face. The development and updating of activities, programs, and systems before an event occurs is included in this phase of the cycle.
- **Response** is the immediate effects after a disaster.
- **Recovery** is a long-term phase that focuses on returning the community to normal after a disaster.
- **Mitigation** is an action that can occur at any phase.

meetings were held between March 19<sup>th</sup> and April 23<sup>rd</sup> wherein each participant provided data and completed work sheets to develop their hazard mitigation plans.



## The Benefits of Hazard Mitigation for Local Governments

For local governments, there are benefits in knowing how specific hazards may affect their communities, its potential to cause negative impacts, and develop pre-disaster actions or activities to lessen or avoid those anticipated negative impacts.

Benefits include:

- ✓ An increased understanding of how natural and human caused hazards develop under certain conditions which may inform a level of magnitude or intensity.
- ✓ Take advantage of the opportunity to create more sustainable and disaster-resistant communities.
- ✓ Participating in this collaborative intergovernmental effort is cost effective for all participants.
- ✓ Using limited resources to address the threat from hazard events that may have the biggest impact on the community.
- ✓ Reducing or preventing damage to existing structures and reducing their subsequent repair costs.
- ✓ Identifying vulnerable populations to establish equitable outcomes.

- ✓ Hazard mitigation involves a commitment to long-term goals that focus on lessening or reducing negative impacts of natural, and human caused hazards.

## The Planning Process

In order to reduce the threat of negative impacts from natural hazards, a risk informed approach was used in this planning process. A risk informed approach is a multi-step process. This Plan also involves collaboration among participants in the planning committee. The process involved learning the historical occurrence of when such hazards may have occurred in Chickasaw County.

Participants in the Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan Planning Committee determined the level of risk facing their communities by completing a risk assessment. Data gathering by committee participants involved giving updates to existing mitigation activities by the local government.

**Participants in the Plan followed a general 5 step process. (below)**



### Community Data Sources

Population data is based on 2020 decennial Census data. The 2022 American Community Survey 5-year estimates are the latest and most reliable survey data sets to understand what is taking place in the county and each city. Most counties, cities, and towns rely on 5-year estimates. Employment, workforce, and industry figures in this Plan are estimates that have a margin of error.

It is important to note that the ACS estimates used for rural communities will have a degree of uncertainty associated with them, called sampling error, because they are based on a sample. In general, the larger the sample, the smaller the level of sampling error. Rural communities tend to have smaller samples than larger cities, so the “margin of error”—a measure of the precision of an estimate at a given level of confidence—likely will be larger for rural areas.

Crash data along roadways within each jurisdiction is collected between the period of 2019 and 2023. Using a map tool interface, the data was taken at a city level and presented to understand incident severity, casualties, and property damage from reported accidents. Accident data is added to the site daily and accessible through an online website, <https://icat.iowadot.gov/>.

In the risk analysis section of this Plan, estimates of property loss are measured using mapping of hazardous zones. For the vulnerability risk assessment, flood prone homes were determined using the boundaries of the 100 year (1%) annual chance flood zone. The value of potential property loss was derived from the 2023 assessed dollar

value of structures and dwellings on affected parcels provided by the Chickasaw County Assessor's Office.



*Located in one of the original Carnegie libraries, the Carnegie Cultural Center is dedicated to the arts, history, and cultural awareness. It is located at 7 North Water Avenue, New Hampton, just off the downtown's Main Street.*

Photo source: Author

## City Profile

**Jurisdiction: City of New Hampton**

**County: Chickasaw County**

**Population (2020): 3,494**

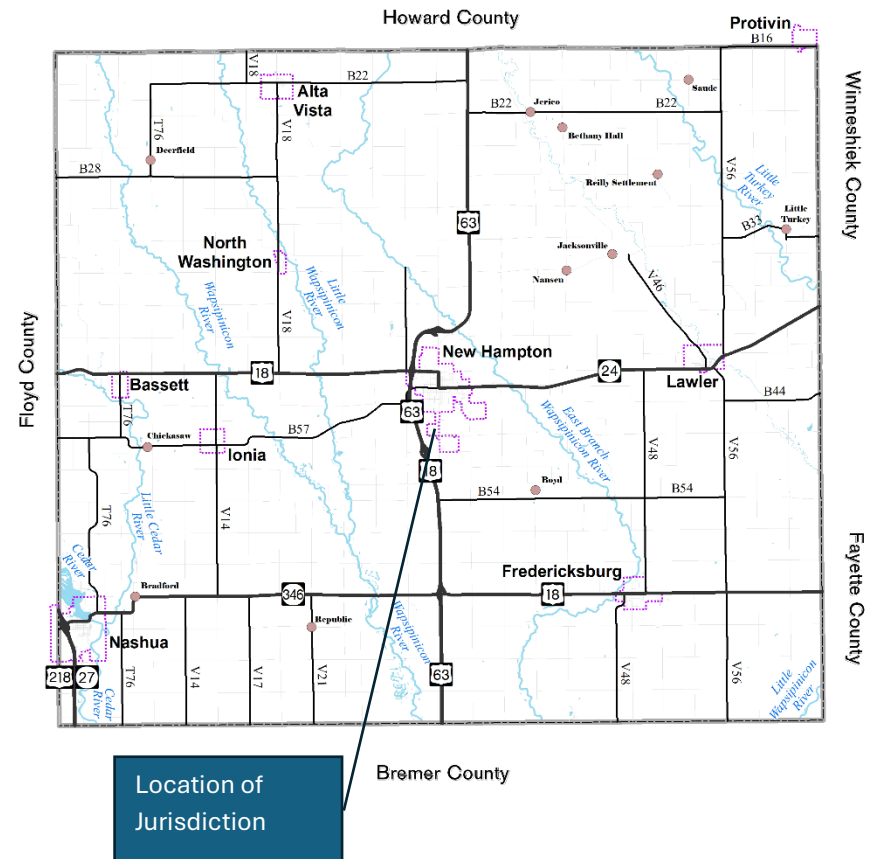
The City of New Hampton is in the center of Chickasaw County. State Highway 18 and Highway 24 both intersect Highway 63 at different points in New Hampton. The east branch of the Wapsipinicon River flows to the east of New Hampton.

The following data presented in tables on the following page include population, employment, and industry sector data for the community based on 2020 Census data and 2022 American Community Survey 5-year Estimates.

In 2020, the city's population was 3,494 and 90% were White with the median age is 43. Working aged residents (15-60 years) made up 59% of the population. Children and teens (younger than 15 years) made up 18% of New Hampton's population while older adults (older than 65 years) made up 23%.

The median household income in 2022 was \$44,079. The unemployment rate was 3.6%. Most people commute to work, and 54 people, or 3% of the workforce, worked from home. The top three largest industry sectors in New Hampton are as follows (in order from highest to lowest): 1) Manufacturing; 2) Educational Services, and health care, and social assistance, and 3) Transportation - warehousing or utilities.

**Figure 1: Map of Chickasaw County**



## 2024 New Hampton Hazard Mitigation Plan

**Table 1: Population Data (2020)**

City of New Hampton		
	Total	% of Population
Total population	3,494	100%
AGE		
Under 5 years	195	6%
5 to 9 years	238	7%
10 to 14 years	196	6%
15 to 19 years	222	6%
20 to 24 years	153	4%
25 to 29 years	217	6%
30 to 34 years	209	6%
35 to 39 years	218	6%
40 to 44 years	152	4%
45 to 49 years	170	5%
50 to 54 years	209	6%
55 to 59 years	229	7%
60 to 64 years	297	9%
65 to 69 years	234	7%
70 to 74 years	159	5%
75 to 79 years	134	4%
80 to 84 years	130	4%
85 years and over	132	4%
Median Age	42.8	-
RACE		
White	3,153	90%
Black or African American	36	1%
Hispanic or Latino (of any race)	275	8%
American Indian and Alaska Native	3	0%
Asian	13	0%
Native Hawaiian/Other Pacific Islander	2	0%
Some Other Race	107	3%
Two or More Races	180	5%

Source: 2020 Census

**Table 2: Employment Data (2022)**

City of New Hampton		
	Value	% of Population
Median Household Income	\$44,079	-
Unemployment Rate (2022)	3.60%	-
Workers that commute to work	1,599	97%
Workforce that works from home	54	3%

Source: 2022 American Community Survey 5-Yr Estimates

**Table 3: Employment Industry Data (2022)**

City of New Hampton		
Workforce Industry	# of Workers	% of Workforce
Workforce	1,758	100%
Agriculture, forestry, fishing and hunting, and mining	60	3%
Construction	135	8%
Manufacturing	632	36%
Wholesale trade	74	4%
Retail trade	131	8%
Transportation -warehousing, utilities	179	10%
Information	0	0%
Finance and insurance, and real estate and rental and leasing	63	4%
Professional, scientific, and management, and administrative and waste management services	49	3%
Educational services, and health care and social assistance	227	13%
Arts, entertainment, and recreation, and accommodation and food services	99	6%
Other services, except public administration	63	4%
Public administration	46	3%

Source: 2022 American Community Survey 5-Yr Estimates

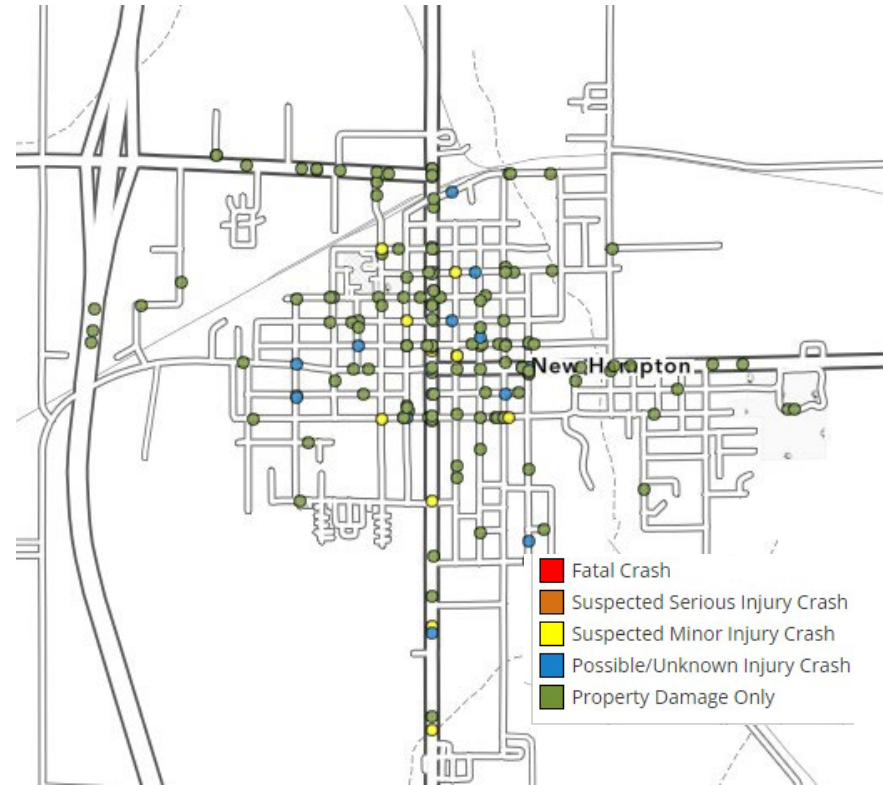
### Highway Traffic and Crash Data

Based on Iowa DOT crash data, between 2019 and 2023 there have been 170 incidents. Of those incidents, 140 of them were property damage only which totaled to \$906,157. No fatalities or crashes with severely injured persons were reported.

**Table 4: Crash Data from 2019-2023**

<b>Total Crashes</b>	170
<b>Crash Severity</b>	
<b>Fatal</b>	0
<b>Suspected Serious Injury</b>	0
<b>Suspected Minor Injury</b>	14
<b>Unknown</b>	16
<b>Property Damage Only</b>	140
<b>Property Damage Total</b>	\$906,157
<i>Source: Iowa DOT Crash Data</i>	

**Figure 2: Iowa Crash Analysis for All Traffic Incidents (2019-2023)**



Source: Iowa DOT

## Housing Data

The City of New Hampton has 1,491 occupied housing units. Nearly 82% of them are single family detaching housing. An estimated 35 housing units are mobile homes or other types of housing. About 2% are duplex apartments. About 12% are multifamily (greater than 2 units).

A large portion of the housing stock was built between 1960-79 (31%). About 65% of the housing stock is under 60 years old. Most homes heat their units with gas (87%).

## Community Utility Providers

New Hampton Municipal provides utility electric services. Black Hills Energy is the natural gas service provider. Windstream telephone services and broadband internet services. Residents receive water, sewer, and recycling collection services from the city.

Table 6: Utility Providers	
City of New Hampton	
<i>Electric</i>	New Hampton Municipal
<i>Natural Gas</i>	Black Hills Energy
<i>Telephone/Internet</i>	Windstream/ New Hampton Municipality
<i>Cable TV</i>	Windstream/ New Hampton Municipality
<i>Water Services</i>	City of New Hampton
<i>Sewer Services</i>	City of New Hampton
<i>Sanitation</i>	City of New Hampton

Table 5: Housing Data (2022)		
City of New Hampton		
	Total	% of Occupied Units
Occupied housing units	1,491	100%
<b>Housing Unit Type</b>		
1, detached	1,222	82%
1, attached	55	4%
2 apartments	38	3%
3 or 4 apartments	73	5%
Mobile home or other type of housing	35	2%
<b>Year Structure Built</b>	Total	% of Occupied Units
2020 or later	0	0%
2010 to 2019	18	1%
2000 to 2009	33	2%
1980 to 1999	357	24%
1960 to 1979	464	31%
1940 to 1959	169	11%
1939 or earlier	450	30%
<b>House Heating Fuel</b>	Total	% of Occupied Units
Utility gas	1,297	87%
Bottled, tank, or LP gas	5	0%
Electricity	176	12%
Fuel oil, kerosene, etc.	0	0%
Coal or coke	0	0%
All other fuels	10	1%
No fuel used	3	0.20%
Source: 2022 American Community Survey 5-Year Estimates		



### Vulnerable Assets

#### People

Vulnerability to hazard losses increases where there are larger concentrations of people. In towns where population density increases, the number of people that can be harmed during a hazard event (tornado, flood, etc.) increases. In addition, there are segments of the population that may be more susceptible to impacts and/or harm from a hazard depending on their location within the area (i.e. flood zone or near industrial plants with hazardous materials). This includes underserved or socially vulnerable populations.

#### *Vulnerable Age Groups*

Both younger and older aged groups are likely to require assistance with physically moving to shelters or finding safety. Elderly residents may not have a personal vehicle to move away from a hazard quickly. Cognitive impairments among older adults may cause some to get easily confused.

#### *Households Facing Poverty or With Limited Income*

Families or older adults living at, near, or below poverty are more likely to be impacted by hazards than other households with higher incomes. The costly repairs from a tornado or derecho for a low-income household may be more adversely affected than another household that has the same damage but may be able to afford the repairs without much change to their lifestyles or needs. That disparity is also different during extreme weather events such as a heat wave. Low-income households may not be able to afford the electricity to run air conditioning and many may face

complications that involve heat stroke, fatigue, or death due to their age (infants or the infirm) and health conditions (obesity, heart conditions, diabetes).

#### *New Hampton's Vulnerable Populations*

In New Hampton, 13% (or 190 out of 1,491) of occupied households are below the poverty level. About 47% (697) of occupied households have elderly occupants (60 years and over). About 31% (469) of occupied households have elderly residents (65 years and over) living alone.

Most residents have access to a vehicle, however an estimate of 5% (68) households have no access to a vehicle. Nearly 61 of those 68 households without a vehicle are renters. Nearly 23% (342) of households have a person living with a disability. This is broadly defined from the data estimates for New Hampton. However, persons with mobility disabilities may be at a higher risk than others especially during unexpected natural disasters where accessibility is not always guaranteed to shelter.

Manufactured homes are unsafe in a tornado. Fatality rates are significantly higher than sturdy buildings. An alternative shelter should be identified prior to a tornado watch or warning. In 2022, there are about 32 mobile homes estimated in New Hampton (or 6% of occupied housing units). With an average household size of 2.3 persons, that puts potentially 75 people at a greater fatality risk than others.



## 2024 New Hampton Hazard Mitigation Plan

New Hampton has about 3% (97 people) of its population in institutionalized quarters which is likely the assisted living facility and jail.

### **Critical Facilities**

#### Water Supply

The City of New Hampton has a municipal water supply that services approximately 1,632 water meters. The community's water is taken from two locally located wells. These wells produce approximately 1,625 gallons of water per minute. In addition to structures that use the municipal water supply, there are several housing units that obtain their water from individually drilled wells. The City has two elevated water towers with a total capacity of 800,000 gallons. Typical daily usage is approximately 512,000 gallons per day, and just less than 200 million gallons are used annually in the city. The water is treated with chlorine at each well location.

#### Wastewater Treatment Plant and Lift Stations

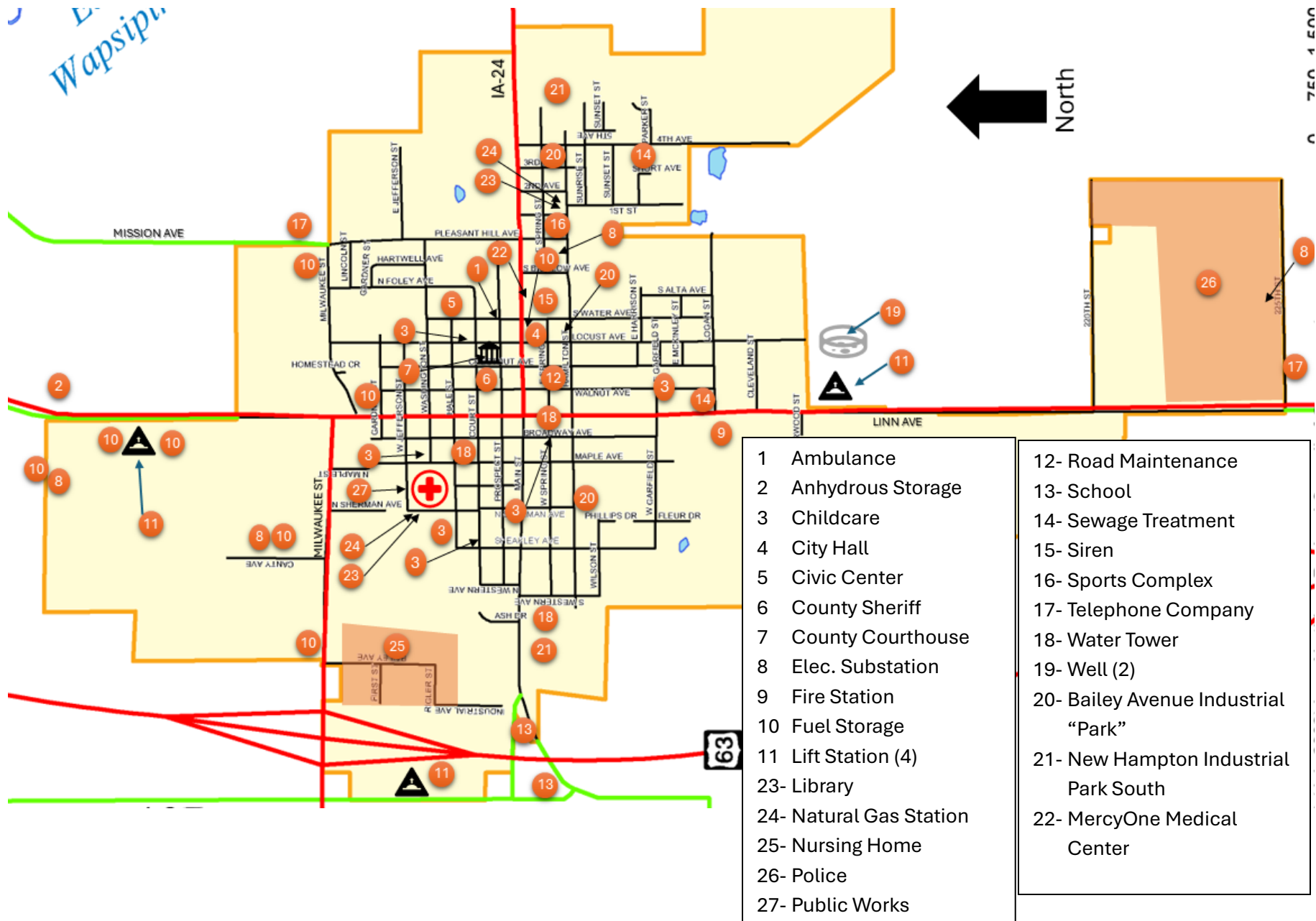
The City of New Hampton operates a Wastewater Treatment Facility designed to treat municipal wastewater. The effluent is collected through approximately 30 miles of sewer lines and four lift stations. The current wastewater treatment plant, constructed in the mid-1960s, utilizes a trickling filter system<sup>1</sup>. Additionally, New Hampton is currently planning for a new wastewater treatment plant, which is outlined in the approved 2023 Facility Plan. The system aims to serve citizens' needs and support economic development and industrial growth.

Each of the lift stations are at the following locations:

- 1- At the northern edge of town, located near the Deb El Foods at the intersection of North Linn Avenue and West Milwaukee Street.
- 2- At the west edge of town along Kenwood Avenue, south of the Croell Redi-Mix Headquarters.
- 3- At the southern edge of town near the south industrial park.
- 4- Located south of Cleveland Street and east of Linn Avenue, the terminal lift station of the city's sanitary system is a crucial point. Just before the pipelines bring effluent to the wastewater treatment plant, this lift station corrects large differences in connecting elevations. The terminal lift station is required to be continuously powered and in operation.

In the next 20 years, New Hampton is likely to see population growth. The existing water plant and wastewater treatment lagoons have the capacity to manage slow steady growth. Future hazard mitigation efforts will note additional facilities related to the assets here shown within the vulnerability assessment.

Figure 3: Critical Facilities



## Measuring Vulnerability to Selected Hazards

### Tornado Hazard

In 1992, an EF2 tornado passed through south of the city. The tornado caused \$500,000 in property damage. In 2003, an EF0 caused \$20,000 in property damage.

All buildings in New Hampton are prone to being damaged by a tornado. Therefore, the vulnerability of the community was determined by the assessed valuation of all buildings and dwellings on all parcels within the city's limits.

Using the assessed value from December 2023, the valuation of all 1,771 parcels in the City of New Hampton is \$195,397,445 based on Chickasaw County assessor data. The City of New Hampton has a potential property loss of \$195,397,445 from a tornado disaster.

**Table 7: Valuation of All Parcels in City of New Hampton (2023)**

Percent of City at Risk of a Tornado	100%
# of Parcels	1,771
Total Assessed Value of Buildings and Dwellings on Affected Parcels in 2023	\$195,397,445
Source: Chickasaw County Assessor's Office	

### Flood Prone Areas

The potential property losses of structures prone to flooding was calculated using the effective flood insurance rate map (FIRM) flood hazard zones for a 100-year (1%) annual chance flood.

Assessing the community's vulnerability to losses from tornado and flood hazards is determined with county assessor data. The potential property losses of structures prone to flooding was calculated using the effective flood insurance rate map (FIRM) flood hazard zones for a 100-year (1%) annual chance flood.

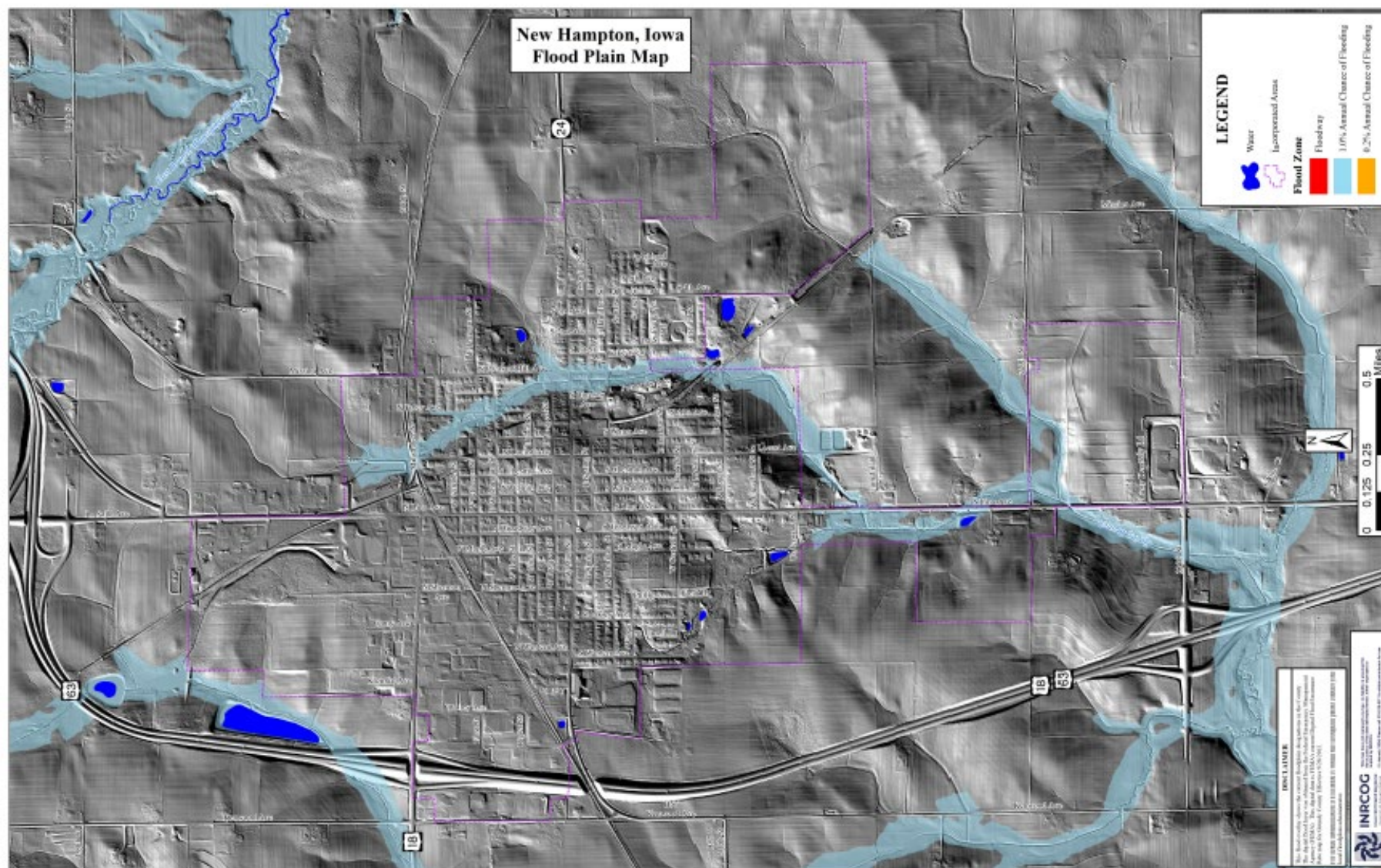
In Figures 4 and 5, the flood plain map shows the 1% annual chance of flooding in and around the City of New Hampton. The river basin is depicted in the topography shown on the map.

The parcels that are impacted with the 1% annual chance of flood are highlighted in Figure 6. There are 159 parcels within New Hampton potentially affected. The value of all buildings and dwellings on the affected parcels is \$12,156,605 based on the latest Chickasaw County assessor information. This covers 6.2% of the city's total parcels.

**Table 8: Potential Property Losses from the 1% Annual Chance Flood**

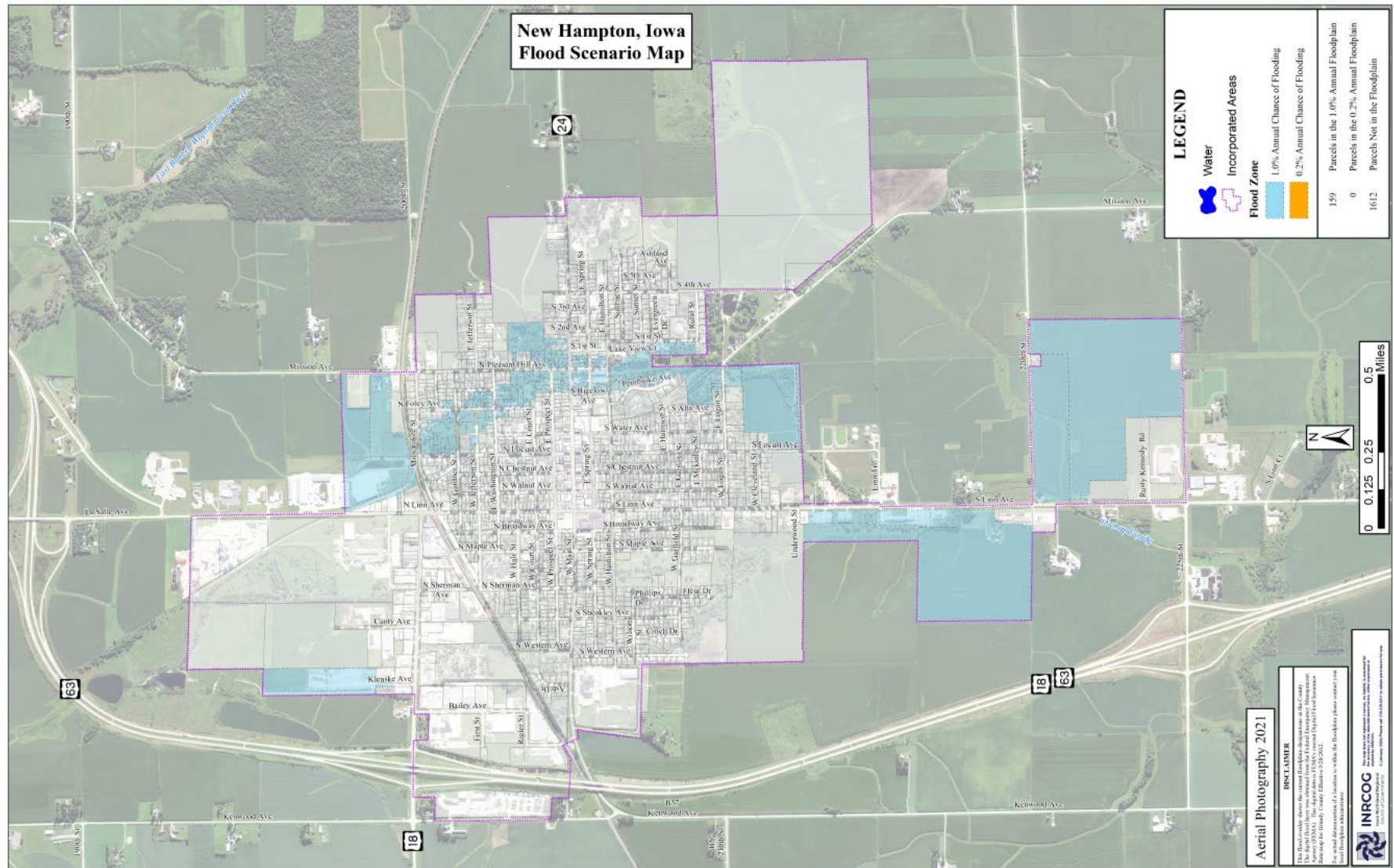
Percent of City Affected	6.2%
# of Parcels	159
Total Assessed Value of Buildings and Dwellings on Affected Parcels in 2023	\$12,156,605
Source: Chickasaw County Assessor's Office	

### Figure 4: Flood Plain Map





### Figure 5: Flood Scenario Map



### Future Development

Recent updates in Title 44 CFR §201.6 (c) (2) (i) require this risk assessment include a section with future conditions on the type, location, and range of anticipated intensities of natural hazards.

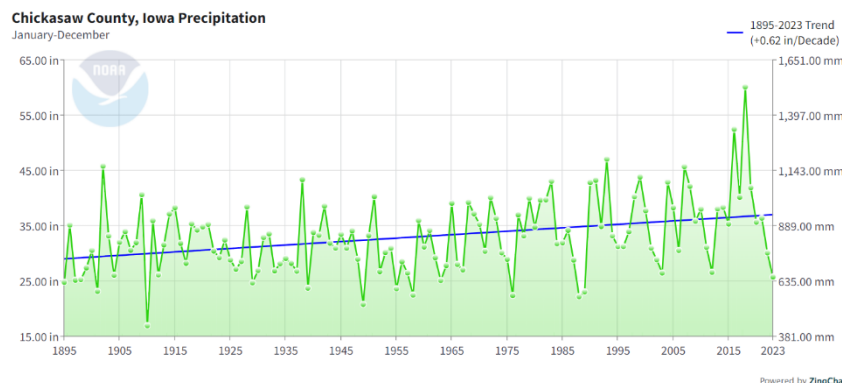
Long term trends of climate patterns for the region were summarized in the Fourth National Climate Assessment Midwest Section.<sup>1</sup> The National Climate Report is mandated to be updated every 4 years and deliver results to Congress and President on the effects to agriculture, energy productions, land use, transportation, and human health.

Yearly precipitation levels and annual average temperatures offer insights into future conditions of our climate system.

#### Annual Precipitation Levels in Chickasaw County

Taking the monthly precipitation records from January to December between 1895 and 2023 is shown in Figure 6. The values hover between 25 – 35 inches of precipitation levels recorded. The average precipitation level for the year is plotted and a linear trend of those values is shown in Figure 6. The trend shows a growing level of annual precipitation on average of 0.62 in more than the decade before. Based on this historical trend, precipitation is likely to continue to increase in the coming years.

**Figure 6: Historical Precipitation Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



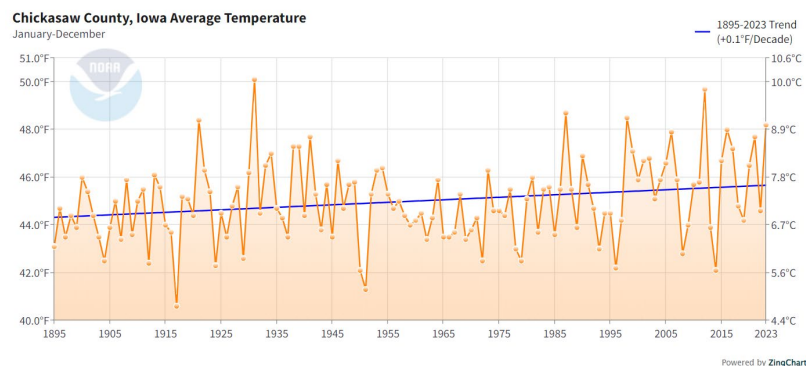
#### Average Annual Temperatures in Chickasaw County

The monthly average temperature is plotted over a 12-month period from 1885 to 2023 in Figure 7. The annual average temperature is also shown with a linear trend in Figure 7. This trend shows the average temperature in Chickasaw County increasing at a rate of +0.1° F every 10 years.

<sup>1</sup> USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

<sup>2</sup> NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published February 2024, retrieved on April 15, 2024 from <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>

**Figure 7: Historical Temperature Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



### **Climate Patterns from Increasing Precipitation and Higher Temperatures**

#### Drought

The relationship between increasing precipitation, temperature, and drought is complex, and often counterintuitive at first thinking about it. While increasing precipitation may seem like it would mitigate drought conditions, higher temperatures can exacerbate the situation in several ways:

1. Evapotranspiration: Higher temperatures lead to increased evaporation rates from soil, bodies of water, and plants. This means that even if there is more precipitation, it may quickly evaporate before it can effectively replenish soil moisture or water sources.
2. Changes in precipitation patterns: Increasing temperatures can alter precipitation patterns, leading

to more intense rainfall events but also longer periods of drought between these events. This pattern can result in rapid runoff and soil erosion during heavy rain, followed by extended dry periods that contribute to drought conditions.

Overall, while increasing precipitation may provide temporary relief from drought, the combined effects of rising temperatures can outweigh this benefit, leading to more frequent and severe drought events in certain regions.

#### Pest Infestation

With more humidity, the daily minimum temperature may increase across all seasons. Warming winters can increase the survival and reproduction of existing insect pests which allow new insect pests and crop pathogens to move into the Midwest region.

#### Extreme Heat Domes

A heat dome is a weather phenomenon characterized by a high-pressure system that traps hot air beneath it, leading to prolonged periods of extremely high temperatures and often causing heatwaves. Extreme heat events during the summers may occur with more frequency in the Midwest.

The human impacts of extreme heat affect socially and economically vulnerable populations the most. The higher costs of energy during heat waves disproportionately impact cost-burdened households. Heat related illness may be more severe among infants, elderly populations, and those with chronic health conditions.



### Projected Trends of Natural Hazards in Chickasaw County

- Prologued drought may occur as the atmosphere holds more moisture (even pulling moisture from plants) as the temperature increases. Longer periods between weather events means there are dryer and longer periods in between these events.
- Floods (flash or major types) will increase in intensity as the atmosphere holds more moisture to drive stronger storms and drop heavier rainfall over a shorter period during an event.
- Extreme heat may occur more frequently. The human health impacts are higher among socially vulnerable populations (the elderly, infants, those with chronic health issues, cost burdened households).
- Agricultural pests and pathogens may increase in growing plants and stored grain. Warming temperatures in the spring and summer have led to rising humidity. Higher dew and moisture conditions may increase the presence of these pests or crop diseases.

### **National Flood Insurance Program**

The City of New Hampton participates in the National Flood Insurance Program. The current effective FIRM map date is September 28, 2012. There are 8 policies within the community with a total coverage of \$1,522,000. There were 7 losses reported with a net of \$7,718 paid.

FEMA defines a repetitive loss property as an insurable building that has experienced two losses in a 10-year period in which each loss is \$1,000 or more. There are 3 reported repetitive loss properties. The City is aware of the location of these properties and will incorporate them into future flood mitigation measures.

**Table 9: National Flood Insurance Program Information**

<b>Community Name</b>	City of New Hampton
<b>NFIP Participant (Yes/No)</b>	Yes
<b>Designee / Agency to implement NFIP Requirements</b>	City Clerk
<b>Participant in CRS (Yes/No)</b>	No
<b>Current Effective Map Date</b>	09/28/2012(M)
<b>Regular-Emergency Program Entry Date</b>	09/01/1987
<b>Total Policy Count</b>	8
<b>Total Coverage</b>	\$1,522,000
<b>Total Losses</b>	7
<b>Total Net Dollars Paid</b>	\$7,718
<i>(M) = No flood elevations determined – All Zone A, C, and X</i>	
<i>Source: Source: FEMA National Flood Insurance Program, Data and Analytics, HUDEX Report. <a href="https://nfipservices.floodsmart.gov/reports-flood-insurance-data">https://nfipservices.floodsmart.gov/reports-flood-insurance-data</a></i>	

### Hazard Risk Assessment

The top three hazards from the risk assessment are:

1. Tornado/ Windstorm
2. Pandemic/ Endemic Human Disease
3. Thunderstorm with Lighting/ Hail



### Methodology

This risk assessment identifies how people, property, and structures would be harmed or damaged by one of the listed hazard events. Iowa Homeland Security and Emergency Management Department (Iowa H.E.S.M.D.) provided the hazard risk score formula for determining the level of risk used in this analysis.

### Factors of Hazard Risk

Risks to a hazard event may differ across geographical locations or even differ based on certain times of year. For example, tornado season in Iowa is usually in May and tornados have the highest risk during this time due to change in weather patterns from the western and central Gulf of Mexico causing higher chances of extreme weather.

For this analysis, four hazard risk factors are rated on a scale between 1 and 4 by committee participants after reviewing

profiles of each hazard with the planning coordinator. Information was shared with the committee which described the hazard, historical occurrences, impact, duration, and warning time. Participants used this information to strengthen their understanding to rate each hazard factor.

### Hazard Risk Score Formula

$$\begin{aligned} &[\text{Probability}] \times \mathbf{45\%} + [\text{Magnitude or Severity}] \times \mathbf{30\%} \\ &+ [\text{Warning Time}] \times \mathbf{15\%} + [\text{Duration}] \times \mathbf{10\%} \\ &= \text{Final Hazard Assessment} \end{aligned}$$

*Source: Provided by Iowa H.S.E.M.D.*

Hazard scores were collected during the 2<sup>nd</sup> county committee meeting. INRCOG planners calculated the hazard risk score for each hazard based on the formula in this section. Results for New Hampton are on page 21.

Score Value vs. Hazard Risk Level	Description of hazard with this rating
Scores with a value closer to 1: <u>Low risk hazard</u>	Hazard is not likely to affect people or property because the likelihood is minimal.
Scores with a value closer to 4: <u>High risk hazard</u>	The hazard has historically occurred and may have significant impacts to people and property.

## 2024 New Hampton Hazard Mitigation Plan

### Probability

The probability score reflects the likelihood of the hazard occurring in the near future. Historical data of the hazard event occurring in Chickasaw County or Iowa informed the likelihood of future occurrence.

Probability Score Definitions		
Score	Description	
1	Unlikely	<i>Less than 10% probability in any given year (up to 1 in 10 chance of occurring), a history of events is less than 10% likely or the event is unlikely but there is a possibility of its occurrence.</i>
2	Occasional	<i>Between 10% and 20% probability in any given year (up to 1 in 5 chance of occurring), history of events is greater than 10% but less than 20% or the event could possibly occur.</i>
3	Likely	<i>Between 20% and 33% probability in any given year (up to 1 in 3 chance of occurring), history of events if greater than 20% but less than 33% or the event is likely to occur.</i>
4	Highly Likely	<i>More than 33% probability in any given year (event has up to a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.</i>

### Magnitude or Severity

The magnitude or severity of the hazard event is measured by the level of impact on the human environment. Property damage is assessed by the whole planning area.

Magnitude or Severity Score Definitions		
Score	Description	
1	Negligible	Less than 10% of property severely damaged, the shutdown of facilities and services for less than 24 hours, and/or injuries/illnesses treatable with first aid
2	Limited	10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
3	Critical	25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
4	Catastrophic	More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.

## 2024 New Hampton Hazard Mitigation Plan

### Warning Time

This should be taken as an anticipated warning time.

The warning time score assesses the ability to warn a population before the hazard occurs. The values of the score range from 1 (at least 24 hours) to 4 (minimal or no warning time).

For many of the climate hazards, there is a considerable amount of warning time as opposed to the human-caused hazards (transportation and hazardous materials incidents) that occur instantaneously or without any significant warning time.

Warning Time Score Definitions		
Score	Description	
1	Forecasted	More than 24 hours warning time.
2	Likely	12 to 24 hours warning time.
3	High Chance	6 to 12 hours warning time
4	Imminent	Minimal or no warning time (up to 6 hours warning)

### Duration

The duration is the time of a typical or expected hazard event to occur. For an earthquake or traffic accident that is a score of 1. For infrastructure failure, it is likely a 4.

Table 6 displays rated risk scores for each associated hazard. This assessment was completed by city representatives based on hazard profiles prepared for the planning committee.

Duration Score Definitions	
Score	Description
1	Less than 6 hours
2	Less than 1 day
3	Less than 1 week
4	More than 1 week

Table 10: Hazard Risk Assessment					
Hazards	Probability	Magnitude	Warning Time	Duration	Score
Tornado/Windstorm	4	4	4	1	3.7
Pandemic/ Endemic Human Disease	4	4	2	4	3.7
Thunderstorm/ Lighting/ Hail	4	2	4	1	3.1
Flooding - Flash	4	2	3	2	3.1
Infrastructure Failure	3	2	4	4	3.0
Hazardous Materials	3	2	4	3	2.9
Transportation Incidents	3	2	4	2	2.8
Animal/ Crop/ Plant Disease	4	1	1	4	2.7
Severe Winter Storm	4	1	1	2	2.5
Earthquake	1	4	4	1	2.4
Grass/Wildland Fire	3	1	4	1	2.4
Drought	3	1	1	4	2.2
Extreme Heat	3	1	1	4	2.2
Terrorism	1	1	4	2	1.6
Sinkholes	1	1	4	1	1.5
Expansive Soils	1	1	1	4	1.3
Landslide	1	1	1	1	1.0
Levee/Dam Failure	1	1	1	1	1.0
Flooding - Riverine	1	1	1	1	1.0
Radiological	1	1	1	1	1.0

Source: Completed by City Representative. Calculated score completed by INRCOG.

## Hazard Mitigation Goals

### in New Hampton, Iowa

The following list of goals was developed by planning committee participants from the associated jurisdiction. Goals 1 through 7 were developed in the previous 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. Goals 6 and 7 were revised to be more effective and sensible to local level scopes. The planning committee participants chose to adopt the same goals and add additional goals. Goals 8 through 9 were created by the city's committee representatives which provided updated and additional mitigation goals and activities.

**Goal #1** Reduce the chance of and impact of flooding in the community.

**Goal #2** Take measures to minimize the occurrence of injuries and loss of life due to hazards.

**Goal #3** Take measures to minimize or eliminate damage that may occur because of hazards.

**Goal #4** Increase the city's ability to respond to natural disasters and man-made hazards.

**Goal #5** Return to the community to similar or improved pre-event conditions as quickly as possible following a disaster event.

**Goal #6** Incorporate city plans with existing planning documents including the hazard mitigation plan.

**Goal #7** Continually re-assess and re-evaluate the plan as updates to improve inefficiencies or identify barriers and reconsider mitigation activities for relevancy or achievability.

**Goal #8** Ensure public safety and welfare with updating planning and development documents.

**Goal #9** Invest in updated city improvements to ensure functionality and sustainable use of public infrastructure.

### **Previous Mitigation Activities by Type**

Mitigation actions and activities in this Plan will be organized according to these 5 categories: Emergency Services, Education and Outreach Projects, Natural Resource Protection or Natural Based Solutions, Structural Projects, or Local Plans and Regulations.

### **Emergency Services in New Hampton**

#### Chickasaw County Emergency Management Agency

New Hampton works with the Chickasaw County Emergency Management Coordinator, based out of the City of New Hampton, on various safety and emergency events. The Emergency Management Coordinator works in conjunction with local fire, rescue, police, and government officials to draft and implement workable emergency action plans in the community. The Chickasaw County Emergency Management Coordinator is Jeff Bernatz.

#### Law Enforcement

The New Hampton Police Department located at 22 S. Locus Ave in New Hampton, IA provides law enforcement services to the community. There are 6 police officers that serve from the department.

#### Fire Protection and EMS Services

Fire protection for the City of New Hampton is provided by the New Hampton Fire Department. The station is located at 403 S. Linn Ave in New Hampton, IA. There are 28-30 volunteer fire fighters that serve in the department currently. Each of the members are HAZMAT certified Firefighter 1

trained. There are several members that have Firefighter 2 training, and others with driver/operator training. New Hampton's Fire Department also has members certified in operating an aerial apparatus. Dispatch is provided via a paging system called I Am Responding app that is accessible through a phone app.

The New Hampton Fire Department maintains 28E agreements with the following communities: Alta Vista, Protivin, Ionia, Lawler, Nashua, Fredericksburg, and North Washington.

Equipment used by the New Hampton Fire Department includes the following:

- 3 pumper trucks
- 2 tankers
- 2 grass rigs
- 1 aerial/ladder apparatus

#### EMS Services

Chickasaw County EMS provides ambulance service to area hospitals. Chickasaw EMS was started by the county in January 2023. It is managed by the county and located at 204 East Prospect Street in New Hampton.



## 2024 New Hampton Hazard Mitigation Plan

### Medical Facilities

MercyOne New Hampton Medical Center is in New Hampton, IA. This is the only medical facility with an ER unit located in the county. MercyOne has 11 private inpatient rooms and cares for over 20,000 outpatients each year.

MercyOne New Hampton offers a full range of services in an inpatient and outpatient setting as well as 24-hour emergency care, surgical services, primary care clinic, therapy and rehabilitation, diagnostic services, speech and occupational therapy, Senior Life Solutions, and specialty clinics.

### HAZMAT Response Teams

New Hampton contracts with Northeast Iowa Response Group for response to hazardous material spills. The Northeast Iowa Response Group is a division of Waterloo Fire Rescue as is the Hazardous Materials Regional Training Center. The Training Center provides training to fire departments and companies from around the state and country. Not only is this a training center, but it also serves as a hazardous materials quick response unit to Black Hawk County, surrounding counties, and many municipalities in a ten-county region. The Unit provides local fire departments with hazard materials emergency procedures thus reducing additional contamination. An evacuation plan is also in place in conjunction with the activities of the local department. Contact information for the facility is as follows: Hazardous Materials Regional Training Center, 1925 Newell Street, Waterloo, Iowa 50707, Phone: (319) 291-4275, Toll Free: (800) 291-4682, Fax: (319) 291-4285

The jurisdiction also partners with the Northeast Iowa Response Group for assistance in responding to any methamphetamine labs located in the city limits. The Response Group assists the Police Departments in containment of the site and disposal of hazardous chemicals.

### Warning Systems in New Hampton

#### 1. Tornado Sirens

New Hampton has purchased a new tornado warning siren system as of November 2023 with a 30-year life use.

The activation systems of warning systems are activated and operated by a central command system operated by the Chickasaw County Rescue Squad in New Hampton, IA.

#### 2) Alert Iowa Mass Communication System

Chickasaw County has implemented the use of Alert Iowa, a mass communication notification system. The system features are controlled through the Chickasaw County Emergency Management Agency. Residents can customize their alert settings including the type of alerts they would get.

Alert Iowa allows for emergency notifications via landline telephones, cell phones, email, text messages, and social media. This is useful for communities that may not have an operating warning siren or may not hear the sirens. The County will use its emergency notification network for all the following events: blizzards, flash flooding, severe thunderstorms, and tornadoes. There is an

## 2024 New Hampton Hazard Mitigation Plan

optional way to receive the same alert for events such as: excessive heat warnings, hazardous materials warnings, heavy snow warning, high wind warnings, ice storm warnings, law enforcement warnings, shelter in place warnings, sleet warnings, wind chill warnings, and winter storm warnings.

### Public Works/Street Department

The Public Works Director is located at 112 E. Spring Street. The Street Department is located at 424 E. Hamilton Street. Water and Wastewater Departments are located at 800 S. Locust Avenue.

### **Education and Outreach Projects in New Hampton**

New Hampton currently has in place E911 Emergency Assistance. Other communications used by city personnel include pagers, radios, and cellular telephones. Radio, television, cellular telephones, landline telephones, newspapers, warning sirens, and NOAA Radio Service are available to the public at large. The City has developed a website in order to keep its citizens, and other interested parties, aware of local and government affairs. The website address is <https://www.newhamptonia.com/>

The City established City Hall and the Chickasaw County Event Center as public cooling shelters during extreme heat emergencies.

### **Natural Resource Protection in New Hampton**

The Floodplain Ordinance is a portion of New Hampton's Zoning Ordinance. The Zoning Administrator is charged with enforcement of the floodplain ordinance in addition to his/her other duties. In accordance with NFIP guidelines, the ordinance does not allow for new construction within the floodplain. In addition, if a floodplain permit is issued for development in a special flood hazard area the ordinance requires those structures to "be designed or anchored to prevent the flotation, collapse or lateral movement of the structures or portions of structures due to flooding..."

Improvements to the sanitary sewer system and the conversion of what was polishing pond to a catch basin will help to minimize the adverse effects of flooding during future high-water events.

The city received trees through the Trees Forever Program. The program is an Iowa Dept of Natural Resources initiative that promotes planting trees to increase tree canopy coverage and reduce electrical usage during summer months. The city has been implementing a tree planting program over the course of 3-5 years.

### **Structural Projects in New Hampton**

The city has been in the process of replacing fire hydrants throughout town. About 5-10 hydrants are replaced each year.

## Local Plans and Regulations in New Hampton

New Hampton completed a local plan and regulation assessment. The results are shown in the following table.

Table 11: Local Regulatory Capability Assessment	
Community	City of New Hampton
Previous HMP Participant?	Yes
Comprehensive Plan?	Yes
Building Code?	No
Zoning Ordinance? RR=restricted residential	Yes
Subdivision Regulations?	Yes
Floodplain Management Ordinance?	Yes
Tree-Trimming Ordinance?	Yes
Storm Water Ordinance?	Yes
Snow Removal Ordinance?	Yes

Timeframe	Description
Immediate	1 - 6 months
Short Term	1-3 years
Mid-Term	3-5 Years
Long-Term	More than 5 Years

Cost	Estimated Cost Range
Minimal	Less than \$10,000
Low	\$10K to \$99K
Moderate	\$100K to \$299K
High	Greater than \$300K

## How to Use the Implementation Guide in this Plan

Notes about the tasks (listed as line items) in the tables on the following pages.

- Each task (line item) stands on its own so it can be completed whenever possible.
- Each action item is not limited to the details presented below and may change based on future conditions.
- The tasks were categorized based on mitigation type. The mitigation types are not shown in any order (no priority over the other).

This implementation strategy is presented to help with the general understanding of how hazard mitigation may feed into the City's existing or future priorities.

## Priority Level

The priority level was informed through discussions among planning committee members who considered potential benefits of implementing the activity, some hurdles that the city may face in implementing the action step, and the drawbacks of implementation. *Committee representatives considered a cost-benefit approach.*

## Timeframe & Estimated Costs

Cost estimates are based on the associated costs of additional staffing that may or may not be needed, time for planning/meetings/coordinating, and cost of the proposed action/program/ project. The time frame to complete column is based on four designations (see table to the left).

## Strategic Implementation Guide for Hazard Mitigation Activities

<b>Table 12: 'Education and Awareness' Type Mitigation Activities</b>						
Description: These types of actions keep residents informed about potential natural disasters.						
<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (\$)</b>	<b>Funding Source</b>
High	Prepare an outreach strategy to encourage residents to sign up for Alert Iowa.	All	EMA, Fire Dept, Police Dept, City Council	Short 1-3 years	Minimal 0-\$10K	Hazard mitigation grant program
Medium	Ensure up-to-date annual HAZMAT response training for first responders.	Hazardous Materials, Transportation Incidents, Infrastructure Failure	Fire Department, Police Department, City Council	Short 1-3 years	Medium \$100K to \$300K	City general fund, hazard mitigation grant program
Low	Incentivize local business and facilities with Tier II hazards to prepare or update their emergency response plan and share with emergency response teams.	Infrastructure Failure, Hazardous Materials	City Council	Medium 3- 5 years	Low \$10K to \$99K	City general fund

<b>Table 13: 'Emergency Services' Type Mitigation Activities</b>						
Description: Actions that protect people and property during and immediately after a disaster or hazard event.						
<i>Priority</i>	<i>Tasks</i>	<i>Hazard(s)</i>	<i>Primary Agency Responsible for Implementation</i>	<i>Time Frame to Complete</i>	<i>Estimated Cost (s)</i>	<i>Funding Source</i>
Medium	Update a list of potential translation services/contacts for emergency communication services.	All	Fire Dept, Police Dept, City Council, EMA, Public Health	Immediate 1-6 months	Moderate \$100K to \$299K	Hazard Mitigation Grant Program
Low	Purchase SCADA system for high level supervision of water treatment plant, & wastewater plant.	Terrorism, Drought	Police Dept, County EMA	Long 5-10 years	High \$300K +	State and Local Cybersecurity Grant Program, Hazard Mitigation Grant Program, City General Fund

**Table 14: Structure and Infrastructure Project Type Mitigation Activities**

Description: Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
High	Install a security surveillance system at critical infrastructure to prevent crime and disaster.	All	Police Chief, Public Works Director	Long Term 5-10 years	High \$300k or greater	Hazard Mitigation Grant Program, State and Local Cybersecurity Grant Program
High	Survey DATUM points for hydrant locations throughout the city (w/ hydrant tag #) and map the tag # for emergency response services.	Severe Winter Storm, Thunderstorms w/ Lighting, Tornado/Windstorm, Infrastructure Failure, Grass/Wildfire, Extreme Heat,	Public Works Director	Short Term 1 - 6 months	Moderate \$10K to \$30K	City general fund, utility provider
High	Install hydrant reflector tags to locate hydrants in snow/night.	All	Public Works Director	Short Term 1 - 6 months	Moderate \$10K to \$30K	City general fund, utility provider
Medium	Install riverbank riprap.	Flooding	Public Works Director, City Council	Medium 3-5 years	Moderate \$100K to \$299K	City general fund
Low	Continue relocating overhead power lines underground and system hardening updates.	All	City Council, City-Owned Utility	Short-Term (6 months - 3 years)	Moderate \$10K-\$30K	City General Fund, Utility provider

**Table 15: Natural System Protection and Nature-Based Mitigation Type**

Description: Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
High	Apply for a planning grant to prepare a flood mitigation plan that may address riverbank erosion and retention basins to mitigate storm water issues.	River Flooding, Flash Flooding	City Council, County EMA	Medium 1-3 years	Medium \$10K-\$100K	Flood Mitigation Assistance Program (Planning Grants)
Low	Develop infrastructure update plan to increase green infrastructure (i.e. tree planting, native planting, permeable pavers, water retention methods, etc.) to address the impact of drought and excessive heat.	Drought, Excessive Heat	City Council, Public Works	Long Term 5-10 years	Medium \$10K-\$100K	City general fund



<b>Table 16: Local Plans and Regulations Mitigation Activities</b>						
Description: Actions by administrative or regulatory processes which direct how land and buildings are developed and built. These actions include regulations by public entities to reduce hazard losses.						
<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
High	Update the City's comprehensive plan to correspond with existing updated city documents.	All	City Council, City P&Z Commission	Short 1-3 years	Low or Moderate \$10K-\$199K	City General Fund
Medium	Adopt the State Building and Fire Code.	All	City Council	Midterm 3-5 years	High \$300K +	City General Fund
Medium	Enforce stormwater fees.	Flooding	City	Immediate 1-6 months	Minimal 0-\$10K	City General Fund
Low	Enforce back flow valves in all new construction per updated code.	Wild/ Grass fire	City	Immediate 1-6 months	Minimal 0-\$10K	City General Fund

# City of North Washington, Iowa

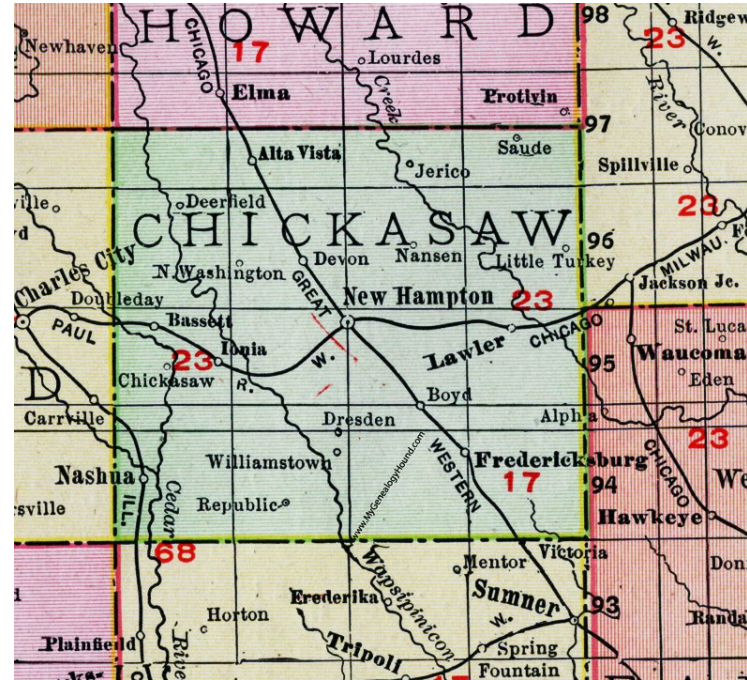
## Hazard Mitigation Plan 2024 Update

### Appendix H of Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan

Funded by the Chickasaw County Emergency  
Management Agency

Prepared by Iowa Northland Regional Council  
of Governments (INRCOG)

April 2024



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# Resolution Adopting Plan by City Council

## A RESOLUTION OF THE CITY COUNCIL OF NORTH WASHINGTON, IOWA, ADOPTING THE CITY OF NORTH WASHINGTON, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.

WHEREAS, the City of North Washington City Council recognizes the threat that natural hazards pose to people and property within North Washington; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing the City of North Washington served and participated in the formulation of said Plan as part of the the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare the hazard mitigation plan, hereby known as the City of North Washington, Iowa Hazard Mitigation Plan 2024 Update in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the City of North Washington, Iowa Hazard Mitigation Plan 2024 Update identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in North Washington from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the City of North Washington, Iowa Hazard Mitigation Plan 2024 Update; and

WHEREAS adoption by the City of North Washington demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

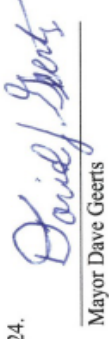
NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF NORTH WASHINGTON, IOWA, THAT:

Section 1: In accordance with local regulations, North Washington City Council adopts the City of North Washington, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of North Washington may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of North Washington to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 7<sup>th</sup> day of May, 2024.

ATTEST:

  
Britney Rasing, City Clerk

  
Mayor Dave Geerts

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## About

The City of North Washington developed this local Hazard Mitigation Plan to update their previous plan. That Plan was part of the 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. The 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan is a sequential 5-year update to the previous hazard mitigation document. Federal hazard mitigation grant programs require an updated hazard mitigation plan approved by FEMA to be in good standing and remain eligible for grant funding. The Plan was developed to meet the requirements in Title 44 CFR § 201.6.

Elected officials, city clerks, planners, first responders, and other stakeholders were invited to attend planning committee meetings as participants while they completed worksheets that were returned to the Chickasaw County's Emergency Management Agency (EMA) and INRCOG. Chickasaw County's EMA initiated and funded this effort for all participating communities and contracted INRCOG to coordinate a multi-jurisdictional approach to this plan development process.

Participating communities included all nine (9) incorporated jurisdictions in Chickasaw County. Other participating members were representing their respective County departments. The school district superintendents of three public school districts participated and represented their jurisdictions. Four (4) committee meetings were held between March 19<sup>th</sup> and April 23<sup>rd</sup> wherein each participant provided data and completed work sheets to develop their hazard mitigation plans.

## FEMA's Emergency Management Cycle



### What is Hazard Mitigation?

Hazard Mitigation is any *sustained* action taken to reduce or eliminate long-term risk to life and property from hazards.

The emergency management cycle has 4 phases:

- **Preparedness** is the assessment of potential risks, hazards, and vulnerabilities that a community may face. The development and updating of activities, programs, and systems before an event occurs is included in this phase of the cycle.
- **Response** is the immediate effects after a disaster.
- **Recovery** is a long-term phase that focuses on returning the community to normal after a disaster.
- **Mitigation** is an action that can occur at any phase.

## The Benefits of Hazard Mitigation

For local governments, there are benefits in knowing hazards, their risks, and planning for mitigation strategies.

Those include:

- ✓ An increased understanding of natural, technical, and man-made hazards faced by communities.
- ✓ Taking an opportunity to create more sustainable and disaster-resistant communities.
- ✓ Participating in this collaborative intergovernmental effort is cost effective for all participants.
- ✓ Using limited resources on hazards that have the biggest impacts on a community.
- ✓ Reducing or preventing damage to existing structures, subsequently reducing repair costs.
- ✓ Identifying vulnerable populations to establish equitable outcomes.
- ✓ Setting long-term goals that can be compatible with city policies or planning documents.

## The Planning Process

In emergency management planning, reducing the community's risk to natural hazards is a multi-step process which involves collaboration among stakeholders, assessing risk and vulnerabilities of hazards facing the community, establishing actions or activities to reduce risk, and assembling an organized strategy to carry out all mitigation activities.

Participants in the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee provided the information in this plan including community profile information, hazard mitigation goals, mitigation activities/action, updates to existing mitigation activities, and elements included in the strategy such as priorities, designated agencies, estimated costs, and overall strategic direction of this plan.

### *Participants in the Plan Followed This 5 Step Process*





## Community Data Sources

Population data is based on 2020 decennial Census data. The 2022 American Community Survey 5-year estimates are the latest and most reliable survey data sets to understand what is taking place in the county and each city. Most counties, cities, and towns rely on 5-year estimates. Employment, workforce, and industry figures in this Plan are estimates that have a margin of error.

It is important to note that the ACS estimates used for rural communities will have a degree of uncertainty associated with them, called sampling error, because they are based on a sample. In general, the larger the sample, the smaller the level of sampling error. Rural communities tend to have smaller samples than larger cities, so the “margin of error”—a measure of the precision of an estimate at a given level of confidence—likely will be larger for rural areas.

Crash data along roadways within each jurisdiction is collected between the period of 2019 and 2023. Using a map tool interface, the data was taken at a city level and presented to understand incident severity, casualties, and property damage from reported accidents. Accident data is added to the site daily and accessible through an online website, <https://icat.iowadot.gov/>.

In the risk analysis section of this Plan, estimates of property loss are measured using mapping of hazardous zones. For the vulnerability risk assessment, flood prone homes were determined using the boundaries of the 100 year (1%) annual chance flood zone. The value of potential property loss was

derived from the 2023 assessed dollar value of structures and dwellings on affected parcels provided by the Chickasaw County Assessor’s Office.



*The Immaculate Conception Catholic Church in North Washington is the largest church in Chickasaw County.*

## City Profile

**Jurisdiction: City of North Washington**

**County: Chickasaw County**

**Population (2020): 112**

The City of North Washington is in the upper west quadrant of Chickasaw County. County Highway V18 runs north-south through the community. The Little Wapsipinicon River is just east of North Washington. The Wapsipinicon River is located west of the city.

In 2020, the city's population was 112 with 97% being White and the median age was 42. Working aged residents (15-60 years) made up 59% of the population. Children and teens (younger than 15 years) made up 21% of North Washington's population while older adults (older than 65 years) made up 20%.

The median household income in 2022 was \$60,052. The unemployment rate was 0%. Most people commute to work and there may be a few that work from home. The top three largest industry sectors in North Washington are as follows (in order from highest to lowest): 1) Retail Trade; 2) Manufacturing and 3) Educational services, and health care and social assistance.

**Figure 1: Map of Chickasaw County**

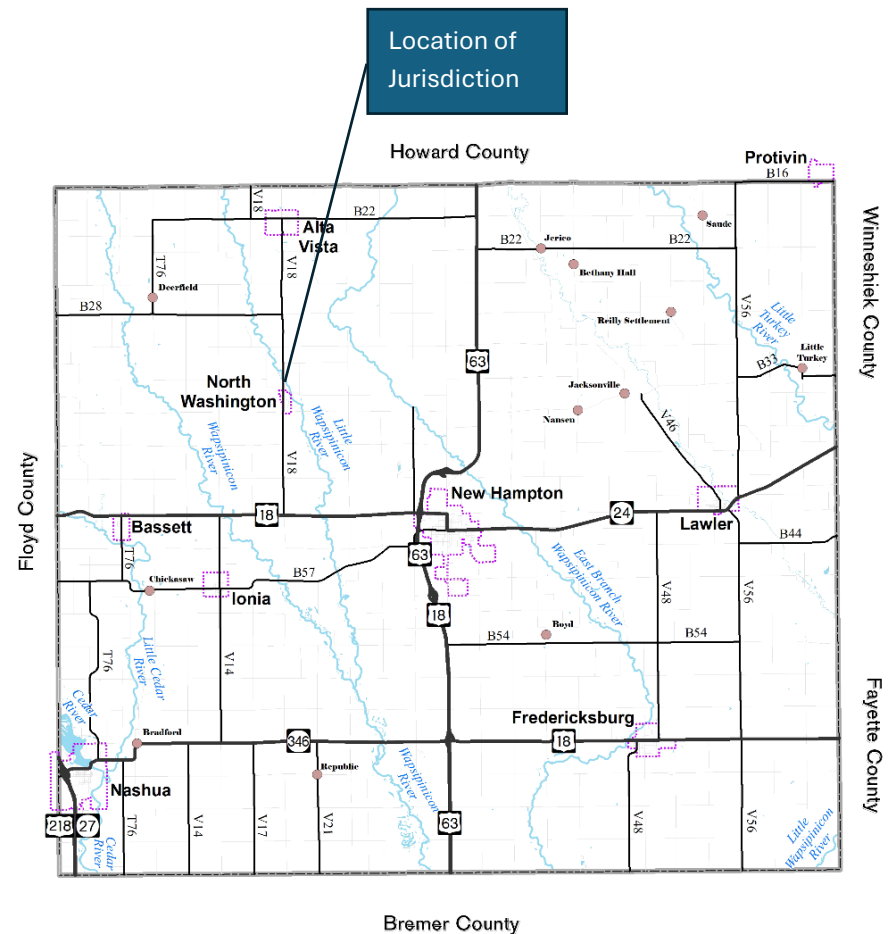


Table 1: Population Data (2020)		
City of North Washington		
	Total	% of Population
Total population	112	100%
AGE		
Under 5 years	8	7%
5 to 9 years	7	6%
10 to 14 years	9	8%
15 to 19 years	5	5%
20 to 24 years	5	5%
25 to 29 years	7	6%
30 to 34 years	10	9%
35 to 39 years	4	4%
40 to 44 years	5	5%
45 to 49 years	10	9%
50 to 54 years	6	5%
55 to 59 years	10	9%
60 to 64 years	4	4%
65 to 69 years	8	7%
70 to 74 years	8	7%
75 to 79 years	2	2%
80 to 84 years	1	1%
85 years and over	3	3%
Median Age	41.3	-
RACE		
White	109	97%
Black or African American	2	2%
Hispanic or Latino (of any race)	3	3%
American Indian and Alaska Native	0	0%
Asian	0	0%
Native Hawaiian/Other Pacific Islander	0	0%
Some Other Race	1	1%
Two or More Races	0	0%
Source: 2020 Census		

Table 2: Employment Data (2022)		
City of North Washington		
	Value	% of Population
Median Household Income	\$60,052	-
Unemployment Rate (2022)	0.0%	-
Workers that commute to work	55	100%
Workforce that works from home	0	0%
Source: 2022 American Community Survey 5-Yr Estimates		

Table 3: Employment Industry Data (2022)		
City of North Washington		
Workforce Industry	# of Workers	% of Workforce
Workforce	77	100%
Agriculture, forestry, fishing and hunting, and mining	2	3%
Construction	4	5%
Manufacturing	18	23%
Wholesale trade	2	3%
Retail trade	27	35%
Transportation -warehousing, utilities	3	4%
Information	0	0%
Finance and insurance, and real estate and rental and leasing	0	0%
Professional, scientific, and management, and administrative and waste management services	1	1%
Educational services, and health care and social assistance	16	21%
Arts, entertainment, and recreation, and accommodation and food services	1	1%
Other services, except public administration	2	3%
Public administration	1	1%
Source: 2022 American Community Survey 5-Yr Estimates		

## Highway Traffic and Crash Data

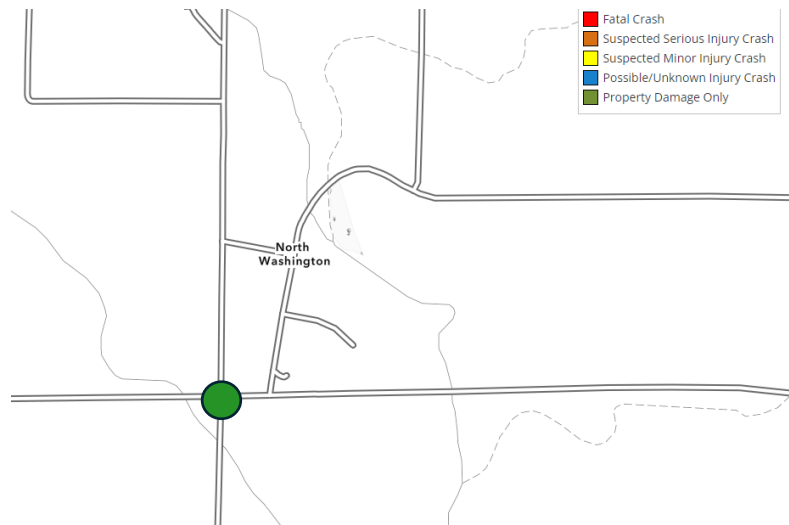
Based on Iowa DOT crash data, between 2019 and 2023 there has been one incident. No fatalities or casualties reported. Property loss from this incident was \$1,500.

**Table 4: Crash Data from 2019-2024**

<b>Total Crashes</b>	1
<b>Crash Severity</b>	
<b>Fatal</b>	0
<b>Suspected Serious Injury</b>	0
<b>Suspected Minor Injury</b>	0
<b>Unknown</b>	0
<b>Property Damage Only</b>	1
<b>Property Damage Total</b>	\$1,500

Source: Iowa DOT Crash Data

**Figure 2: Iowa Crash Analysis for All Traffic Incidents (2019-2023)**



Source: Iowa DOT

## Housing Data

The City of North Washington has about 50 occupied housing units. Nearly all (98%) of them are single family detaching housing. There may be 1 or 2 mobile homes. Most housing was built before 1940 (54%). About 10% of the housing stock was built after 1980. Most homes heat their units with LP gas (84%).

## Community Utility Providers

Alliant Energy is North Washington's electricity provider. Residents of North Washington utilize LP (liquid propane) gas. The three main LP gas providers are Five Star Cooperative, AgVantage, and Consolidated Energy. Windstream provides telephone services and broadband internet services. Residents use private wells to get their household water and septic tanks are used by each home's disposal of wastewater. Jendro Sanitation is the contractor that provides sanitation services.

**Table 5: Utility Providers**

City of North Washington	
<i>Electric</i>	Alliant Energy
<i>Natural Gas</i>	Black Hills
<i>Telephone/Internet</i>	Windstream
<i>Cable TV</i>	None
<i>Water Services</i>	Well (Private)
<i>Sewer Services</i>	Septic
<i>Sanitation</i>	Jendro Sanitation

<b>Table 6: Housing Data (2022)</b>		
City of North Washington		
	Total	% of Occupied Units
Occupied housing units	50	100%
<b>Housing Unit Type</b>		
1, detached	49	98%
1, attached	0	0%
2 apartments	0	0%
3 or 4 apartments	0	0%
Mobile home or other type of housing	1	2%
<b>Year Structure Built</b>	Total	% of Occupied Units
2020 or later	0	0%
2010 to 2019	0	0%
2000 to 2009	1	2%
1980 to 1999	4	8%
1960 to 1979	9	18%
1940 to 1959	9	18%
1939 or earlier	27	54%
<b>House Heating Fuel</b>	Total	% of Occupied Units
Utility gas	0	0%
Bottled, tank, or LP gas	42	84%
Electricity	5	10%
Fuel oil, kerosene, etc.	0	0%
Coal or coke	0	0%
All other fuels	3	6%
No fuel used	0	0%
<i>Source: 2022 American Community Survey 5-Year Estimates</i>		

## Critical Facilities

The fire station/city hall was listed in Table 7 because they serve a critical function for community services. Fuel storage locations, the city's warning siren, and bridges are shown in Figure 3.

In the next 20 years, North Washington is not likely to see population growth that will require large upgrades to their infrastructure such as a wastewater treatment plant. Future hazard mitigation efforts will note additional facilities related to the assets here shown within the vulnerability assessment.

<b>Table 7: Critical Facilities</b>	
Fire Station/ City Hall	114 S. Wapsi St North Washington, IA

## **Vulnerable Assets**

### **People**

Vulnerability to losses will increase where there are larger concentrations of people. In towns where population density increases, the number of people that can be harmed during a hazard event (tornado, flood, etc.) increases. In addition, there are segments of the population that may be more susceptible to impacts and/or harm from a hazard depending on their location within the area (i.e. flood zone or near industrial plants with hazardous materials). This includes underserved or socially vulnerable populations.

#### *Vulnerable Age Groups*

Both younger and older aged groups are likely to require assistance with physically moving to shelters or finding safety. Elderly residents may not have a personal vehicle to move away from a hazard quickly. Cognitive impairments among older adults may cause some to get easily confused.

#### *Households Facing Poverty or With Limited Income*

Families or older adults living at, near, or below poverty are more likely to be impacted by hazards than other households with higher incomes. The costly repairs from a tornado or derecho for a low-income household may be more adversely affected than another household that has the same damage but may be able to afford the repairs without much change to their lifestyles or needs. That disparity is also different during extreme weather events such as a heat wave. Low-income households may not be able to afford the electricity to run air conditioning and many may face

complications that involve heat stroke, fatigue, or death due to their age (infants or the infirm) and health conditions (obesity, heart conditions, diabetes).

#### *North Washington's Vulnerable Populations*

In North Washington, 6% (or 3 out of 50) occupied households are below the poverty level. About 21 (42%) occupied households have elderly occupants that are at least 60 years old. About 5 households (11%) have elderly residents (65 years and over) living alone.

Most residents have access to multiple vehicles with 38% of households with access to at least 2 and 58% with access to at least 3. Nearly 46% of households have a person living with a disability. This is broadly defined from the data estimates for North Washington. However, persons with mobility disabilities may be at a higher risk than others especially during unexpected natural disasters where accessibility is not always guaranteed to shelter.

Manufactured homes are unsafe in a tornado. Fatality rates are significantly higher than sturdy buildings. An alternative shelter should be identified prior to a tornado watch or warning. There are 1 or 2 mobile homes estimated in North Washington. With an average household size of 2.2 persons, that potentially puts 4 people at a greater fatality risk than others.



**Figure 3: Critical Facilities**





## Measuring Vulnerability to Selected Hazards

### Tornado Hazard

In August 2014, an EF0 tornado approached and dissipated west of North Washington. The tornado caused \$1,000 in damage and downed trees.

In December 2021, an EF1 tornado hit west of North Washington and tracked northeast for about 4 miles before dissipating. The tornado damaged trees and some farm outbuilding along its path causing \$255,000 in property damage.

All buildings in North Washington are prone to being damaged by a tornado. Therefore, the vulnerability of the community was determined by the assessed valuation of all buildings and dwellings on all parcels within the city's limits.

Using the assessed value from December 2023, the valuation of all 67 parcels in the City of North Washington is \$3,155,600 based on Chickasaw County assessor data. The City of North Washington has a potential property loss of \$3,155,600 from a tornado disaster.

**Table 8: Valuation of All Parcels in City of North Washington (2023)**

Percent of City at Risk to a Tornado	100%
# of Affected Parcels	67
Total Assessed Value of Buildings and Dwellings on Affected Parcels in 2023	\$3,155,600
Source: Chickasaw County Assessor's Office	

### Flood Prone Areas

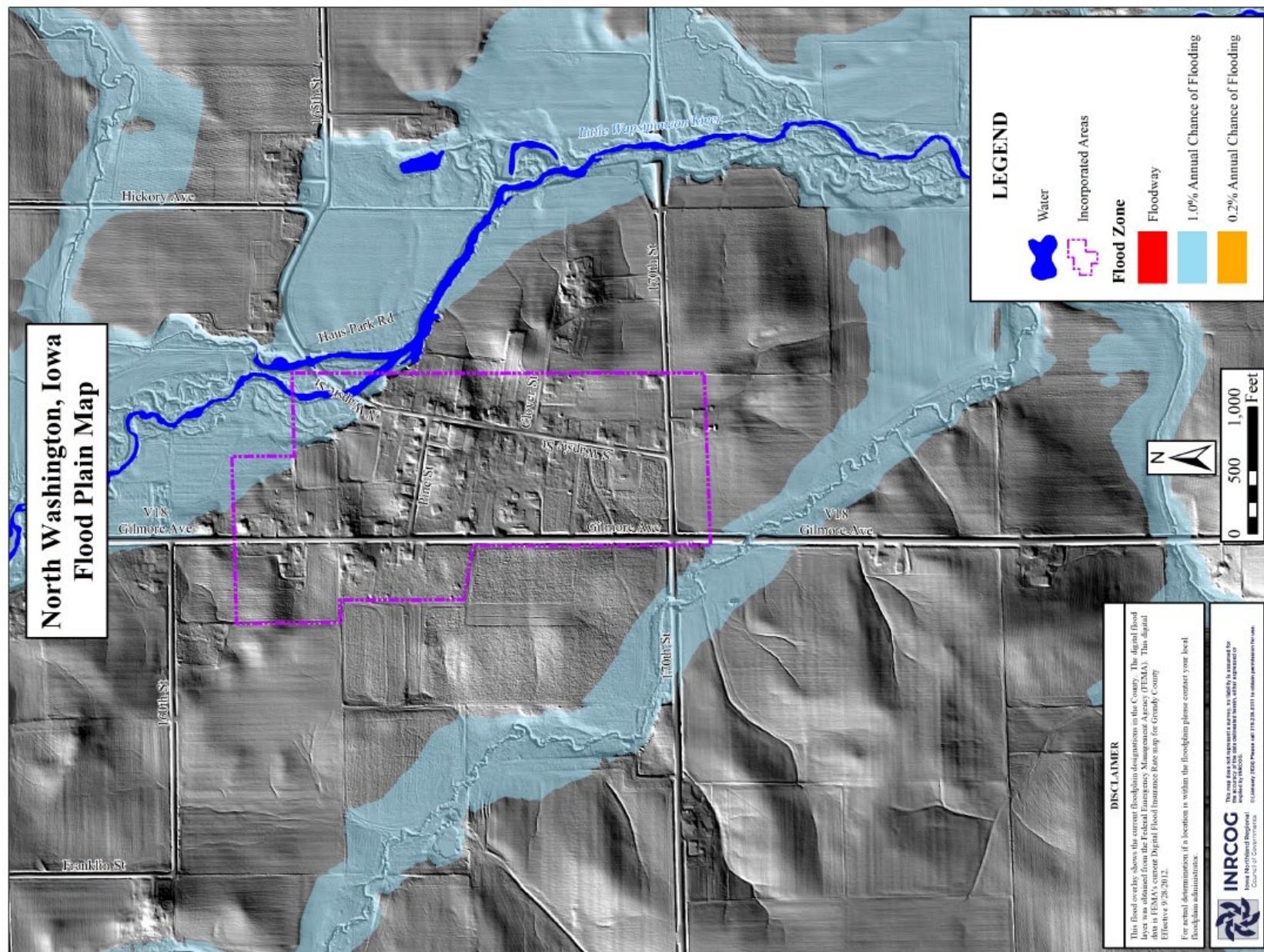
The potential property losses of structures prone to flooding was calculated using the effective flood insurance rate map (FIRM) flood hazard zones for a 100-year (1%) annual chance flood.

In Figures 4 and 5, the maps show the flood hazard zone in and around the City of North Washington. The river basin is depicted in the topography shown in Figure 5. The parcels that are impacted by the 1% annual chance of flood are highlighted in Figure 6. There are 16 parcels within North Washington potentially affected. The value of all buildings and dwellings on the affected parcels is \$185,600 based on the latest Chickasaw County assessor information. This covers 6 % of the city's total parcels.

**Table 9: Potential Property Losses from the 1% Annual Chance Flood**

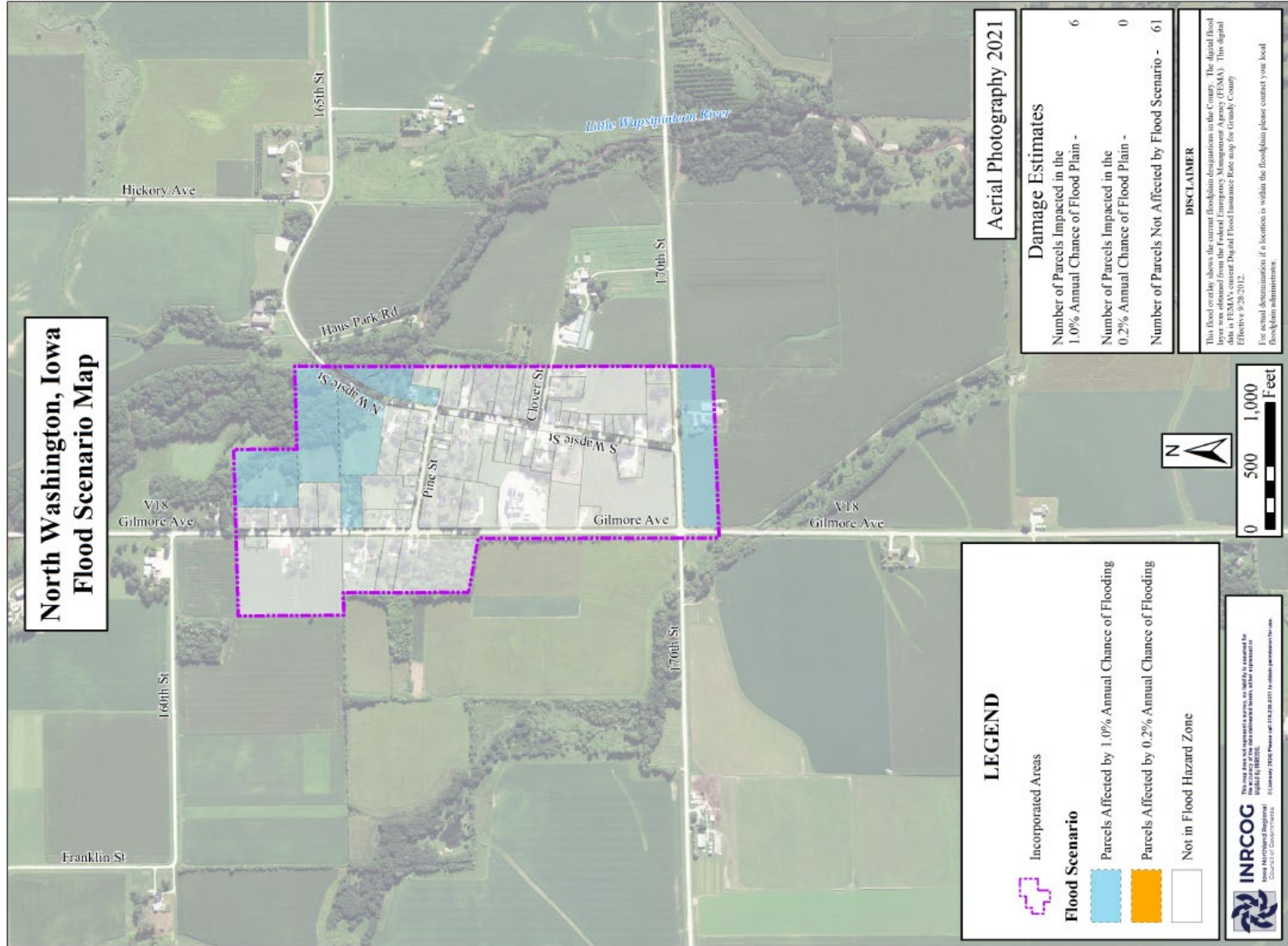
Percent of City Affected	5.9%
# of Parcels	16
Total Value (Building and Dwelling)	\$185,600
Source: Chickasaw County Assessor's Office	

### Figure 4: Flood Plain Map





**Figure 5: Flood Scenario Map**



## Future Development

Recent updates in Title 44 CFR §201.6 (c) (2) (i) require this risk assessment include a section with future conditions on the type, location, and range of anticipated intensities of natural hazards.

Long term trends of climate patterns for the region were summarized in the Fourth National Climate Assessment Midwest Section.<sup>1</sup> The National Climate Report is mandated to be updated every 4 years and deliver results to Congress and President on the effects to agriculture, energy productions, land use, transportation, and human health.

Yearly precipitation levels and annual average temperatures offer insights into future conditions of our climate system.

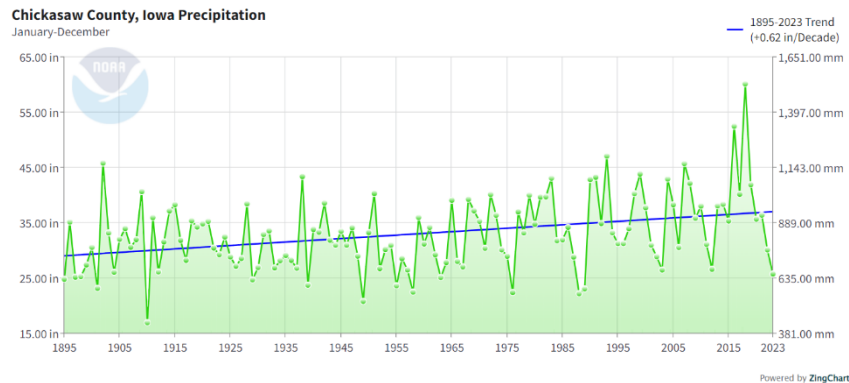
### Annual Precipitation Levels in Chickasaw County

Taking the monthly precipitation records from January to December between 1895 and 2023 is shown in Figure 6. The values hover between 25 – 35 inches of precipitation levels recorded. The average precipitation level for the year is plotted and a linear trend of those values is shown in Figure 6. The trend shows a growing level of annual precipitation on average of 0.62 in more than the decade before. Based on this historical trend, precipitation is likely to continue to increase in the coming years.

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<sup>1</sup> USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

**Figure 6: Historical Precipitation Data and Trend for Chickasaw County, Iowa<sup>2</sup>**

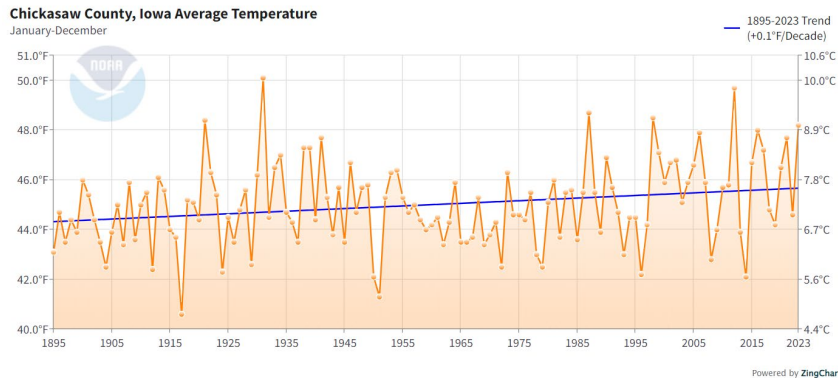


### Average Annual Temperatures in Chickasaw County

The monthly average temperature is plotted over a 12-month period from 1885 to 2023 in Figure 7. The annual average temperature is also shown with a linear trend in Figure 7. This trend shows the average temperature in Chickasaw County increasing at a rate of +0.1° F every 10 years.

<sup>2</sup> NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published February 2024, retrieved on April 15, 2024 from <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>

**Figure 7: Historical Temperature Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



## Climate Patterns from Increasing Precipitation and Higher Temperatures

### Drought

The relationship between increasing precipitation, temperature, and drought is complex, and often counterintuitive at first thinking about it. While increasing precipitation may seem like it would mitigate drought conditions, higher temperatures can exacerbate the situation in several ways:

1. **Evapotranspiration:** Higher temperatures lead to increased evaporation rates from soil, bodies of water, and plants. This means that even if there is more precipitation, it may quickly evaporate before it can effectively replenish soil moisture or water sources.
2. **Changes in precipitation patterns:** Increasing temperatures can alter precipitation patterns, leading

to more intense rainfall events but also longer periods of drought between these events. This pattern can result in rapid runoff and soil erosion during heavy rain, followed by extended dry periods that contribute to drought conditions.

Overall, while increasing precipitation may provide temporary relief from drought, the combined effects of rising temperatures can outweigh this benefit, leading to more frequent and severe drought events in certain regions.

### Pest Infestation

With more humidity, the daily minimum temperature may increase across all seasons. Warming winters can increase the survival and reproduction of existing insect pests which allow new insect pests and crop pathogens to move into the Midwest region.

### Extreme Heat Domes

A heat dome is a weather phenomenon characterized by a high-pressure system that traps hot air beneath it, leading to prolonged periods of extremely high temperatures and often causing heatwaves. Extreme heat events during the summers may occur with more frequency in the Midwest.

The human impacts of extreme heat affect socially and economically vulnerable populations the most. The higher costs of energy during heat waves disproportionately impact cost-burdened households. Heat related illness may be more severe among infants, elderly populations, and those with chronic health conditions.

### Projected Trends of Natural Hazards in Chickasaw County

- Prologued drought is probably as the atmosphere holds more moisture (even pulling moisture from plants) as the temperature increases. Longer periods between weather events means there are dryer and longer periods in between these events.
- Floods (flash or major types) will increase in intensity as the atmosphere holds more moisture to drive stronger storms and drop heavier rainfall over a shorter period during an event.
- Extreme heat may occur more frequently. The human health impacts are higher among socially vulnerable populations (the elderly, infants, those with chronic health issues, cost burdened households).
- Agricultural pests and pathogens may increase in growing plants and stored grain. Warming temperatures in the spring and summer have led to rising humidity. Higher dew and moisture conditions may increase the presence of these pests or crop diseases.

### **National Flood Insurance Program**

The City of North Washington participates in the National Flood Insurance Program. The current effective FIRM map date is September 28, 2012. There is 1 policy within the community with a total coverage of \$78,000. There were no losses reported and \$0 paid out.

FEMA defines a repetitive loss property as an insurable building that has experienced two losses in a 10-year period in which each loss is \$1,000 or more. There are no reported repetitive loss properties.

**Table 10: National Flood Insurance Program Information**

<b>Community Name</b>	City of North Washington
<b>NFIP Participant (Yes/No)</b>	Yes
<b>Designee / Agency to implement NFIP Requirements</b>	City Clerk
<b>Participant in CRS (Yes/No)</b>	No
<b>Current Effective Map Date</b>	09/28/2012(M)
<b>Regular-Emergency Program Entry Date</b>	6/19/2024
<b>Total Policy Count</b>	1
<b>Total Coverage</b>	\$78,000
<b>Total Losses</b>	0
<b>Total Net Dollars Paid</b>	\$0

(M) = No flood elevations determined – All Zone A, C, and X

Source: Source: FEMA National Flood Insurance Program, Data and Analytics, HUDEX Report. <https://nfipservices.floodsmart.gov/reports-flood-insurance-data>

## Hazard Risk Assessment

The top three hazards from the risk assessment are:

1. Tornado/ Windstorm
2. Grass/ Wildland Fire
3. Extreme Heat



### Methodology

This risk assessment identifies how people, property, and structures would be harmed or damaged by one of the listed hazard events. Iowa Homeland Security and Emergency Management Department (Iowa H.E.S.M.D.) provided the hazard risk score formula for determining the level of risk used in this analysis.

### Factors of Hazard Risk

Risks to a hazard event may differ across geographical locations or even differ based on certain times of year. For example, tornado season in Iowa is usually in May and tornadoes have the highest risk during this time due to change in weather patterns from the western and central Gulf of Mexico causing higher chances of extreme weather.

For this analysis, four hazard risk factors are rated on a scale between 1 and 4 by committee participants after reviewing

profiles of each hazard with the planning coordinator. Information was shared with the committee which described the hazard, historical occurrences, impact, duration, and warning time. Participants used this information to strengthen their understanding to rate each hazard factor.

### Hazard Risk Score Formula

$$\begin{aligned} &[\text{Probability}] \times 45\% + [\text{Magnitude or Severity}] \times 30\% \\ &+ [\text{Warning Time}] \times 15\% + [\text{Duration}] \times 10\% \\ &= \text{Final Hazard Assessment} \end{aligned}$$

*Source: Provided by Iowa H.S.E.M.D.*

Hazard scores were collected during the 2<sup>nd</sup> county committee meeting. INRCOG planners calculated the hazard risk score for each hazard based on the formula in this section. Results for North Washington are on page 21.

Score Value vs. Hazard Risk Level	Description of hazard with this rating
Scores with a value closer to 1: <u>Low risk hazard</u>	Hazard is not likely to affect people or property because the likelihood is minimal.
Scores with a value closer to 4: <u>High risk hazard</u>	The hazard has historically occurred and may have significant impacts to people and property.



The factors in the hazard risk calculation are defined and the score values for each part is summarized in the following sections:

### Probability

The probability score reflects the likelihood of the hazard occurring in the near future. Historical data of the hazard event occurring in Chickasaw County or Iowa informed the likelihood of future occurrence.

Probability Score Definitions		
Score	Description	
<b>1</b>	Unlikely	<i>Less than 10% probability in any given year (up to 1 in 10 chance of occurring), a history of events is less than 10% likely or the event is unlikely but there is a possibility of its occurrence.</i>
<b>2</b>	Occasional	<i>Between 10% and 20% probability in any given year (up to 1 in 5 chance of occurring), history of events is greater than 10% but less than 20% or the event could possibly occur.</i>
<b>3</b>	Likely	<i>Between 20% and 33% probability in any given year (up to 1 in 3 chance of occurring), history of events if greater than 20% but less than 33% or the event is likely to occur.</i>
<b>4</b>	Highly Likely	<i>More than 33% probability in any given year (event has up to a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.</i>

### Magnitude or Severity

The magnitude or severity of the hazard event is measured by the level of impact on the human environment. Property damage is assessed by the whole planning area.

Magnitude or Severity Score Definitions		
Score	Description	
<b>1</b>	Negligible	Less than 10% of property severely damaged, the shutdown of facilities and services for less than 24 hours, and/or injuries/illnesses treatable with first aid
<b>2</b>	Limited	10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
<b>3</b>	Critical	25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
<b>4</b>	Catastrophic	More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.

### Warning Time

This should be taken as an anticipated warning time.

The warning time score assesses the ability to warn a population before the hazard occurs. The values of the score range from 1 (at least 24 hours) to 4 (minimal or no warning time).

For many of the climate hazards, there is a considerable amount of warning time as opposed to the human-caused hazards (transportation and hazardous materials incidents) that occur instantaneously or without any significant warning time.

Warning Time Score Definitions		
Score	Description	
1	Forecasted	More than 24 hours warning time.
2	Likely	12 to 24 hours warning time.
3	High Chance	6 to 12 hours warning time
4	Imminent	Minimal or no warning time (up to 6 hours warning)

### Duration

The duration is the time of a typical or expected hazard event to occur. For an earthquake or traffic accident that is a score of 1. For infrastructure failure, it is likely a 4.

Duration Score Definitions	
Score	Description
1	Less than 6 hours
2	Less than 1 day
3	Less than 1 week
4	More than 1 week

Table 11 displays rated risk scores for each associated hazard. This assessment was completed by city representatives based on hazard profiles prepared for the planning committee.

Source: Completed by City Representative. Calculated score completed by INRCOG

<b>Table 11: Hazard Risk Assessment</b>					
<b>Hazards</b>	<b>Probability</b>	<b>Magnitude</b>	<b>Warning Time</b>	<b>Duration</b>	<b>Score</b>
Tornado/Windstorm	4	3	3	1	3.3
Grass/Wildland Fire	4	2	4	1	3.1
Extreme Heat	4	2	1	3	2.9
Severe Winter Storm	4	2	1	3	2.9
Thunderstorm/ Lighting/ Hail	4	2	2	1	2.8
Drought	3	2	1	4	2.5
Animal/ Crop/ Plant Disease	2	3	1	4	2.4
Pandemic/ Endemic Human Disease	2	3	1	4	2.4
Flooding - Riverine*	3	1	2	3	2.3
Earthquake*	1	1	1	1	1.0
Expansive Soils*	1	1	1	1	1.0
Flooding - Flash	1	1	1	1	1.0
Landslide	1	1	1	1	1.0
Levee/Dam Failure*	1	1	1	1	1.0
Sinkholes*	1	1	1	1	1.0
Hazardous Materials	1	1	1	1	1.0
Infrastructure Failure	1	1	1	1	1.0
Radiological	1	1	1	1	1.0
Terrorism	1	1	1	1	1.0
Transportation Incidents	1	1	1	1	1.0

\*The following hazards were identified as not being considered a threat needing a specific mitigation activity given the specific jurisdictional situation.

## Hazard Mitigation Goals

### Goals for Hazard Mitigation in North Washington, Iowa

The following list of goals was developed by planning committee participants from the associated jurisdiction. Goals 1 through 5 were developed in the previous 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan and re-adopted to this updated plan. Goals 6 and 7 were revised to be more effective and sensible to local level scopes. The planning committee participants chose to adopt the same goals and add additional goals. Goals 8 through 9 were created by the city's committee representatives which provided updated and additional mitigation goals and activities.

**Goal #1** Reduce the chance of and impact of flooding in the community.

**Goal #2** Take measures to minimize the occurrence of injuries and loss of life due to hazards.

**Goal #3** Take measures to minimize or eliminate damage that may occur as a result of hazards.

**Goal #4** Increase the city's ability to respond to natural disasters and man-made hazards.

**Goal #5** Return to the community to similar or improved pre-event conditions as quickly as possible following a disaster event.

**Goal #6** Incorporate city plans with existing planning documents including the hazard mitigation plan.

**Goal #7** Continually re-assess and re-evaluate the plan as updates to improve inefficiencies or identify barriers and reconsider mitigation activities for relevancy or achievability.

**Goal #8** Reduce risks associated with an aging tornado siren and enhance the warning siren system with new equipment.

**Goal #9** Create an attractive opportunity for volunteer fire fighters to serve their community.

## **Existing or Previous Mitigation Activities by Type**

Mitigation actions and activities in this Plan will be organized according to these 5 categories: Emergency Services, Education and Outreach Projects, Natural Resource Protection or Natural Based Solutions, Structural Projects, or Local Plans and Regulations.

### **Emergency Services in North Washington**

#### Chickasaw County Emergency Management Agency

North Washington works with the Chickasaw County Emergency Management Coordinator, based out of the City of New Hampton, on various safety and emergency events. The Emergency Management Coordinator works in conjunction with local fire, rescue, police, and government officials to draft and implement workable emergency action plans in the community. The Chickasaw County Emergency Management Coordinator is Jeff Bernatz.

#### Law Enforcement

North Washington has a 28E agreement with the Chickasaw County Sheriff's Office for law enforcement services. The sheriff and deputies serve as- needed. The Sheriff's Office is located out of New Hampton at 116 N. Chestnut.

#### Fire Protection and EMS Services

Fire protection is provided by the North Washington Fire Department. The station is located at 114 S. Waspi Street in North Washington, IA. There are 21 volunteer fire fighters that serve in the department currently. The members of the department meet monthly and take training in fire

suppression, hazardous materials, and emergency medical services.

Dispatch is provided via a paging system through the Chickasaw County Sheriff's Office.

The North Washington Fire Department maintains 28E agreements with the following communities: Deerfield and Washington Townships.

Equipment used by the North Washington Fire Department includes the following:

- 1996 pumper truck (water flow rate of 1,250 gal/min)
- 1999 Tanker/Pumper (water flow rate of 500 gal/min)
- 2015 Grass Truck (water flow rate of 100 gal/min)

#### EMS Services

Chickasaw County EMS provides ambulance service to area hospitals. The company is based out of New Hampton, approximately 9-mile drive southeast of North Washington.

Chickasaw County Rescue Squad also provides service in North Washington. There are 42 EMT certified individuals who volunteer to respond to emergency calls on an as-need basis.

#### Medical Facilities

There are no medical facilities in North Washington. The closest facility is the MercyOne New Hampton Medical Center in New Hampton, IA. This is the only medical facility with an ER unit located in the county. MercyOne has 11

private inpatient rooms and cares for over 20,000 outpatients each year.

MercyOne New Hampton offers a full range of services in an inpatient and outpatient setting as well as 24-hour emergency care, surgical services, primary care clinic, therapy and rehabilitation, diagnostic services, speech and occupational therapy, Senior Life Solutions, and specialty clinics.

#### HAZMAT Response Teams

North Washington contracts with Northeast Iowa Response Group for response to hazardous material spills. The Northeast Iowa Response Group is a division of Waterloo Fire Rescue as is the Hazardous Materials Regional Training Center. The Training Center provides training to fire departments and companies from around the state and country. Not only is this a training center, but it also serves as a hazardous materials quick response unit to Black Hawk County, surrounding counties, and many municipalities in a ten-county region. The Unit provides local fire departments with hazard materials emergency procedures thus reducing additional contamination. An evacuation plan is also in place in conjunction with the activities of the local department. Contact information for the facility is as follows: Hazardous Materials Regional Training Center, 1925 Newell Street, Waterloo, Iowa 50707, Phone: (319) 291-4275, Toll Free: (800) 291-4682, Fax: (319) 291-4285

The jurisdiction also partners with the Northeast Iowa Response Group for assistance in responding to any methamphetamine labs located in the city limits. The

Response Group assists the Police Departments in containment of the site and disposal of hazardous chemicals.

#### Warning Systems in North Washington

##### 1) Tornado Sirens

North Washington has a tornado warning siren which is long past their lifetime use. Repairs are made continuously and when the budget allows.

The activation systems of warning systems are activated and operated by a central command system operated by the Chickasaw County Sheriff's Office in New Hampton, IA.

##### 2) Alert Iowa Mass Communication System

Chickasaw County has implemented the use of Alert Iowa, a mass communication notification system. The system features are controlled through the Chickasaw County Emergency Management Agency. Residents can customize their alert settings including the type of alerts they would get.

Alert Iowa allows for emergency notifications via landline telephones, cell phones, email, text messages, and social media. This is useful for communities that may not have an operating warning siren or may not hear the sirens. The County will use its emergency notification network for all the following events: blizzards, flash flooding, severe thunderstorms, and tornadoes. Through the options on Alert Iowa, residents can set it up so they may receive alerts for all the hazards in this Plan.

### Public Works/Street Department

City officials carry out the duties for street maintenance and public works duties such as water testing.

### **Education and Outreach Projects in North Washington**

There have been no recent outreach or education projects in North Washington.

### **Natural Resource Protection in North Washington**

There have been no recent natural resource protection projects in North Washington.

### **Structural Projects in North Washington**

There have been no recent structural projects in North Washington.

### **Local Plans and Regulations in North Washington**

North Washington completed a local plan and regulation assessment. The results are shown in the table below.

<b>Table 12: Local Capability Assessment</b>	
<b>Community</b>	<b>City of North Washington</b>
<b>Previous HMP Participant?</b>	Yes
Comprehensive Plan?	No
Building Code?	No
Zoning Ordinance? RR=restricted residential	No
Subdivision Regulations?	No
Floodplain Management Ordinance?	Yes
Tree-Trimming Ordinance?	No
Storm Water Ordinance?	No
Snow Removal Ordinance?	No



## Components of the Implementation Strategy

The end of this section has strategic implementation tables prepared in consultation with the North Washington's planning committee's representative and INRCOG. This is a guide for a strategic approach when implementing the city's efforts in hazard mitigation. The tasks in these tables are drawn from the city's capabilities, goals, and hazard risks presented in previous sections of this Plan.

The designated agency or staff presented with each line item was written by North Washington's planning committee.

Notes about the tasks (listed as line items) in each table.

- Each task (line item) stands on its own so it can be completed whenever possible.
- Each action item is not limited to the details presented below and may change based on future conditions.
- The tasks were categorized based on mitigation type. The mitigation types are not shown in any order (no priority over the other).

This implementation strategy is presented to help with the general understanding of how hazard mitigation may feed into the City's existing or future priorities.

## Priority Level

The priority level was informed through discussions among planning committee members who considered potential benefits of implementing the activity, some hurdles that the city may face in implementing the action step, and the

drawbacks of implementation. *Committee representatives considered a cost-benefit approach.*

## Timeframe

Timeframe	Description
Immediate	1-6 months
Short Term	1-5 years
Mid-Term	5-10 Years
Long-Term	More than 10 Years

## Estimated Costs

Cost estimates are based on the associated costs of additional staffing that may or may not be needed, time for planning/meetings/coordinating, and cost of the proposed action/program/ project.

Cost	Estimated Cost Range
Minimal	Less than \$10,000
Low	\$10K to \$99K
Moderate	\$100K to \$299K
High	Greater than \$300K

## Strategic Implementation Plan by Mitigation Activity Type

<b>Table 13: 'Education and Awareness' Type Mitigation Activities</b>						
Description: These types of actions keep residents informed about potential natural disasters.						
<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
High	Prepare an outreach strategy to encourage residents to sign up for Alert Iowa.	All	EMA, Fire Dept, Sheriff Office, City Council	Short 1-3 years	Minimal 0-\$10K	Hazard mitigation grant program; City General fund
Medium	Host a fire fighter volunteer recruiting event with a tour, meet and greet, and overview of application process.	All	Fire Department, City Council, EMA, City Clerk	Short 1-3 years	Minimal 0-\$10K	City General fund
Low	Educate homeowners on maintaining proper drainage around their properties, installing sump pumps, and ensuring stormwater drainage systems are clear.	Flash Flooding	City Clerk, Public Works	Short 1-3 years	Minimal 0-\$10K	City General fund

**Table 16: Natural System Protection and Nature-Based Mitigation Type**

Description: Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (\$)</b>	<b>Funding Source</b>
Low	Maintain participation in the National Flood Insurance Program (NFIP).	Flooding (river and flash)	City Clerk	When there is an update, adoption of new maps and ordinance to match must be done by an effective map date.  Immediate 1-6 months	Low \$10K-\$299K	City General Fund
Low	Plan native trees and shrubs around the town to provide shade, reduce heat, and improve water retention in the soil.	Drought, Excessive Heat	City Council, Public Works Dept.	Short 1-3 years	Minimal 0-\$10K	City General fund

<b>Table 14: 'Emergency Services' Type Mitigation Activities</b>						
Description: Actions that protect people and property during and immediately after a disaster or hazard event.						
<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
High	Maintain 28E agreement with Chickasaw County Sheriff's Office for law enforcement services.	All	City Council, Chickasaw County Sheriff, County Board of Supervisors	Immediate 1-6 months <i>June 30, 2024</i> <i>Current 28E agreement ends</i>	Low \$10K-\$99K	City General fund
High	Maintain 28E agreements with the Chickasaw County EMS for ambulance services.	All	City Council, EMS Chickasaw County, County Board of Supervisors	Immediate 1-6 months	Low \$10K-\$99K	City General fund

**Table 15: Structure and Infrastructure Project Type Mitigation Activities**

Description: Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
Low	Relocate overhead power lines underground.	Severe Winter Storm, Hailstorm, Thunderstorm and Lightning, Tornado, Windstorm, Infrastructure Failure, Grass/Wildfire, Landslide	City Council, City-Owned Utility	Long-Term 8-10 years	High \$300K	City General Fund, Utility provider
High	Replace warning siren when additional grant funding becomes available.	Severe Winter Storm, Hailstorm, Thunderstorm and Lightning, Tornado, Windstorm, Infrastructure Failure	City Council, City-Owned Utility	Medium-Term 4-8 years	Low \$10K-\$299K	City General Fund, Grant Funding

# City of Protivin

## Hazard Mitigation Plan 2024 Update

### Appendix I of the Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan



Funded by the Chickasaw County Emergency  
Management Agency

Prepared by Iowa Northland Regional Council  
of Governments (INRCOG)



**INRCOG**  
Iowa Northland Regional  
Council of Governments

May 2024

Photo Source: <https://www.howard-county.com/communities/protivin>

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RESOLUTION # 24-7-2

**A RESOLUTION OF THE CITY COUNCIL OF PROTIVIN, IOWA, ADOPTING THE CITY OF PROTIVIN, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.**

WHEREAS, the City of Protivin City Council recognizes the threat that natural hazards pose to people and property within Protivin; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing Protivin served and participated in the formulation of the Plan, hereby known as the City of Protivin, Iowa Hazard Mitigation Plan 2024 Update, as part of the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Protivin from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the Plan; and

WHEREAS adoption by the City Council of Protivin demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF PROTIVIN, IOWA, THAT:

Section 1: In accordance with local regulations, the Council adopts the City of Protivin, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of Protivin may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of Protivin to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 9<sup>th</sup> day of July 2024.

  
Mayor

ATTEST:  
  
City Clerk

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## About

The City of Protivin Hazard Mitigation Plan 2024 update was formed as an appendix to a county-wide planning effort by multiple communities, school districts, and Chickasaw County departments. The 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan is a sequential update to the previous hazard mitigation plan. FEMA requires a 5-year update for approved hazard mitigation plans to be in good standing and eligible for grant funding. The Plan was developed to meet the requirements in 44 CFR § 201.6. The Plan was submitted to the Iowa Homeland Security and Emergency Management Department (IHSEMD) office and then submitted to FEMA for approval. Chickasaw County's Emergency Management Agency initiated and funded this effort for all participating communities and contracted INRCOG to coordinate this multi-jurisdictional planning process. An approved and adopted hazard mitigation plan qualifies participating jurisdictions with pre-disaster grant programs that may fund projects for the entire community.

Participating communities included all nine incorporated communities in the County, Chickasaw County's departments, and three public school districts. Four committee meetings were held between March 19<sup>th</sup> and April 23<sup>rd</sup> wherein each jurisdiction provided data and completed work sheets to develop their hazard mitigation plans.

## What is Hazard Mitigation?

Hazard Mitigation is any sustained action taken to reduce or eliminate long-term risk to life and property from hazards.



*FEMA's Emergency Management Cycle*

The emergency management cycle has 4 phases:

- **Preparedness** is the assessment of potential risks, hazards, and vulnerabilities that a community may face. The development and updating of activities, programs, and systems before an event occurs is included in this phase of the cycle.
- **Response** is the immediate effects after a disaster.
- **Recovery** is a long-term phase that focuses on returning the community to normal after a disaster.
- **Mitigation** is an action that can occur at any phase.

## The Benefits of Hazard Mitigation

Benefits of mitigation planning for local governments include:

- ✓ An increased understanding of natural hazard and human-caused hazards.
- ✓ Taking an opportunity to create more sustainable and disaster-resistant communities.
- ✓ Participating in this collaborative intergovernmental effort is cost effective for all participants.
- ✓ Using limited resources on hazards that have the biggest impacts on a community.
- ✓ Reducing or preventing damage to existing structures, subsequently reducing repair costs.
- ✓ Identifying vulnerable populations to establish equitable outcomes.
- ✓ Setting long-term goals that can be compatible with city policies or planning documents.

## The Planning Process

In emergency management planning, reducing the community's risk to natural hazards is a multi-step process which involves collaboration among stakeholders, assessing risk and vulnerabilities of hazards facing the community, establishing actions or activities to reduce risk, and assembling an organized strategy to carry out all mitigation activities.

Participants in the Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan Planning Committee provided the information in this plan including community profile information, hazard mitigation goals, mitigation activities/action, updates to existing mitigation activities, and elements included in the strategy such as priorities, designated agencies, estimated costs, and overall strategic direction of this plan.

### Participants in the Plan Followed This 5 Step Process



## Community Data Sources

Population data is based on 2020 decennial Census data. The 2022 American Community Survey 5-year estimates are the latest and most reliable survey data sets to understand what is taking place in the county and each city. Most counties, cities, and towns rely on 5-year estimates. Employment, workforce, and industry figures in this Plan are estimates that have a margin of error.

It is important to note that the ACS estimates used for rural communities will have a degree of uncertainty associated with them, called sampling error, because they are based on a sample. In general, the larger the sample, the smaller the level of sampling error. Rural communities tend to have smaller samples than larger cities, so the “margin of error”—a measure of the precision of an estimate at a given level of confidence—likely will be larger for rural areas.

Crash data along roadways within each jurisdiction is collected between the period of 2019 and 2023. Using a map tool interface, the data was taken at a city level and presented to understand incident severity, casualties, and property damage from reported accidents. Accident data is added to the site daily and accessible through an online website, <https://icat.iowadot.gov/>.

In the risk analysis section of this Plan, estimates of property loss are measured using mapping of hazardous zones. For the vulnerability risk assessment, flood prone homes were determined using the boundaries of the 100 year (1%) annual chance flood hazard zone. The value of potential property loss was derived from the 2023 assessed dollar

value of structures and dwellings on affected parcels provided by the Chickasaw County Assessor's Office.



*The former Bohemian Savings Bank building was constructed in 1910 and operated as an independent savings bank. The Bohemian Savings Bank operated in this building until it was purchased in 1986 by Decorah State Bank. The building was converted to a branch office and used until 1989.*

*Photo source: Brian McMillin*

*<https://iowabackroads.com/former-bohemian-savings-bank-protivin-iowa/>*

## City Profile

**Jurisdiction: City of Protivin**

**County: Chickasaw County and Howard County**

**Population (2020): 269**

The City of Protivin is located on the northern boundary of Chickasaw County. Partially in Howard County and Chickasaw County, the city of Protivin is a community of 269 residents. County Highway B16 and V64 intersect at Protivin.

The following data presented in the upcoming tables page include population, employment, and industry sector data for the community based on 2020 Census data and 2022 American Community Survey 5-year Estimates.

In 2020, the city's population was 269 and 89% identified as White. The median age was 42. Working aged residents (15-60 years) made up 57% of the population. Children and teens (younger than 15 years) made up 20% of Protivin's population while older adults (older than 65 years) made up 23%.

The median household income in 2022 was \$58,375. The unemployment rate was nearly 3%. Most people commute to work, and 23 people or 13% of the workforce work from home. The top three largest industry sectors in Protivin are as follows (in order from highest to lowest): 1) Education Services, and health care, and social assistance; 2) Manufacturing, and 3) Construction.

Location of  
Jurisdiction

**Figure 1: Map of Chickasaw County**

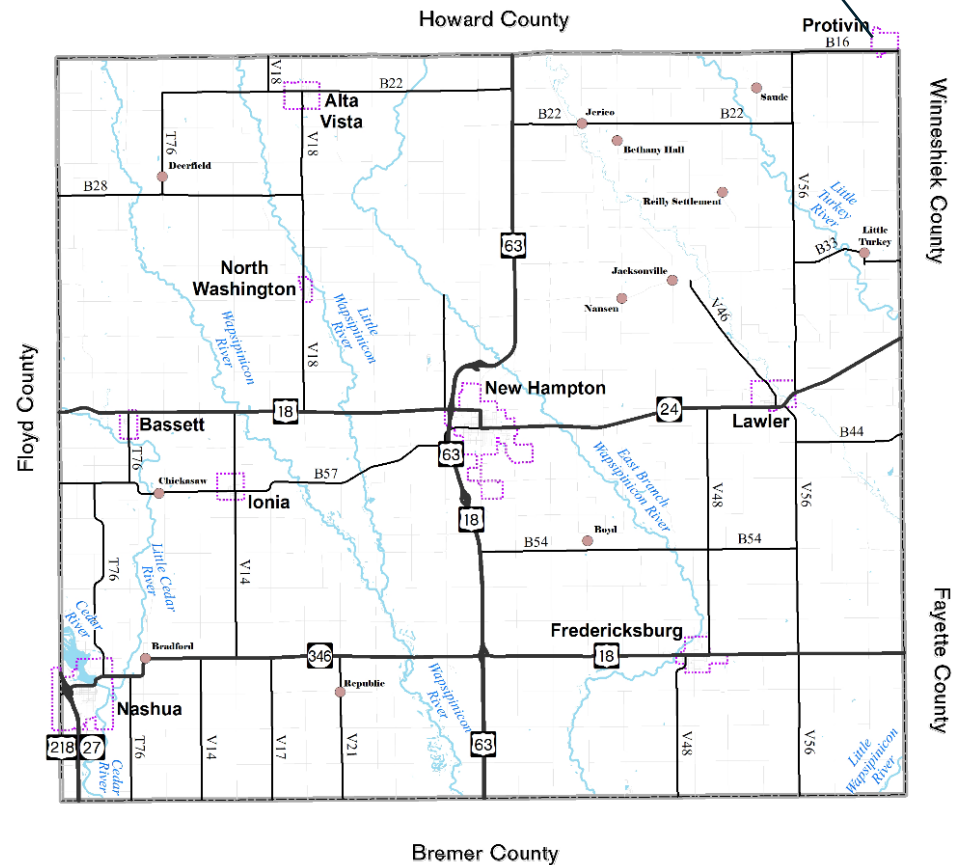




Table 1: Population Data (2020)		
City of Protivin		
	Total	% of Pop.
Total population	269	100%
AGE		
Under 5 years	15	6%
5 to 9 years	21	8%
10 to 14 years	18	7%
15 to 19 years	4	2%
20 to 24 years	4	2%
25 to 29 years	31	12%
30 to 34 years	15	6%
35 to 39 years	21	8%
40 to 44 years	13	5%
45 to 49 years	8	3%
50 to 54 years	11	4%
55 to 59 years	14	5%
60 to 64 years	32	12%
65 to 69 years	178	6%
70 to 74 years	10	4%
75 to 79 years	11	4%
80 to 84 years	6	2%
85 years and over	18	7%
Median Age	42	-
RACE		
White	239	89%
Black or African American	0	0%
Hispanic or Latino (of any race)	23	7%
American Indian and Alaska Native	4	2%
Asian	0	0%
Native Hawaiian/Other Pacific Islander	0	0%
Some Other Race	19	7%
Two or More Races	8	3%
Source: 2020 Census		

Table 2: Employment Data (2022)		
City of Protivin		
	Value	% of Population
Median Household Income	\$58,375	-
Unemployment Rate (2022)	2.4%	-
Workers that commute to work	135	76%
Workforce that works from home	23	13%
Source: 2022 American Community Survey 5-Yr Estimates		

Table 3: Employment Industry Data (2022)		
City of Protivin		
Workforce Industry	# of Workers	% of Workforce
Workforce	178	100%
Agriculture, forestry, fishing and hunting, and mining	16	9%
Construction	24	14%
Manufacturing	35	20%
Wholesale trade	4	2%
Retail trade	24	14%
Transportation -warehousing, utilities	5	3%
Information	0	0%
Finance and insurance, and real estate and rental and leasing	4	2%
Professional, scientific, and management, and administrative and waste management services	1	1%
Educational services, and health care and social assistance	54	30%
Arts, entertainment, and recreation, and accommodation and food services	0	0%
Other services, except public administration	4	2%
Public administration	7	4%
Source: 2022 American Community Survey 5-Yr Estimates		

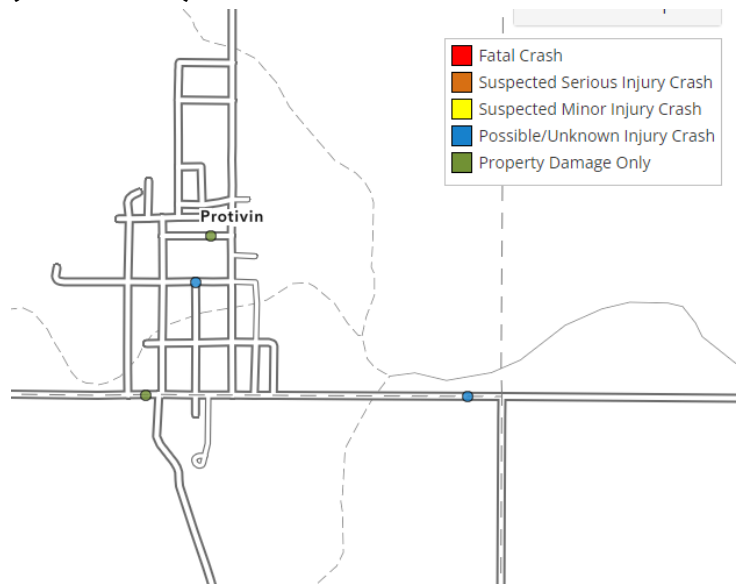


## Highway Traffic and Crash Data

Based on Iowa DOT crash data, between 2019 and 2023 there have been 4 incidents totaling \$66,656 in property damage.

Vehicle Crash Data within Protivin, Iowa (2019-2023)	
Total Crashes	4
Crash Severity	
Fatal	0
Suspected Serious Injury	0
Suspected Minor Injury	0
Unknown	2
Property Damage Only	2
Property Damage Total	\$66,656

**Figure 2: Iowa Crash Analysis for All Traffic Incidents (2019-2023)**



Source: Iowa DOT

## Housing Data

The City of Protivin has 154 occupied housing units. Nearly 95% (146) of them are single-family housing types. There are 5 multifamily housing and approximately 3 housing units are mobile homes.

A large portion of the housing stock was built between the years 1960-79 (78%). About 22% of the housing stock is under 60 years old. Most homes heat their units with bottled tank, or LP gas (76%).

## Community Utility Providers

Alliant Energy provide utility electric services. LP gas and fuel oil are supplied by private companies. Windstream telephone services and broadband internet services. Residents receive water and sewer utility services from the city. Sanitation is contracted by Hawkeye Sanitation.

Table 4: Utility Providers	
	City of Protivin
<i>Electric</i>	Alliant Energy
<i>Natural Gas</i>	Private Companies
<i>Telephone/Internet</i>	Windstream
<i>Cable TV</i>	Windstream
<i>Water Services</i>	City of Protivin
<i>Sewer Services</i>	City of Protivin
<i>Sanitation</i>	Hawkeye Sanitation

Table 5: Housing Data (2022)		
City of Protivin		
	Total	% of Occupied Units
Occupied housing units	154	100.0%
Housing Unit Type	Total	% of Occupied Units
1, detached	146	95%
1, attached	0	0%
Duplex (2)	0	0%
More than 2 apartments	5	3%
Mobile home or other type of housing	3	2%
Year Structure Built	Total	% of Occupied Units
2020 or later	0	0%
2010 to 2019	0	0%
2000 to 2009	10	7%
1980 to 1999	24	116%
1960 to 1979	37	24%
1940 to 1959	26	16%
1939 or earlier	57	37%
House Heating Fuel	Total	% of Occupied Units
Utility gas	0	0%
Bottled, tank, or LP gas	117	76%
Electricity	15	10%
Fuel oil, kerosene, etc.	3	2%
Coal or coke	0	0%
All other fuels	19	12%
No fuel used	0	0%
Source: 2022 American Community Survey 5-Year Estimates		

## Vulnerable Assets

### People

Vulnerability to hazard losses increases where there are larger concentrations of people. In towns where population density increases, the number of people that can be harmed during a hazard event (tornado, flood, etc.) increases. In addition, there are segments of the population that may be more susceptible to impacts and/or harm from a hazard depending on their location within the area (i.e. flood zone or near industrial plants with hazardous materials). This includes underserved or socially vulnerable populations.

### Vulnerable Age Groups

Both younger and older aged groups are likely to require assistance with physically moving to shelters or finding safety. Elderly residents may not have a personal vehicle to move away from a hazard quickly. Cognitive impairments among older adults may cause some to get easily confused.

### Households Facing Poverty or With Limited Income

Families or older adults living at, near, or below poverty are more likely to be impacted by hazards than other households with higher incomes. The impact of costly repairs to property from a tornado or heating/cooling electricity costs from extreme weather is greater for low-income families.

## Protivin's Vulnerable Populations

Based on 2022 American Community Survey 5-Year estimates, the largest and more common vulnerable group in Protivin are older adults. About 46% of occupied households have elderly occupants (60 years and over). About 15% have elderly residents (65 years and over) living alone.

Nearly all residents have access to a vehicle. About 22% of households have a person living with a disability. This is broadly defined from the data estimates for Protivin. However, persons with mobility disabilities may be at a higher risk than others especially during unexpected natural disasters where accessibility is not always guaranteed to shelter.

Manufactured homes are unsafe in a tornado. Fatality rates are significantly higher than for more sturdy buildings on permanent foundations. An alternative shelter should be identified prior to a tornado watch or warning. There are estimated to be 1 or 2 mobile homes in Protivin. With an average household size of 2.4, that potentially puts 2-5 people with a higher risk of becoming a fatality during a tornado.

**Table 6: Vulnerable Populations (2022)**

	Estimate	%
Households	154	100%
Average Household Size	2.4	
With one or more people in the household 60 years and over	71	46%
With householder 65+ years old and living alone	23	15%
Below poverty level	4	2.6%
With one or more people with a disability	33	22%
receiving food stamps/SNAP	1	1%
w/o access to a vehicle	0	-
living in mobile homes or other type of housing	1	1%

## Critical Facilities

Identifying structures that may be affected from a hazard event and also serve a critical function for the community are shown in the table on the following page.

The City of Protivin has a municipal water system with a 20,000-gallon storage capacity. The community's water is taken from two local wells, and supplies water to approximately 250 users. The system has an average use of approximately 2,500 gallons per day with a peak demand of 3,500 gallons. It provides water for fire protection within the

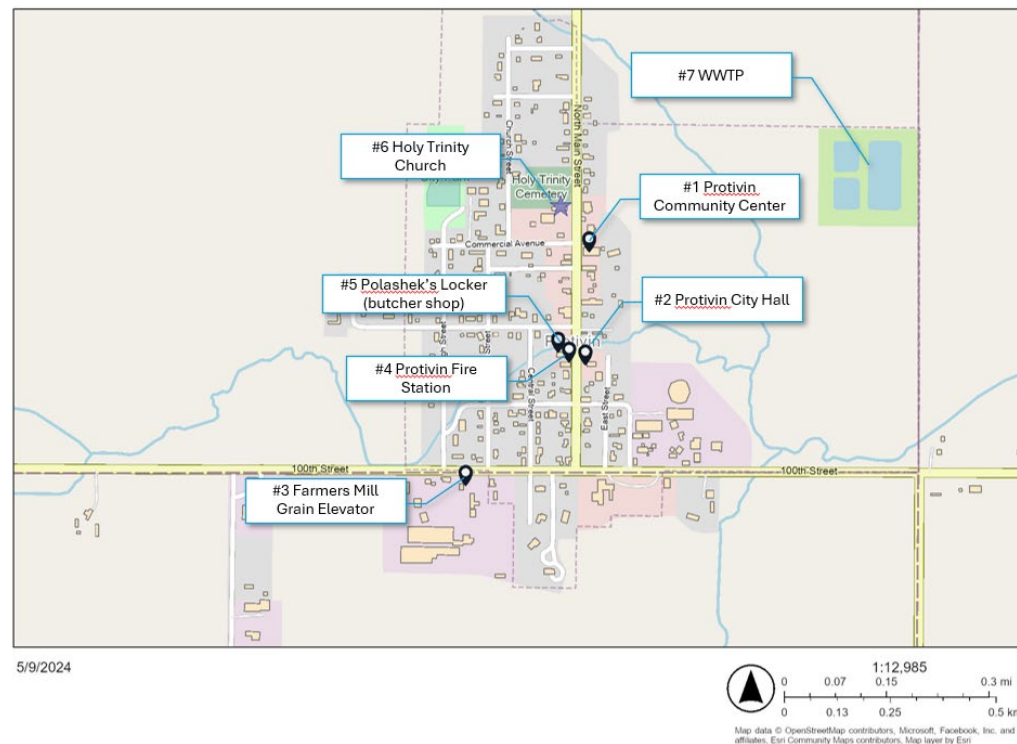
City of Protivin and surrounding rural areas. The City of Protivin wastewater is treated through a lagoon system.

These treatment lagoons are located east of the city. According to the City, the existing system can handle a population of approximately 700 persons. The 2020 Census showed that Protivin had a population of 269 people.

In the next 20 years, Protivin is likely to see small population changes and the existing water plant and wastewater treatment lagoons have capacity to manage existing demands or steady growth.

**Figure 3: Critical Facilities Map**

Label #	Critical Facilities
1	Community Center
2	Protivin City Hall
3	Farmers Mill Grain Elevator
4	Protivin Fire Station
5	Polashek's Locker (Butcher Shop)
6	Holy Trinity Church
7	WWTP Lagoon



## Measuring Vulnerability to Selected Hazards

### 100-Year Annual Chance Flood Scenario

Assessing the community's vulnerability to losses from tornado and flood hazards is determined with county assessor data. The potential property losses of structures prone to flooding was calculated using the effective flood insurance rate map (FIRM) flood hazard zones for a 100-year (1%) annual chance flood.

In Figure 4, the flood plain map shows the 1% annual chance of flooding in and around the City of Protivin. The river basin is depicted in the topography shown on the map.

No parcels are affected by the 1% annual chance flood hazard zone. Therefore, there is no potential losses of properties prone to flooding in Protivin.

### Tornado Scenario

Protivin's vulnerability to a tornado hazard is determined with a summation of all structures susceptible to damage from a tornado. Since all buildings have this risk of being damaged by a tornado, the valuation of all structures on each parcel within the city's limits will provide the potential losses for this hazard. Based on the valuations from the Chickasaw County assessor, there are 171 parcels in Protivin and all buildings and dwellings in Protivin have a summation in value of \$6,750,400. Therefore, Protivin is vulnerable to potential property losses of \$6,750,400 in 2023 dollars from a tornado hazard.

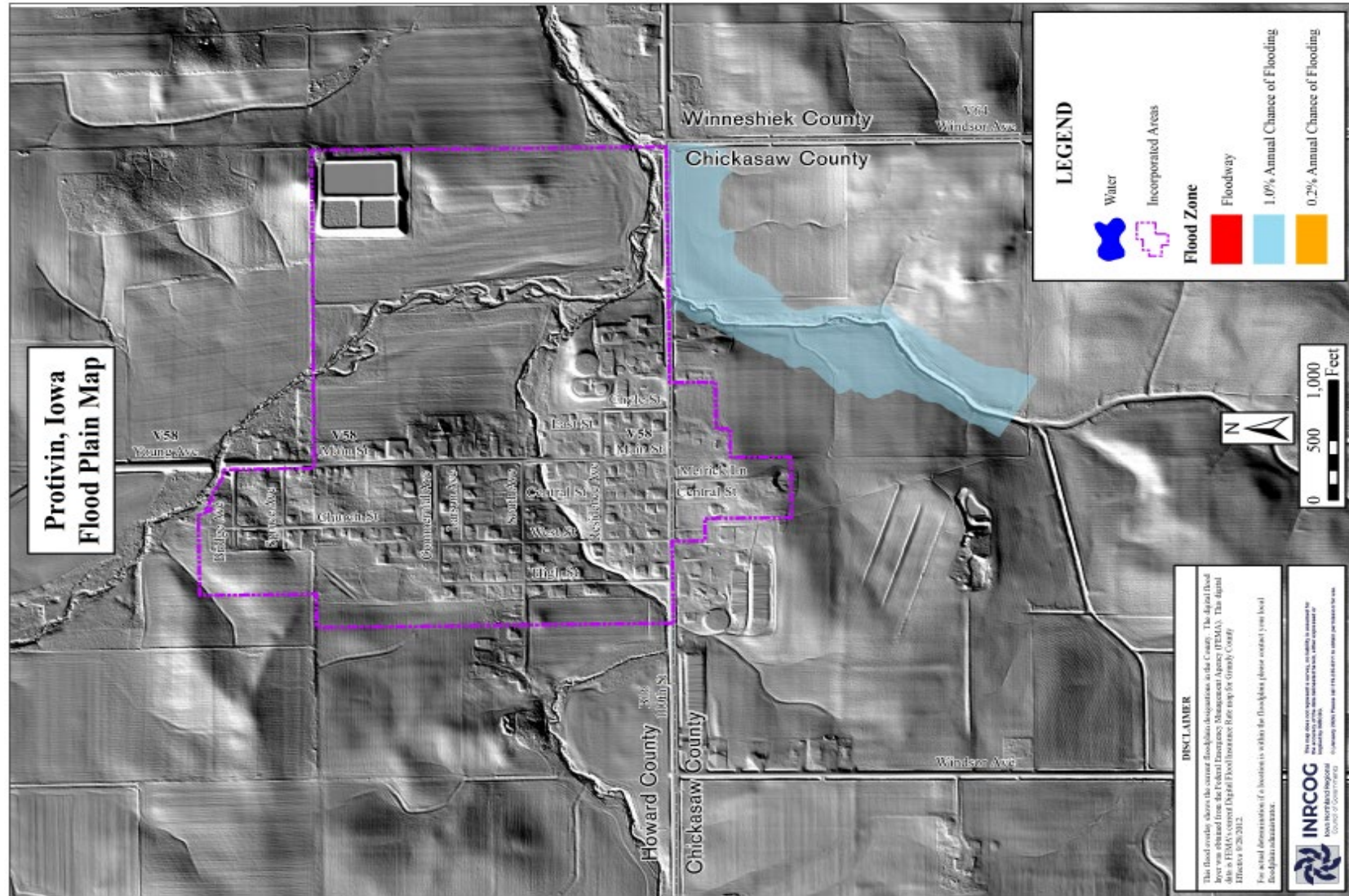
**Table 7: Vulnerability to Selected Hazards**

<b>Hazard</b>	<b>% of City at Risk to Hazard</b>	<b># of Parcels</b>	<b>Total Value (Buildings and Dwellings)</b>
Tornado	100%	171	\$6,750,400
100-Year Annual Chance Flood	0%	0	\$0

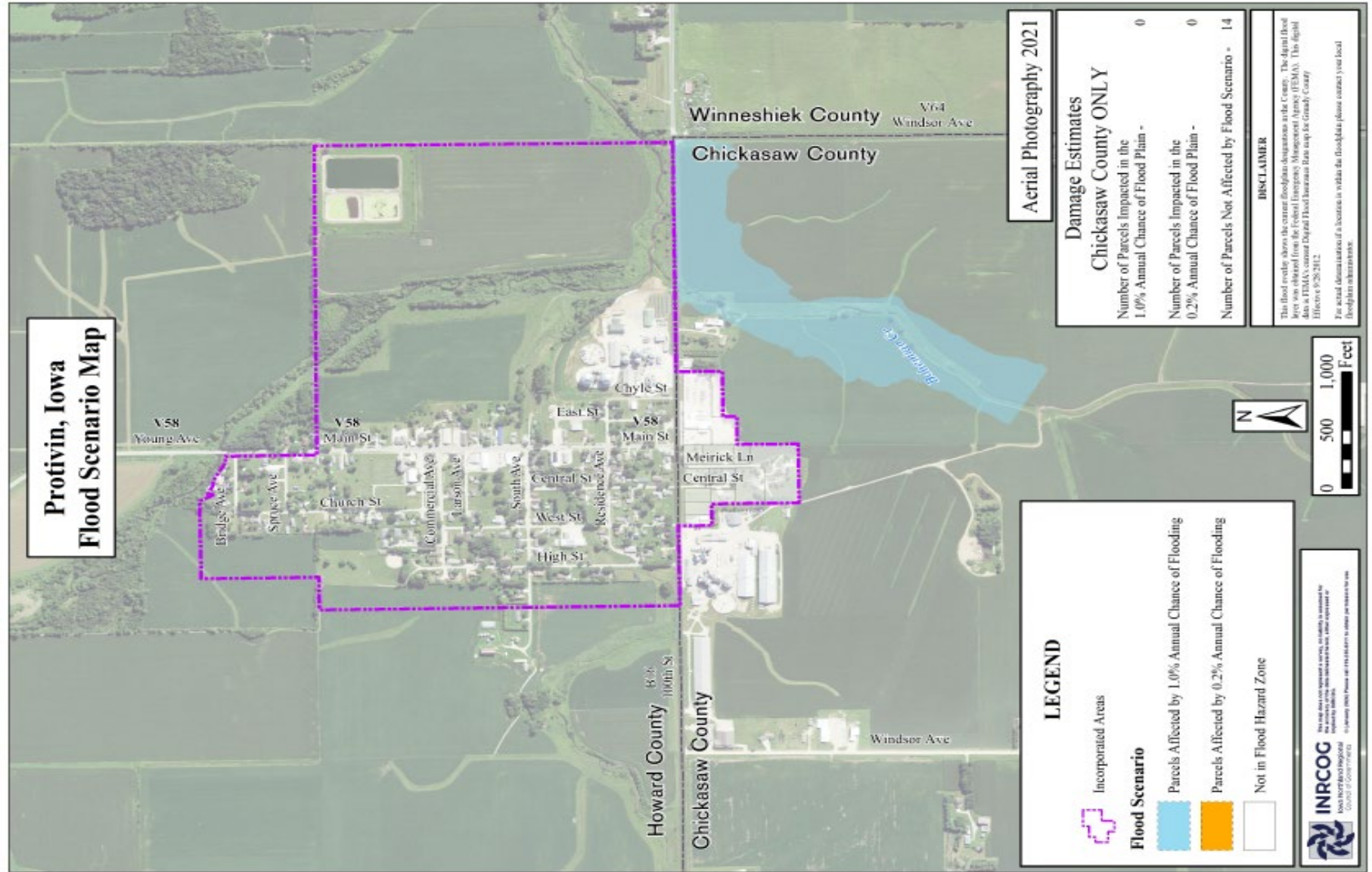
*Source: Chickasaw County Assessor Data (2023 dollars)*



**Figure 4: Flood Plain Map**



**Figure 5: Flood Scenario Map**





## Future Development

Recent updates in Title 44 CFR §201.6 (c) (2) (i) require this risk assessment include a section with future conditions on the type, location, and range of anticipated intensities of natural hazards.

Long term trends of climate patterns for the region were summarized in the Fourth National Climate Assessment Midwest Section.<sup>1</sup> The National Climate Report is mandated to be updated every 4 years and deliver results to Congress and President on the effects to agriculture, energy productions, land use, transportation, and human health.

Yearly precipitation levels and annual average temperatures provide trends that may help determine future intensities of climate systems.

### Annual Precipitation Levels in Chickasaw County

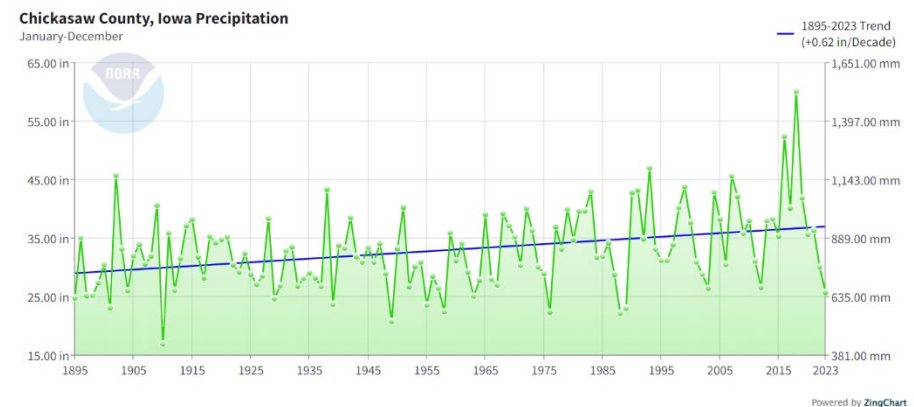
Chickasaw County's monthly precipitation records from 1895 are shown in Figure 6.

Yearly precipitation has been increasing at a rate of +0.62 every decade. Based on this historical trend, precipitation is likely to continue to increase in the coming years.

Managing this projected change in climate may increase more hazard mitigation efforts to reduce property damage and soil erosion from frequent flooding.

City infrastructure may become overwhelmed and require repairs, renovation, upgrades, or replacement such as the storm water systems and berms, dikes, or dams.

**Figure 6: Historical Precipitation Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



### Average Annual Temperatures in Chickasaw County

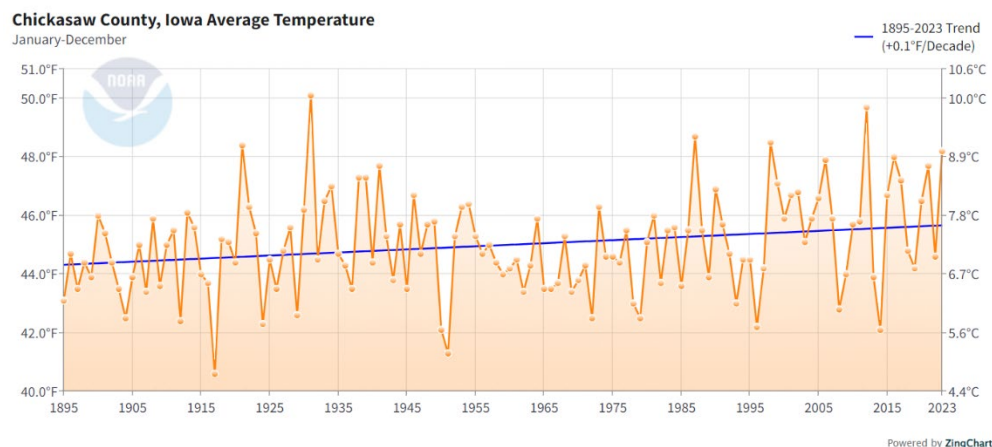
The annual average temperature is plotted over a 12-month period from 1885 to 2023 in Figure 7. This trend shows the

<sup>1</sup> USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

<sup>2</sup> NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published February 2024, retrieved on April 15, 2024 from <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>

average temperature in Chickasaw County increasing at a rate of +0.1° F every 10 years.

**Figure 7: Historical Temperature Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



#### Climate Patterns from Higher Average Temperatures

Extreme heat events during the summers may occur with more frequency in the Midwest.

The human impacts of extreme heat affect socially and economically vulnerable populations the most. The higher costs of energy during heat waves disproportionately impact cost-burdened households. Heat related illness may be more severe among infants, elderly populations, and those with chronic health conditions.

Daily minimum temperatures may increase across all seasons due to an increase in humidity.

Warming winters can increase the survival and reproduction of existing insect pests which allow new insect pests and crop pathogens to move into the Midwest region.

#### Climate Patterns from Increasing Precipitation and Higher Temperatures

The relationship between increasing precipitation, temperature, and drought is complex and often counterintuitive. While increasing precipitation may seem like it would mitigate drought conditions, higher temperatures can exacerbate the situation in several ways:

1. **Evapotranspiration:** Higher temperatures lead to increased evaporation rates from soil, bodies of water, and plants. This means that even if there is more precipitation, it may quickly evaporate before it can effectively replenish soil moisture or water sources.
2. **Changes in precipitation patterns:** Increasing temperatures can alter precipitation patterns, leading to more intense rainfall events but also longer periods of drought between these events. This pattern can result in rapid runoff and soil erosion during heavy rain, followed by extended dry periods that contribute to drought conditions.

Overall, while increasing precipitation may provide temporary relief from drought, the combined effects of rising temperatures can outweigh this benefit, leading to more frequent and severe drought events in certain regions.

### Projected Trends of Natural Hazards in Chickasaw County

- Drought is likely to occur more frequently as the atmosphere holds more moisture (even pulling moisture from plants) as the temperature increases. Longer periods between weather events means there are dryer and longer periods in between these events.
- Floods (flash or major types) will increase in intensity as the atmosphere holds more moisture to drive stronger storms and drop heavier rainfall over a shorter period during an event.
- Extreme heat may occur more frequently. The human health impacts are higher among socially vulnerable populations (the elderly, infants, those with chronic health issues, cost burdened households).
- Agricultural pests and pathogens may increase in growing plants and stored grain. Warming temperatures in the spring and summer have led to rising humidity. Higher dew and moisture conditions may increase the presence of these pests or crop diseases.

### **National Flood Insurance Program**

The City of Protivin participates in the National Flood Insurance Program. The current effective map date is Sept. 16, 2011. No baseline elevations were determined for the flood hazard zones in the latest FIRM map.

Protivin has 1 policy. The policy provides \$239,000 in coverage. There have been 0 claims for losses that had a net payout of \$0.

FEMA defines a repetitive loss property as an insurable building that has experienced zero losses in a 10-year period in which each loss is \$1,000 or more. Protivin has 0 repetitive loss properties.

**Table 8: National Flood Insurance Program Information**

Community Name	City of Protivin
NFIP Participant (Yes/No)	Yes
Designee / Agency to implement NFIP Requirements	City Clerk
Participant in CRS (Yes/No)	No
Current Effective Map Date	09/16/2011(M)
Regular-Emergency Program Entry Date	August 19, 1986
Total Policy Count	1
Total Coverage	\$239,000
Total Losses	0
Total Net Dollars Paid	\$0
<i>(M) = No flood elevations determined - All Zone A, C, and X</i>	
<i>Source: FEMA Community Status Book Report, 04/16/2024</i> <i><a href="https://www.fema.gov/cis/IA.pdf">https://www.fema.gov/cis/IA.pdf</a></i>	
<i>Source: Source: FEMA National Flood Insurance Program, Data and Analytics, HUDEX Report. <a href="https://nfipservices.floodsmart.gov/reports-flood-insurance-data">https://nfipservices.floodsmart.gov/reports-flood-insurance-data</a></i>	

## Hazard Risk Assessment

The top three hazards from the risk assessment are:

1. Severe Winter Storm
2. Flooding - Flash
3. Extreme Heat

### Risk Score Summary for Protivin

Table 9 displays rated risk scores for each associated hazard. This assessment was completed by city representatives based on hazard profiles prepared for the planning committee.

The top three risks rated for the City of Protivin are 1) Severe Winter Storm, 2) Flash Flooding, and 3) Extreme Heat. This risk assessment will be used in a risk informed approach to deciding which hazard mitigation activities or tasks the city will include in this Plan.

### Methodology

This risk assessment identifies how people, property, and structures would be harmed or damaged by one of the listed hazard events. IHESMD provided the formula below.

### Factors of Hazard Risk

Risks to a hazard event may differ across geographical locations or even differ based on certain times of year. For example, tornado season in Iowa is usually in May and tornados have the highest risk during this time due to

<b>Hazards</b>	<b>Probability</b>	<b>Magnitude</b>	<b>Warning Time</b>	<b>Duration</b>	<b>Score</b>
Severe Winter Storm	3	2	1	4	2.5
Flooding - Flash	2	3	3	2	2.5
Extreme Heat	2	3	1	4	2.4
Grass/Wildland Fire	2	2	4	1	2.2
Thunderstorm/ Lighting/ Hail	3	1	2	2	2.2
Tornado/Windstorm	2	2	3	2	2.2
Flooding - Riverine	2	2	2	3	2.1
Drought	2	2	1	4	2.1
Hazardous Materials	2	1	4	2	2.0
Transportation Incidents	2	1	4	2	2.0
Radiological	1	1	4	3	1.7
Sinkholes	1	1	4	2	1.6
Terrorism	1	1	4	2	1.6
Infrastructure Failure	1	1	3	3	1.5
Earthquake	1	1	4	1	1.5
Levee/Dam Failure	1	1	3	2	1.4
Expansive Soils	1	1	1	4	1.3
Landslide	1	1	3	1	1.3
Animal/ Crop/ Plant Disease	1	1	1	4	1.3
Pandemic/ Endemic Human Disease	1	1	1	4	1.3

change in weather patterns from the western and central Gulf of Mexico causing higher chances of extreme weather.

For this analysis, four hazard risk factors are rated on a scale between 1 and 4 by committee participants after reviewing profiles of each hazard with the planning coordinator. Information was shared with the committee which described the hazard, historical occurrences, impact, duration, and warning time. Participants used this information to strengthen their understanding to rate each hazard factor.

#### Hazard Risk Score Formula

$$\begin{aligned}
 &[\text{Probability}] \times 45\% + [\text{Magnitude or Severity}] \times 30\% \\
 &+ [\text{Warning Time}] \times 15\% + [\text{Duration}] \times 10\% \\
 &= \text{Final Hazard Assessment}
 \end{aligned}$$

Source: Provided by Iowa HSEMD during scope of work

Hazard scores were collected during the second committee meeting. INRCOG planners calculated the hazard risk score for each hazard based on the formula in this section.

Score Value	Hazard Risk Level	Description of hazard with this rating
1	<u>Low risk hazard</u>	Hazard is not likely to affect people or property because the likelihood is minimal.
4	<u>High risk hazard</u>	The hazard has historically occurred and may have significant impacts to people and property.

#### Probability

The probability score reflects the likelihood of the hazard occurring in the near future. Historical data of the hazard event occurring in Chickasaw County or Iowa informed the likelihood of future occurrence.

Probability Score Definitions		
Score	Description	
1	Unlikely	<i>Less than 10% probability in any given year (up to 1 in 10 chance of occurring), a history of events is less than 10% likely or the event is unlikely but there is a possibility of its occurrence.</i>
2	Occasional	<i>Between 10% and 20% probability in any given year (up to 1 in 5 chance of occurring), history of events is greater than 10% but less than 20% or the event could possibly occur.</i>
3	Likely	<i>Between 20% and 33% probability in any given year (up to 1 in 3 chance of occurring), history of events if greater than 20% but less than 33% or the event is likely to occur.</i>
4	Highly Likely	<i>More than 33% probability in any given year (event has up to a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.</i>

### Magnitude or Severity

The magnitude or severity of the hazard event is measured by the level of impact on the human environment. Property damage is assessed by the whole planning area.

Magnitude or Severity Score Definitions		
Score	Description	
1	Negligible	Less than 10% of property severely damaged, the shutdown of facilities and services for less than 24 hours, and/or injuries/illnesses treatable with first aid
2	Limited	10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
3	Critical	25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
4	Catastrophic	More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.

### Warning Time

This should be taken as an anticipated warning time.

The warning time score assesses the ability to warn a population before the hazard occurs. The values of the score range from 1 (at least 24 hours) to 4 (minimal or no warning time).

For many of the climate hazards, there is a considerable amount of warning time as opposed to the human-caused hazards (transportation and hazardous materials incidents) that occur instantaneously or without any significant warning time.

Warning Time Score Definitions		
Score	Description	
1	Forecasted	More than 24 hours warning time.
2	Likely	12 to 24 hours warning time.
3	High Chance	6 to 12 hours warning time
4	Imminent	Minimal or no warning time (up to 6 hours warning)

### Duration

The duration is the time of a typical or expected hazard event to occur. For an earthquake or traffic accident that is a score of 1. For infrastructure failure, it is likely a 4.

Duration Score Definitions	
Score	Description
1	Less than 6 hours
2	Less than 1 day
3	Less than 1 week
4	More than 1 week

## Hazard Mitigation Goals

### For Protivin, Iowa

The following list of goals was developed by planning committee participants from the associated jurisdiction. Goals 1 through 7 were developed in the previous 2012 Howard County Multi-Jurisdictional Hazard Mitigation Plan. The planning committee participants chose to adopt the same goals and add additional goals. Goals 8 through 12 were developed by planning committee members including Protivin representatives.

**Goal #1** Reduce the chance of and impact of flooding in the community.

**Goal #2** Take measures to minimize the occurrence of injuries and loss of life due to hazards.

**Goal #3** Take measures to minimize or eliminate damage that may occur as a result of hazards.

**Goal #4** Increase the city's ability to respond to natural disasters and man-made hazards.

**Goal #5** Return to the community to similar or improved pre-event conditions as quickly as possible following a disaster event.

**Goal #6** Incorporate the City Plan into the proposed Multi-Jurisdictional Plan.

**Goal #7** Continually re-assess and re-evaluate the plan and mitigation activities.

**Goal #8** Create a hazard mitigation strategy for flood plain properties.

**Goal #9** Enhance local transportation safety by installing or replacing railroad crossing systems/signage in Protivin.

**Goal #10** Enhance the safety of Protivin residents with a modern warning system, including updated

tornado sirens and register for Alert Iowa notifications through the online registration portals.

**Goal #11** Ensure safe construction of all buildings in Protivin by adopting State Building Codes per Iowa Code Chapter 103A as the local construction standards for all building improvements: newly constructed, renovated, repaired work that may need a permit.

**Goal #12** Ensure mutual aid agreements for all emergency response services are renewed and up to date.



## Previous Mitigation Activities

Mitigation actions and activities in this Plan will be organized according to these 5 categories:

*1) Emergency Services, 2) Education and Outreach, 3) Structural Projects, 4) Natural Resource Protection and Nature Based Solutions, and 5) Local Plans and Regulations.*

### Emergency Services in Protivin

#### Chickasaw County Emergency Management Agency

Protivin works with the Chickasaw County Emergency Management Coordinator, based out of the City of New Hampton, on various safety and emergency events. The Emergency Management Coordinator works in conjunction with local fire, rescue, police, and government officials to draft and implement workable emergency action plans in the community. The Chickasaw County Emergency Management Coordinator is Jeff Bernatz.

#### Law Enforcement

The community has a 28E agreement in place with Chickasaw County Sheriff's Department that will provide law enforcement services. Services include patrol in the city. The sheriff deputies provide a response time to the city up to 30 minutes and will provide extra people power when notified by the city.

#### Fire Protection and EMS Services

Fire protection is provided by Protivin's Fire Department located at 229 S Main Street in Protivin, Iowa. There are 24

volunteer firefighters that have fire, first response, HAZMAT, and emergency management training.

Equipment used by the Protivin Fire Department include the following:

- 2012 Alexis Freightliner Pumper (1500 Gallon capacity w/ 1,500 gpm Pump)
- 1994 International Tanker (2,500 Gallons)
- 1998 International Tanker (2,000 Gallons)
- 1988 Chevrolet Pumper (1,000 Gallons w/ 750 gpm Pump)
- 1994 Freightliner E1 Chassis Rescue Truck
- 2012 Polaris Ranger 900

#### EMS Services

Chickasaw Ambulance Service provides ambulance service to area hospitals. Chickasaw Ambulance Service is a private company that contracts service with local entities. The company is based out of New Hampton, approximately 22 miles southwest of Protivin.

Chickasaw County Rescue Squad also provides service in Protivin. There are 42 EMT certified individuals who volunteer to respond to emergency calls on a needed basis in the county.

#### Medical Facilities

There are no medical facilities in Protivin. The closest facility is 13 miles north of Protivin at the Regional Health Services of Howard County (RHSHC) general hospital in Cresco, Iowa. This is the only medical facility with an ER unit located in the

county. RSHHC offers acute and skilled medical/surgical care, obstetrical, rehabilitative, and diagnostic services in a 19-bed Critical Access hospital.

#### HAZMAT Response Teams

Protivin contracts with Northeast Iowa Response Group for response to hazardous material spills. The Northeast Iowa Response Group is a division of Waterloo Fire Rescue as is the Hazardous Materials Regional Training Center. The Training Center provides training to fire departments and companies from around the state and country. Not only is this a training center, but it also serves as a hazardous materials quick response unit to Black Hawk County, surrounding counties, and many municipalities in a ten-county region. The Unit provides local fire departments with hazard materials emergency procedures thus reducing additional contamination. An evacuation plan is also in place in conjunction with the activities of the local department. Contact information for the facility is as follows: Hazardous Materials Regional Training Center, 1925 Newell Street, Waterloo, Iowa 50707, Phone: (319) 291-4275, Toll Free: (800) 291-4682, Fax: (319) 291-4285

The jurisdiction also partners with the Northeast Iowa Response Group for assistance in responding to any methamphetamine labs located in the city limits. The Response Group assists the Police Departments in containment of the site and disposal of hazardous chemicals.

#### Warning Systems in Protivin

1. *Tornado Sirens*

The outdoor early warning system consists of one siren that is activated either by the Sheriff's Department or the Emergency Management Office. The existing siren was installed in 2019 and has a battery backup.

2. *NOAA Weather Radio* broadcasts are also available in the community. NOAA Radio's provide up to the minute weather related alerts. Other locations that warnings and watches can be found are television, Internet, and radio.

3. *AlertIowa notification system*

AlertIowa is a mass emergency notifications system for all residents through an online registration process. Chickasaw County's Alert Iowa system is managed by the Chickasaw County Emergency Management Agency. The County will use their emergency notification network for all of the following events: blizzards, flash flooding, severe thunderstorms, and tornadoes.

#### Previous Education and Outreach Projects in Protivin

The City of Protivin funds first responders' annual training for fire department personnel, law enforcement personnel, and ambulance crews to address all hazards.

Protivin developed a NOAA weather radio awareness program, tree inspection and trimming program for dead Ash trees from EAB infestation.

### Previous Natural Resource Protection in Protivin

The City of Protivin is not regularly affected by flood events.

### Previous Structural Projects in Protivin

The city recently completed the building of a new fire station.

### Local Plans and Regulations in Protivin

Protivin completed a local plan and regulation assessment. The results are shown in the table below.

### **Local Capability Assessment**

Presented in Table 10 is an assessment of the community's capabilities to carry out hazard mitigation activities through local plans and regulations. This was completed in consultation with the Protivin's planning committee's representative and INRCOG.

<b>Table 10: Local Regulatory Capability Assessment</b>	
Community	City of Protivin
Previous Hazard Mitigation Plan Participant?	Yes (Howard County, 2011)
Comprehensive Plan?	Yes
Building Code?	No
Zoning Ordinance? RR=restricted residential	RR
Subdivision Regulations?	No
Floodplain Management Ordinance?	Yes
Tree-Trimming Ordinance?	Yes
Storm Water Ordinance?	No
Snow Removal Ordinance?	Yes

### **Components of the Implementation Guide**

Tables 12 through 15 are mitigation activities categorized by the mitigation action type. There are five categories: Local Plans and Regulations, Emergency Services, Education and Outreach, Natural Resource and Nature Based Solutions, and Structural Projects. Hazard mitigation activities are the tasks in the table which are shown with components for a strategic approach.

The tables are drawn from the city's capabilities, goals, and hazard risks presented in previous sections of this Plan.

The designated agency or staff presented with each line item was written by Protivin's planning committee.

Notes about the tasks (listed as line items) in each table.

- Each task (line item) stands on its own so it can be completed whenever possible.
- Each action item is not limited to the details presented below and may change based on future conditions.
- The tasks were categorized based on mitigation type. The mitigation types are not shown in any order (no priority over the other). This is presented to help with the general understanding of how hazard mitigation may feed into the City's existing or future priorities.

### Priority Level

The priority level was informed through discussions among planning committee members who considered potential benefits of implementing the activity, some hurdles that the city may face in implementing the action step, and the drawbacks of implementation. *Committee representatives considered a cost-benefit approach.*

### Timeframe

Timeframe	Description
Immediate	1 - 6 months
Short Term	1-5 years
Mid-Term	5-10 Years
Long-Term	More than 10 Years

### Estimated Costs

Cost estimates are based on the associated costs of additional staffing that may or may not be needed, time for planning/meetings/coordinating, and cost of the proposed action/program/ project.

Cost	Estimated Cost Range
Minimal	Less than \$10,000
Low	\$10K to \$99K
Moderate	\$100K to \$299K
High	Greater than \$300K

## Strategy for Implementing the Plan

Presented below are tables prepared in consultation with the Alta Vista's planning committee's representative and INRCOG. This is a guide for a strategic approach when implementing the city's efforts in hazard mitigation. The tasks in these tables are drawn from the city's capabilities, goals, and hazard risks presented in previous sections of this Plan. The designated agency or staff presented with each line item was written by Alta Vista's planning committee.

Notes about the tasks (listed as line items) in each table.

- Each task (line item) stands on its own so it can be completed whenever possible.
- Each action item is not limited to the details presented below and may change based on future conditions.
- The tasks were categorized based on mitigation type. The mitigation types are not shown in any order (no priority over the other). This is presented to help with the general understanding of how hazard mitigation may feed into the City's existing or future priorities.

## Priority Level

The priority level was informed through discussions among planning committee members who considered potential benefits of implementing the activity, some hurdles that the city may face in implementing the action step, and the drawbacks of implementation. *Committee representatives considered a cost-benefit approach.*

## Timeframe

Timeframe	Description
Immediate	1 - 6 months
Short Term	1-5 years
Mid-Term	5-10 Years
Long-Term	More than 10 Years

## Estimated Costs

Cost estimates are based on the associated costs of additional staffing that may or may not be needed, time for planning/meetings/coordinating, and cost of the proposed action/program/ project.

Cost	Estimated Cost Range
Minimal	Less than \$10,000
Low	\$10K to \$99K
Moderate	\$100K to \$299K
High	Greater than \$300K

**Table 11: 'Education and Awareness' Type Mitigation Activities**

Description: These types of actions keep residents informed about potential natural disasters.

<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
Low	Distribute a monthly newsletter to Protivin residents for better communication and outreach.	All	City Clerk	Immediate: 1 month - 6 months	Minimal	City general fund
Low	Help residents register on Alert Iowa with outreach and education initiatives.	Tornado	City Council	Immediate 1 - 6 months	Minimal	County EMA, City General Fund
Medium	Ensure proper training and certification of floodplain manager.	River flooding, flash flooding	City Clerk	Short Term 1-3 years	Minimal	County EMA, City General Fund
High	Promote and education Howard and Chickasaw County Multi-Jurisdictional Hazard Mitigation Plans.	All	City Council	Immediate 1 - 6 months	Minimal	County EMA, City General Fund

<b>Table 12: 'Emergency Services' Type Mitigation Activities</b>						
Description: Actions that protect people and property during and immediately after a disaster or hazard event.						
<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (\$)</b>	<b>Funding Source</b>
High	Acquire funds to purchase new siren.	Tornado	City Council	Short term 1-3 years	High	Hazard Mitigation Grant Program
Medium	Establish and sock community shelter locations.	All	Fire Dept, EMA	Short term 1-3 years	Medium	City general fund
Medium	Train and recruit additional volunteer emergency response individuals.	All	Fire Dept, EMA	Short term 1-3 years	Medium	City general fund

<b>Table 13: Natural System Protection and Nature-Based Mitigation Type</b>						
Description: Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions						
<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (\$)</b>	<b>Funding Source</b>
Low	Reinstall wetlands that were previously in place to improve flash flooding.	Flash Flood	City Council, Private Property Owners	Mid-term (3-5 Years)	High \$30K +	Stormwater BMP Loans with Iowa Dept of Ag & Land Stewardship



**Table 14: Structure and Infrastructure Project Type Mitigation Activities**

Description: Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
Medium	Prioritize dilapidated housing that poses the greatest threat to health, safety, and welfare and pursue one property acquisition through 657A.	Infrastructure failure, Tornado/ Windstorms, Thunderstorms with Strong Hail, Winter storm	City council	Long Term 5-10 years	High \$30K +	City general fund, CBDG funding, Revitalization grants, USDA rural development programs, Iowa Nuisance Property & Abandoned Building Remediation Loan Program
Medium	Harden utilities by promoting buried electrical utilities.	Windstorms, Thunderstorms with Strong Hail, Winter storm	City Council, Utility Provider	Moderate 5-10 years	High \$30K +	City general fund
Medium	Construct, stock, and implement FEMA compliant tornado safe room.	All	City Council	Moderate 5-10 years	High \$30K +	City general fund
Low	Install fiber optic internet.	All	City Council, County	Moderate 5-10 years	High \$30K +	City general fund

**Table 15: Local Plans and Regulations Mitigation Activities**

Description: Actions by administrative or regulatory processes which direct how land and buildings are developed and built. These actions include regulations by public entities to reduce hazard losses.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
Low	Create an annual fire inspection program for commercial and industrial properties.	Fire, Infrastructural Failure	City Council and Protivin Fire	Short term 1-3 years	Medium \$10K - \$30K	City general fund
Medium	Work with local utility provider on how to prevent/prepare, respond, and recover from hazard events.	Windstorm/ Tornado, Thunderstorm with Heavy Hail and Lightning, Winter storms	City Council and Protivin Municipal	Long Term 5-10 Years	High \$30K	Utility Provider
Low	Implement building codes and enforcement.	All	City Council	Short term 1-3 years	Medium \$10K - \$30K	City general fund
Low	Develop ordinance to restrict the use of public water resources for non-essential usage during drought conditions.	Drought	City Council	Mid-term (3-5 Years)	Minimal	City general fund

# New Hampton Community School District

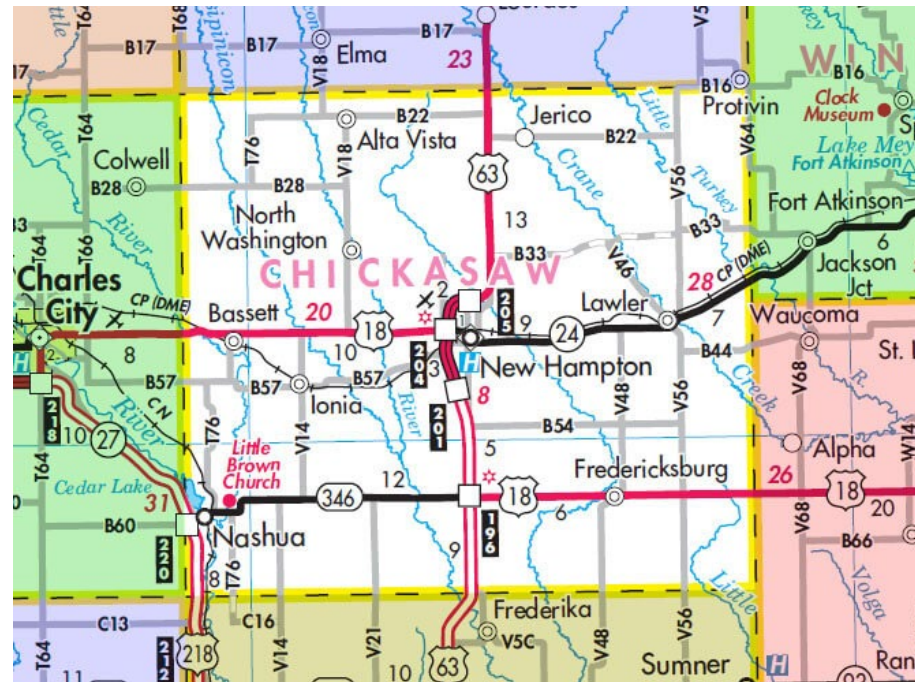
## Hazard Mitigation Plan 2024 Update

### Appendix K of the Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan

Funded by the Chickasaw County Emergency  
Management Agency

Prepared by Iowa Northland Regional Council  
of Governments (INRCOG)

May 2024



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Resolution Adopting Plan by Board

**A RESOLUTION OF THE SCHOOL BOARD OF THE NEW HAMPTON COMMUNITY SCHOOL DISTRICT, ADOPTING A HAZARD MITIGATION PLAN.**

WHEREAS, the New Hampton Community School District (or School District) recognizes the threat that natural hazards pose to people and property within Nashua and Plainfield, Iowa; and

WHEREAS, the Chickasaw County Emergency Management Agency has funded the development of an updated Plan in order to become eligible for federal hazard mitigation grant programs; and

WHEREAS, Superintendent Jurens, representing the School District, served and participated in the formulation of the hazard mitigation plan, hereby known as the New Hampton Community School District Hazard Mitigation Plan 2024 (or Plan) as part of the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS, said Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to students, faculty, staff, and property from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on said Plan; and

WHEREAS, adoption by the School Board of Directors demonstrates the School District's commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE SCHOOL BOARD OF DIRECTORS OF NEW HAMPTON COMMUNITY SCHOOL DISTRICT HEREBY:

Section 1: In accordance with school regulations, school board directors adopt New Hampton Community School District Hazard Mitigation Plan 2024. While content related to the School District may require revisions to meet the plan approval requirements set by Iowa Homeland Security and Emergency Management Department or FEMA, changes occurring after adoption will not require the school board of directors to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 17<sup>th</sup> day of June, 2024.

ATTEST:

  
Cheryl L. Pfeiffer  
Board Secretary

  
School Board President

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## About

The New Hampton Community School District developed a Hazard Mitigation Plan as part of a larger effort to update the 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. Federal hazard mitigation grant programs require an updated hazard mitigation plan approved by FEMA to be in good standing and remain eligible for grant funding. The Plan was developed to meet the requirements in Title 44 CFR § 201.6.

Elected officials, city clerks, planners, first responders, and school superintendents were invited to attend planning committee meetings as participants while they completed worksheets that were returned to the Chickasaw County's Emergency Management Agency (EMA) and INRCOG. Chickasaw County's EMA initiated and funded this effort for all participating communities and contracted INRCOG to coordinate a multi-jurisdictional approach to this plan development process.

Participating communities included all nine (9) incorporated jurisdictions in Chickasaw County. Other participating members were representing their respective County departments. The school district superintendents of three public school districts participated and represented their jurisdictions. Four (4) committee meetings were held between March 19<sup>th</sup> and April 23<sup>rd</sup> wherein each participant provided data and completed work sheets to develop their hazard mitigation plans.

## FEMA's Emergency Management Cycle



### What is Hazard Mitigation?

Hazard Mitigation is any *sustained* action taken to reduce or eliminate long-term risk to life and property from hazards.

The emergency management cycle has 4 phases:

- **Preparedness** is the assessment of potential risks, hazards, and vulnerabilities that a community may face. The development and updating of activities, programs, and systems before an event occurs is included in this phase of the cycle.
- **Response** is the immediate effects after a disaster.
- **Recovery** is a long-term phase that focuses on returning the community to normal after a disaster.
- **Mitigation** is an action that can occur at any phase.



## The Benefits of Hazard Mitigation

For local governments, there are benefits in knowing hazards, their risks, and planning for mitigation strategies.

Those include:

- ✓ An increased understanding of natural, technical, and man-made hazards faced by communities.
- ✓ Taking an opportunity to create more sustainable and disaster-resistant communities.
- ✓ Participating in this collaborative intergovernmental effort is cost effective for all participants.
- ✓ Using limited resources on hazards that have the biggest impacts on a community.
- ✓ Reducing or preventing damage to existing structures, subsequently reducing repair costs.
- ✓ Identifying vulnerable populations to establish equitable outcomes.
- ✓ Setting long-term goals that can be compatible with city policies or planning documents.

## The Planning Process

In emergency management planning, reducing the community's risk to natural hazards is a multi-step process which involves collaboration among stakeholders, assessing risk and vulnerabilities of hazards facing the community, establishing actions or activities to reduce risk, and assembling an organized strategy to carry out all mitigation activities.

Participants in the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee provided the information in this plan including community profile information, hazard mitigation goals, mitigation activities/action, updates to existing mitigation activities, and elements included in the strategy such as priorities, designated agencies, estimated costs, and overall strategic direction of this plan.

### *Participants in the Plan Followed This 5 Step Process*



## School District Profile

**Jurisdiction: New Hampton Community School District**

**Counties: Chickasaw County**

**Student Enrollment (2023-2024): 1,088**

The New Hampton Community School District is based in the City of New Hampton, Iowa. The district provides pre-kindergarten through 12<sup>th</sup> grade education to 1,088 students. There are two schools within the school district. The school district office is located at 710 W. Main Street New Hampton, IA 50639.

**Table 1: District Schools**

New Hampton Elementary School	New Hampton Middle School	New Hampton Community High School
206 W. Main New Hampton, IA 50659	711 W Main Street New Hampton, IA 50659	710 W Main Street New Hampton, IA 50659

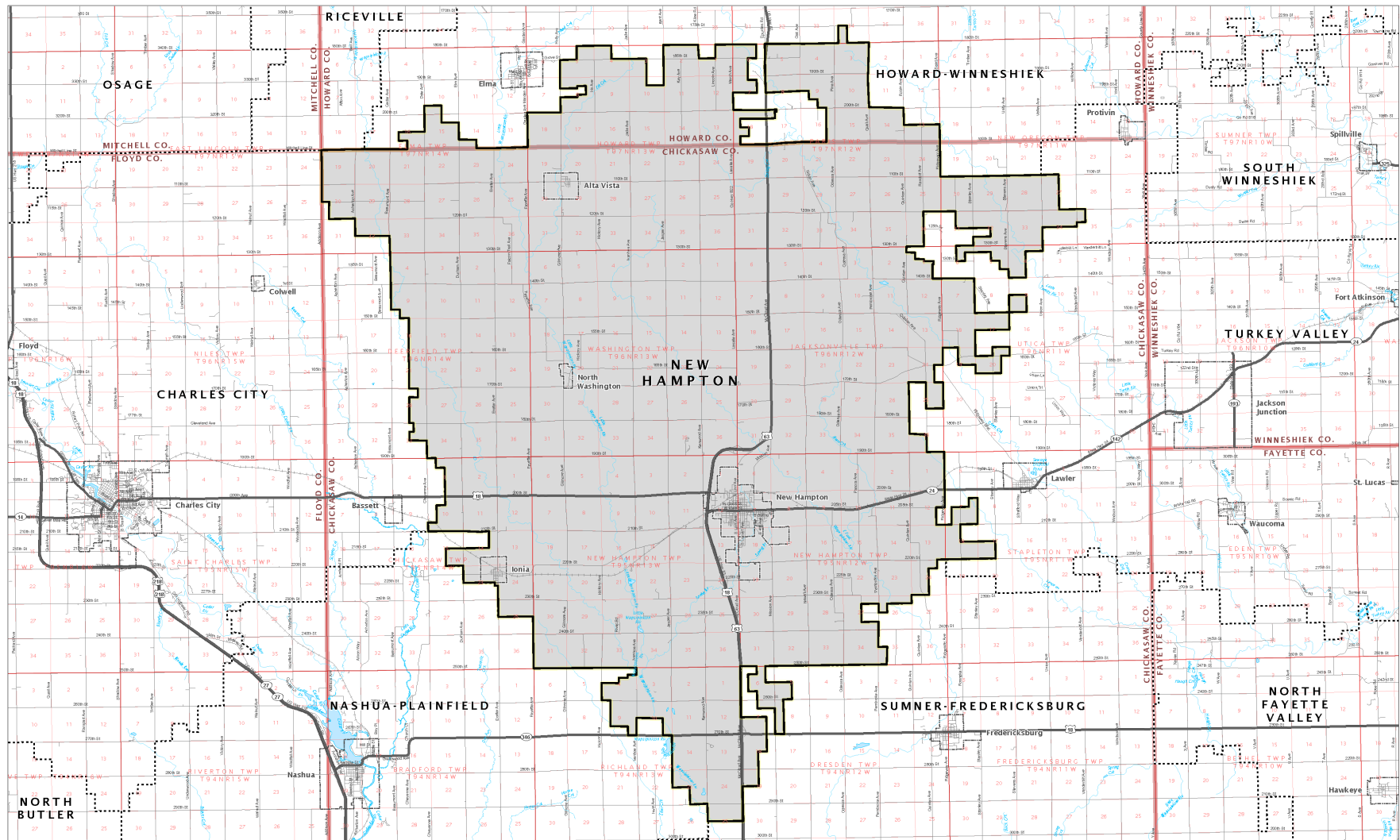
**Table 2: Historic Pre-K-12<sup>th</sup> Grade Student Enrollment**

Year	Enrollment
2023-2024	1,088
2022-2023	1,038
2021-2022	1,026
2020-2021	1,029
2020-2021	1,029
2019-2020	1,036
2018-2019	1,054

There are 453 students that ride the buses daily. There are 11 buses in the school district fleet. The school district conducts 2 bus safety drills each year.



**Figure 1: District Map (Source: Iowa Dept. of Education)**



Iowa Department of Education School District Boundary Verification 2022 - 2023

**NEW HAMPTON**

- NEW HAMPTON
- Other School District Boundary
- City

- Township
- Section
- County



The school district boundaries represented on this map were developed by the Iowa Department of Education and are a product of the 2022-2023 School District Review Program (SDRP) with the U.S. Census Bureau. Legal boundary descriptions are available. If the boundary represented here appears to conflict with an error, please contact the Department as available or send full description to: The Department or its agents in the name of the Iowa Department of Education. Map Produced: 4/10/2023

0 1 2 3 4 Miles

## Critical Facilities

The school district has 4 critical buildings. Shown in the table above, the facilities include New Hampton Elementary School, New Hampton Middle School, New Hampton High School, and district bus yard. All facilities are in New Hampton, Iowa.

**Table 3: Critical Facilities**

New Hampton Elementary School	206 W. Main New Hampton, IA 50659
New Hampton Middle School	711 W Main Street New Hampton, IA 50659
New Hampton Community High School	710 W Main Street New Hampton, IA 50659
Bus Barn	Located at 805 East Spring Street, New Hampton, IA 50659

## Community Utility Providers

City of New Hampton	
<i>Electric</i>	New Hampton Municipal Light Plant
<i>Natural Gas</i>	Black Hills Energy
<i>Telephone/Internet</i>	Windstream
<i>Cable TV</i>	Mediacom Communications
<i>Water Services</i>	City of New Hampton
<i>Sewer Services</i>	City of New Hampton
<i>Sanitation</i>	Jendro Sanitation

## Future Development

Recent updates in Title 44 CFR §201.6 (c) (2) (i) require this risk assessment include a section with future conditions on the type, location, and range of anticipated intensities of natural hazards.

Long term trends of climate patterns for the region were summarized in the Fourth National Climate Assessment Midwest Section.<sup>1</sup> The National Climate Report is mandated to be updated every 4 years and deliver results to Congress and President on the effects to agriculture, energy productions, land use, transportation, and human health.

Yearly precipitation levels and annual average temperatures offer insights into future conditions of our climate system.

### Annual Precipitation Levels in Chickasaw County

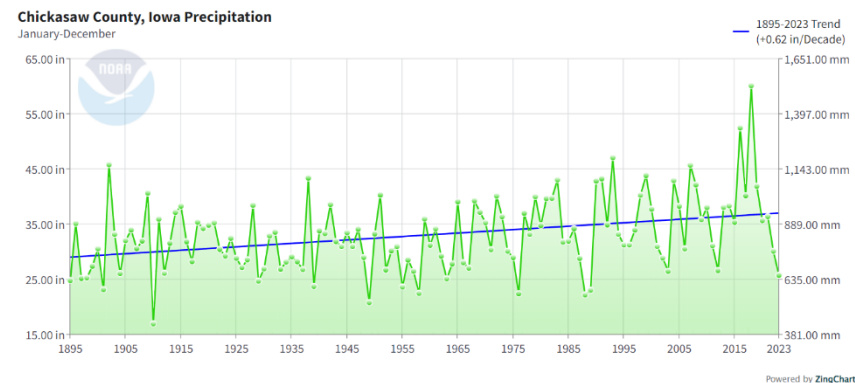
Taking the monthly precipitation records from January to December between 1895 and 2023 is shown in Figure 2. The values hover between 25 – 35 inches of precipitation levels recorded. The average precipitation level for the year is plotted and a linear trend of those values is shown in Figure 2. The trend shows a growing level of annual precipitation on average of 0.62 in more than the decade before. Based on

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<sup>1</sup> USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

this historical trend, precipitation is likely to continue to increase in the coming years.

**Figure 2: Historical Precipitation Data and Trend for Chickasaw County, Iowa<sup>2</sup>**

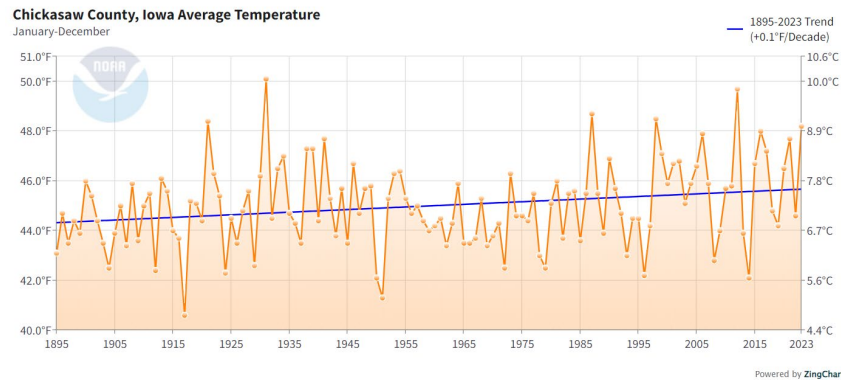


### Average Annual Temperatures in Chickasaw County

The monthly average temperature is plotted over a 12-month period from 1885 to 2023 in Figure 3. The annual average temperature is also shown with a linear trend in Figure 3. This trend shows the average temperature in Chickasaw County increasing at a rate of +0.1° F every 10 years.

<sup>2</sup> NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published February 2024, retrieved on April 15, 2024 from <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>

**Figure 3: Historical Temperature Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



## Climate Patterns from Increasing Precipitation and Higher Temperatures

### Drought

The relationship between increasing precipitation, temperature, and drought is complex, and often counterintuitive at first thinking about it. While increasing precipitation may seem like it would mitigate drought conditions, higher temperatures can exacerbate the situation in several ways:

1. **Evapotranspiration:** Higher temperatures lead to increased evaporation rates from soil, bodies of water, and plants. This means that even if there is more precipitation, it may quickly evaporate before it can effectively replenish soil moisture or water sources.

2. **Changes in precipitation patterns:** Increasing temperatures can alter precipitation patterns, leading to more intense rainfall events but also longer periods of drought between these events. This pattern can result in rapid runoff and soil erosion during heavy rain, followed by extended dry periods that contribute to drought conditions.

Overall, while increasing precipitation may provide temporary relief from drought, the combined effects of rising temperatures can outweigh this benefit, leading to more frequent and severe drought events in certain regions.

### Pest Infestation

With more humidity, the daily minimum temperature may increase across all seasons. Warming winters can increase the survival and reproduction of existing insect pests which allow new insect pests and crop pathogens to move into the Midwest region.

### Extreme Heat Domes

A heat dome is a weather phenomenon characterized by a high-pressure system that traps hot air beneath it, leading to prolonged periods of extremely high temperatures and often causing heatwaves. Extreme heat events during the summers may occur with more frequency in the Midwest.

The human impacts of extreme heat affect socially and economically vulnerable populations the most. The higher costs of energy during heat waves disproportionately impact cost-burdened households. Heat related illness may be more



severe among infants, elderly populations, and those with chronic health conditions.

#### Projected Trends of Natural Hazards in Chickasaw County

- Prologued drought is probably as the atmosphere holds more moisture (even pulling moisture from plants) as the temperature increases. Longer periods between weather events means there are dryer and longer periods in between these events.
- Floods (flash or major types) will increase in intensity as the atmosphere holds more moisture to drive stronger storms and drop heavier rainfall over a shorter period during an event.
- Extreme heat may occur more frequently. The human health impacts are higher among socially vulnerable populations (the elderly, infants, those with chronic health issues, cost burdened households).
- Agricultural pests and pathogens may increase in growing plants and stored grain. Warming temperatures in the spring and summer have led to rising humidity. Higher dew and moisture conditions may increase the presence of these pests or crop diseases.

#### **Hazard Risk Assessment**

The top three hazards from the risk assessment are:

1. River Flooding
2. Tornado/ Windstorm
3. Thunderstorm with Lightning/Hail

#### Methodology

This risk assessment identifies how people, property, and structures would be harmed or damaged by one of the listed hazard events. Iowa Homeland Security and Emergency Management Department (Iowa H.E.S.M.D.) provided the hazard risk score formula for determining the level of risk used in this analysis.

#### Factors of Hazard Risk

Risks to a hazard event may differ across geographical locations or even differ based on certain times of year. For example, tornado season in Iowa is usually in May and tornados have the highest risk during this time due to change in weather patterns from the western and central Gulf of Mexico causing higher chances of extreme weather.

For this analysis, four hazard risk factors are rated on a scale between 1 and 4 by committee participants after reviewing profiles of each hazard with the planning coordinator. Information was shared with the committee which described the hazard, historical occurrences, impact, duration, and warning time. Participants used this information to strengthen their understanding to rate each hazard factor.



## Hazard Risk Score Formula

$$\begin{aligned} &[\text{Probability}] \times 45\% + [\text{Magnitude or Severity}] \times 30\% \\ &+ [\text{Warning Time}] \times 15\% + [\text{Duration}] \times 10\% \\ &= \text{Final Hazard Assessment} \end{aligned}$$

Source: Provided by Iowa H.S.E.M.D.

Hazard scores were collected during the 2<sup>nd</sup> county committee meeting. INRCOG planners calculated the hazard risk score for each hazard based on the formula in this section. Results for New Hampton CSD are below.

Score Value vs. Hazard Risk Level	Description of hazard with this rating
Scores with a value closer to 1: <u>Low risk hazard</u>	Hazard is not likely to affect people or property because the likelihood is minimal.
Scores with a value closer to 4: <u>High risk hazard</u>	The hazard has historically occurred and may have significant impacts to people and property.

The factors in the hazard risk calculation are defined and the score values for each part is summarized in the following sections:

## Probability

The probability score reflects the likelihood of the hazard occurring in the near future. Historical data of the hazard event occurring in Chickasaw County or Iowa informed the likelihood of future occurrence.

Probability Score Definitions		
Score	Description	
1	Unlikely	<i>Less than 10%</i> probability in any given year (up to 1 in 10 chance of occurring), a history of events is less than 10% likely or the event is unlikely but there is a possibility of its occurrence.
2	Occasional	<i>Between 10% and 20%</i> probability in any given year (up to 1 in 5 chance of occurring), history of events is greater than 10% but less than 20% or the event could possibly occur.
3	Likely	<i>Between 20% and 33%</i> probability in any given year (up to 1 in 3 chance of occurring), history of events if greater than 20% but less than 33% or the event is likely to occur.
4	Highly Likely	<i>More than 33%</i> probability in any given year (event has up to a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.

### Magnitude or Severity

The magnitude or severity of the hazard event is measured by the level of impact on the human environment. Property damage is assessed by the whole planning area.

Magnitude or Severity Score Definitions		
Score	Description	
1	Negligible	Less than 10% of property severely damaged, the shutdown of facilities and services for less than 24 hours, and/or injuries/illnesses treatable with first aid
2	Limited	10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
3	Critical	25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
4	Catastrophic	More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.

### Warning Time

This should be taken as an anticipated warning time.

The warning time score assesses the ability to warn a population before the hazard occurs. The values of the score

range from 1 (at least 24 hours) to 4 (minimal or no warning time).

For many of the climate hazards, there is a considerable amount of warning time as opposed to the human-caused hazards (transportation and hazardous materials incidents) that occur instantaneously or without any significant warning time.

Warning Time Score Definitions		
Score	Description	
1	Forecasted	More than 24 hours warning time.
2	Likely	12 to 24 hours warning time.
3	High Chance	6 to 12 hours warning time
4	Imminent	Minimal or no warning time (up to 6 hours warning)

### Duration

The duration is the time of a typical or expected hazard event to occur. For an earthquake or traffic accident that is a score of 1. For infrastructure failure, it is likely a 4.

Table 4 displays rated risk scores for each associated hazard. This assessment was completed by school district representatives based on hazard profiles prepared for the

Duration Score Definitions	
Score	Description
1	Less than 6 hours
2	Less than 1 day
3	Less than 1 week
4	More than 1 week

planning committee.

Source: Completed by School District Representative. Calculated score completed by INRCOG

<b>Table 4: Hazard Risk Assessment</b>					
<b>Hazards</b>	<b>Probability</b>	<b>Magnitude</b>	<b>Warning Time</b>	<b>Duration</b>	<b>Score</b>
Flooding - Riverine*	4	3	2	3	3.3
Tornado/ Windstorm	4	2	4	1	3.1
Thunderstorm/ Lightning/ Hail	4	1	3	1	2.7
Drought*	4	1	1	4	2.7
Extreme Heat	3	2	1	4	2.5
Severe Winter Storm	4	1	1	2	2.5
Grass/Wildland Fire*	2	2	4	2	2.3
Infrastructure Failure	2	2	4	2	2.3
Hazardous Materials	2	3	2	1	2.2
Flooding - Flash	2	2	2	3	2.1
Pandemic/ Endemic Human Disease	2	2	1	4	2.1
Transportation Incidents	2	1	4	1	1.9
Expansive Soils*	1	1	4	3	1.7
Radiological Incident	1	1	4	2	1.6
Earthquake*	1	1	4	1	1.5
Landslide*	1	1	4	1	1.5
Levee/ Dam Failure*	1	1	2	4	1.5
Sinkholes*	1	1	4	1	1.5
Terrorism	1	1	4	1	1.5
Animal/ Crop/ Plant Disease	1	1	1	4	1.3

\*The following hazards were identified as not being considered a threat needing a specific mitigation action given the jurisdictional situation of a school district. The district is committed to working with public and private entities to ensure to limit its impact on the community it serves.

## **Hazard Mitigation Goals**

The following list of goals was developed by planning committee participants from the associated jurisdiction. Goals 1 through 6 were adopted to this Plan. Goals 7 were created by problem statements provided by the school superintendent during the plan development process. This process included updated and additional mitigation goals and activities.

- Goal #1** Maintain emergency services during hazard events, or if this is not possible, return to pre-disaster service levels as soon as possible.
- Goal #2** Protect the health and welfare of students and staff by utilizing pre-disaster planning and constructing mitigation projects.
- Goal #3** Take steps to mitigate or minimize the impact of natural, technological, and/or man-made disasters.
- Goal #4** Take measures to minimize the occurrence of injuries and loss of life due to hazards.
- Goal #5** Take measures to minimize or eliminate damage that may occur as a result of hazards.
- Goal #6** Return to similar or improved pre-event conditions as quickly as possible following a disaster event.
- Goal #7** Support city mitigation initiatives to offset impacts of extreme weather and seek collaboration between the school district and City of New Hampton.

## **Mitigation Activities by Type**

Mitigation actions and activities in this Plan will be organized according to these 5 categories: Emergency Services, Education and Outreach Projects, Natural Resource Protection or Natural Based Solutions, Structural Projects, or Local Plans and Regulations.

All school buildings are located in the City of New Hampton. The school district presents existing mitigation activities and emergency service capabilities for the city rather than the school district.

### **Emergency Services in New Hampton**

#### Chickasaw County Emergency Management Agency

New Hampton works with the Chickasaw County Emergency Management Coordinator, based out of the City of New Hampton, on various safety and emergency events. The Emergency Management Coordinator works in conjunction with local fire, rescue, police, and government officials to draft and implement workable emergency action plans in the community. The Chickasaw County Emergency Management Coordinator is Jeff Bernatz.

#### Law Enforcement

The New Hampton Police Department located at 22 S. Locus Ave in New Hampton, IA provides law enforcement services to the community. There are 6 police officers that serve from the department.

#### Fire Protection

Fire protection for the City of New Hampton is provided by the New Hampton Fire Department. The station is located at 403 S. Linn Ave in New Hampton, IA. There are 28-30 volunteer fire fighters that serve in the department currently. Each of the members are HAZMAT certified Firefighter 1 trained. There are several members that have Firefighter 2 training, and others with driver/operator training. New Hampton's Fire Department also has members certified in operating an aerial apparatus. Dispatch is provided via a paging system called I Am Responding app that is accessible through a phone app.

The New Hampton Fire Department maintains 28E agreements with the following communities: Alta Vista, Protivin, Ionia, Lawler, Nashua, Fredericksburg, and North Washington.

Equipment used by the New Hampton Fire Department includes the following:

- 3 pumper trucks
- 2 tankers
- 2 grass rigs
- 1 aerial/ladder apparatus

#### EMS Services

Chickasaw Ambulance Service provides ambulance service to area hospitals. Chickasaw Ambulance Service is managed by the county and located at 204 East Prospect, Net Hampton. The county-run department started in January 2023.

### Medical Facilities

MercyOne New Hampton Medical Center in New Hampton, IA is the only medical facility with an ER unit located in the county. MercyOne has 11 private inpatient rooms and cares for over 20,000 outpatients each year.

MercyOne New Hampton offers a full range of services in an inpatient and outpatient setting as well as 24-hour emergency care, surgical services, primary care clinic, therapy and rehabilitation, diagnostic services, speech and occupational therapy, Senior Life Solutions, and specialty clinics.

### HAZMAT Response Teams

New Hampton contracts with Northeast Iowa Response Group for response to hazardous material spills. The Northeast Iowa Response Group is a division of Waterloo Fire Rescue as is the Hazardous Materials Regional Training Center. The Training Center provides training to fire departments and companies from around the state and country. Not only is this a training center, but it also serves as a hazardous materials quick response unit to Black Hawk County, surrounding counties, and many municipalities in a ten-county region. The Unit provides local fire departments with hazard materials emergency procedures thus reducing additional contamination. An evacuation plan is also in place in conjunction with the activities of the local department. Contact information for the facility is as follows: Hazardous Materials Regional Training Center, 1925 Newell Street,

Waterloo, Iowa 50707, Phone: (319) 291-4275, Toll Free: (800) 291-4682, Fax: (319) 291-4285

The jurisdiction also partners with the Northeast Iowa Response Group for assistance in responding to any methamphetamine labs located in the city limits. The Response Group assists the Police Departments in containment of the site and disposal of hazardous chemicals.

### Warning Systems in New Hampton

#### 1) Tornado Sirens

New Hampton has purchased a new tornado warning siren system as of November 2023 with a 30-year life use.

The activation systems of warning systems are activated and operated by a central command system operated by the Chickasaw County Rescue Squad in New Hampton, IA.

#### 2) Alert Iowa

Chickasaw County has implemented the use of Alert Iowa, a mass communication notification system. The system features are controlled through the Chickasaw County Emergency Management Agency. Residents can customize their alert settings including the type of alerts they would get.

Alert Iowa allows for emergency notifications via landline telephones, cell phones, email, text messages, and social media. This is useful for communities that may not have

an operating warning siren or may not hear the sirens. The County will use its emergency notification network for all the following events: blizzards, flash flooding, severe thunderstorms, and tornadoes. Through the options on Alert Iowa, residents can set it up so they may receive alerts for all the hazards in this Plan.

### **Education and Outreach Projects Mitigation Activities**

The district participates in the annual emergency preparedness awareness week. Fire and weather are the two hazards that are prepared for during this time.

The school district holds emergency management training for administrators and staff annually through the Chickasaw County Emergency Management Agency.

The City of New Hampton has a public awareness plan for natural gas. Citizens receive a detailed letter regarding what to do in the situation of various emergency situations. The City also informs citizens of Iowa One Call.

The school district would like to assist the City and County EMA with getting the word out on Alert Iowa. Using existing feeds from the school district including social media, emails, and newsletters, the school district can reach a significant portion of the population.

### **Natural Resource Protection Mitigation Activities**

There have been no recent natural resource protection projects.

### **Structural Projects Mitigation Activities**

There have been no recent structural projects.

The school district needs a saferoom for tornadoes and other natural disasters. Efforts to place or site the shelter will be made in communication with the City of New Hampton. It is the goal of this mitigation activity that both the city and school district may have access to when necessary.

### **Local Plans and Regulations in New Hampton**

The School District participated in the Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan, which was adopted in 2019.

The school district prepares a school safety plan annually in June. This is sent to the state department of education per their requirements.

### **Components of the Implementation Strategy**

The end of this section has strategic implementation information prepared in consultation with the school district's superintendent and INRCOG. This is a guide for a strategic approach when implementing the school district's efforts in hazard mitigation. The tasks in these tables are drawn from problems statements and new mitigation activity worksheets.

Notes about the tasks (listed as line items) in each table.

- Each task (line item) stands on its own so it can be completed whenever possible.
- Each action item is not limited to the details presented below and may change based on future conditions.
- The tasks were categorized based on mitigation type. The mitigation types are not shown in any order (no priority over the other).



This implementation strategy is presented to help with the general understanding of how hazard mitigation may feed into existing or future priorities.

### Priority Level

The priority level was informed through discussions among planning committee members who considered potential benefits of implementing the activity, some hurdles that the city may face in implementing the action step, and the drawbacks of implementation. *Committee representatives considered a cost-benefit approach.*

### Estimated Costs

Cost estimates are based on the associated costs of additional staffing that may or may not be needed, time for planning/meetings/coordinating, and cost of the proposed action/program/ project.

Cost	Estimated Cost Range
Minimal	Less than \$10,000
Low	\$10K to \$99K
Moderate	\$100K to \$299K
High	Greater than \$300K

### Timeframe

Timeframe	Description
Immediate	1-6 months
Short Term	1-5 years
Mid-Term	5-10 Years
Long-Term	More than 10 Years

### Hazard Mitigation Goals

The following list of goals was adopted by the school district.

- Goal #1** Maintain emergency services during hazard events, or if this is not possible, return to pre-disaster service levels as soon as possible.
- Goal #2** Protect the health and welfare of students and staff by utilizing pre-disaster planning and constructing mitigation projects.
- Goal #3** Take steps to mitigate or minimize the impact of natural, technological, and/or man-made disasters.
- Goal #4** Take measures to minimize the occurrence of injuries and loss of life due to hazards.
- Goal #5** Take measures to minimize or eliminate damage that may occur as a result of hazards.
- Goal #6** Return to similar or improved pre-event conditions as quickly as possible following a disaster event.

## Strategic Implementation Plan by Mitigation Activity Type

<b>Table 5: 'Education and Awareness' Type Mitigation Activities</b>						
Description: These types of actions keep residents informed about potential natural disasters.						
<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
Medium	Improve school communication about various hazards that could potentially impact students, including how to stay cool during extreme heat or cold and how to stay safe during severe weather by sharing information through school website and school social media.	All	Superintendent and tech director	Immediate 1-6 months	Minimal \$0	None needed
Medium	Collect outreach information from Jeff Bernatz (Chickasaw County EMA) for Alert Iowa.	All	EMA coordinating sets	Immediate 1-6 Months	Minimal \$0	None needed
High	Improve school communication about various hazards that could potentially impact students.	All	EMA coordinating sets	Immediate 1-6 Months	Minimal \$0	None needed

<b>Table 6: 'Emergency Services' Type Mitigation Activities</b>						
Description: Actions that protect people and property during and immediately after a disaster or hazard event.						
<i>Priority</i>	<i>Tasks</i>	<i>Hazard(s)</i>	<i>Primary Agency Responsible for Implementation</i>	<i>Time Frame to Complete</i>	<i>Estimated Cost (s)</i>	<i>Funding Source</i>
High	Identify locations of critical public facilities to support a hazard plan.	All	Chickasaw County EMS, Superintendent, Principal	Short 1-3 years	Minimal 0-\$10K	School general fund
High	Prepare and sign an agreement for EMS services to be provided to the school district.	All	Chickasaw County EMA, Superintendent	Short 1-3 years	Minimal 0-\$10K	School general fund
Low	Coordinate with the City to develop plans for a FEMA approved storm shelter.	All	Chickasaw County EMS, Superintendent, Principal	Medium 5-10 years	Minimal \$0	None needed

<b>Table 7: Structure and Infrastructure Project Type Mitigation Activities</b>						
Description: Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.						
<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
High	Apply for grants and set aside funds to cover costs for infrastructure projects identified.	Thunderstorm with lightning/hail, tornado/windstorm	Superintendent, School Board, City Council	Medium Term 5-10 Years	High \$300K+	School general fund, city general fund, hazard mitigation grant program

**Table 8: Natural System Protection and Nature-Based Mitigation Type**

Description: Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimate d Cost (\$)</b>	<b>Funding Source</b>
Medium	Solicit donation and grants to plant trees and replace the tree shade canopy from cut ash trees.	Thunderstorm w/ lighting/hail, Tornado/ Windstorm, Winterstorm	Building and ground superintendent, School Board	Short Term 1-3 years	Minimal 0-\$10K	School general fund, Community Forestry Grant Program, Black Hills Energy Power of Trees
Medium	Continue to support and improve natural systems around the school to improve stormwater drainage.	Windstorm, Thunderstorm, Extreme Heat, Flash Flooding	Building and ground superintendent, School Board	Short Term 1-3 Years	Minimal 0-\$10K	School general fund, State and Federal Grant Funding

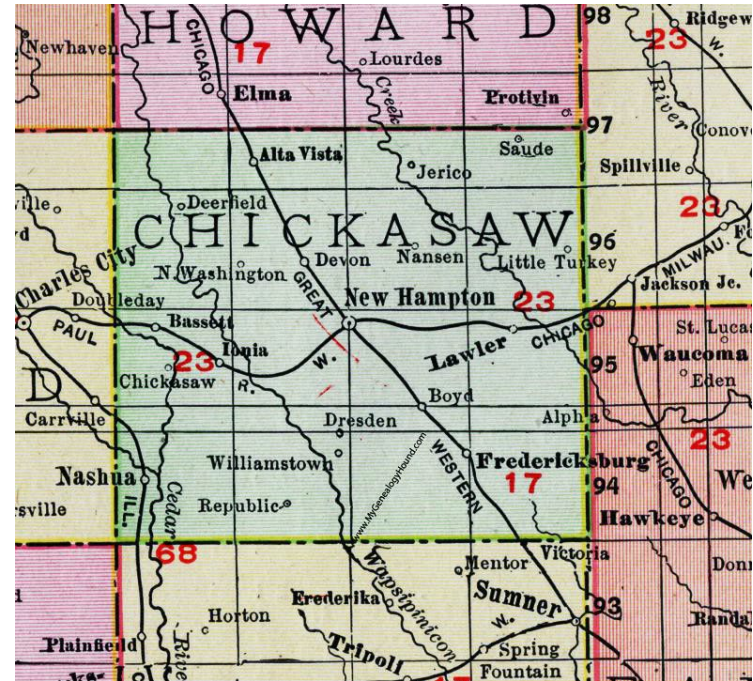
# Sumner-Fredericksburg Community School District Hazard Mitigation Plan 2024

Appendix L  
of the Chickasaw County  
Multi-Jurisdictional  
Hazard Mitigation Plan

Funded by the Chickasaw County Emergency  
Management Agency

Prepared by Iowa Northland Regional Council  
of Governments (INRCOG)

May 2024



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## Resolution Adopting Plan by Board

**A RESOLUTION OF THE SCHOOL BOARD OF SUMNER-FREDERICKSBURG COMMUNITY SCHOOL DISTRICT, ADOPTING A HAZARD MITIGATION PLAN.**

WHEREAS, the Sumner-Fredricksburg Community School District (or School District) recognizes the threat that natural hazards pose to people and property within Fredericksburg, Iowa; and

WHEREAS, the Chickasaw County Emergency Management Agency has funded the development of an updated Plan in order to become eligible for federal hazard mitigation grant programs; and

WHEREAS, Superintendent Matlage, representing the School District, served and participated in the formulation of the hazard mitigation plan, hereby known as the Sumner-Fredricksburg Community School District Hazard Mitigation Plan 2024 (or Plan) as part of the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS, said Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to students, faculty, staff, and property from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on said Plan; and

WHEREAS, adoption by the School Board of Directors demonstrates the School District's commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE SCHOOL BOARD OF DIRECTORS OF SUMNER-FREDERICKSBURG COMMUNITY SCHOOL DISTRICT HEREBY:

Section 1: In accordance with school regulations, school board directors adopt Sumner-Fredricksburg Community School District Hazard Mitigation Plan 2024. While content related to the School District may require revisions to meet the plan approval requirements set by Iowa Homeland Security and Emergency Management Department or FEMA, changes occurring after adoption will not require the school board of directors to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 13<sup>th</sup> day of May, 2024.

ATTEST:

  
Board Secretary

  
School Board President



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## About

The Sumner-Fredericksburg Community School District developed a Hazard Mitigation Plan as part of a larger effort to update the 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. Federal hazard mitigation grant programs require an updated hazard mitigation plan approved by FEMA to be in good standing and remain eligible for grant funding. The Plan was developed to meet the requirements in Title 44 CFR § 201.6.

Elected officials, city clerks, planners, first responders, and school superintendents were invited to attend planning committee meetings as participants while they completed worksheets that were returned to the Chickasaw County's Emergency Management Agency (EMA) and INRCOG. Chickasaw County's EMA initiated and funded this effort for all participating communities and contracted INRCOG to coordinate a multi-jurisdictional approach to this plan development process.

Participating communities included all nine (9) incorporated jurisdictions in Chickasaw County. Other participating members were representing their respective County departments. The school district superintendents of three public school districts participated and represented their jurisdictions. Four (4) committee meetings were held between March 19<sup>th</sup> and April 23<sup>rd</sup> wherein each participant provided data and completed work sheets to develop their hazard mitigation plans.

## FEMA's Emergency Management Cycle



### What is Hazard Mitigation?

Hazard Mitigation is any *sustained* action taken to reduce or eliminate long-term risk to life and property from hazards.

The emergency management cycle has 4 phases:

- **Preparedness** is the assessment of potential risks, hazards, and vulnerabilities that a community may face. The development and updating of activities, programs, and systems before an event occurs is included in this phase of the cycle.
- **Response** is the immediate effects after a disaster.
- **Recovery** is a long-term phase that focuses on returning the community to normal after a disaster.
- **Mitigation** is an action that can occur at any phase.

## The Benefits of Hazard Mitigation

For local governments, there are benefits in knowing hazards, their risks, and planning for mitigation strategies.

Those include:

- ✓ An increased understanding of natural, technical, and man-made hazards faced by communities.
- ✓ Taking an opportunity to create more sustainable and disaster-resistant communities.
- ✓ Participating in this collaborative intergovernmental effort is cost effective for all participants.
- ✓ Using limited resources on hazards that have the biggest impacts on a community.
- ✓ Reducing or preventing damage to existing structures, subsequently reducing repair costs.
- ✓ Identifying vulnerable populations to establish equitable outcomes.
- ✓ Setting long-term goals that can be compatible with city policies or planning documents.

## The Planning Process

In emergency management planning, reducing the community's risk to natural hazards is a multi-step process which involves collaboration among stakeholders, assessing risk and vulnerabilities of hazards facing the community, establishing actions or activities to reduce risk, and assembling an organized strategy to carry out all mitigation activities.

Participants in the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee provided the information in this plan including community profile information, hazard mitigation goals, mitigation activities/action, updates to existing mitigation activities, and elements included in the strategy such as priorities, designated agencies, estimated costs, and overall strategic direction of this plan.

### *Participants in the Plan Followed This 5 Step Process*



**School District Profile**

**Jurisdiction:** Sumner-Fredericksburg Community School District  
**Counties:** Chickasaw, Fayette, and Bremer County  
**Student Enrollment (2023-2024):** 771

The Sumner-Fredericksburg Community School District is based in the cities of Sumner and Fredericksburg, Iowa. The district provides pre-kindergarten through 12<sup>th</sup> grade education to nearly 771 students.

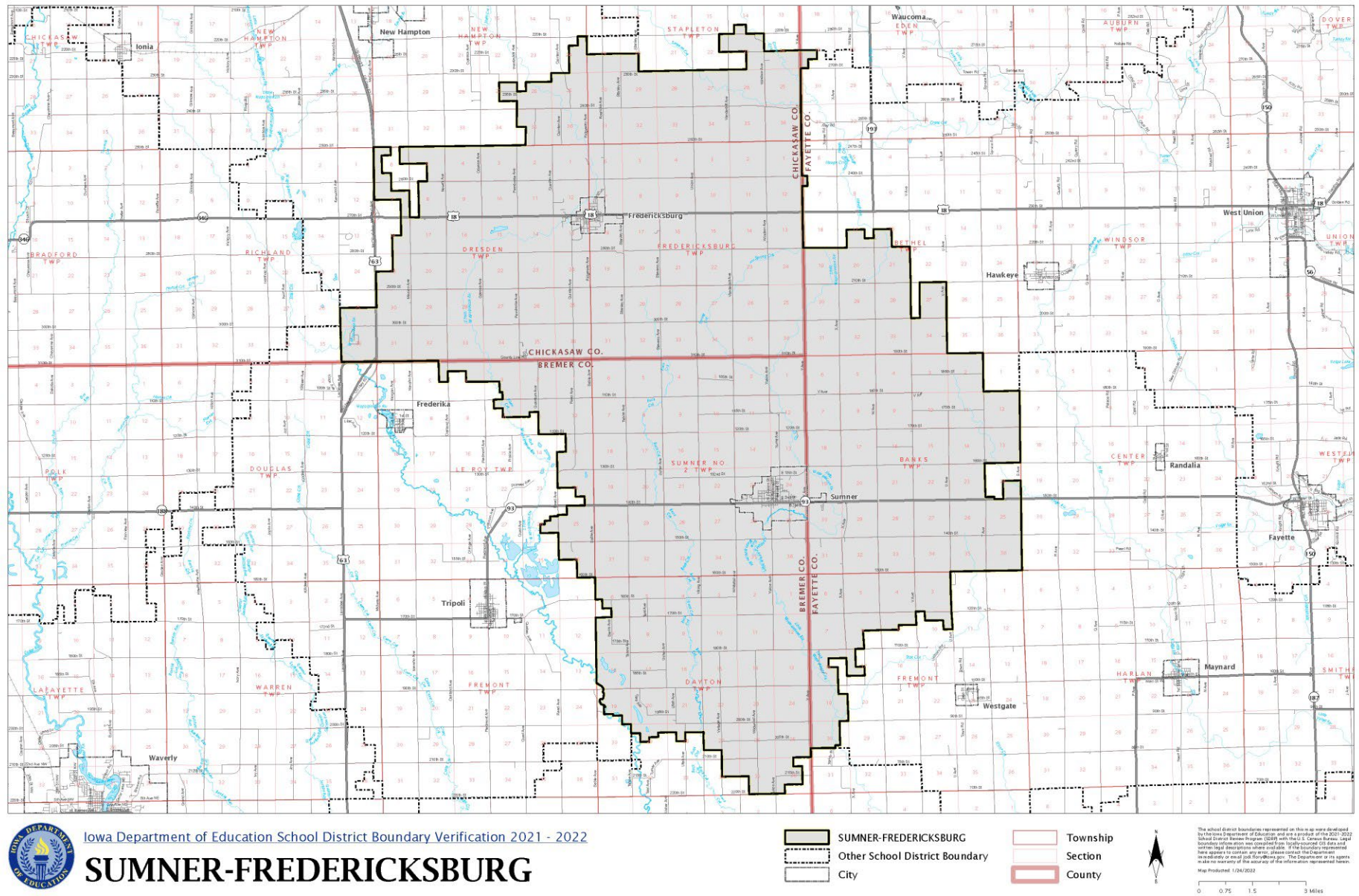
There are 328 students that ride the buses daily. There are 13 buses in the school district fleet. The school district conducts fire drills 4x a year and tornado drill 4x a year. There are 2 active shooter drills and 2 bus safety drills each year.

The school district does not have tornado safe rooms or wind resistant retrofits in their buildings. The school district sends out information to households for fire, police, and emergency preparedness.

The district has ESL (English as a Second Language) resources available to students as needed.

Table 1: District Schools			
Sumner-Fredericksburg High School	Sumner Fredericksburg Middle School	Durant Elementary School	Fredericksburg Elementary School
802 W. 6 <sup>th</sup> Street Sumner, IA	300 E. Main Street Fredericksburg, IA	601 W. 5 <sup>th</sup> Street Sumner, IA	401 E. High Street Fredericksburg, IA

Figure 1: District Map (Source: Iowa Dept. of Education)



## Critical Facilities

**Table 2: Critical Facilities**

Sumner-Fredericksburg Middle School	300 E Main Street Fredericksburg, IA
Sumner-Fredericksburg High School	802 W. 6 <sup>th</sup> Street Sumner, IA
Fredericksburg Elementary School	401 E High Street Fredericksburg, IA
Durant Elementary School	601 W. 5 <sup>th</sup> Street Sumner, IA
Bus barn	Located at Fredericksburg Elementary School
ICN Fibre	Located at S-F Middle School building

The school district has 4 critical buildings. Shown in the table above, the facilities include Sumner Fredericksburg Middle School, Fredericksburg Elementary School, district bus yard, and ICN fibre. The facilities are in Fredericksburg and Sumner, Iowa.

## Community Utility Providers

**Table 3: Utility Providers**

	City of Fredericksburg	City of Sumner
<i>Electric</i>	Fredericksburg Municipal	Sumner Municipal
<i>Natural Gas</i>	Black Hills	Black Hills
<i>Telephone/Internet</i>	Windstream/ICN	Windstream/ICN
<i>Cable TV</i>	Mediacom	Mediacom
<i>Water Services</i>	City of Fredericksburg	City of Sumner
<i>Sewer Services</i>	City of Fredericksburg	City of Sumner
<i>Sanitation</i>	City of Fredericksburg	City of Sumner



## Future Development

Recent updates in Title 44 CFR §201.6 (c) (2) (i) require this risk assessment include a section with future conditions on the type, location, and range of anticipated intensities of natural hazards.

Long term trends of climate patterns for the region were summarized in the Fourth National Climate Assessment Midwest Section.<sup>1</sup> The National Climate Report is mandated to be updated every 4 years and deliver results to Congress and President on the effects to agriculture, energy productions, land use, transportation, and human health.

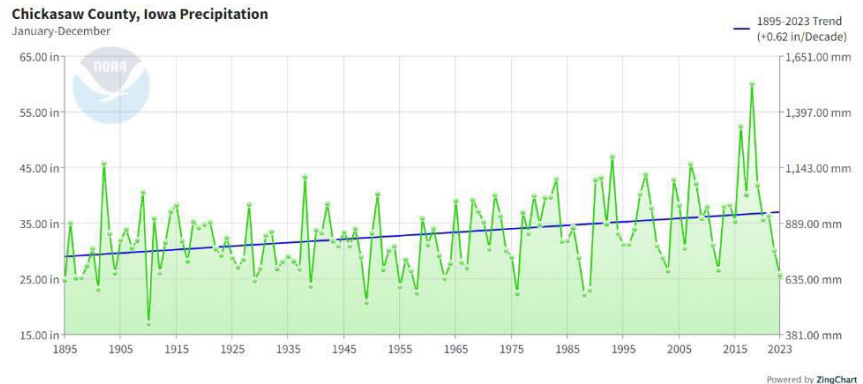
Yearly precipitation levels and annual average temperatures offer insights into future conditions of our climate system.

### Annual Precipitation Levels in Chickasaw County

Taking the monthly precipitation records from January to December between 1895 and 2023 is shown in Figure 6. The values hover between 25 – 35 inches of precipitation levels recorded. The average precipitation level for the year is plotted and a linear trend of those values is shown in Figure 2. The trend shows a growing level of annual precipitation on average of 0.62 in more than the decade before. Based on this historical trend, precipitation is likely to continue to increase in the coming years.

<sup>1</sup> USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

**Figure 2: Historical Precipitation Data and Trends for Chickasaw County, Iowa**



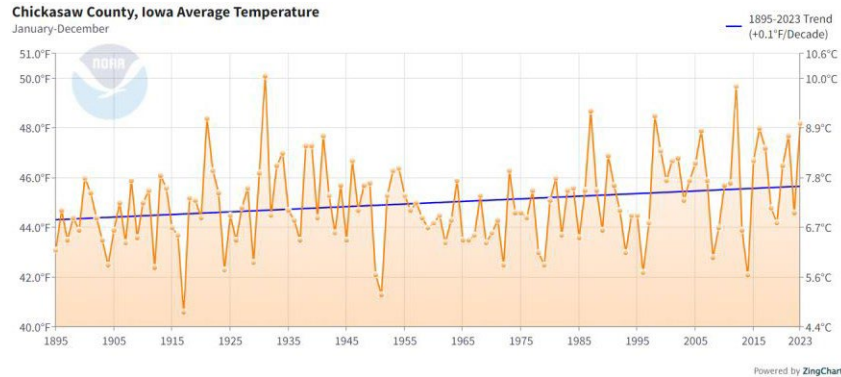
### Average Annual Temperatures in Chickasaw County

The monthly average temperature is plotted over a 12-month period from 1885 to 2023 in Figure 3. The annual average temperature is also shown with a linear trend in Figure 7. This trend shows the average temperature in Chickasaw County increasing at a rate of +0.1° F every 10 years.

<sup>2</sup> NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published February 2024, retrieved on April 15, 2024 from <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>



**Figure 3: Historical Temperature Data and Trends for Chickasaw County, Iowa**



## Climate Patterns from Increasing Precipitation and Higher Temperatures

### Drought

The relationship between increasing precipitation, temperature, and drought is complex, and often counterintuitive at first thinking about it. While increasing precipitation may seem like it would mitigate drought conditions, higher temperatures can exacerbate the situation in several ways:

1. **Evapotranspiration:** Higher temperatures lead to increased evaporation rates from soil, bodies of water, and plants. This means that even if there is more precipitation, it may quickly evaporate before it can effectively replenish soil moisture or water sources.

2. **Changes in precipitation patterns:** Increasing temperatures can alter precipitation patterns, leading to more intense rainfall events but also longer periods of drought between these events. This pattern can result in rapid runoff and soil erosion during heavy rain, followed by extended dry periods that contribute to drought conditions.

Overall, while increasing precipitation may provide temporary relief from drought, the combined effects of rising temperatures can outweigh this benefit, leading to more frequent and severe drought events in certain regions.

### Pest Infestation

With more humidity, the daily minimum temperature may increase across all seasons. Warming winters can increase the survival and reproduction of existing insect pests which allow new insect pests and crop pathogens to move into the Midwest region.

### Extreme Heat Domes

A heat dome is a weather phenomenon characterized by a high-pressure system that traps hot air beneath it, leading to prolonged periods of extremely high temperatures and often causing heatwaves. Extreme heat events during the summers may occur with more frequency in the Midwest.

The human impacts of extreme heat affect socially and economically vulnerable populations the most. The higher costs of energy during heat waves disproportionately impact cost-burdened households. Heat related illness may be more severe among infants, elderly populations, and those with chronic health conditions.

### Projected Trends of Natural Hazards in Chickasaw County

- Prologued drought is probably as the atmosphere holds more moisture (even pulling moisture from plants) as the temperature increases. Longer periods between weather events means there are dryer and longer periods in between these events.
- Floods (flash or major types) will increase in intensity as the atmosphere holds more moisture to drive stronger storms and drop heavier rainfall over a shorter period during an event.
- Extreme heat may occur more frequently. The human health impacts are higher among socially vulnerable populations (the elderly, infants, those with chronic health issues, cost burdened households).
- Agricultural pests and pathogens may increase in growing plants and stored grain. Warming temperatures in the spring and summer have led to rising humidity. Higher dew and moisture conditions may increase the presence of these pests or crop diseases.

### **Hazard Risk Assessment**

The top three hazards from the risk assessment are:

1. River Flooding
2. Tornado/ Windstorm
3. Thunderstorm with Lightning/Hail

#### Methodology

This risk assessment identifies how people, property, and structures would be harmed or damaged by one of the listed hazard events. Iowa Homeland Security and Emergency Management Department (Iowa H.E.S.M.D.) provided the hazard risk score formula for determining the level of risk used in this analysis.

#### Factors of Hazard Risk

Risks to a hazard event may differ across geographical locations or even differ based on certain times of year. For example, tornado season in Iowa is usually in May and tornados have the highest risk during this time due to change in weather patterns from the western and central Gulf of Mexico causing higher chances of extreme weather.

For this analysis, four hazard risk factors are rated on a scale between 1 and 4 by committee participants after reviewing profiles of each hazard with the planning coordinator. Information was shared with the committee which described the hazard, historical occurrences, impact, duration, and warning time. Participants used this information to strengthen their understanding to rate each hazard factor.

## Hazard Risk Score Formula

$$\begin{aligned}
 &[\text{Probability}] \times 45\% + [\text{Magnitude or Severity}] \times 30\% \\
 &+ [\text{Warning Time}] \times 15\% + [\text{Duration}] \times 10\% \\
 &= \text{Final Hazard Assessment}
 \end{aligned}$$

Source: Provided by Iowa H.S.E.M.D.

Hazard scores were collected during the 2<sup>nd</sup> county committee meeting. INRCOG planners calculated the hazard risk score for each hazard based on the formula in this section. Results for Sumner-Fredericksburg are on page 21.

Score Value vs. Hazard Risk Level	Description of hazard with this rating
Scores with a value closer to 1: <u>Low risk hazard</u>	Hazard is not likely to affect people or property because the likelihood is minimal.
Scores with a value closer to 4: <u>High risk hazard</u>	The hazard has historically occurred and may have significant impacts to people and property.

The factors in the hazard risk calculation are defined and the score values for each part is summarized in the following sections:

## Probability

The probability score reflects the likelihood of the hazard occurring in the near future. Historical data of the hazard event occurring in Chickasaw County or Iowa informed the likelihood of future occurrence.

Probability Score Definitions		
Score	Description	
1	Unlikely	<i>Less than 10%</i> probability in any given year (up to 1 in 10 chance of occurring), a history of events is less than 10% likely or the event is unlikely but there is a possibility of its occurrence.
2	Occasional	<i>Between 10% and 20%</i> probability in any given year (up to 1 in 5 chance of occurring), history of events is greater than 10% but less than 20% or the event could possibly occur.
3	Likely	<i>Between 20% and 33%</i> probability in any given year (up to 1 in 3 chance of occurring), history of events if greater than 20% but less than 33% or the event is likely to occur.
4	Highly Likely	<i>More than 33%</i> probability in any given year (event has up to a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.

### Magnitude or Severity

The magnitude or severity of the hazard event is measured by the level of impact on the human environment. Property damage is assessed by the whole planning area.

Magnitude or Severity Score Definitions		
Score	Description	
1	Negligible	Less than 10% of property severely damaged, the shutdown of facilities and services for less than 24 hours, and/or injuries/illnesses treatable with first aid
2	Limited	10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
3	Critical	25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
4	Catastrophic	More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.

### Warning Time

This should be taken as an anticipated warning time.

The warning time score assesses the ability to warn a population before the hazard occurs. The values of the score range from 1 (at least 24 hours) to 4 (minimal or no warning time).

For many of the climate hazards, there is a considerable amount of warning time as opposed to the human-caused hazards (transportation and hazardous materials incidents) that occur instantaneously or without any significant warning time.

Warning Time Score Definitions		
Score	Description	
1	Forecasted	More than 24 hours warning time.
2	Likely	12 to 24 hours warning time.
3	High Chance	6 to 12 hours warning time
4	Imminent	Minimal or no warning time (up to 6 hours warning)

### Duration

The duration is the time of a typical or expected hazard event to occur. For an earthquake or traffic accident that is a score of 1. For infrastructure failure, it is likely a 4.

Table 6 displays rated risk scores for each associated hazard. This assessment was completed by school district representatives based on hazard profiles prepared for the planning committee.

Duration Score Definitions	
Score	Description
1	Less than 6 hours
2	Less than 1 day
3	Less than 1 week
4	More than 1 week

Source: Completed by School District Representative. Calculated score completed by INRCOG

<b>Table 4: Hazard Risk Assessment</b>					
<b>Hazards</b>	<b>Probability</b>	<b>Magnitude</b>	<b>Warning Time</b>	<b>Duration</b>	<b>Score</b>
Flooding – Riverine*	4	3	2	3	3.3
Tornado/ Windstorm	4	2	4	1	3.1
Thunderstorm/ Lightning/ Hail	4	1	3	1	2.7
Drought*	4	1	1	4	2.7
Extreme Heat	3	2	1	4	2.5
Severe Winter Storm	4	1	1	2	2.5
Grass/Wildland Fire*	2	2	4	2	2.3
Infrastructure Failure	2	2	4	2	2.3
Hazardous Materials	2	3	2	1	2.2
Flooding – Flash	2	2	2	3	2.1
Pandemic/ Endemic Human Disease	2	2	1	4	2.1
Transportation Incidents	2	1	4	1	1.9
Expansive Soils*	1	1	4	3	1.7
Radiological Incident	1	1	4	2	1.6
Earthquake*	1	1	4	1	1.5
Landslide*	1	1	4	1	1.5
Levee/ Dam Failure*	1	1	2	4	1.5
Sinkholes*	1	1	4	1	1.5
Terrorism	1	1	4	1	1.5
Animal/ Crop/ Plant Disease	1	1	1	4	1.3

\*The following hazards were identified as not being considered a threat needing a specific mitigation action given the jurisdictional situation of a school district. The district is committed to working with public and private entities to ensure to limit its impact on the community it serves.

## Hazard Mitigation Goals

The following list of goals was developed by planning committee participants from the associated jurisdiction. Goals 1 through 6 were adopted to this Plan. Goals 7 were created by problem statements provided by the school superintendent during the plan development process. This process included updated and additional mitigation goals and activities.

- Goal #1** Maintain emergency services during hazard events, or if this is not possible, return to pre-disaster service levels as soon as possible.
- Goal #2** Protect the health and welfare of students and staff by utilizing pre-disaster planning and constructing mitigation projects.
- Goal #3** Take steps to mitigate or minimize the impact of natural, technological, and/or man-made disasters.
- Goal #4** Take measures to minimize the occurrence of injuries and loss of life due to hazards.
- Goal #5** Take measures to minimize or eliminate damage that may occur as a result of hazards.
- Goal #6** Return to similar or improved pre-event conditions as quickly as possible following a disaster event.
- Goal #7** Support local mitigation initiatives to offset impacts of extreme weather and seek collaboration between the school district and City of Fredericksburg and City of Sumner.

## **Mitigation Activities by Type**

Mitigation actions and activities in this Plan will be organized according to these 5 categories: Emergency Services, Education and Outreach Projects, Natural Resource Protection or Natural Based Solutions, Structural Projects, or Local Plans and Regulations.

### **Emergency Services in the City of Fredericksburg**

#### Chickasaw County Emergency Management Agency

The City of Fredericksburg works with the Chickasaw County Emergency Management Coordinator, based out of the City of New Hampton, on various safety and emergency events. The Emergency Management Coordinator works in conjunction with local fire, rescue, police, and government officials to draft and implement workable emergency action plans in the community. The Chickasaw County Emergency Management Coordinator is Jeff Bernatz.

#### Law Enforcement

Fredericksburg has a 28E agreement with the Chickasaw County Sheriff's Office for law enforcement services. The sheriff and deputies serve as- needed. The Sheriff's Office is located out of New Hampton at 116 N. Chestnut.

#### Fire Protection and EMS Services

Fire protection is provided by the Fredericksburg Fire Department. The station is located at 100 Falcon Drive Fredericksburg, IA 50630. There are 27 volunteer fire fighters that serve in the department currently. The members of the department meet monthly and take training in fire

suppression, hazardous materials, and emergency medical services.

Dispatch is provided via a paging system through the Chickasaw County Sheriff's Office.

The Fredericksburg Fire Department maintains 28E agreements with the following communities: Deerfield and Washington Townships. Sumner, Frederika, Waucoma, Alta Vista, Bassett, Ionia, Lawler, Nashua, New Hampton, and North Washington.

Equipment used by the North Washington Fire Department includes the following:

- 1991 Pumper Truck
- 1998 Rescue Truck
- 2023 UTV
- 1995 Tanker Truck
- 2018 Freightliner Tanker w/pump
- 1999 Pickup/ Brush Truck
- 2012 Freightliner Pumper
- 2024 Brush/Rescue Truck
- 3 Drones for Search and Rescue with night vision,

#### EMS Services

Chickasaw County EMS provides ambulance service to area hospitals. It was started by the county in January 2023. There is also one ambulance stationed in Fredericksburg at the Fire Station.



### Medical Facilities

Fredericksburg Medical Clinic is located at 115 Schult Ridge Road in Fredericksburg. The facility is open 8am to 5pm M-Th and 8am to 12pm on Fridays only.

The closest ER facility is the MercyOne New Hampton Medical Center in New Hampton, IA. This is the only medical facility with an ER unit located in the county. MercyOne has 11 private inpatient rooms and cares for over 20,000 outpatients each year.

MercyOne New Hampton offers a full range of services in an inpatient and outpatient setting as well as 24-hour emergency care, surgical services, primary care clinic, therapy and rehabilitation, diagnostic services, speech and occupational therapy, Senior Life Solutions, and specialty clinics.

### HAZMAT Response Teams

Fredericksburg contracts with Northeast Iowa Response Group for response to hazardous material spills. The Northeast Iowa Response Group is a division of Waterloo Fire Rescue as is the Hazardous Materials Regional Training Center. The Training Center provides training to fire departments and companies from around the state and country. Not only is this a training center, but it also serves as a hazardous materials quick response unit to Black Hawk County, surrounding counties, and many municipalities in a Ten-county region. The Unit provides local fire departments

with hazardous materials emergency procedures thus reducing additional contamination. An evacuation plan is also in place in conjunction with the activities of the local department. Contact information for the facility is as follows: Hazardous Materials Regional Training Center, 1925 Newell Street, Waterloo, Iowa 50707, Phone: (319) 291-4275, Toll Free: (800) 291-4682, Fax: (319) 291-4285

The jurisdiction also partners with the Northeast Iowa Response Group for assistance in responding to any methamphetamine labs located in the city limits. The Response Group assists the Police Departments in containment of the site and disposal of hazardous chemicals.

### Warning Systems in Fredericksburg

#### 1) Tornado Sirens

Fredericksburg has a tornado warning siren.

The activation systems of warning systems are activated and operated by a central command system operated by the Chickasaw County Rescue Squad in New Hampton, IA.

#### 2) Alert Iowa Mass Communication System

Chickasaw County has implemented the use of Alert Iowa, a mass communication notification system. The system features are controlled through the Chickasaw County Emergency Management Agency. Residents can customize their alert settings including the type of alerts they would get.

Alert Iowa allows for emergency notifications via landline telephones, cell phones, email, text messages, and social media. This is useful for communities that may not have an operating warning siren or may not hear the sirens.

The County will use its emergency notification network for all the following events: blizzards, flash flooding, severe thunderstorms, and tornadoes. Through the options on Alert Iowa, residents can set it up so they may receive alerts for all the hazards in this Plan.

### **Education and Outreach Projects Mitigation Activities**

The district participates in the annual emergency preparedness awareness week. Fire and weather are the two hazards that are prepared for during this time.

The school district holds emergency management training for administrators and staff annually through the Bremer County Emergency Management Agency.

The City of Fredericksburg has a public awareness plan for natural gas. Citizens receive a detailed letter regarding what to do in case of a gas emergency. The city also informs citizens of Iowa One Call.

The school district would like to assist the City and County EMA with getting the word out on Alert Iowa. Using existing feeds from the school district including social media, emails, and newsletters, the school district can reach a significant portion of the population.

### **Natural Resource Protection Mitigation Activities**

There have been no recent natural resource protection projects.

The school district can plant trees, shrubs, and grass to help slow or mitigate the flow of water on the south and west side of Fredericksburg Elementary School. This will assist the city with their retention pond to the west of the school campus. As the trees grow, this will serve as a natural windbreak for the school building.

Following recommendations from the 2014 Urban Forest Management Plan for Fredericksburg, Iowa prepared by Iowa DNR, tree planting efforts will ensure to plant a diverse mix of trees that does NOT include: ash, maple, cottonwood, poplar, box elder, Chinese elm, evergreen, willow, or black walnut. Over the next five years, most tree removal in Fredericksburg can be offset by planting 1.2 trees for each one removed, considering that not all newly planted trees may survive. While it's not mandatory for replacement trees to be situated in the exact locations of those removed, maintaining the overall number of trees is crucial for sustaining the ecological benefits provided by Fredericksburg's existing forest.

### **Structural Projects Mitigation Activities**

There have been no recent structural projects.

The school district needs a saferoom for tornados and other natural disasters. Efforts to place or site the shelter will be made in conjunction with the City of Fredericksburg. It is the goal of this mitigation activity that both the city and

school district may have access to this shelter in times of need.

### Local Plans and Regulations in Fredericksburg

The City of Fredericksburg completed a capability assessment. The results are shown in the table below. The capability assessment measures how well a municipality may implement mitigation activities in their jurisdiction. The City of Fredericksburg has regulatory mechanisms to mitigate potential hazards which reflect well on the school district's safety.

The school district prepares a school safety plan annually in June. This is sent to the state department of education per their requirements.

Table 5: Local Capability Assessment	
Community	City of Fredericksburg
Comprehensive Plan?	Yes
Building Code?	No
Zoning Ordinance? RR=restricted residential	Yes
Subdivision Regulations?	No
Floodplain Management Ordinance?	Yes
Tree-Trimming Ordinance?	Yes
Storm Water Ordinance?	Yes
Snow Removal Ordinance?	Yes

### Components of the Implementation Strategy

The end of this section has strategic implementation information prepared in consultation with the schooldistrict's superintendent and INRCOG. This is a guide for a strategic approach when implementing the school district's efforts in hazard mitigation. The tasks in these tables are drawn from problems statements and new mitigation activity worksheets.

Notes about the tasks (listed as line items) in each table.

- Each task (line item) stands on its own so it can be completed whenever possible.
- Each action item is not limited to the details presented below and may change based on future conditions.
- The tasks were categorized based on mitigation type. The mitigation types are not shown in any order (no priority over the other).

This implementation strategy is presented to help with the general understanding of how hazard mitigation may feed into existing or future priorities.

### Priority Level

The priority level was informed through discussions among planning committee members who considered potential benefits of implementing the activity, some hurdles that the city may face in implementing the action step, and the drawbacks of implementation. *Committee representatives considered a cost-benefit approach.*

## Timeframe

Timeframe	Description
Immediate	1-6 months
Short Term	1-5 years
Mid-Term	5-10 Years
Long-Term	More than 10 Years

## Estimated Costs

Cost estimates are based on the associated costs of additional staffing that may or may not be needed, time for planning/meetings/coordinating, and cost of the proposed action/program/ project.

Cost	Estimated Cost Range
Minimal	Less than \$10,000
Low	\$10K to \$99K
Moderate	\$100K to \$299K
High	Greater than \$300K

## Strategic Implementation Plan by Mitigation Activity Type

Table 6: 'Education and Awareness' Type Mitigation Activities						
Description: These types of actions keep residents informed about potential natural disasters.						
<i>Priority</i>	<i>Tasks</i>	<i>Hazard(s)</i>	<i>Primary Agency Responsible for Implementation</i>	<i>Time Frame to Complete</i>	<i>Estimated Cost (s)</i>	<i>Funding Source</i>
Medium	Improve school communication about various hazards that could potentially impact students, including how to stay cool during extreme heat or cold and how to stay safe during severe weather by sharing information through school website and social media.	All	Superintendent and tech director	Immediate 1-6 months	Minimal \$0	None needed
Medium	Collect outreach information from Chickasaw County EMA for Alert Iowa.	All	Superintendent	Immediate 1-6 Months	Minimal \$0	None needed
Medium	Develop education plan for student drivers on driving safely during storm events.	Winter Storms; Thunderstorms; Windstorms	Superintendent, City Police	Immediate 1-6 Months	Minimal \$0	None needed

<b>Table 7: 'Emergency Services' Type Mitigation Activities</b>						
Description: Actions that protect people and property during and immediately after a disaster or hazard event.						
<i>Priority</i>	<i>Tasks</i>	<i>Hazard(s)</i>	<i>Primary Agency Responsible for Implementation</i>	<i>Time Frame to Complete</i>	<i>Estimated Cost (s)</i>	<i>Funding Source</i>
High	Meet with local and county EMS to share ideas and concern.	All	Chickasaw County EMS, Superintendent, Principal	Short 1-3 years	Minimal 0-\$10K	School general fund
High	Prepare and sign an agreement for EMS services to be provided to the School District.	All	Chickasaw County EMA, Superintendent	Short 1-3 years	Minimal 0-\$10K	School general fund

**Table 8: Structure and Infrastructure Project Type Mitigation Activities**

Description: Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
High	Work with ISG to prepare cost estimate and potential location for a tornado safe room.	Thunderstorm and Lightning, Tornado, Windstorm,	Superintendent, School Board, City Council	Short term 1-3 years	Minimal 0-\$10K	School general fund, city general fund
High	Apply for grants and set aside fund to cover costs.	Thunderstorm with lightning/hail, tornado/windstorm	Superintendent, School Board, City Council	Long Term 5-10 Years	High \$300K+	School general fund, city general fund, hazard mitigation grant program

**Table 9: Natural System Protection and Nature-Based Mitigation Type**

Description: Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
Medium	Solicit donation and grants to plant trees and replace the tree shade canopy from cut ash trees.	Thunderstorm w/ lightning/hail, Tornado/ Windstorm, Winterstorm	Building and ground superintendent, School Board	Short Term 1-3 years	Minimal 0-\$10K	School general fund, Community Forestry Grant Program, Black Hills Energy Power of Trees
Medium	Plant trees, shrubs, and grasses on the south and west side of Fredericksburg Elementary School campus.	Windstorm, Thunderstorm, Extreme Heat, Flash Flooding	Building and ground superintendent, School Board	Short Term 1-3 Years	Minimal 0-\$10K	School general fund, Community Forestry Grant Program, Black Hills Energy Power of Trees



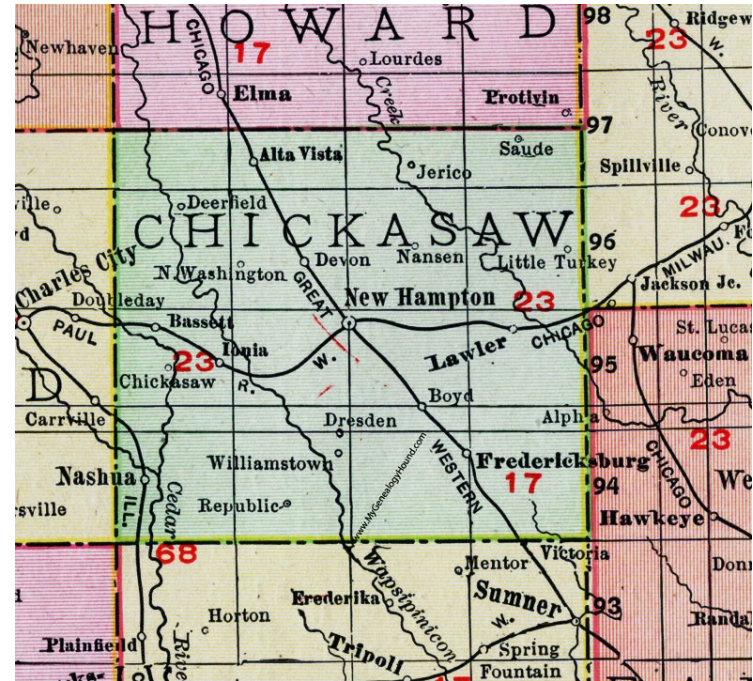
# Nashua-Plainfield Community School District Hazard Mitigation Plan 2024

Appendix J  
of the Chickasaw County  
Multi-Jurisdictional  
Hazard Mitigation Plan

Funded by the Chickasaw County Emergency  
Management Agency

Prepared by Iowa Northland Regional Council  
of Governments (INRCOG)

May 2024



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## Resolution Adopting Plan by Board

### A RESOLUTION OF THE SCHOOL BOARD OF THE NASHUA-PLAINFIELD COMMUNITY SCHOOL DISTRICT, ADOPTING A HAZARD MITIGATION PLAN.

WHEREAS, the Nashua-Plainfield Community School District (or School District) recognizes the threat that natural hazards pose to people and property within Nashua and Plainfield, Iowa; and

WHEREAS, the Chickasaw County Emergency Management Agency has funded the development of an updated Plan in order to become eligible for federal hazard mitigation grant programs; and

WHEREAS, Superintendent Liechty, representing the School District, served and participated in the formulation of the hazard mitigation plan, hereby known as the Nashua-Plainfield Community School District Hazard Mitigation Plan 2024 (or Plan) as part of the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS, said Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to students, faculty, staff, and property from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on said Plan; and

WHEREAS, adoption by the School Board of Directors demonstrates the School District's commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE SCHOOL BOARD OF DIRECTORS OF NASHUA-PLAINFIELD COMMUNITY SCHOOL DISTRICT HEREBY:

Section 1: In accordance with school regulations, school board directors adopt Nashua-Plainfield Community School District Hazard Mitigation Plan 2024. While content related to the School District may require revisions to meet the plan approval requirements set by Iowa Homeland Security and Emergency Management Department or FEMA, changes occurring after adoption will not require the school board of directors to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 10<sup>th</sup> day of June, 2024.

ATTEST:

  
Board Secretary

  
School Board President  
Vice

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## About

The Nashua-Plainfield Community School District developed a Hazard Mitigation Plan as part of a larger effort to update the 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. Federal hazard mitigation grant programs require an updated hazard mitigation plan approved by FEMA to be in good standing and remain eligible for grant funding. The Plan was developed to meet the requirements in Title 44 CFR § 201.6.

Elected officials, city clerks, planners, first responders, and school superintendents were invited to attend planning committee meetings as participants while they completed worksheets that were returned to the Chickasaw County's Emergency Management Agency (EMA) and INRCOG. Chickasaw County's EMA initiated and funded this effort for all participating communities and contracted INRCOG to coordinate a multi-jurisdictional approach to this plan development process.

Participating communities included all nine (9) incorporated jurisdictions in Chickasaw County. Other participating members were representing their respective County departments. The school district superintendents of three public school districts participated and represented their jurisdictions. Four (4) committee meetings were held between March 19<sup>th</sup> and April 23<sup>rd</sup> wherein each participant provided data and completed work sheets to develop their hazard mitigation plans.

## FEMA's Emergency Management Cycle



### What is Hazard Mitigation?

Hazard Mitigation is any *sustained* action taken to reduce or eliminate long-term risk to life and property from hazards.

The emergency management cycle has 4 phases:

- **Preparedness** is the assessment of potential risks, hazards, and vulnerabilities that a community may face. The development and updating of activities, programs, and systems before an event occurs is included in this phase of the cycle.
- **Response** is the immediate effects after a disaster.
- **Recovery** is a long-term phase that focuses on returning the community to normal after a disaster.
- **Mitigation** is an action that can occur at any phase.

## The Benefits of Hazard Mitigation

For local governments, there are benefits in knowing hazards, their risks, and planning for mitigation strategies.

Those include:

- ✓ An increased understanding of natural, technical, and man-made hazards faced by communities.
- ✓ Taking an opportunity to create more sustainable and disaster-resistant communities.
- ✓ Participating in this collaborative intergovernmental effort is cost effective for all participants.
- ✓ Using limited resources on hazards that have the biggest impacts on a community.
- ✓ Reducing or preventing damage to existing structures, subsequently reducing repair costs.
- ✓ Identifying vulnerable populations to establish equitable outcomes.
- ✓ Setting long-term goals that can be compatible with city policies or planning documents.

## The Planning Process

In emergency management planning, reducing the community's risk to natural hazards is a multi-step process which involves collaboration among stakeholders, assessing risk and vulnerabilities of hazards facing the community, establishing actions or activities to reduce risk, and assembling an organized strategy to carry out all mitigation activities.

Participants in the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee provided the information in this plan including community profile information, hazard mitigation goals, mitigation activities/action, updates to existing mitigation activities, and elements included in the strategy such as priorities, designated agencies, estimated costs, and overall strategic direction of this plan.

### *Participants in the Plan Followed This 5 Step Process*



## School District Profile

**Jurisdiction: Nashua-Plainfield Community School District**  
**Counties: Chickasaw, Floyd, Fayette, and Bremer County**  
**Student Enrollment (2022-2023): 593**

The Nashua-Plainfield Community School District is based in the City of Nashua, Iowa. The district provides pre-kindergarten through 12<sup>th</sup> grade education to 593 students. The school district was established in 1997 with the merger of two school districts: Nashua and Plainfield. The school district operates two schools both located in Nashua.

**Table 1: District Schools**

Nashua-Plainfield Elementary School	Nashua-Plainfield Jr/Sr. High School
621 Panama Street Nashua, IA 50658	612 Greeley Street Nashua, IA 50658

There are 198 students that ride the buses daily. There are 8 buses in the school district fleet. The school district conducts 2 bus safety drills each year.

**Table 2: Historic PreK-12 Student Enrollment**

2023-2024	593
2022-2023	582
2021-2022	592
2020-2021	601
2019-2020	600
2018-2019	622

*Source: Iowa Dept. of Education Certified Enrollment Data*

**Table 3: Utility Providers**

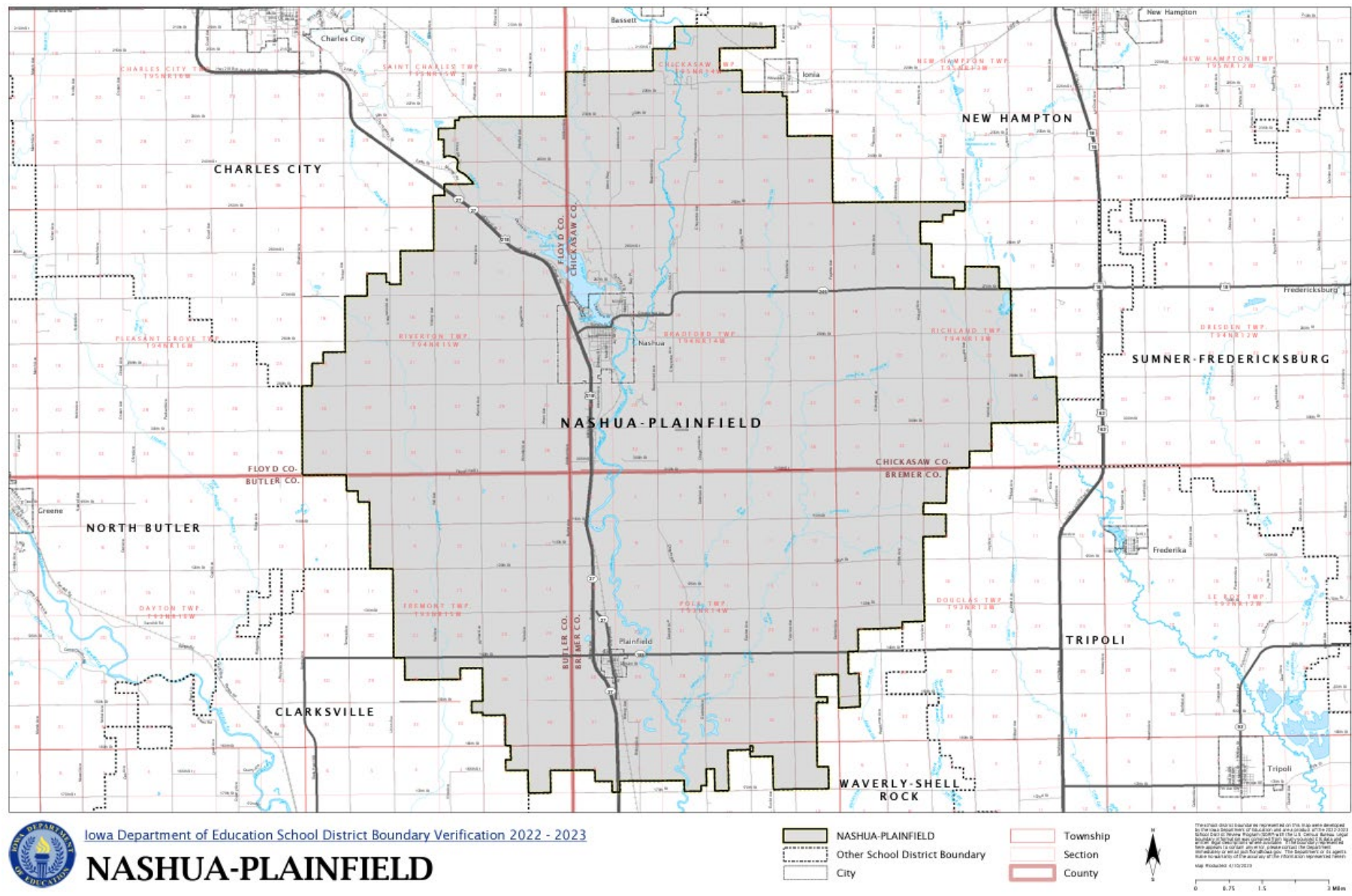
<i>Electric</i>	MidAmerican Energy
<i>Natural Gas</i>	Symmetry
<i>Telephone/Internet</i>	ICN
<i>Cable TV</i>	Butler Bremer
<i>Water Services</i>	City of Nashua
<i>Sewer Services</i>	City of Nashua
<i>Sanitation</i>	Jendro Sanitation

**Table 4: Hazard Mitigation Capability Assessment**

Community Tornado Safe Room	No
Wind Resistant Structural Retrofits to Any Buildings?	No
How the district shares information	Website, Social Media (Facebook), Monthly High School Newsletter
District send information to households for fire/police/emergency preparedness?	No
School district participate in emergency preparedness awareness week?	Yes, Fire and tornado drills
English as a Second Language Resources?	Yes, for 1 ESL parent
District Safety Team?	No



**Figure 1: District Map (Source: Iowa Dept. of Education)**



## Risk Assessment

### Hazard Risk Scores Results

The top three hazards from the risk assessment are:

1. Severe Winter Storm
2. Extreme Heat
3. Transportation Incidents

The ranking used to compute the risk assessment score used the following formula.

#### Hazard Risk Score Formula

$$\begin{aligned}
 &[\text{Probability}] \times 45\% + [\text{Magnitude or Severity}] \times 30\% \\
 &+ [\text{Warning Time}] \times 15\% + [\text{Duration}] \times 10\% \\
 &= \text{Final Hazard Assessment}
 \end{aligned}$$

Source: Provided by Iowa H.S.E.M.D.

Score Value vs. Hazard Risk Level	Description of hazard with this rating
Scores with a value closer to 1: <u>Low risk hazard</u>	Hazard is not likely to affect people or property because the likelihood is minimal.
Scores with a value closer to 4: <u>High risk hazard</u>	The hazard has historically occurred and may have significant impacts to people and property.

Hazard scores were collected during the 2<sup>nd</sup> county committee meeting. INRCOG planners calculated the hazard risk score for each hazard based on the formula in this section. Results are shown on Table 5.

**Table 5: Hazard Risk Assessment**

Hazards	Probability	Magnitude	Warning Time	Duration	Score
Severe Winter Storm	4	2	1	3	2.9
Extreme Heat	3	2	1	4	2.5
Transportation Incidents	2	3	4	1	2.5
Thunderstorm with Lighting/ Hail	4	1	1	2	2.5
Tornado/Windstorm	1	4	4	1	2.4
Hazardous Materials	1	1	4	4	1.8
Infrastructure Failure	1	1	4	4	1.8
Radiological	1	1	4	4	1.8
Pandemic/ Endemic Human Disease	1	2	1	4	1.6
Terrorism	1	1	4	2	1.6
Earthquake*	1	1	4	1	1.5
Grass/ Wildland Fire*	1	1	4	1	1.5
Drought*	1	1	1	4	1.3
Sinkholes*	1	1	1	4	1.3
Expansive Soils*	1	1	1	1	1.0
Flooding - Flash*	1	1	1	1	1.0
Landslide*	1	1	1	1	1.0
Levee/Dam Failure*	1	1	1	1	1.0
Flooding - Riverine*	1	1	1	1	1.0
Animal/ Crop/ Plant Disease	1	1	1	1	1.0

\*The following hazards were identified as not being considered a threat needing a specific mitigation action given the jurisdictional situation of a school district. The district is committed to working with public and private entities to ensure to limit its impact on the community it serves.

## Scores and Descriptions Used in Risk Assessment

Magnitude or Severity Score Definitions		
Score	Description	
<b>1</b>	Negligible	Less than 10% of property severely damaged, the shutdown of facilities and services for less than 24 hours, and/or injuries/illnesses treatable with first aid
<b>2</b>	Limited	10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
<b>3</b>	Critical	25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
<b>4</b>	Catastrophic	More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.

Duration Score Definitions	
Score	Description
<b>1</b>	Less than 6 hours
<b>2</b>	Less than 1 day
<b>3</b>	Less than 1 week
<b>4</b>	More than 1 week

Probability Score Definitions		
Score	Description	
<b>1</b>	Unlikely	<i>Less than 10% probability in any given year (up to 1 in 10 chance of occurring), a history of events is less than 10% likely or the event is unlikely but there is a possibility of its occurrence.</i>
<b>2</b>	Occasional	<i>Between 10% and 20% probability in any given year (up to 1 in 5 chance of occurring), history of events is greater than 10% but less than 20% or the event could possibly occur.</i>
<b>3</b>	Likely	<i>Between 20% and 33% probability in any given year (up to 1 in 3 chance of occurring), history of events if greater than 20% but less than 33% or the event is likely to occur.</i>
<b>4</b>	Highly Likely	<i>More than 33% probability in any given year (event has up to a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.</i>

Warning Time Score Definitions		
Score	Description	
<b>1</b>	Forecasted	More than 24 hours warning time.
<b>2</b>	Likely	12 to 24 hours warning time.
<b>3</b>	High Chance	6 to 12 hours warning time
<b>4</b>	Imminent	Minimal or no warning time (up to 6 hours warning)

## Future Development and Hazards in Chickasaw County

Recent updates in Title 44 CFR §201.6 (c) (2) (i) require this risk assessment include a section with future conditions on the type, location, and range of anticipated intensities of natural hazards.

Long term trends of climate patterns for the region were summarized in the Fourth National Climate Assessment Midwest Section.<sup>1</sup> The National Climate Report is mandated to be updated every 4 years and deliver results to Congress and President on the effects to agriculture, energy productions, land use, transportation, and human health.

Yearly precipitation levels and annual average temperatures offer insights into future conditions of our climate system.

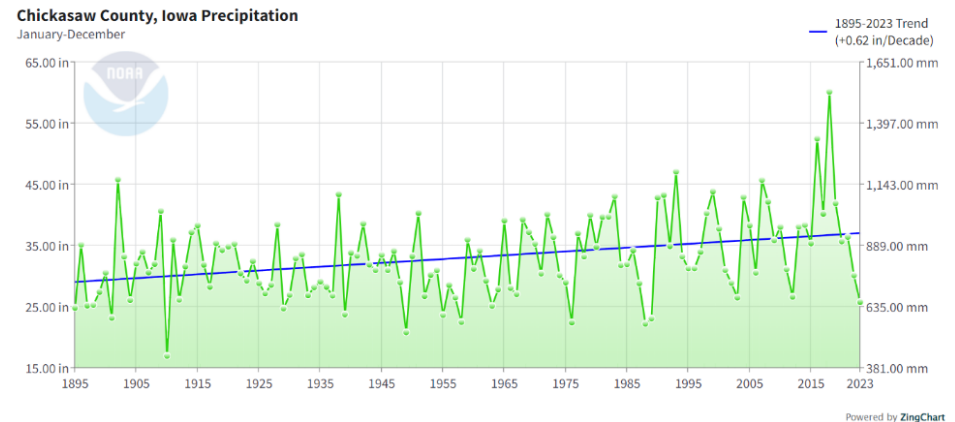
### Annual Precipitation Levels in Chickasaw County

Taking the monthly precipitation records from January to December between 1895 and 2023 is shown in Figure 2. The values hover between 25 – 35 inches of precipitation levels recorded. The average precipitation level for the year is plotted and a linear trend of those values is shown in Figure 2. The trend shows a growing level of annual precipitation on average of 0.62 in more than the decade before. Based on this historical trend, precipitation is likely to continue to increase in the coming years.

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<sup>1</sup> USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

## Figure 2: Historical Precipitation Data and Trend for Chickasaw County, Iowa<sup>2</sup>

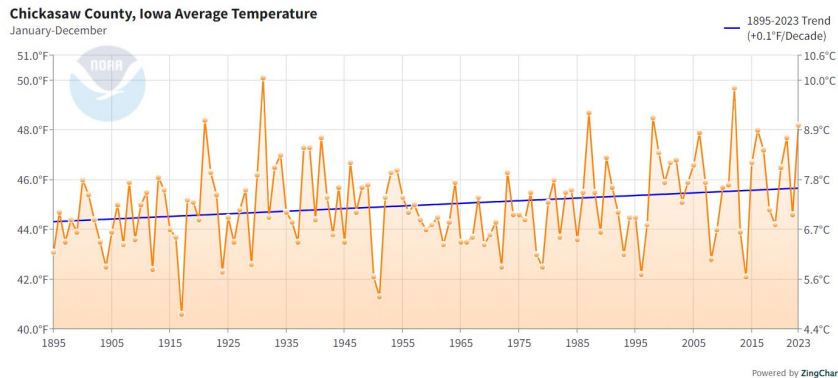


### Average Annual Temperatures in Chickasaw County

The monthly average temperature is plotted over a 12-month period from 1885 to 2023 in Figure 3. The annual average temperature is also shown with a linear trend in Figure 3. This trend shows the average temperature in Chickasaw County increasing at a rate of +0.1° F every 10 years.

<sup>2</sup> NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published February 2024, retrieved on April 15, 2024 from <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>

**Figure 3: Historical Temperature Data and Trend for Chickasaw County, Iowa<sup>2</sup>**



### Climate Patterns from Increasing Precipitation and Higher Temperatures

#### Drought

The relationship between increasing precipitation, temperature, and drought is complex, and often counterintuitive at first thinking about it. While increasing precipitation may seem like it would mitigate drought conditions, higher temperatures can exacerbate the situation in several ways:

1. **Evapotranspiration:** Higher temperatures lead to increased evaporation rates from soil, bodies of water, and plants. This means that even if there is more precipitation, it may quickly be evaporated before it can effectively replenish soil moisture or water sources.
2. **Changes in precipitation patterns:** Increasing temperatures can alter precipitation patterns, leading

to more intense rainfall events but also longer periods of drought between these events. This pattern can result in rapid runoff and soil erosion during heavy rain, followed by extended dry periods that contribute to drought conditions.

Overall, while increasing precipitation may provide temporary relief from drought, the combined effects of rising temperatures can outweigh this benefit, leading to more frequent and severe drought events in certain regions.

#### Pest Infestation

With more humidity, the daily minimum temperature may increase across all seasons. Warming winters can increase the survival and reproduction of existing insect pests which allow new insect pests and crop pathogens to move into the Midwest region.

#### Extreme Heat Domes

A heat dome is a weather phenomenon characterized by a high-pressure system that traps hot air beneath it, leading to prolonged periods of extremely high temperatures and often causing heatwaves. Extreme heat events during the summers may occur with more frequency in the Midwest.

The human impacts of extreme heat affect socially and economically vulnerable populations the most. The higher costs of energy during heat waves disproportionately impact cost-burdened households. Heat related illness may be more severe among infants, elderly populations, and those with chronic health conditions.



### Projected Trends of Natural Hazards in Chickasaw County

- Prologued drought is probably as the atmosphere holds more moisture (even pulling moisture from plants) as the temperature increases. Longer periods between weather events means there are dryer and longer periods in between these events.
- Floods (flash or major types) will increase in intensity as the atmosphere holds more moisture to drive stronger storms and drop heavier rainfall over a shorter period during an event.
- Extreme heat may occur more frequently. The human health impacts are higher among socially vulnerable populations (elderly, infants, those with chronic health issues, cost burdened households).
- Agricultural pests and pathogens may increase in growing plants and stored grain. Warming temperatures in the spring and summer have led to rising humidity. Higher dew and moisture conditions may increase the presence of these pests or crop diseases.

### **Mitigation Activities by Type**

Mitigation actions and activities in this Plan will be organized according to these 5 categories: Emergency Services, Education and Outreach Projects, Natural Resource Protection or Natural Based Solutions, Structural Projects, or Local Plans and Regulations.

#### **Emergency Services in the City of Nashua**

##### Chickasaw County Emergency Management Agency

The City of Nashua works with the Chickasaw County Emergency Management Coordinator, based out of the City of New Hampton on various safety and emergency events. The Emergency Management Coordinator works in conjunction with local fire, rescue, police, and government officials to draft and implement workable emergency action plans in the community. The Chickasaw County Emergency Management Coordinator is Jeff Bernatz.

##### Law Enforcement

Nashua has a 28E agreement with the Chickasaw County Sheriff's Office for law enforcement services. The Sheriff's Office is located out of New Hampton at 116 N. Chestnut.

The Office of the Sheriff holds the responsibility of enforcing federal, state, county, and municipal ordinances across the county, which encompasses investigations into various criminal activities such as theft, vandalism, assault, illegal drug involvement, and instances of reported child or domestic abuse. Additionally, the Sheriff is mandated to handle tasks pertaining to the involuntary hospitalization of individuals with mental illness.

### Fire Protection and EMS Services

Fire protection is provided by the Nashua Fire Department. The station is located at 125 Greenwood Avenue in Nashua. There are 30 volunteer fire fighters that serve in the department currently. The members of the department meet monthly and take training in fire suppression, hazardous materials, and emergency medical services.

Dispatch is provided through the Chickasaw County Sheriff's Office.

Equipment used by the Nashua Fire Department includes the following:

- 1993 GMC Pumper
- 1977 Ford Pumper
- 1975 Ford Tanker
- 1965 Ford Tanker
- 1984 Chevy 1-ton Rescue Truc
- 1984 Chevy 1-ton, 4x4 Grass/Rescue Truck
- 17 ft. Rescue Boat w/ 40 hp outboard
- Jaws of Life (vehicle extraction device)

### EMS Services

Nashua Area EMS provides ambulance service to area hospitals. The company is based out of Nashua.

Chickasaw County Rescue Squad also provides service in Fredericksburg. There are 42 EMT certified individuals who volunteer to respond to emergency calls on an as-need basis.

### Medical Facilities

The closest ER facility is the MercyOne New Hampton Medical Center in New Hampton, IA. This is the only medical facility with an ER unit located in the county. MercyOne has 11 private inpatient rooms, and the ER is open 24/7.

Other health care centers include:

- Nashua Clinic at 80 Amherst Boulevard, # 400 in Nashua, IA
- Waverly Medical Center in Waverly, IA
- Floyd Medical Center in Charles City, IA

### HAZMAT Response Teams

Nashua contracts with Northeast Iowa Response Group for response to hazardous material spills. The Northeast Iowa Response Group is a division of Waterloo Fire Rescue as is the Hazardous Materials Regional Training Center. The Training Center provides training to fire departments and companies from around the state and country. Not only is this a training center, but it also serves as a hazardous materials quick response unit to Black Hawk County, surrounding counties, and many municipalities in a ten-county region. The Unit provides local fire departments with hazard materials emergency procedures thus reducing additional contamination.



## Warning Systems in Nashua

### 1) Tornado Sirens

Nashua has purchased a new tornado warning siren system as of November 2023 with a 30-year life use.

The activation systems of warning systems are activated and operated by a central command system operated by the Chickasaw County Rescue Squad in New Hampton, IA.

### 2) Alert Iowa Mass Communication System

Chickasaw County has implemented the use of Alert Iowa, a mass communication notification system. The system features are controlled through the Chickasaw County Emergency Management Agency. Residents can customize their alert settings including the type of alerts they would get.

Alert Iowa allows for emergency notifications via landline telephones, cell phones, email, text messages, and social media. This is useful for communities that may not have an operating warning siren or may not hear the sirens.

## **Education and Outreach Projects Mitigation Activities**

The district participates in the annual emergency preparedness awareness week. Fire and weather are the two hazards that are prepared for during this time. The school district has completed hazard awareness activities and cooperated with organizations such as the American Red Cross, Chickasaw County Emergency Management Agency

to educate residents on how to respond to a variety of hazards.

## **Natural Resource Protection Mitigation Activities**

The school district has completed several projects to improve stormwater drainage.

## **Structural Projects Mitigation Activities**

There have been no recent structural projects.

## **Local Plans and Regulations in Nashua**

The School District participated in the Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan, which was adopted in 2019.

The school district prepares a school safety plan annually in June. This is sent to the state department of education per their requirements.

## **Components of the Implementation Strategy**

The end of this section has strategic implementation information prepared in consultation with the school district's superintendent and INRCOG. This is a guide for a strategic approach when implementing the school district's efforts in hazard mitigation. The tasks in these tables are drawn from problems statements and new mitigation activity worksheets.

Notes about the tasks (listed as line items) in each table.

- Each task (line item) stands on its own so it can be completed whenever possible.

- Each action item is not limited to the details presented below and may change based on future conditions.
- The tasks were categorized based on mitigation type. The mitigation types are not shown in any order (no priority over the other).

This implementation strategy is presented to help with the general understanding of how hazard mitigation may feed into existing or future priorities.

### Priority Level

The priority level was informed through discussions among planning committee members who considered potential benefits of implementing the activity, some hurdles that the city may face in implementing the action step, and the drawbacks of implementation. *Committee representatives considered a cost-benefit approach.*

### Estimated Costs

Cost estimates are based on the associated costs of additional staffing that may or may not be needed, time for planning/meetings/coordinating, and cost of the proposed action/program/ project.

Cost	Estimated Cost Range
Minimal	Less than \$10,000
Low	\$10K to \$99K
Moderate	\$100K to \$299K
High	Greater than \$300K

### Timeframe

Timeframe	Description
Immediate	1-6 months
Short Term	1-5 years
Mid-Term	5-10 Years
Long-Term	More than 10 Years

### Hazard Mitigation Goals

The following list of goals was adopted by the school district.

- Goal #1** Maintain emergency services during hazard events, or if this is not possible, return to pre-disaster service levels as soon as possible.
- Goal #2** Protect the health and welfare of students and staff by utilizing pre-disaster planning and constructing mitigation projects.
- Goal #3** Take steps to mitigate or minimize the impact of natural, technological, and/or man-made disasters.
- Goal #4** Take measures to minimize the occurrence of injuries and loss of life due to hazards.
- Goal #5** Take measures to minimize or eliminate damage that may occur as a result of hazards.
- Goal #6** Return to similar or improved pre-event conditions as quickly as possible following a disaster event.

## Strategic Implementation Plan by Mitigation Activity Type

<b>Table 6: 'Education and Awareness' Type Mitigation Activities</b>						
Description: These types of actions keep residents informed about potential natural disasters.						
<b>Priority</b>	<b>Tasks</b>	<b>Hazard(s)</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimated Cost (s)</b>	<b>Funding Source</b>
Medium	Improve school communication about various hazards that could potentially impact students, including how to stay cool during extreme heat or cold and how to stay safe during severe weather by sharing information through school website and social media.	All	Superintendent and tech director	Immediate 1-6 months	Minimal \$0	None needed
Medium	Collect outreach information from Jeff Bernatz (Chickasaw County EMA) for Alert Iowa.	All	EMA coordinating sets	Immediate 1-6 Months	Minimal \$0	None needed
High	Improve school communication about various hazards that could potentially impact students.	All	EMA coordinating sets	Immediate 1-6 Months	Minimal \$0	None needed
Medium	Develop education plan for student drivers on driving safely during storm events.	Winter Storms; Thunderstorms; Windstorms	Superintendent, City Police	Immediate 1-6 Months	Minimal \$0	None needed

<b>Table 7: 'Emergency Services' Type Mitigation Activities</b>						
Description: Actions that protect people and property during and immediately after a disaster or hazard event.						
<i>Priority</i>	<i>Tasks</i>	<i>Hazard(s)</i>	<i>Primary Agency Responsible for Implementation</i>	<i>Time Frame to Complete</i>	<i>Estimated Cost (s)</i>	<i>Funding Source</i>
High	Identify locations of critical public facilities to support a hazard plan.	All	Chickasaw County EMS, Superintendent, Principal	Short 1-3 years	Minimal 0-\$10K	School general fund
High	Prepare and sign an agreement for EMS services to be provided to the school district.	All	Chickasaw County EMA, Superintendent	Short 1-3 years	Minimal 0-\$10K	School general fund
Low	Ensure storm shelter remains in compliance with FEMA standards.	All	Chickasaw County EMS, Superintendent, Principal	Immediate 1-6 Months	Minimal \$0	None needed

<b>Table 8: Structure and Infrastructure Project Type Mitigation Activities</b>						
Description: Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.						
<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete Action</b>	<b>Estimated Cost(s) to Implement</b>	<b>Funding Source</b>
High	Apply for grants and set aside funds to cover costs for infrastructure projects identified.	Thunderstorm with lightning/hail, tornado/windstorm	Superintendent, School Board, City Council	Long Term 5-10 Years	High \$300K+	School general fund, city general fund, hazard mitigation grant program

**Table 9: Natural System Protection and Nature-Based Mitigation Type**

Description: Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions

<b>Priority</b>	<b>Action/Activity</b>	<b>Hazard(s) Addressed by Action</b>	<b>Primary Agency Responsible for Implementation</b>	<b>Time Frame to Complete</b>	<b>Estimate d Cost (\$)</b>	<b>Funding Source</b>
Medium	Solicit donation and grants to plant trees and replace the tree shade canopy from cut ash trees.	Thunderstorm w/ lighting/hail, Tornado/ Windstorm, Winterstorm; Extreme Heat	Building and ground superintendent, School Board	Short Term 1-3 years	Minimal 0-\$10K	School general fund, Community Forestry Grant Program, Black Hills Energy Power of Trees
Medium	Continue to support and improve natural systems around the school to improve stormwater drainage.	Windstorm, Thunderstorm, Extreme Heat, Flash Flooding	Building and ground superintendent, School Board	Short Term 1-3 Years	Minimal 0-\$10K	School general fund, State and Federal Grant Funding

# 2023 CHICKASAW COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

## APPENDIX M

### PLAN ADOPTION RESOLUTIONS

**Resolution 06-03-24-25**

**A RESOLUTION OF THE BOARD OF SUPERVISORS OF CHICKASAW COUNTY, IOWA, ADOPTING THE CHICKASAW COUNTY, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.**

WHEREAS, the Board of Supervisors of Chickasaw County recognizes the threat that natural hazards pose to people and property within Chickasaw County; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing Chickasaw County served and participated in the formulation of the Plan, hereby known as the Chickasaw County, Iowa Hazard Mitigation Plan 2024 Update, as part of the the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Chickasaw from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the Plan; and

WHEREAS adoption by the Board of Supervisors of Chickasaw County demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE BOARD OF SUPERVISORS OF CHICKASAW COUNTY, IOWA, THAT:

Section 1: In accordance with local regulations, the Board adopts the Chickasaw County, Iowa Hazard Mitigation Plan 2024 Update. While content related to the Chickasaw County Plan may require revisions to meet the plan approval requirements, changes occurring after adoption will not require Chickasaw County to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 3rd day of June 2024.

  
Board of Supervisor Chairperson

ATTEST:

  
County Auditor



Resolution 2024-6-5

**A RESOLUTION OF THE CITY COUNCIL OF ALTA VISTA, IOWA, ADOPTING THE CITY OF ALTA VISTA, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.**

WHEREAS, the City of Alta Vista City Council recognizes the threat that natural hazards pose to people and property within Alta Vista; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing Alta Vista served and participated in the formulation of the Plan, hereby known as the City of Alta Vista, Iowa Hazard Mitigation Plan 2024 Update, as part of the the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Alta Vista from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the Plan; and

WHEREAS adoption by the City Council of Alta Vista demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF ALTA VISTA, IOWA, THAT:

Section 1: In accordance with local regulations, the Council adopts the City of Alta Vista, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of Alta Vista may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of Alta Vista to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 10<sup>th</sup> day of June 2024.

  
Mayor Burt Ostert

ATTEST:

  
City Clerk Jarrett Holthaus

**A RESOLUTION OF THE CITY COUNCIL OF FREDERICKSBURG, IOWA, ADOPTING  
THE CITY OF FREDERICKSBURG, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.**

WHEREAS, the City of Fredericksburg City Council recognizes the threat that natural hazards pose to people and property within Fredericksburg; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing Fredericksburg served and participated in the formulation of the Plan, hereby known as the City of Fredericksburg, Iowa Hazard Mitigation Plan 2024 Update, as part of the the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Fredericksburg from the impacts of future hazards and disasters; and

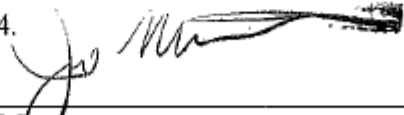
WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the Plan; and

WHEREAS adoption by the City Council of Fredericksburg demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF FREDERICKSBURG, IOWA, THAT:

Section 1: In accordance with local regulations, the Council adopts the City of Fredericksburg, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of Fredericksburg may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of Fredericksburg to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 19<sup>th</sup> day of June 2024.

  
\_\_\_\_\_  
Mayor

ATTEST:

  
\_\_\_\_\_  
City Clerk

RESOLUTION 24-11

RESOLUTION OF THE CITY COUNCIL OF IONIA, IOWA, ADOPTING THE CITY OF IONIA, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.

WHEREAS, the City of Ionia City Council recognizes the threat that natural hazards pose to people and property within Ionia; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing Ionia served and participated in the formulation of the Plan, hereby known as the City of Ionia, Iowa Hazard Mitigation Plan 2024 Update, as part of the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Ionia from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the Plan; and

WHEREAS adoption by the City Council of Ionia demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF IONIA, IOWA, THAT:

Section 1: In accordance with local regulations, the Council adopts the City of Ionia, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of Ionia may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of Ionia to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 3<sup>rd</sup> day of June 2024.

  
\_\_\_\_\_ Mayor

ATTEST:

  
\_\_\_\_\_ City Clerk

**A RESOLUTION OF THE CITY COUNCIL OF LAWLER, IOWA, ADOPTING THE CITY OF LAWLER, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.**

WHEREAS, the City of Lawler City Council recognizes the threat that natural hazards pose to people and property within Lawler; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing the City of Lawler served and participated in the formulation of said Plan as part of the the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare the hazard mitigation plan, hereby known as the City of Lawler, Iowa Hazard Mitigation Plan 2024 Update in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the City of Lawler, Iowa Hazard Mitigation Plan 2024 Update identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Lawler from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the City of Lawler, Iowa Hazard Mitigation Plan 2024 Update; and

WHEREAS adoption by the City of Lawler demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

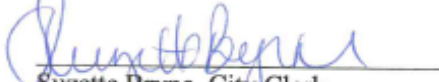
NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF LAWLER, IOWA, THAT:

Section 1: In accordance with local regulations, the City of Lawler adopts the City of Lawler, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of Lawler may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of Lawler to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 6<sup>th</sup> day of May, 2024.

  
Mayor Mark Mueterthies

ATTEST:

  
Suzette Bryne, City Clerk



Resolution  
24-34

**A RESOLUTION OF THE CITY COUNCIL OF NASHUA, IOWA, ADOPTING THE CITY OF NASHUA, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.**

WHEREAS, the City of Nashua City Council recognizes the threat that natural hazards pose to people and property within Nashua; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of this Plan, hereby known as the City of Nashua, Iowa Hazard Mitigation Plan 2024 Update (or Plan), in order to remain eligible for federal hazard mitigation grant programs; and

WHEREAS, the participants representing the City of Nashua served and participated in the formulation of said Plan as part of the the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Nashua from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the Plan; and

WHEREAS adoption by the City of Nashua demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF NASHUA, IOWA, THAT:


Section 1: In accordance with local regulations, the City of Nashua adopts the City of Nashua, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of Nashua may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of Nashua to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 3rd day of June 2024.



Mayor Harold Kelleher

ATTEST:



City Clerk, John Ott

## RESOLUTION NO. 6642

### A RESOLUTION OF THE CITY COUNCIL OF NEW HAMPTON, IOWA, ADOPTING THE CITY OF NEW HAMPTON, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.

WHEREAS, the City of New Hampton City Council recognizes the threat that natural hazards pose to people and property within New Hampton; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing New Hampton served and participated in the formulation of the Plan, hereby known as the City of New Hampton, Iowa Hazard Mitigation Plan 2024 Update, as part of the the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in New Hampton from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the Plan; and  
WHEREAS adoption by the City Council of New Hampton demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF NEW HAMPTON, IOWA, THAT:

Section 1: In accordance with local regulations, the Council adopts the City of New Hampton, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of New Hampton may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of New Hampton to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 3<sup>rd</sup> day of June 2024.

  
STEVE GEERTS, Mayor

ATTEST:



KAREN CLEMENS, City Clerk

**A RESOLUTION OF THE CITY COUNCIL OF NORTH WASHINGTON, IOWA,  
ADOPTING THE CITY OF NORTH WASHINGTON, IOWA HAZARD MITIGATION  
PLAN 2024 UPDATE.**

WHEREAS, the City of North Washington City Council recognizes the threat that natural hazards pose to people and property within North Washington; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing the City of North Washington served and participated in the formulation of said Plan as part of the the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare the hazard mitigation plan, hereby known as the City of North Washington, Iowa Hazard Mitigation Plan 2024 Update in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the City of North Washington, Iowa Hazard Mitigation Plan 2024 Update identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in North Washington from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the City of North Washington, Iowa Hazard Mitigation Plan 2024 Update; and

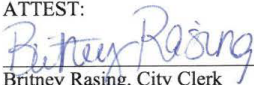
WHEREAS adoption by the City of North Washington demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF NORTH WASHINGTON, IOWA, THAT:

Section 1: In accordance with local regulations, North Washington City Council adopts the City of North Washington, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of North Washington may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of North Washington to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 7<sup>th</sup> day of May, 2024.

  
\_\_\_\_\_  
Mayor Dave Geerts

ATTEST:  
  
\_\_\_\_\_  
Britney Rasing, City Clerk



RESOLUTION # 24-7-2

**A RESOLUTION OF THE CITY COUNCIL OF PROTIVIN, IOWA, ADOPTING THE CITY OF PROTIVIN, IOWA HAZARD MITIGATION PLAN 2024 UPDATE.**

WHEREAS, the City of Protivin City Council recognizes the threat that natural hazards pose to people and property within Protivin; and

WHEREAS, Chickasaw County Emergency Management Agency has funded the development of a plan update in order to remain eligible for hazard mitigation grant programs; and

WHEREAS, the participants representing Protivin served and participated in the formulation of the Plan, hereby known as the City of Protivin, Iowa Hazard Mitigation Plan 2024 Update, as part of the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS the Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Protivin from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on the Plan; and

WHEREAS adoption by the City Council of Protivin demonstrates its commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE CITY COUNCIL OF PROTIVIN, IOWA, THAT:

Section 1: In accordance with local regulations, the Council adopts the City of Protivin, Iowa Hazard Mitigation Plan 2024 Update. While content related to the City of Protivin may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the City of Protivin to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 9<sup>th</sup> day of July 2024.

  
Mayor

ATTEST:

  
City Clerk

**A RESOLUTION OF THE SCHOOL BOARD OF THE NASHUA-PLAINFIELD COMMUNITY SCHOOL DISTRICT, ADOPTING A HAZARD MITIGATION PLAN.**

WHEREAS, the Nashua-Plainfield Community School District (or School District) recognizes the threat that natural hazards pose to people and property within Nashua and Plainfield, Iowa; and

WHEREAS, the Chickasaw County Emergency Management Agency has funded the development of an updated Plan in order to become eligible for federal hazard mitigation grant programs; and

WHEREAS, Superintendent Liechty, representing the School District, served and participated in the formulation of the hazard mitigation plan, hereby known as the Nashua-Plainfield Community School District Hazard Mitigation Plan 2024 (or Plan) as part of the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS, said Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to students, faculty, staff, and property from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on said Plan; and

WHEREAS, adoption by the School Board of Directors demonstrates the School District's commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE SCHOOL BOARD OF DIRECTORS OF NASHUA-PLAINFIELD COMMUNITY SCHOOL DISTRICT HEREBY:

Section 1: In accordance with school regulations, school board directors adopt Nashua-Plainfield Community School District Hazard Mitigation Plan 2024. While content related to the School District may require revisions to meet the plan approval requirements set by Iowa Homeland Security and Emergency Management Department or FEMA, changes occurring after adoption will not require the school board of directors to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 10<sup>th</sup> day of June, 2024.

  
\_\_\_\_\_  
School Board President  
Vice

ATTEST:

  
\_\_\_\_\_  
Board Secretary

**A RESOLUTION OF THE SCHOOL BOARD OF THE NEW HAMPTON COMMUNITY SCHOOL DISTRICT, ADOPTING A HAZARD MITIGATION PLAN.**

WHEREAS, the New Hampton Community School District (or School District) recognizes the threat that natural hazards pose to people and property within Nashua and Plainfield, Iowa; and

WHEREAS, the Chickasaw County Emergency Management Agency has funded the development of an updated Plan in order to become eligible for federal hazard mitigation grant programs; and

WHEREAS, Superintendent Jurens, representing the School District, served and participated in the formulation of the hazard mitigation plan, hereby known as the New Hampton Community School District Hazard Mitigation Plan 2024 (or Plan) as part of the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS, said Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to students, faculty, staff, and property from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on said Plan; and

WHEREAS, adoption by the School Board of Directors demonstrates the School District's commitment to hazard mitigation and achieving the goals outlined in said Plan.


NOW THEREFORE, BE IT RESOLVED THAT THE SCHOOL BOARD OF DIRECTORS OF NEW HAMPTON COMMUNITY SCHOOL DISTRICT HEREBY:

Section 1: In accordance with school regulations, school board directors adopt New Hampton Community School District Hazard Mitigation Plan 2024. While content related to the School District may require revisions to meet the plan approval requirements set by Iowa Homeland Security and Emergency Management Department or FEMA, changes occurring after adoption will not require the school board of directors to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 17<sup>th</sup> day of June, 2024.

  
\_\_\_\_\_  
School Board President

ATTEST:

  
\_\_\_\_\_  
Board Secretary



**A RESOLUTION OF THE SCHOOL BOARD OF SUMNER-FREDERICKSBURG COMMUNITY SCHOOL DISTRICT, ADOPTING A HAZARD MITIGATION PLAN.**

WHEREAS, the Sumner-Fredericksburg Community School District (or School District) recognizes the threat that natural hazards pose to people and property within Fredericksburg, Iowa; and

WHEREAS, the Chickasaw County Emergency Management Agency has funded the development of an updated Plan in order to become eligible for federal hazard mitigation grant programs; and

WHEREAS, Superintendent Matlage, representing the School District, served and participated in the formulation of the hazard mitigation plan, hereby known as the Sumner-Fredericksburg Community School District Hazard Mitigation Plan 2024 (or Plan) as part of the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee; and

WHEREAS, INRCOG has helped prepare said Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS, said Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to students, faculty, staff, and property from the impacts of future hazards and disasters; and

WHEREAS, a Public Hearing has been held for the purpose of obtaining citizen input on said Plan; and

WHEREAS, adoption by the School Board of Directors demonstrates the School District's commitment to hazard mitigation and achieving the goals outlined in said Plan.

NOW THEREFORE, BE IT RESOLVED THAT THE SCHOOL BOARD OF DIRECTORS OF SUMNER-FREDERICKSBURG COMMUNITY SCHOOL DISTRICT HEREBY:


Section 1: In accordance with school regulations, school board directors adopt Sumner-Fredericksburg Community School District Hazard Mitigation Plan 2024. While content related to the School District may require revisions to meet the plan approval requirements set by Iowa Homeland Security and Emergency Management Department or FEMA, changes occurring after adoption will not require the school board of directors to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

Passed and adopted this 13<sup>th</sup> day of May, 2024.



School Board President

ATTEST:



Board Secretary

# 2023 CHICKASAW COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

## APPENDIX N

### UPDATES TO PREVIOUS MITIGATION ACTIVITIES BY JURISDICTION

**ALTA VISTA**

2019 Implementation Strategy - Action Items/Activities

Fill out all columns for each action item.

Mitigation Action/Program/Project	Completed?	Not Completed	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Educate the public on proper steps to protect their property and self during an event		X	No plan was implemented	Yes
Place lightning arrestors on power lines	X			
Purchase and install surge protector equipment on critical municipally-owned electronic equipment	X			
Backup critical city data and stored off-site		X	Store on disc but not off site	Yes
Bury overhead power lines		X	No budget	Need a grant
Maintain tree-trimming policies	X			
Acquire backup generation capabilities at critical facilities (i.e., lift station, city hall, fire department, telephone office, etc.	X			
Maintain a backup fuel supply	X			
Regularly inspect propane connections	X			
Divide community electrical circuits to reduce the loss of power throughout the community	X			
Purchase and install early warning siren to be a replacement or an additional siren in the community		X	No budget	Need a grant
Purchase NOAA Weather Radios for vulnerable population and critical locations in the community		X	No budget	Need a grant

Mitigation Action/Program/Project	Completed?	Not Completed	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Recruit and train volunteer storm watchers/tornado spotters	X			
Identify locations and construct a public tornado shelter in vulnerable areas of town	X			
Construct tornado safe rooms in homes, businesses, etc.		X	No budget	Need a grant
Work with local businesses and County EMA to ensure Tier II reports are being filed				
Encourage citizens to keep hazardous materials secured	N/A			
Establish and enforce designated routes for the transport of hazardous materials	N/A			
Maintain law enforcement contract to monitor large storage supplies of hazardous materials	X			
Maintain contract for HAZMAT response	X			
Ensure first responders are aware of response plans for local facilities	X			
Maintain a well-trained and equipped Street Department	X			
Implement and enforce sidewalk clearance ordinance	X			
Maintain tree-trimming policies	X			



Mitigation Action/Program/Project	Completed?	Not Completed	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Designate and maintain heating shelters				
Acquire and distribute NOAA Weather Radios to vulnerable populations and critical facilities in the community		X	No budget	Need a grant
Maintain list of potential translators to be called upon in case of an emergency		X	N/A	No
Implement and review annually an incident command standard operating procedure in local fire responder organizations	X			
Maintain a well-trained and equipped fire department	X			
Encourage the use of smoke detectors, sprinkler systems and fire extinguishers	X			
Identify needs of fire department and pursue funding for: a replacement of old and worn-out bunker gear, fully outfit department with new SCBA's, and other items as they become needed	X			
Establish cooling shelters	X			
Consider adopting building codes and developing a regular building inspections program		X	Small town	No
Identify, purchase, and remove structures in flood hazard areas		X	Identify, don't purchase, remove	No
Enforce floodplain ordinance per minimum criteria for National Flood Insurance Program. Adopt resolution approving the use of effective flood hazard maps by effective date.		X	Budget	Yes
Construct detention ponds and/or filter strips along upstream Elk Creek		X	Budget	Need a grant
Construct a dike along east bank of Elk Creek		X	Budget	Need a grant

Mitigation Action/Program/Project	Completed?	Not Completed	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Flood proof structures in flood hazard area	X			
Maintain supply of sandbags	X			
Continue to clean debris from stream	X			
Acquire additional water pumps	X			
Maintain a viable law enforcement department, capable of responding to all hazards	X			
Secure vulnerable critical sites throughout the community; including, but not limited to: locks on all critical facilities, fences at some critical facilities, security cameras, alarms, increase patrols, automatic locks.	X			
Implement and enforce a storm water management program	X			
Implement and encourage erosion control measures when construction disturbs a certain amount of ground soils	X			
Continue to treat and monitor water supply	X			
Construct new wastewater treatment facility to meet current standards	X			
Ensure proper signage along transportation network to control flow of traffic	X			

Mitigation Action/Program/Project	Completed?	Not Completed	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Implement and enforce burning bans when necessary	X			
Restrict water usage, as necessary, to maintain water supply		X	N/A	We haven't had issue in the past but we could implement a plan
Continue to cooperate with Health Department and local medical facilities to help insure effectiveness of prevention (vaccinations/immunizations), detection, and response mechanisms	X			
Continue to spray for mosquitoes and other insects		X	We have not sprayed in the past	No
Maintain sanitary conditions at all public facilities	X			
Identify and remove dangerous buildings throughout the community		X	Identify but do not remove; cost issue	No not in the budget

Column1	Column2	Column3	Column4	Column5
<b>FREDERICKSBURG</b>				
2019 Implimentation Strategy - Action Items/Activities		Fill out all columns for each action item.		
Mitigation Action/Program/Project	Completed?	Not Completed	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implimentation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Continue to follow monitoring requirements set forth by the Iowa DNR	X			Achievable
Consider development of a storm water management program	X			Implemented storm fee
Educate the public on preparedness, avoidance, and recovery from hazards to reduce the loss of life and property		X	Hold town hall meeting	
Encourage the use of buffer and filter strips	X			Applied for USDA grant
Continue participation in the National Flood Insurance Program		X		Not sure
Maintain, enforce, and update Zoning and Floodplain Ordinances as needed		X	Ongoing; no zoning in town	
Continue with improvements to the storm sewer system		X	Ongoing with storm fee	
Develop and maintain a plan for sandbagging in the community	X			Fire department doing
Continue to provide necessary training for Fire Department personnel, law enforcement personnel, and ambulance crews for all hazard	X			Ongoing annually
Maintain existing equipment and purchase needed firefighting equipment	X			Update equipment regularly
Maintain existing 28E agreements with surrounding communities for mutual aid assistance	X			Working on new agreements
Continue to make necessary updates to and enforce the city guidelines for burning	X			No open burning
Create an annual fire inspection program for commercial and industrial properties		X	Need to develop program	Annual walkthrough in industries
Encourage local utility to install surge protectors on major electric lines	X			Install new substation with [...]

Mitigation Action/Program/Project	Completed?	Not Completed	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Continue working with the Northeast Iowa Response Group	X			Take annual hazmat
Ensure hazardous materials are reported (Tier II reports) in accordance with applicable laws	X			On file at EMA and Fire dept
Continue to enforce tree inspection and trimming program	X			Taking bids on tree trimming
Work with local utility to develop a program for burying existing power lines	X			4 year [...]
Purchase new generators for emergency power in needs of need at the main lift station and	X			Completed
Backup electronic data at City Hall and emergency response locations and store off-site		X	We utilize a cloud based accounting software	
Continue to enforce snow ordinance	X			Ongoing
Establish heating sites for at-risk populations	X			Community center; fire station
Regularly review and amend fire, medical, and hazardous response standard operating	X			Updated SOP's yearly
Install GPS in all emergency vehicles to speed response routes and monitoring location of	X			Utilize IAR
Maintain a list of available translators in the community		X	Need to do this	
Evaluate current terrorism mitigation efforts		X	Shouldn't this be county lead	
Increase security measures taken to protect and secure critical facilities in community	X			New substation fencing lighting [...]
Encourage the installation of back-flow valves in structures to prevent contamination of water	X			Have at industry and fire station
Continue community cooperation with Iowa One Call	X			Ongoing

Mitigation Action/Program/Project	Completed?	Not Completed	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Encourage immunizations and vaccinations	X			Share public health info
Educate and train city personnel on all hazards that could impact the community	X			Ongoing
Develop a NOAA Weather Radio awareness program		X	Need to develop	
Maintain access to Geiger counters for first responders		X	Need to develop	
Update and install improved signage along roadways, as it become necessary	X			Consistently maintaining
Develop a tornado safe room awareness program		X	Not sure	
Maintain weather spotter training	X			Annually or online
Develop and maintain a plan for rationing water use within the community		X	Have canned water on hand	
Establish local cooling sites for at-risk populations	X			Community center; fire station
Encourage citizens to plant shade trees near dwellings	X			Apply for black hills and trees forever
Update Emergency Response Plan as needed	X			Annually
Develop and update as needed, a continuity of operations plan		X	Need to develop or have redundant site	
Develop a list of structures to be used as gathering sites in the event of an emergency situation	X			Community center; fire station
Continue to follow monitoring requirements set forth by the Iowa DNR	X			Monthly

City of Ionia Previous Mitigation Activity Update				
Fill out all columns for each action item.				
Mitigation Action/ Program/ Project	CHECK ONE		If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implimentation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
	Completed?	Not Completed?		
Have sandbags on hand and train firemen	X			
Keep people trained in weather spotting	X			
First responders trained to handle all hazards		X	Ongoing	
Fire Department training		X	Ongoing	
Continue to work with County and their programs		X	Ongoing	
Continue to work with the County Sheriff's office		X	Ongoing	
Continue to improve (repair as needed) City Hall and Sewer System	X			
Continue enforcing building codes		X	Ongoing	
Continue to clean out storm drains	X			
Educate public on hazards		X	Ongoing	
Maintain all mutual aid agreements	X			
Update Emergency Response Plan		X	Ongoing	



**LAWLER**

2019 Implimentation Strategy - Action Items/Activities

Fill out all columns for each action item.

Mitigation Action/Program/Project	Completed?	Not Completed	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implimentation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Continue to follow monitoring requirements set forth by the Iowa DNR	X			
Consider the development of a storm water management program	X			
Continue to participation in the National Flood Insurance Program	X			
Widen and clear the southwest drainage channel of Crane Creek and widen Brush Street culvert			In progress	
Construct a berm and clear growth and debris in northwest drainage channel of Crane Creek		X		
Maintain, enforce, and update Zoning and Floodplain Ordinances as needed	X			
Continue to enforce and update, as needed, the 2012 Building Code	X			
Ensure proper training and certification of Floodplain Manager		X		
Flood proof structures in the floodplain	X			
Continue to provide necessary training to Fire Department and other emergency response personnel	X			
Maintain existing and purchase new firefighting equipment as needed	X			
Maintain existing mutual aid agreements with surrounding communities for mutual aid emergency assistance	X			

Mitigation Action/Program/Project	Completed?	Not Completed	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Enforce city guidelines for burning	X			
Create an annual fire inspection program for commercial and industrial properties		X		
Work with local utility provider to install surge protectors on major electric lines	X			
Purchase additional generators to provide emergency power in times of need	X			
Provide education to the public on how to prevent/prepare, respond, and recover from hazard events		X		
Continue the tree inspection and trimming program	X			
Work with local utility provider to develop a program to bury existing utility lines		X		
Maintain existing redundant grid within the city	X			
Maintain a list of individuals in the community who require oxygen systems		X		
Enforce snow ordinance	X			
Maintain a heating facility for individuals at city hall	X			
Regularly review and amend fire, medical, and hazardous material response standard operating procedures	X			

Mitigation Action/Program/Project	Completed?	Not Completed	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Install GPS in all emergency vehicles to speed response times and monitor vehicle location during an emergency	X			
Evaluate current terrorism mitigation efforts		X		
Increase security measures taken to protect and secure city facilities and utilities	X			
Improve public awareness of existing evacuation plans		X		
Develop a NOAA Weather Radio awareness program	X			
Complete installation of improved warning equipment at railroad crossings	X			
Complete installation of street lighting at poorly lit intersections	X			
Develop a tornado safe room awareness program	X			
Continue weather spotter training	X			
Develop a plan for rationing water use within the community		X		
Maintain a cooling facility at city hall for at-risk population	X			
Update emergency response plan as needed	X			
Consider the use of incident command process	X			

Mitigation Action/Program/Project	Completed?	Not Completed	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Develop a continuity of operations plan and recovery ordinance	X			

**NASHUA**

2019 Implimentation Strategy - Action Items/Activities

Fill out all columns for each action item.

Mitigation Action/Program/Project	Completed?	Not Completed?	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implimentation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Educate the Public		X		
Evaluate and make improvements to outdoor warning siren network.		X		
Encourage residents to purchase NOAA weather radios.		X		
Recruit and train volunteer firefighters in storm watching/tornado spotting.	X			
Encourage the construction tornado safe rooms in homes, businesses, and schools.		X		
Purchase and install surge protector equipment on critical municipally owned				
Backup critical city data and store offsite.	X			
Encourage the utility provider to bury overhead utility lines.		X		
Encourage and ensure the utility provider maintains tree-trimming policies.	X			
Work with local businesses and County EMA to ensure Tier II reports are being filed.		X		
Maintain law enforcement monitoring of large storage supplies of hazardous materials (i.e. Anhydrous Ammonia)				
Maintain contract for service with Northeast Iowa Response Group for HAZMAT response.				
Maintain contract for service with Northeast Iowa Response Group for HAZMAT response.				
Ensure first responders are aware of any response plans for local facilities.				

Mitigation Action/Program/Project	Completed?	Not Completed?	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Maintain employee training efforts to help ensure compliance with all OSHA regulations.		X	It is in the process of being completed	Yes
Maintain first responder training to properly handle HAZMAT incidents.				
Enforce designated truck carrier routes for the transport of Hazardous Materials.	X			
Purchase and maintain generators for critical facilities throughout the community.	X			
Maintain backup fuel supplies.		X		
Encourage energy conservation.		X		
Enforce floodplain ordinance and remain member of the National Flood Insurance	X			
Require back flow valves on the sanitary sewer connections in all new construction.	X			
Explore potential steps to reduce illegal inflow and infiltration into the sanitary sewer		X	The city has hired an engineer to look @ INI	
Continue to remove structures from identified flood hazard areas, as needed.		X		
Floodproof structures in or near the flood hazard areas.				
Consider certification training for the flood manager.		X		
Consider the purchase of sandbagging machine to expedite the filling of sandbags		X		
Continue to have local supply of sandbags on hand for future flood events.		X		
Elevate lift station south of Highway 346 and east of Cedar River.		X		

Mitigation Action/Program/Project	Completed?	Not Completed?	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Flood proof the wastewater treatment plant with a floodwall, per the provisions of the recent HMGP award from FEMA.				
Study the effect of a total dam breach/failure on downriver properties within the city.	X		I believe this was completed and we are listed as a low hazard	
Explore areas within the city where "green storm water management" practices		X	We did start this with Greeley St project	
Maintain list of potential translators to be called upon in case of an emergency.		X		
Upgrade radio equipment as needed or required by law.	X			
Maintain list of emergency contacts.	X			
Maintain a well-trained and equipped public works department.	X		We hire a 3rd party company	
Enforce sidewalk clearance ordinance.		X		
Designate heating shelter(s)				
Continue improving cooling shelters plan to be used during extreme heat events.				
Conduct citizen welfare checks for vulnerable populations.			Ongoing but we have requested welfare checks	
Maintain a viable law enforcement agency, capable of properly responding to this type of an event.	X			
Ensure that proper signage is in place to facilitate a controlled flow of traffic.			We have been working on signage; stop or yield old	
Continue to inspect bridges for safety and maintenance issues.	X			
Maintain training, equipment and facilities for the Fire Department and Ambulance	X			



Mitigation Action/Program/Project	Completed?	Not Completed?	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Gather a militia should the U.S. Military not be able to respond		X		
Secure vulnerable critical sites throughout the community.		X		
Maintain and update anti-virus software, as needed	X			
Keep open flow of information and cooperate with the FBI and other government agencies.			Ongoing but we have worked with FBI, DNR, EPA, etc	
Implement Storm Water Management program.		X		
Implement Wellhead Protection Program.		X		
Implement and encourage erosion control measures.		X		
Continue and encourage use of monitoring wells.	X			
Continue to treat and monitor water supply.	X			
Identify and map areas of past contamination.		X		
Encourage residents to have and maintain Smoke Detectors/Sprinkler Systems/Fire Extinguishers				
Improve water distribution system.				
Implement burning bans when severe drought occurs.				
Restrict water usage as necessary in times of severe drought in order to maintain				
Encourage residents to use the yard waste facility instead of burning.				

Mitigation Action/Program/Project	Completed?	Not Completed?	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Continue inspection of dam structure				
Continue to test the various dam components on an annual basis.				
Encourage the Fire Department to attend pipeline incident response training.				
Place tile in back of curbs on any new street construction.				
Continue to cooperate with Health Department and local medical facilities to help insure effectiveness of prevention,				
Encourage vaccinations				
Spray for mosquitoes, other insects. Also, use granular inserts into standing water for same purpose.				
Consider enforcing the local building codes.				
Maintain regular building inspections.				
Identify and remove dangerous buildings throughout the community.				
Continue to seek housing rehabilitation grants for eligible and willing homeowners				
Maintain teasers and training on the use of such devices				
Encourage erosion control measures.				
Continue to monitor and repair sinkholes, should they develop.				
Inspect any water or utility lines that might be near a sinkhole.				

Mitigation Action/Program/Project	Completed?	Not Completed?	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Secure the area around a sinkhole with a barrier.				
Continue to inspect and maintain levee				

Mitigation Action/Program/Project	Completed?	Not Completed	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Educate the public on proper steps to prevent/reduce/protect/recover from hazard events	Ongoing			
Install backup generators at identified critical facilities: local wells, hospital, schools, police station, fire station, etc.	Ongoing		Light plant has 5 generators to back up the town	
Encourage the planting of trees for shade	Ongoing		Received Trees Forever grant for additional trees	
Maintain community swimming pool and water slide	Ongoing		Continuing to maintain annually	
Establish cooling shelters for at-risk populations	Ongoing		City hall, Chickasaw Event Center, fire station all place to shelter	
Purchase and install additional early warning sirens	Completed in 2023		Awarded grants to purchase new siren	
Construct public tornado shelters in vulnerable areas of town: New Hampton Elementary, Middle, and High Schools, near mobile home court, hospital, nursing home, industrial park, and St. Joe's Catholic School	Ongoing		Kindness square shelter (2024)	
Encourage the construction of tornado safe rooms	Ongoing		Budget/funding opportunities	
Recruit and train volunteer storm watchers/tornado spotters	Ongoing		Police & fire continue to train & storm watch during events	
Maintain a well-trained and equipped street department	Ongoing		Continue to update equipment to help with emergencies	
Designate heating shelters	Ongoing		Same as cooling shelters	
Enforce existing ordinances	Ongoing		Updating ordinances currently	
Maintain a viable law enforcement department, capable of properly responding to all types of hazard events	Ongoing		Always respond & will contact necessary department for action	

Mitigation Action/Program/Project	Completed?	Not Completed	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Secure vulnerable critical sites throughout the community with: locks, fences, security cameras, alarms, increase patrols, automatic locks, etc.	Ongoing		All public sites, specifically city infrastructure is locked & secured	
Maintain a well-trained and equipped fire department, capable of properly responding to all types of hazard events. Identified need for new equipment truck, larger fire station, aerial rig, GPS for vehicles, and thermal imaging cameras.	Some completed; ongoing		Fire station built in 2008. Apply for funding opportunities for new trucks & equipment annually	
Analyze and improve water distribution system	Ongoing		Continuing to evaluate annually. Now replacing 5-10 hydrants a year	
Consider expanding fire code to entire community		Not completed	Budget & politics prevent this from being implemented	
Work with local businesses/industries and County EMA to ensure Tier II reports are being filed	Ongoing		Each year water department dispurses	
Maintain contract for HAZMAT response	Ongoing		Contract with County & Waterloo hazmat group	
Ensure first responders are aware of any response plans for local facilities	Ongoing		Very few response plans for each industry. Need to work on all industries.	
Continue to treat and monitor drinking water supply and wastewater	Ongoing		City public works test water & sewer weekly. Sends results off to labs	
Ensure proper signage is in place to facilitate a controlled flow of traffic	Ongoing		Continuing to purchase and update signage as money becomes available	
Maintain list of potential translators to be called upon in case of an emergency	Ongoing		Sheriffs station has list - needs work	
Implement burning bans when necessary	Ongoing - needs work		Have process but consensus is tough to achieve	
Restrict water usage when necessary	Ongoing		Never had to. Would hae to create a process for notification	

Mitigation Action/Program/Project	Completed?	Not Completed	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Implement the usage of surge protectors		Not completed	Light plant would need to enforce	
Purchase and install squirrel guards around transformers	Ongoing		Working towards underground installation	
Enforce the use of Iowa One Call	Ongoing		All permits within city requires this as a condition	
Acquisition and removal of flood prone structures	Ongoing		Limiting new structures being built in floodplains, city acquired a few lots	
Continue to make improvements to storm water system	Ongoing		Started charging storm water fees & have engineers looking into regional funds	
Elevation of structures in the floodplain		Haven't set up a process yet	Evaluates as a permit is submitted	
Continue participation in the National Flood Insurance Program	Ongoing		3/4 of town is part of FEMA firmette map program	
Purchase portable water pumps		Not completed	Funding/budget has prevented	
Require back flow valves in all new construction	Ongoing		Updated in code; starting to enforce	

**NORTH WASHINGTON**

2019 Implementation Strategy - Action Items/Activities

Fill out all columns for each action item.

<b>Mitigation Action/ Program/ Project</b>	<b>Completed?</b>	<b>Not Completed</b>	<b>If not completed, write short statement why (ex. Annual budgets could not cover it)</b>	<b>Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)</b>
Educate the public on hazards			Finding the best way to educate is difficult	Will continue to try
Training and equipping the Fire Department	Yes		As best as possible with budget & volunteers that's available	Yes
Continue to send firefighters and council members to weather spotting classes	Yes			Yes
Continue to use the County Sheriff Office for law enforcement	Yes			Yes
Continue to maintain tornado sirens	Yes			Yes
Maintain all mutual aid agreements	Yes			Yes



Nashua-Plainsfield Community School District				
Hazard Mitigation Action Items/Activities from prior 2019 Implementation Strategy	Check One Below		Fill out all columns for each action item.	
Mitigation Action/ Program/ Project	Completed?	Not Completed?	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Educate the Student Population/Public through: continued cooperation with local service organizations (American Red Cross, County EMA, etc.) to educate residents on how to prepare for and respond to a variety of hazards	X			
Consider the Construction of Community Tornado Shelter and Safe Room at Nashua-Plainfield Elementary School.		X		
Identify Locations (all school facilities, shelter locations) where it would be beneficial to have Backup Power Generation or maintain backup power generation		X		
Continue to Work to Safeguard against Potential Fire and Explosion Hazards Throughout the Community	X			At school sites
Maintain and Update as Needed, 28E Agreements with Surrounding Entities		X	Not our role	
Continue Participation in the National Flood Insurance Program (NFIP)		X	We're not in the flood plain	
Systematically Review and Update, as needed, Hazard Responses Policies and Procedures	X			
Identify and Evaluate Critical Facilities for Accessibility, Vulnerability, and Risk	X			
Continue to Test and Chlorinate Drinking Water	X			City does
Continue to Cooperate with Local Medical Facilities and Health Department to				
Develop and Maintain Tree-Trimming Program in Order to Reduce the Chances of	X			
Develop and Maintain a List of Interpreters in order to Enhance Communication	X			
Restrict Water Usage, as necessary, to Maintain Water Supply		X		
Construct new or retrofit current facilities to include tornado safe rooms		X	No new facilities	
Maintain and evaluate existing terrorism mitigation procedures	X			

**NEW HAMPTON COMMUNITY SCHOOL DISTRICT**

2019 Implimentation Strategy - Action Items/Activities

Fill out all columns for each action item.

<b>Mitigation Action/ Program/ Project</b>	<b>Completed?</b>	<b>Not Completed?</b>	<b>If not completed, write short statement why (ex. Annual budgets could not cover it)</b>	<b>Will this action item be in your 2023 Implimentation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)</b>
Educate the Student Population/Public through: continued cooperation with local service organizations (American Red Cross,		X	Have done; need to revisit and do again	Yes
Consider the Construction of Community Tornado Shelter and Safe Room at New Hampton Elementary School.		X	Did not get into school budget	Probably not
Identify Locations (all school facilities, shelter locations) where it would be beneficial to have Backup Power Generation or maintain	X			
Continue to Work to Safeguard against Potential Fire and Explosion Hazards Throughout the Community	X			This is ongoing through our crisis committee; will evaluate to make sure all current
Maintain and Update as Needed, 28E Agreements with Surrounding Entities	X			Probably needs reviewed and updated again
Continue Participation in the National Flood Insurance Program (NFIP)		X	We don't participate	No
Systematically Review and Update, as needed, Hazard Reponses Policies and Procedures	X			Do this annually with crisis plan
Identify and Evaluate Critical Facilities for Accessibility, Vulnerability, and Risk	X			Do this annually with crisis plan
Continue to Test and Chlorinate Drinking Water		X	We test but the city handles chlorination	No
Continue to Cooperate with Local Medical Facilities and Health Department to increase likelihood of detection and proper response		X	We work with them not on this specifically	Yes
Develop and Maintain Tree-Trimming Program in Order to Reduce the Chances of Falling Branches on Infrastructure and Property	X			This is completed twice per year
Develop and Maintain a List of Interpreters in order to Enhance Communication Barriers within the community	X			In process of developing this
Restrict Water Usage, as necessary, to Maintain Water Supply		X		Not sure what this means
Construct new or retrofit current facilities to include tornado safe rooms		X		No

Mitigation Action/ Program/ Project	Completed?	Not Completed?	If not completed, write short statement why (ex. Annual budgets could not cover it)	Will this action item be in your 2023 Implementation Strategy? (Is it still relevant? Is it actionable and achievable within 5-8 years?)
Maintain and evaluate existing terrorism mitigation procedures	X			We evaluate this yearly

# 2023 CHICKASAW COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

## APPENDIX O

### PLANNING COMMITTEE MATERIALS

**- PUBLIC MEETING AGENDA -**  
**Chickasaw County Multi-Jurisdictional**  
**Hazard Mitigation Plan Committee Meeting #1**

**Date:** Tuesday March 19, 2024

**Time:** 6 PM – 7:30 PM

**Place:** 260 E. Prospect Street  
New Hampton, Iowa 50659

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1. Welcome and Quick Introductions
2. Set Future Meeting Dates and Project Timeline
3. Handout Committee Member Packets
4. Intro to Hazard Mitigation
5. Hazard Mitigation Grant Program and FEMA Requirements
6. National Flood Insurance Program (NFIP) Status
7. Review Types of Mitigation
8. Regional Impacts of Hazard Mitigation – *Other counties, watershed, agricultural stakeholders*
  - a. Guests Invited to Share/Talk with Committee
9. Assignment:
  - a. Update Each Action Item in 2019 Mitigation Strategy Tables (handout)
  - b. *Turn in Worksheets Before You Leave*
10. Adjourn

**THIS IS A PUBLIC MEETING**

**MEMBERS OF THE COMMUNITY, NEIGHBORING COUNTIES, COMMUNITY ORGS, FARMERS ARE INVITED  
TO ATTEND THIS MEETING**

**Parking Available in the Rear of Building**

For Questions or Comments, contact:  
Leon Begay / INRCOG / Office: (319) 235-0311 / lbegay@inrcog.org

# Chickasaw County Hazard Mitigation Committee

19-Mar-24

NAME	REPRESENTING
Amy Laurens	Alta Vista
Cassey Mai	City of NH
Tim Pedersen	New Hampton Police
Brad Moudry	Provincetown Fire Dept
Jeremy Markenshaw	Lawler Fire Dept
Scott C	BOS
Megan Baites	NW
Derek Day	Ionia Fire
Randy Taylor	City of Ionia
James Mitchell	Fredericksburg
Al Matlage	S-F Schools
Ray Ambrecht	Fredericksburg
Samantha Johnson	Nashua
Mark Muetters	Lawler City of
Karen Clemens	New Hampton
Burt Ostert	Alta Vista
Matt Kuhn	BOS
Lisa Welter	ceph

## 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan Update Timeline

### I. Schedule of Committee Meetings

Meeting (90 mins)	Date	Topics, Resources, and Assignments to Complete (they will be <i>easy, I promise</i> )
#1	<u>Tuesday, March 19, 2024</u>	<ol style="list-style-type: none"> <li>1. Set dates for #2, #3, and #4 Meetings</li> <li>2. Overview of What to Expect</li> <li>3. Purpose of a Multi-Jurisdictional Approach</li> <li>4. Local Disaster Management: Hazard Mitigation</li> </ol> <b>Resources to Know</b> <ol style="list-style-type: none"> <li>1. Hazard Mitigation Grant Program</li> <li>2. National Flood Insurance Program</li> <li>3. Regional Impacts and Making Equitable Outcomes</li> </ol> <ul style="list-style-type: none"> <li>• <b>Completing Your Community Profile worksheet</b></li> <li>• <b>Completing responses to update items in your 2019 Action Plan</b></li> </ul>
#2	<u>Tuesday, March 26, 2024</u>	<ol style="list-style-type: none"> <li>1. How to Assess Hazards and Risk</li> <li>2. Profiles of Each Type of Hazard</li> <li>3. County Disaster History (Impacts, Level of Risk)</li> </ol> <ul style="list-style-type: none"> <li>• <b>Complete Your Local Hazard Risk Assessment (turn in score sheet)</b></li> <li>• <b>Complete Capability Assessment</b></li> </ul>
#3	<u>Tuesday, April 2, 2024</u>	<ol style="list-style-type: none"> <li>1. Review/Refine Hazard Assessment Results</li> <li>2. <i>Assembling Your Hazard Mitigation Strategy</i></li> </ol> <ul style="list-style-type: none"> <li>• <b>Writing Problem Statements – How to Build Hazard Mitigation Goals in 3 Steps</b></li> </ul>
#4	<u>Tuesday, April 9, 2024</u>	<ul style="list-style-type: none"> <li>• Finalize and Prioritize Your Action Items</li> <li>• Finalize Community Profiles</li> </ul>

Timeline-1



II. Plan Development (INRCOG and Jurisdiction Representative) and *Adoption of Plans (Jurisdictions)*

Goal: Approval of Local HMPs and Submittal of County MJ-HMP

#	Tasks	Date	Description
1	<p>INRCOG will write your local hazard plan draft. INRCOG will post online for public comment period.</p> <p>Participants will need to do necessary editing: grammar, names, funding cycles, formatting, etc.</p>	<p><u>April 22-24, 2024</u></p> <p>* INRCOG to turn around a draft plan for you in 12-15 days</p>	<p>Each participating jurisdiction will have a draft of a local hazard mitigation plan developed for them that meets requirements for approval by FEMA</p> <p>Drafts of each plan will be posted online for 7 day public comment period (INRCOG and County Website)</p> <p><b>Review grammar, names, titles. Format if needed to your city templates if needed. Add a few pics, etc. Limit moving around content, in order pass state and federal review.</b></p>
2	<p>Share with your city leaders/boards and hold a public hearing for comments, input by community at city council/school district meeting</p> <p>Send in draft plan and resolution to make your May 2024 agenda. In order to be on agenda, submit by this date:</p> <p><b>Send to Leon and you are done!</b></p>	<p>Jurisdictions: Submit draft plan and resolution for adoption by your governing body</p> <p><b>MUST MAKE THIS DEADLINE</b> to get it on your MAY 2024 city council/school district board meeting agenda for approval</p>	<p>Confirm council/board meeting dates and location with Leon and Jeff (we will attend to answer questions/concerns regarding document information)</p> <p>City council must approval plan with resolution.</p> <p><b>Celebrate! Submit to news media.</b></p>
3	<p>INRCOG will submit the county MJ-HMP to Chickasaw board of supervisors for approval and adoption of resolution</p>	<p>INRCOG: Post public notices and request to be on BoS meeting agenda with draft plan, comments addressed, and adopting resolution approving the county plan.</p>	<p>Get resolutions adopted approving county MJ-HMP.</p>
4	<p>INRCOG: Prepare and submit entire plan for 1<sup>st</sup> review by state mitigation office (IHSEM).</p>	<p>May 27-31, 2024</p>	<p>45 day review period</p>
5	<p>INRCOG:</p> <p>If 1<sup>st</sup> review has comments: Make changes if necessary from 1st review and submit again</p> <p>If no comments, state office submits to FEMA for review</p>	<p>June – July 2024</p>	<p>60 Day Review Period</p>
6	<p>Plan is APPROVED and Jurisdictions are Eligible for Grant Program till 2029.</p>	<p>July 2024</p>	<p>Get FEMA approval letter. See you in 5 years!</p>

Timeline-2

### **Plan Adoption and Review**

<b>April 22-24, 2024</b>	Draft Plan posted for public comment (INRCOG and County Website)
<b>May 2024</b>	Jurisdictions Hold Public Hearings at City Council Meeting for Public Comments and Adopt 2024 MJ-HMP by resolution
<b>May 27-31 2024</b>	Submit Plan to IHSEMD and FEMA for review
<b>June -July 2024</b>	Incorporate any changes identified by IHSEMD and FEMA
<b>July 2024</b>	Receive Plan Approval from FEMA
<b>March 1, 2024</b>	2019 Chickasaw County MJ-HMP Expires

### **Co-Lead and Plan Coordinator**

Leon Begay, Community Planner  
Iowa Northland Regional Council of Governments (INRCOG)  
229 East Park Avenue, Waterloo, IA 50703  
Phone: (319) 235-0311 | lbegay@inrcog.org

Timeline-3

## What is Hazard Mitigation?

Mitigating a threat to your community can generally be any effort, action or activity taken to reduce or eliminate the level of risk that a hazard poses. Threats from hazards is the level of risk of potential losses or damage from a hazard event.

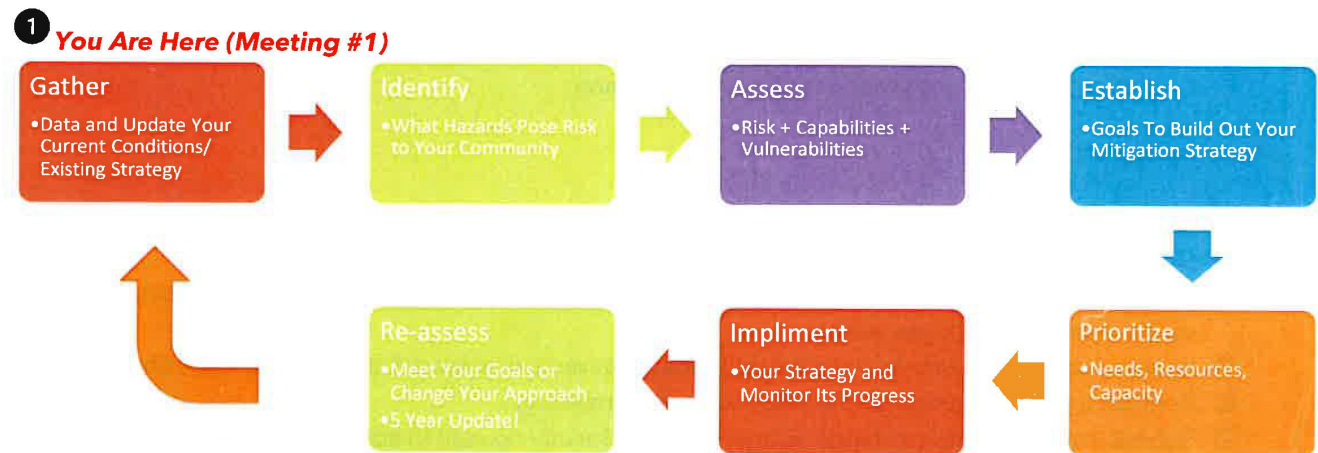
In emergency management, there are 5 phases surrounding a disaster. Preparedness, Disaster (or Hazard) Event, Response, Recovery, and Mitigation.

Mitigation, or prevention, can occur at any point in the cycle of disaster planning (See FEMA's Cycle of Emergency Management).



### Chickasaw County's Approach

The process of developing a hazard mitigation plan will follow this multistep approach.



In July 2029, you will be here.

## What is the Purpose of the Hazard Mitigation Plan?

1. To **reduce the county's** overall **vulnerability** to natural and man-made types of hazards.
2. Ensure that the County, participating communities, and school districts are **eligible to apply for disaster recovery federal funds** that are released when a disaster proclamation is announced (state or federal).
3. This is the **national strategy in emergency management** and legislation uses this approach in awarding federal funds.
4. **Be risk informed** during the planning process so your hazard mitigation strategies will chosen by your because they are actionable, protect health, safety, and welfare of the community, cost effective, and socially inclusive during the planning process so that any community wide efforts will have equitable outcomes when using federal and state funds/grants.
5. Participating jurisdictions will become **eligible for mitigation grant dollars** made available through FEMA to assist in big ticket items like tornado safe rooms, warning sirens, etc.

## Why Do We Update The Plan Every 5 Years?

Conditions change (fiscally, strategically, environmentally) and so should your hazard mitigation plan (goals, actions, strategies, priorities). The overall intention behind hazard mitigation planning is still to eliminate or reduce losses due to risk.

*Ultimately, it is required to be updated every 5 years<sup>1</sup> to maintain eligibility for state and federal disaster assistance and future mitigation project funding (grants).*

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*Mitigation is defined as any sustained action taken to reduce or eliminate long-term risk to human life and property from a hazard event.*

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Besides financial opportunities, other benefits to communities for conducting natural hazard mitigation planning include:

- ✓ An increased understanding of natural and man-made hazards faced by communities.
- ✓ Opportunity to create more sustainable and disaster-resilient communities.
- ✓ Optimize capacity constraints through multi-jurisdictional planning and robust mitigation efforts.
- ✓ Focused use of limited resources on hazards that have the biggest impacts on a community.
- ✓ Reduced long-term impacts and injury to human health and welfare.
- ✓ Cost Effective Outcomes with Cost Effective Planning

## What To Expect

- ☑ Attend 4 publicly held committee meetings (90 mins each)
- ☑ Complete 5 Work Sheets At Meetings
- ☑ Receive your local hazard mitigation plan draft and make edits to correct grammar, names, titles, dates, add pictures (if you want)
- ☑ Share revised draft with your city council, boards to review (at least 4 days before public hearing)
- ☑ Request a public hearing at your May city council meeting.
- ☑ Submit draft plan and resolution as agenda items for city council to adopt (May 2024 meeting)
- ☑ Seek out information with your city staff/leaders/stakeholders to complete assignments and turn in work regularly

## What Not to Expect

- ☐ You are not expected to do any formal cost benefit analysis/studies (ex. HAZUS).
- ☐ Mapping with GIS or flood mapping,
- ☐ Writing and typing up a large report
- ☐ Create a disaster response plan or continuity of government plan
- ☐ Discussions that take time away from meeting topics or arguments about disagreeing with FEMA policy and procedures that are required

## FEMA Mitigation Grant Programs

provide funds for pre- and post-disaster mitigation

### Hazard Mitigation Assistance Programs

**Building Resilient Infrastructure and Communities (BRIC).**

This program gives resources to communities for hazard mitigation projects. With funds to address future natural disaster risk, communities can build their resilience.

**Flood Mitigation Assistance.**

This program gives funds on an annual basis. Communities can use these funds to take measures that reduce or eliminate the risk of flood damage to buildings insured under the National Flood Insurance Program

**Hazard Mitigation Grant Program.**

This program assists in carrying out long-term hazard mitigation measures following presidential disaster declarations. Funding may be authorized to carry out projects in accordance with state, tribal and local priorities.

**Safeguarding Tomorrow Revolving Loan Fund.**

This program provides seed funding for states to set up mitigation revolving loan fund programs. These programs provide low interest loans to jurisdictions to reduce vulnerability to natural disasters, foster greater community resilience and reduce disaster suffering.

**The Rehabilitation of High Hazard Potential Dams (HHPD)**

This grant program provides technical, planning, design, and construction assistance in the form of grants for rehabilitation of eligible high hazard potential dams

## Hazard Mitigation Assistance Data

### in Chickasaw County, Iowa

### By County

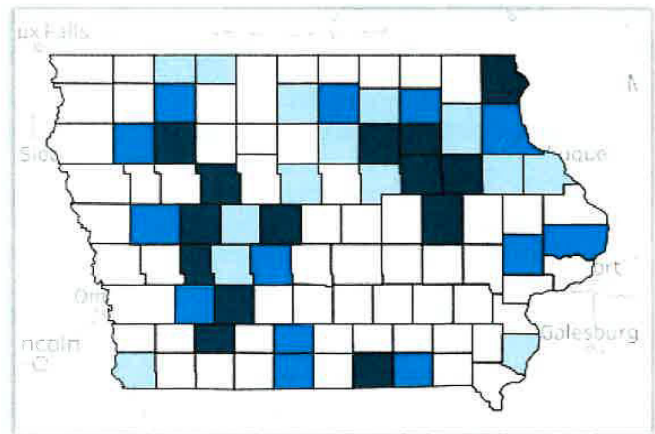
#### By Grant Program

- HMGP = \$323.8K
- Pre-Disaster Mitigation = \$229.2K

#### By Project Type

- Utility/Infrastructure Protection = \$267.1K
- Safe Room/Wind Shelter = \$229.2K
- Mitigation Planning = \$44.4K
- Acquisitions = \$12.2K

Source: <https://www.fema.gov/data-visualizations/hazard-mitigation-assistance-obligations>



\$553K \$138K \$276K \$415K \$553K

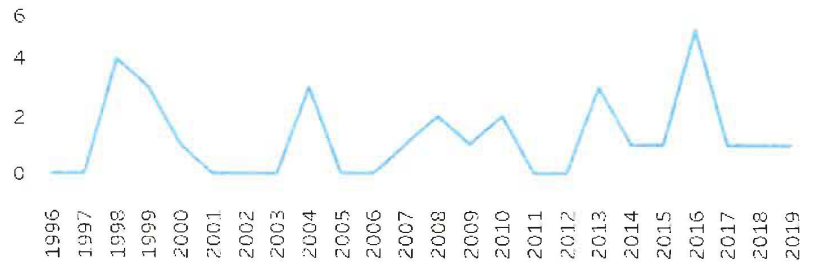


## National Flood Insurance Program (NFIP)

FEMA conducts flood studies across the country, periodically revising, and producing updated, or effective, flood maps show a community's risk of flooding.

Flood Events

Chickasaw County's Flood History since 1996



- **Flood maps show a** community's flood zone, floodplain boundaries, and base flood elevations.

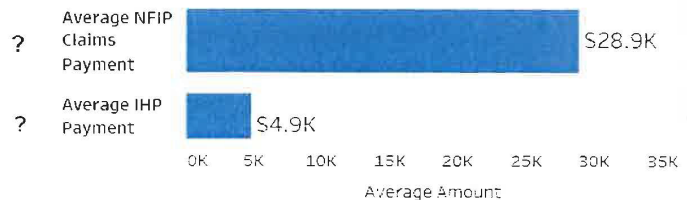
Property owners, insurance agents, and lenders can use flood maps to determine flood insurance requirements and policy costs.

Participating communities must have:

1. Adopted Floodplain Ordinance that meets program minimum criteria
2. Adopted the latest effective FIRM flood hazard maps from FEMA by eff. date

### Costs of Flooding

The National Flood Insurance Program (NFIP) provides flood insurance to homeowners, renters, and business owners. FEMA's **Individuals and Households Program (IHP)** can provide financial help and direct services after a disaster. The program assists with housing needs not covered by insurance or provided by any other source. See differences in NFIP claims paid to individuals from 1996 - 2019 and funding from IHP for flood-related damages from 2006 - 2016 for your state.



### Learn More

See how you can protect your home from flood-related damages.



Communities Participating in NFIP  
(effective flood maps dated 09/28/2012)

\$ of All Claims  
Paid by NFIP

Total # of  
Losses

<input checked="" type="checkbox"/> Chickasaw County	\$255.6K	17
<u>Cities</u>		
<input checked="" type="checkbox"/> Alta Vista	N/A	N/A
<input checked="" type="checkbox"/> Fredericksburg	\$1.7K	1
<input checked="" type="checkbox"/> Lawler	\$9K	2
<input checked="" type="checkbox"/> Nashua	\$224.6K	14
<input checked="" type="checkbox"/> New Hampton	\$2.6K	7
<input checked="" type="checkbox"/> North Washington	\$0	None

Not in Program

- ☐ Basset

To **Communities/School Districts** of Chickasaw County,

Chickasaw County's Emergency Management Commission is preparing a 5-year update to the 2019 *County Multi-Jurisdictional Hazard Mitigation Plan (MJ-HMP)*, **and you are invited to participate as a planning committee representative for your community or school district**. Serving on the planning committee will allow your community to meet requirements to remain eligible for federal mitigation grant funding opportunities.

*If you participated in the 2019 Chickasaw County MJ-HMP, then you will need to participate in this planning process to remain eligible for mitigation grant programs. If you haven't participated before, we welcome you to this opportunity!*

- This will be a fast-paced meeting series (4 meetings-1.5 hr each-in the evenings) facilitated by INRCOG's community planner.
- Participants should be ready to participate and fill out simple city information gathering assignments (rep should be informed about city projects, funding, etc).
- Each meeting is important to attend (in person or virtually).
- **When the series concludes a local hazard mitigation plan will be prepared for your community.**

**The first planning meeting will be held Tuesday March 19, 2024 at 6PM -7:30PM in the meeting room at County DHS office located at 260 Prospect St. New Hampton, Iowa.** Parking can be found at the rear of the building. We will discuss the planning process, establish and schedule the following three (3) meetings, and review/update strategy action items from the previous plan. The primary focus on this meeting will be reviewing and updating the status of projects as well as the community profiles of participating jurisdictions in Chickasaw's existing county hazard mitigation plan.

Thank you in advance for your time and cooperation. If you should have any comments or questions, please feel free to contact Leon Begay, INRCOG community planner, at (319)235-0311 and [lbegay@inrcog.org](mailto:lbegay@inrcog.org), or Jeff Bernatz, Chickasaw County Emergency Management Coordinator, at (641)394-2406 and [j.bernatz@chickasawcounty.iowa.gov](mailto:j.bernatz@chickasawcounty.iowa.gov)

**Please forward this email/letter to any city department or local groups that may be interested in participating.**





- PUBLIC MEETING AGENDA -  
Chickasaw County Multi-Jurisdictional  
Hazard Mitigation Plan Committee Meeting #2

**Date:** Tuesday, March 26, 2024  
**Time:** 6:00 PM  
**Place:** 260 E. Prospect Street  
New Hampton, Iowa 50659

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1. Welcome
2. Overview of Hazards
3. County's Historical Hazard Information (w/ probability, magnitude, duration, and warning time)
4. Handout: Hazard Risk Assessment Summary Worksheet (**Complete and Turn In**)
5. Handout: Capability Assessment (**Bring Back to Next Meeting**)
6. Previous Meeting Assignments
  - a. 2019 Mitigation Strategy Update Tables
    1. COMPLETED: New Hampton, Lawler, North Washington, Fredericksburg, New Hampton CSD
    2. NOT COMPLETED: Chickasaw County, Alta Vista, Ionia, Nashua, Nashua-Plainfield CSD, Sumner-Fredericksburg CSD,
  - b. Community Profile
    1. COMPLETED: Chickasaw County, Fredericksburg, Ionia, New Hampton,
    2. NOT COMPLETED: Lawler, North Washington, Bassett, Alta Visa, Nashua, Nashua Plainsfield CSD, New Hampton CSD, Sumner-Fredericksburg CSD
7. Next Meeting
  - a. Tuesday, April 2, 2024, at 6:00 PM – same location
8. Adjourn

**Members of the public are welcome to attend and observe the meeting.  
Committee participants are expected to attend and complete meeting materials.  
Parking Available in the Rear of Building**

For Questions or Comments, contact meeting coordinator:  
Leon Begay / INRCOG / Office: (319) 235-0311 / [lbegay@inrcog.org](mailto:lbegay@inrcog.org)

# Chickasaw County Hazard Mitigation Committee

26-Mar-24

NAME	REPRESENTING
Brad Moudry	Protwin Fire Dept / City of Protwin
MILAN MOHN	MAYOR
Angelaures	Alta Vista Council
Larry Laures	Fire Chief Alta Vista
Matt Kuhn	Chick EMA
Derek Day	Tonia Fire
Randy Taylor	City of Tonia
Jeremy Markens	Lawler Fire
Jeff Bernatz	ERIA
Joe Ashley	Bassett
Casey mai	New Hampton
Tim Pedersen	New Hampton Police
Samantha Johnson	Nashua.
Mark Muntethis	Lawler Mayor
SHERIDAN DARMAN	FREDERICKSBURG FIRE
RAY ARMISTEAD	FREDERICKSBURG FIRE
Tom Johnson	Nashua Fire
Meagan Baltes	City of NW

## Chickasaw County Hazard Mitigation Committee

26-Mar-24

NAME	REPRESENTING
Karen Clemens	City of NH
Toby Schwickerath	City of NH FD
Ryan Shawver	Chickasaw Sheriff
Burt Ostert	City of Alta Vista
Toddy Liechty	Nashua-Plainfield Schools

## OVERVIEW OF HAZARDS

### HAZARD IDENTIFICATION

The 2023 Iowa Hazard Mitigation Plan includes 20 different hazards. This includes 13 natural hazards and 7 non-natural hazards.

2023 Iowa Hazard List
Natural Hazards
Drought
Earthquake
Expansive Soils
Extreme Heat
Flooding - Flash
Grass/Wildland Fire
Landslide
Levee/Dam Failure
Flooding - Riverine
Severe Winter Storm
Sinkholes
Thunderstorm/Lighting/Hail
Tornado/Windstorm
Other Hazard Types
Animal/ Crop/ Plant Disease
Pandemic/ Endemic Human Disease
Hazardous Materials
Infrastructure Failure
Radiological
Terrorism
Transportation Incidents

It is important to note that the focus of mitigation is on reducing long-term risks of damage or threats to public health and safety. Not all hazards will impact or affect all participating communities and each hazard can have different magnitudes depending on the location.

This is why you will each individually complete a hazard risk assessment in the form of a scoring sheet. Fill out the hazard risk assessment scoring sheet based on your jurisdiction.

### Natural Type Hazards

*This type of hazard is defined as a source of harm or difficulty created by a meteorological, environmental, or geological phenomenon or combination of them. The following 13 hazards are identified as natural hazard types in the statewide 2023 Iowa Hazard Mitigation Plan. The hazards are listed alphabetically with specific profile information. The natural hazard profiles include information on definitions, previous occurrences, magnitude, duration, and warning time.*

## Drought

### Definition

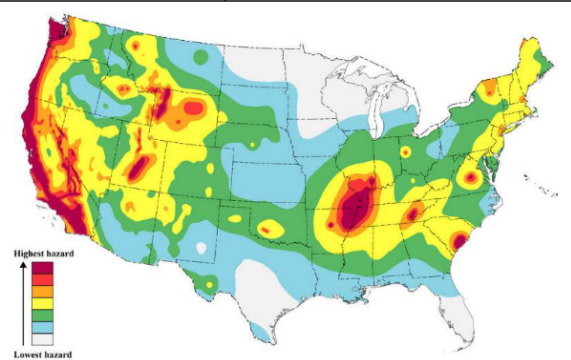
A period of prolonged abnormally low precipitation producing severe dry conditions.

Historical Occurrences in Chickasaw County	The last drought in Chickasaw County was 2012 when the USDA declared a drought disaster. The National Integrated Drought Information System reports no prolonged (> 6 mo) drought event for Chickasaw County (or even Iowa) within the last decade.
Probability and Extent	Highly likely to see moderate drought conditions within the next 5 years. Highly unlikely to see extreme drought conditions in Northeast Iowa.
Droughts are observed by its impacts to agriculture, food production, energy production when there is a lack of soil moisture due to low precipitation levels. Chickasaw County is not susceptible to severe drought that has had impacts on agriculture, response, or the local economy. Droughts directly affect agricultural crops, livestock, wildlife, and stream habitats (fish). Economic and environmental impacts are more critical for agricultural economies like Chickasaw's.	
Duration	Droughts occur over prolonged, consecutive time periods (days, week, months)
Warning Time	Conditions predicting a drought are often not known. Most droughts are declared until a period of low precipitation has occurred and the affects are significant on agriculture, wildlife, and farming economies. No warning time, but forecasts are tracked daily and often change by the day.

## Earthquake

### Definition

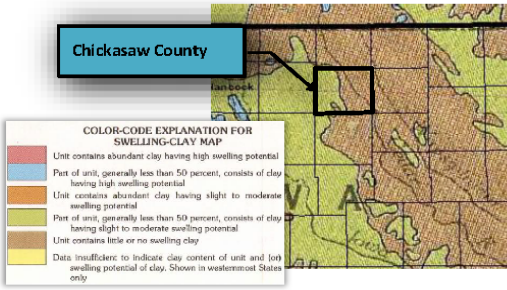
Earthquakes are sudden, rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. This shaking can cause buildings and bridges to collapse; disrupt gas, electric, and phone service; it sometimes triggers other hazards including landslides, flash floods, and fires. The three (3) general classes of earthquakes are, tectonic, volcanic, and induced.

Historical Occurrences in Chickasaw County	<b>None in Chickasaw County</b> Iowa has experienced the effects of only three earthquakes in the past 175 years. The most recent occurrence was a 2.7 magnitude earthquake located east of Rembrandt, Iowa in June 2021.	
Probability and Extent	There is minimal possibility of an earthquake occurring in Chickasaw County within the next 50 years that could be of damaging magnitude.	
		The National Seismic Hazard Map is a U.S. Geological Survey hazard planning tool. Figure 1 (to the right) is the probabilistic map which illustrates the probability of a damaging earthquake occurring in Iowa within the next 50 years.
Magnitude	Limited Relatively low damage based on historical data. The entire county is likely to feel an earthquake.	
Duration	A couple seconds to a minute. Smaller intensity aftershocks occur sparingly over the next few hours.	
Warning Time	Minimal or no warning time	

## Expansive Soils

### Definition

Expansive clay soils, also known as shrink-swell soils or swelling clays, are types of soil that undergo significant changes in volume as their moisture content varies. May cause damage to infrastructure, roadways, and costly repairs.

<b>Historical Occurrences in Chickasaw County</b>	<p><i>No record keeping of this hazard in Chickasaw County</i></p> <p>There have been no recorded disaster declarations or major incidences of this hazard occurring in Iowa. Expansive soils are still a significant concern, particularly in regions where clay-rich soils are prevalent. Expansive soils in Iowa pose challenges for construction, agriculture, and infrastructure development.</p>	
<b>Probability and Extent</b>	Not likely.	
		<p>Based on zoomed part of a swelling clays map produced by the U.S. Geological Survey, most of Chickasaw County has soils that have little or no swelling clay or soils with a composition of less than 50% with swelling potential.</p>
<b>Warning Time</b>	<p>Varies/unknown</p> <p>Expansive soils occur on a geologic time scale. This means that the consistent duration to observe the effects of expansive soils occurring is unknown.</p>	
<b>Duration</b>	<p>Varies, the specific duration required to observe the effects of expansive soils varies depending on various factors such as climate, soil composition, and geological conditions.</p>	

3

## Extreme Heat (Heat Wave)

### Definition

Conditions for extreme heat are defined by summertime weather that is substantially hotter and/or more humid than average for a location at that time of year.

<b>Historical Occurrences in Chickasaw County</b>	Chickasaw County issued an excessive heat warning on August 22-24, 2023 for heat indices exceeding 100 degrees F each day.																																																								
	No deaths or injuries or crop damage reported.																																																								
<b>Probability and Extent</b>	Likely. Based on historical occurrence it may last for a few days and most people are getting more familiar with heat exhaustion, heat stroke, and remaining hydrated/indoors.																																																								
<b>Table 2.3.</b> Heat index values (°F) <sup>3,4</sup>		The heat index is a number in degrees Fahrenheit that tells how hot it really feels when relative humidity is factored into actual air temperature.  Heat index is the temperature felt rather than the atmospheric temperature when there is humidity.																																																							
<table><tr><th>Temperature (°F)</th><th>90</th><th>80</th><th>70</th><th>60</th><th>50</th><th>40</th></tr><tr><td>80</td><td>85</td><td>84</td><td>82</td><td>81</td><td>80</td><td>79</td></tr><tr><td>85</td><td>101</td><td>96</td><td>92</td><td>90</td><td>86</td><td>84</td></tr><tr><td>90</td><td>121</td><td>113</td><td>105</td><td>99</td><td>94</td><td>90</td></tr><tr><td>95</td><td></td><td>133</td><td>122</td><td>113</td><td>105</td><td>98</td></tr><tr><td>100</td><td></td><td></td><td>142</td><td>129</td><td>118</td><td>109</td></tr><tr><td>105</td><td></td><td></td><td></td><td>148</td><td>133</td><td>121</td></tr><tr><td>110</td><td></td><td></td><td></td><td></td><td></td><td>135</td></tr></table>			Temperature (°F)	90	80	70	60	50	40	80	85	84	82	81	80	79	85	101	96	92	90	86	84	90	121	113	105	99	94	90	95		133	122	113	105	98	100			142	129	118	109	105				148	133	121	110					
Temperature (°F)	90	80	70	60	50	40																																																			
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<p>3. Heat index values were not given for the temperature and relative humidity combinations that have blank cells.</p> <p>4. Heat index values can be up to 15°F higher with exposure to direct sunlight. Heat index values assume calm wind conditions; hot dry winds can also increase heat index values.</p> <p>Source: NWS Forecast Office, Pueblo, Colorado, 2004.</p>																																																									
<b>Warning Time</b>	The National Weather Service can issue a Heat Advisory or Excessive Heat Warning to about 10-14 days in advance.																																																								
<b>Duration</b>	Multiple days but usually excessive heat events occur when the temperatures are over the 95 <sup>th</sup> percentile of the region's historical weather data for at least 2 days.																																																								

4



## Flood - Flash

### Definition

A flash flood is an event that occurs with little or no warning where water levels rise at an extremely fast rate. Flash flooding results from intense rainfall over a brief period, sometimes combined with rapid snowmelt, ice jam release, frozen ground, saturated soil, or impermeable surfaces. Most flash flooding is caused by slow-moving thunderstorms or thunderstorms repeatedly moving over the same area.

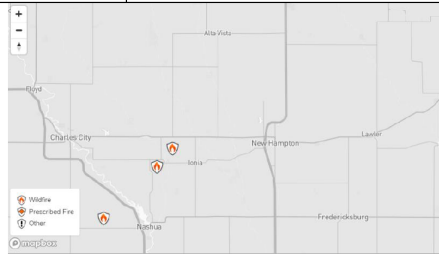
<b>Historical Occurrences in Chickasaw County</b>	<i>No record keeping of this hazard in Chickasaw County</i>					
	The table presents historical flash flooding events since 2010 from the National Climatic Data Center. There have been 13 flash flood events resulting in 1 fatality with a combined property and crop damage of \$6.5 million.					
	Historical Occurrences of Flash Flooding in Chickasaw County 2010-2023					
	Location	Date	Deaths	Injury	Property Damage	Crop Damage
	Saude	5/29/2013	0	0	\$20,000	\$0
	Nashua	6/26/2013	0	0	\$120,000	\$0
	Deerfield	6/19/2014	0	0	\$5,000	\$0
	Lawler	7/23/2016	0	0	\$0	\$0
	Little Turkey	8/24/2016	1	0	\$10,000	\$0
	Lawler	9/9/2016	0	0	\$35,000	\$0
	Nashua	9/22/2016	0	0	\$48,000	\$5,000
	Williamstown	7/21/2017	0	0	\$20,000	\$0
	Bassett	7/22/2017	0	0	\$350,000	\$5,700,000
	New Hampton	5/18/2019	0	0	\$40,000	\$0
	Fredricksburg	6/9/2020	0	0	\$5,000	\$135,000
	New Hampton	8/8/2021	0	0	\$0	\$0
	Deerfield	8/28/2021	0	0	\$0	\$0
	Total	1	0	\$653,000	\$5,840,000	
		Combined Total		\$6,493,000		
	<i>Source: NOAA National Centers for Environmental Information</i>					
<b>Probability and Extent</b>	Likely. June is the most common month for flash floods, but they can occur from May through September.					
<b>Warning Time</b>	Usually a sudden event during an unusually heavy rainfall. No warning time.					
<b>Duration</b>	They are most common in the evening hours, between 8-10 p.m., but can occur at other times and typically last from 3-6 hours.					

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## Grass/Wild Land Fire

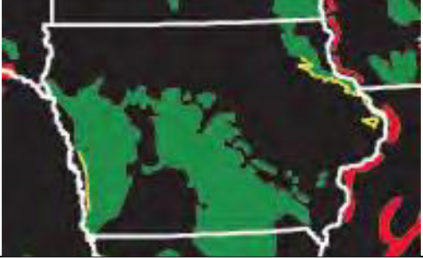
### Definition

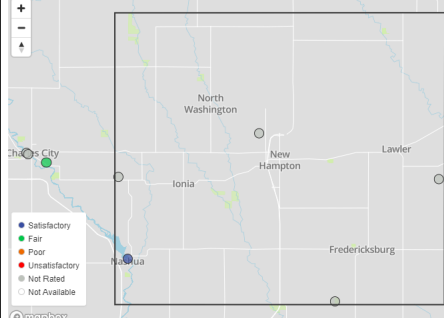
A grass or wild-land fire is an uncontrolled fire that threatens life and property in a rural or a wooded area. Dry weather can also lead to a wildfire threat, especially in the spring before foliage has emerged (i.e. before green up) or in the fall after vegetation has started to die off.

<b>Historical Occurrences in Chickasaw County</b>	A grass fire or wildland fire is an uncontrolled fire that threatens life and property in a rural or wooded area. A grass fire or wildland fire is not a cropland fire. Damage to crops from fire are often covered by insurance, and are on land that is not "wild." Wildland or grass fires occur in natural, wild areas. No deaths or injuries reported.	
<b>Probability and Extent</b>	Not Likely. Wildland fires are more likely to occur when conditions are favorable, such as during periods of drought when natural vegetation is drier and more combustible.	
		Since 2017, there have been 2 wildfires reported. April 3, 2019 - Human caused wildfire burned 50 acres. April 20, 2019 - Human caused wildfire burned 25 acres.  Source: <a href="https://datacentral.press-citizen.com/wildfire-history/?page=1&amp;query=lowa&amp;anc=active#ftbl">https://datacentral.press-citizen.com/wildfire-history/?page=1&amp;query=lowa&amp;anc=active#ftbl</a>
<b>Warning Time</b>	The WHP map indicates that Iowa possesses few areas with significant wildfire potential, with the majority classified as "Non-burnable Lands," primarily agricultural fields. Furthermore, the vast majority of the state exhibits a "Very Low" wildfire hazard potential, indicating minimal risk of extreme fire behavior. Consequently, wildfires in Iowa tend to be limited in scope and severity due to the absence of areas conducive to significant fire spread or extreme behavior.	
<b>Duration</b>	Usually contained in a few hours. Less than 24 hours.	
<b>Chickasaw County's Risk Index Score for Hazard:</b>		15.24 out of 100 (Very Low)
<b>Expected Annualized Loss:</b> <i>Source: FEMA Risk Index by County (2024)</i>		\$5,729

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<h2>Landslide</h2> <p><b>Definition</b></p> <p>Landslides occur when susceptible rock, earth, or debris moves down a slope under the force of gravity and water. Landslides may be very small or very large, and can move at slow to very high speeds. A natural phenomenon, landslides have been occurring in slide-prone areas of Iowa since long before the state was created. Landslides can occur due to rainstorms, fires, or human activities that modify slope and drainage</p>	
<b>Historical Occurrences in Chickasaw County</b>	<p>There have been no occurrences of landslides in Chickasaw County.</p> <p>No deaths or injuries reported.</p>
<b>Probability and Extent</b>	Not Likely. There are no large slopes in Chickasaw County.
<p>Landslide Potential</p> <p>Red = Very High Potential; Yellow = High Potential; Green = Moderate Potential; Black = Low Potential</p> <p>Courtesy of US Geological Survey, www.usgs.gov</p>	
<b>Warning Time</b>	Great amounts of precipitation and moisture over time will greatly increase the warning time of a landslide event; however, there is no official warning system in place, thus the warning time would be short.
<b>Duration</b>	Usually contained in a landslides are typically over within hours of occurring hours. Less than 24 hours.
<p><b>Chickasaw County's Risk Index Score for Hazard:</b></p> <p><b>Expected Annualized Loss:</b></p> <p>Source: FEMA Risk Index by County (2024)</p>	<p>17.19 out of 100 (Relatively Low)</p> <p>\$20,987</p>

<h2>Levee/Dam Failure</h2> <p><b>Definition</b></p> <p>Dam/Levee failure is the uncontrolled release of water resulting from a structural failure in a dam, wall, dike, berm, or area of elevated soil that causes flooding. Possible causes of the breach could include flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation, poor construction, vandalism, terrorism, erosion, piping, saturation, or under seepage.</p>	
<b>Historical Occurrences in Chickasaw County</b>	<p>There have been no dam failures in Chickasaw County</p> <p>No deaths or injuries reported.</p>
<b>Probability and Extent</b>	Not Likely. The probability of a dam failure due to a breach in the structural integrity of the system is also minimal. The hazard risk for the dams in unincorporated Chickasaw County was removed due to no dams or levees being in the county. The probability of a catastrophic dam failure or other dam-related hazard was determined to be unlikely.
<p>Blue = Satisfactory Green = Fair Orange = Poor Red = Unsatisfactory Grey = Not Rated White = Unavailable</p> <p>Chickasaw County has 5 dams that are all state regulated. Average age of dams are 56 years. 4 – Not rated 1 – Satisfactory</p> <p>All rated with low hazard potential classification (Source: US Dam Safety Inspection)</p>	
<b>Warning Time</b>	A sudden failure of a portion of the levee may send floodwaters gushing from this break within seconds. Normally, occupants of the floodplain can be warned about potential levee breaches or breaks when high water encroaches upon the levee.
<b>Duration</b>	The length of time that a dam or levee failure would impact the surrounding area depends largely on the amount of water the specific dam or levee held back. The duration of a failure's impact could feasibly range from hours to months.

## Severe Winter Storm

### Definition

Severe winter weather conditions that can affect day-to-day activities include blizzard conditions, heavy snow, blowing snow, freezing rain, heavy sleet, and extreme cold. Winter storms are common during the months of October through April in Iowa.

<b>Historical Occurrences in Chickasaw County</b>	According to data from the National Climatic Data Center, there have been 11 reported flood events in Chickasaw County between 2000 and 2023. Table below displays the date, general location, and impact of these floods.					
	1 Injury reported. Estimates of property damage \$1.18 million and crop damage \$3.5 million.					
<b>Probability and Extent</b>	Highly Likely. Considering the historical occurrence of flooding events and the number of streams and rivers located in area, the probability of future river flooding remains high. Flooding is an annual problem throughout the area. As part of two watersheds (Upper Cedar River, and Upper Wapsipinicon), areas adjacent to the rivers and creeks, and its main tributaries are at significantly higher risk than those areas located away from these features.					
Historical Occurrences of River Flooding in Chickasaw County 2000-2023						
Location	Date	Deaths	Injury	Property Damage	Crop Damage	
Horn Fld Airport	04/25/2008	0	0	\$50,000	\$0	
Horn Fld Airport	06/07/2008	0	0	\$600,000	\$1,000,000	
Deerfield	03/10/2010	0	1	\$7,000	\$0	
Bassett	03/11/2010	0	0	\$0	\$0	
New Hampton	06/23/2010	0	0	\$0	\$0	
Deerfield	06/14/2016	0	0	\$2,000	\$0	
Deerfield	08/23/2016	0	0	\$20,000	\$0	
Bassett	08/23/2016	0	0	\$0	\$0	
Deerfield	08/28/2021	0	0	\$500,000	\$2,500,000	
Chickasaw	05/15/2023	0	0	\$0	\$0	
Nashua	05/16/2023	0	0	\$0	\$0	
	Total	0	1	\$1,179,000	\$3,500,000	
		Combined Total			\$4,679,000	
Source: NOAA Storm Events Database						
<b>Warning Time</b>	River flooding can be forecasted to allow for at least 24 hours or greater.					
<b>Duration</b>	The duration of a flooding event varies based on the severity and location of the flooding event. Duration can range from a few hours to several days or longer.					

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## Flooding -Riverine

### Definition

River flooding is a rising or overflowing of a tributary or body of water that covers adjacent land not usually covered by water when the volume of water in a stream exceeds the channel's capacity.

<b>Historical Occurrences in Chickasaw County</b>	According to data from the National Climatic Data Center, there have been 35 reported winter storm events in Chickasaw County between 2000 and 2023. Table below displays the date, general location, and impact of storms that caused damage.					
	No fatalities or injuries reported. Estimates of property damage \$110,000 and none for crop damage.					
<b>Probability and Extent</b>	Highly Likely. Based on historical occurrences it is highly likely a severe winter storm will affect Chickasaw County on an annual basis, likely multiple times in a year.					
Historical Occurrences of Hazard in Chickasaw County 2000-2023 with DAMAGE						
	Location	Date	Deaths	Injury	Property Damage	Crop Damage
	Chickasaw County	02/23/2007	0	0	\$100,000	\$0
	Chickasaw County	03/23/2016	0	0	\$10,000	\$0
	Total		0	0	\$110,000	\$0
Source: NOAA Storm Events Database						
<b>Warning Time</b>	The National Weather Service has developed effective weather advisories, which are promptly and widely distributed. There are several notifications made by the National Weather Service. These include winter storm watch, winter storm warning, blizzard warning, winter weather advisory, and a frost/freeze advisory.					
<b>Duration</b>	Depending on the type, duration, and the size of the event the entire population could feel the effect of a winter storm. Generally, due to existing snow removal services and other community services the effects of winter storms on incorporated communities in Chickasaw County are short term; however, the more rural, unincorporated areas tend to be impacted longer due to rural nature of the county. Although more of an inconvenience, and somewhat more dangerous, travel and communication are usually an option in less than 24 hours of any given event.					
<b>Chickasaw County's Risk Index Score for Hazard:</b>	67.23 out of 100 (Relatively Moderate)					
<b>Expected Annualized Loss:</b> Source: FEMA Risk Index by County (2024)	\$120,101					

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## Sinkholes

### Definition

A sinkhole is the loss of surface elevation due to the removal of subsurface support. Sinkholes range from broad, regional lowering of the land surface to abrupt localized collapse. The primary causes of most subsidence are human activities such as underground mining of coal, groundwater/petroleum withdraw, or drainage of organic soils. Sinkholes can aggravate flooding potential, collapse of an abandoned mine may destroy buildings, roads and utilities.

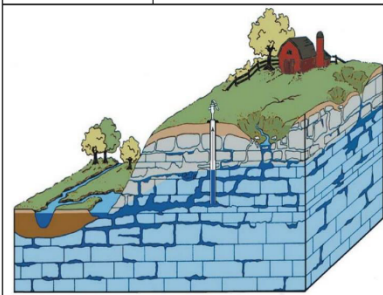
### Historical Occurrences in Chickasaw County

According to Iowa DNR AFO siting maps, there are approximately 10-15 sinkholes located within Chickasaw County. These mainly occur over Karst formations in the ground.

No fatalities or injuries reported. No damage to property or crops.

### Probability and Extent

Highly Unlikely. This hazard affects less than 2% of land in the County.



The dark blue areas denote groundwater stored within the bedrock's crevices, constituting the shallow aquifer and accessible to the depicted well. The diagram illustrates the porous nature of the bedrock, facilitating groundwater storage and movement. It also shows how the land surface and visible stream directly interface with the bedrock-stored water. In Karst systems, soil infiltration, surface runoff, and streams can directly feed into the shallow bedrock, contributing to the shallow groundwater and aquifer, potentially carrying contaminants from the surface to wells drawing from this source.

### Warning Time

Sink holes growing in mass is a slow yet gradual process. Land use practices in the area, soil type in addition to a number of other factors will impact the speed of onset. By identifying these areas city agencies and property owners will be able to implement the necessary precautions to slow and potentially eliminate the development of a sink hole. Catastrophic sinkholes can provide little visible warning, setting in in as little as a few minutes.

### Duration

A sinkhole can affect the location in which it occurred for weeks.

No data on historic/annual losses.

Not in FEMA Risk Index.

## Thunderstorm/Lighting/Hail

### Definition

Thunderstorms are created from a combination of moisture, rapidly raising warm air, and the lifting mechanism such as that caused when warm and cold air masses collide. Thunderstorms occur in the community on an annual basis. Lightning is an electrical discharge that results from

### Historical Occurrences in Chickasaw County

According to the NOAA Storm Events Database, there have been 38 thunderstorm wind events reported causing an estimated \$309.6K in property damage and \$1.5 million in crop damage.

There has been 1 reported lighting strike causing property damage in Ionia in 2021 estimated at \$10,000.

There 36 hail storm events causing \$127.6K in property damage and \$3.3 million in crop damage.

No fatalities or injuries reported for either of these hazards.

### Probability and Extent

Highly Likely that hail and thunderstorms will effect all of Chickasaw County. Highly Unlikely lightning will cause damage but it is highly likely to occur naturally.

#### Historical Occurrences of Lighting and Hail Hazards during a Thunderstorm in Chickasaw County 2000-2023

Hazard	Occurrence	Deaths	Injury	Property Damage	Crop Damage
Hail	36	0	0	\$127,500	\$3,334,000
Lightning	1	0	0	\$10,000	\$0
Thunderstorm Wind	38	0	0	\$309,600	\$1,532,000

Source: NOAA Storm Events Database

### Warning Time

The National Weather Service has developed effective weather advisories, which are promptly and widely distributed.

### Duration

Less than 24 hours.

### Risk Score for Hail:

41.27 out of 100 (relatively low)

### Expected Annualized Loss:

\$52,393

Source: FEMA Risk Index by County (2024)

### Chickasaw County's Risk Index Score for Hazard:

15.03 out of 100 (Very Low)

### Expected Annualized Loss:

\$27,479

Source: FEMA Risk Index by County (2024)

## Tornado

### Definition

A tornado is a violent whirling wind characteristically accompanied by a funnel shaped cloud extending down from a cumulonimbus cloud that progress in a narrow, erratic path. a severe thunderstorm in which pellets or lumps of ice (of most concern when greater than 1 inch in diameter) fall with rain.

<b>Historical Occurrences in Chickasaw County</b>	According to the NOAA Storm Events Database, there have been 8 tornados reported causing an estimated \$625,000 in property damage and \$16,000 in crop damage.				
	No fatalities or injuries reported for this hazards.				
<b>Probability and Extent</b>	Likely. Has occurred 4 times within the last decade. Greater than 25% likely.				
<b>Historical Occurrences of Hazard in Chickasaw County 2000-2023</b>					
Location	Date	EF Rating	Deaths/ Injury	Property Damage	Crop Damage
Ionia	5/8/2002	F0	0	\$0	\$0
Ionia	6/21/2002	F0	0	\$0	\$0
New Hampton	7/7/2003	F0	0	\$20,000	\$5,000
Fredricksburg	8/19/2009	EF0	0	\$20,000	\$10,000
Bassett	8/31/2014	EF0	0	\$0	\$1,000
Deerfield	5/27/2019	EF0	0	\$0	\$0
Bassett	12/15/2021	EF1	0	\$255,000	\$0
Deerfield	12/15/2021	EF0	0	\$330,000	\$0
			TOTAL	\$626,000	\$16,000
Source: NOAA Storm Events Database					
<b>Warning Time</b>		Tornado and thunderstorm watches can warn of likely conditions hours in advance of an upcoming storm. Although an imminent tornado warning may occur with 95% accuracy and those can be issued at least 15 minutes.			
<b>Duration</b>		Less than 24 hours.			
<b>Chickasaw County's Risk Index Score for Hazard:</b>		58.29 out of 100 (relatively low)			
<b>Expected Annualized Loss:</b> Source: FEMA Risk Index by County (2024)		\$1,626,027 (Relatively Low)			

## Non-Natural Type Hazards

### Definition

#### Animal / Plant/ Crop Disease

<b>Definition</b>	A pathogen that may cause stress, infection, illness, and death. Communicable among livestock flocks, interactions with wild animals, crops, and bug infestations. Naturally occurring but hazard is not in the natural hazard section because of human induced causes such as tiling in agriculture, rising temperatures from climate change, etc. may induce more of a hazard.
<b>Historical Occurrences in Chickasaw County</b>	Instances of plant, crop, or animal disease are common across Iowa and Chickasaw County. However, according to available data and input, there have been no widespread recorded occurrences of plant, crop, or animal diseases having a long-term significant impact in the planning area.
	No fatalities or injuries reported for this hazards.
<b>Probability and Extent</b>	Plant and livestock diseases occur regularly. Iowa DNR tracks and notifies the public of any new or confirmed cases of a pathogen. Chickasaw County has an agricultural crop value of \$347,450,456. This is all potentially at risk to an infestation and loss.
	<ul style="list-style-type: none"> <li>In the past decade, there have been confirmed infestations of tar spot in corn crops in the County (2018).</li> <li>Emerald Ash borer insects infested the region in 2014 and have caused the widespread decline of ash trees. Tree removal of dying trees with falling limb hazards has been a top concern for many local jurisdictions.</li> <li>Highly pathogenic avian flu cases have been confirmed in Chickasaw Co among wild geese (migratory flocks). (2023). Previously: In 2022, the Iowa Farm Bureau reports that the pathogen may have caused Iowa's egg and poultry farms to have their lowest flock numbers reported since a 2015 avian flu outbreak but has since returned to normal.</li> <li>Hog numbers remained relatively stable without major outbreaks of swine flu reported.</li> </ul>
<b>Warning Time</b>	With the reporting systems set up among agricultural stakeholders, the warning time is likely a few days ahead of time but this is set to change and varies depending on the specific contagion. Quarantines are often too late to contain pest and insect infestations or migratory bird diseases.
<b>Duration</b>	Weeks or months. Impacts can be years.

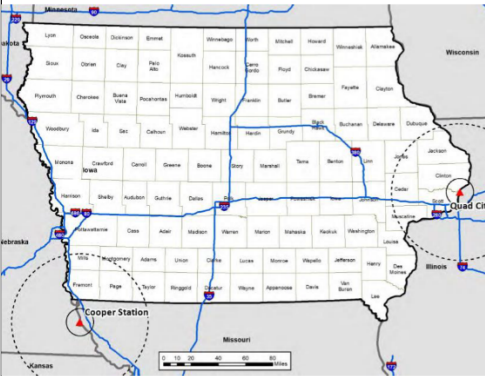
### Pandemic/Endemic Human Disease

<b>Definition</b>	<p>An epidemic is an unexpected increase in the number of disease cases in a specific geographical area. Yellow fever, smallpox, measles, and polio are prime examples of epidemics.</p> <p>A pandemic is an unexpected increase in disease across multiple continents where the contagion is often a virus. Often for new diseases, populations have no immunity and severity of the disease is dependent on the virus characteristics, spreading factors, and efficacy of any existing vaccines to control the spread.</p>
<b>Historical Occurrences in Chickasaw County</b>	<p>Pandemic human disease has long been a known threat, but it was catapulted to the forefront of public thought in 2020 as the multi-year, COVID-19 pandemic caused by the novel SARS-COV2 virus swept across the globe, causing massive disruptions to public health and healthcare systems, public life and society, and economies at every scale. The reverberations from this pandemic are ongoing.</p> <p>Endemics of flu are regular on an annual basis. Rates of infection have remained normal.</p> <p>Lyme Disease, Cryptosporidiosis, E-Coli, Latent tuberculosis are typical infections tracked by County public health officials that occur mostly from an environmental sources (contaminated meats, water).</p> <p>Total reported deaths from COVID-19 in Chickasaw County were 37. Most occurring during the 2020 outbreak.</p>
<b>Probability and Extent</b>	<p>Population of Chickasaw County was 12,012 (2020 Census) As of Dec 2023, 55% fully vaccinated for COVID 19. Rise in COVID-19 cases occur annually in the colder months making this an endemic that is likely to stay in the population.</p> <ul style="list-style-type: none"> <li>In the last 20 years, 10 events occurred where contagions have occurred as pandemics or major endemics (H1N1, SARS, MERS, Polio, Ebola (2), Malaria, Zika, COVID-19). The scale and impact of each one was dependent on the contagion characteristics, vaccine efficacy, and cooperation of world wide systems to contain these outbreaks. Based on past events, the probability is likely greater than 20% of major endemics or pandemics occurring within 10 years however the scale and magnitude can vary depending multiple factors primarily in the early weeks of appearance.</li> </ul>
<b>Warning Time</b>	Usually a few weeks ahead of time.
<b>Duration</b>	Weeks or months. If not contained, pandemics can become endemics and stay in the human population indefinitely.

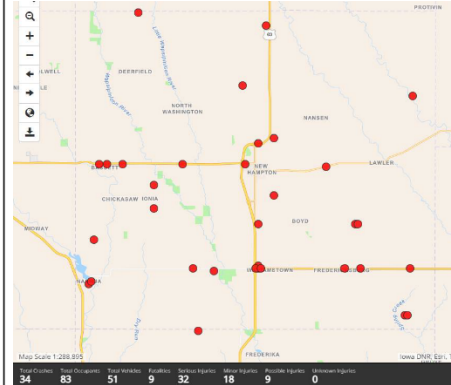
### Terrorism

<b>Definition</b>	Domestic terrorism is the focus on terrorism in this assessment. This is defined as violent, criminal acts committed by individuals and/or groups to further ideological goals stemming from domestic influences, such as those of a political, religious, social, racial, or environmental nature.
<b>Historical Occurrences in Chickasaw County</b>	<p>None in Chickasaw County.</p> <p>No injuries or deaths reported.</p>
<b>Probability and Extent</b>	<p>Population of Chickasaw County was 12,012 (2020 Census) The 2024 Homeland Threat Assessment expects domestic terrorism to remain unchanged in the coming years.</p> <ul style="list-style-type: none"> <li>Rural areas are not prone to foreign born terrorism attacks. Domestic terrorism is far more likely for rural areas and the likelihood increases with a variety of factors.</li> <li>Radicalization online and the availability of accessing weapons can make any spot prone to attack. Attacks have largely targeted schools, churches, and mass gatherings such as shopping centers.</li> </ul>
<b>Warning Time</b>	None.
<b>Duration</b>	Usually occurs in less than hour. Depending on the attack.

## Radiological

<b>Definition</b>	A radiological incident is an occurrence resulting in a release of radiological material at a fixed facility or in transit. An incident resulting in a release of radiological material at a fixed facility includes, but is not limited to, power plants, hospitals, and laboratories. Although the term "nuclear accident" has no strict technical definition, it generally refers to events involving the release of significant levels of radiation.
<b>Historical Occurrences in Chickasaw County</b>	No occurrences recorded in Chickasaw County No deaths or injuries reported due to this hazard in County.
<b>Probability and Extent</b>	Not likely. Chickasaw County is located far beyond the 50 mile hazard radius from a nuclear powerplant. Beyond a nuclear bomb attack which would likely impact only large metro areas, Chickasaw County has no vulnerability to radiological hazard.
There are two nuclear power plants that operate close to Iowa's borders; the Quad Cities Generating Station near Cordova, Illinois, and the Cooper Nuclear Station near Brownsville, Nebraska. The map below identifies the location of each facility as well as the 10-mile and 50-mile planning buffers.	<p><b>Nuclear Power Plants Impacting Iowa (2021).</b> Source: Iowa HSEMD</p> 
<b>Warning Time</b>	Usually no warning time.
<b>Duration</b>	A nuclear event is likely over in a few seconds. The fallout is likely to last for decades. For a meltdown at a power plant, this can occur over a period of hours or days. If left uncontained, the radioactivity would devastate the region and winds could carry the fallout and drop hazardous fallout a vast area for hundreds of miles.

## Transportation Incident

<b>Definition</b>	This hazard encompasses air transportation, highway transportation, railway transportation, and waterway incidents. A transportation incident is described as an accident involving any mode of transportation that directly threatens life, property damage, injury, or adversely impacts a community's capabilities to provide emergency services.
<b>Historical Occurrences in Chickasaw County</b>	<p>There have been <b>34 car crashes</b> over the last 5 years that have resulted in 9 deaths and 32 serious injured throughout the county.</p> <p>From 2011-2021, there have been <b>6 railway accidents</b> involving collisions with cars at crossings resulting in 1 death and 3 injuries. Total property damage is estimated at \$327,300.</p> <p><b>1 aviation incident</b> based on NTSB data since 2000 involving an aerial application spray run with a helicopter that struck wires due to incorrect action performance by the pilot (reason: inattentive). Substantial damage to helicopter during hard landing. Pilot survived.</p> <p>10 fatalities and 35 seriously injured from vehicle, rail, and airplane crashes over the last 5-10 years.</p>
<b>Probability and Extent</b>	Car crashes are likely to occur. Based on historical data, 15% probability of serious car accidents each year (not many confirmed involving drugs or alcohol). Most accidents involve 2 vehicles. Railway and aviation accidents are not likely and less than 10% a chance of occurring annually.
Between 2019-2023, there have been:	<p><b>Car Crashes with Highest Severity (Fatal or Severely Injured) (2019-2023).</b> Source: Iowa DOT</p>  <ul style="list-style-type: none"> <li>- 34 car crashes of the highest severity involving 9 fatalities and 32 seriously injured casualties.</li> <li>- There was 1 fatal crash involving drugs and alcohol.</li> <li>- 1 seriously injured crash involving an animal</li> </ul>
<b>Warning Time</b>	None
<b>Duration</b>	Most transportation incidents are of short duration and limited impact.

## OVERVIEW OF HAZARDS

### HAZARD IDENTIFICATION

The 2023 Iowa Hazard Mitigation Plan includes 20 different hazards. This includes 13 natural hazards and 7 non-natural hazards.

<b>2023 Iowa Hazard List</b>
<b>Natural Hazards</b>
Drought
Earthquake
Expansive Soils
Extreme Heat
Flooding - Flash
Grass/Wildland Fire
Landslide
Levee/Dam Failure
Flooding - Riverine
Severe Winter Storm
Sinkholes
Thunderstorm/Lighting/Hail
Tornado/Windstorm
<b>Other Hazard Types</b>
Animal/ Crop/ Plant Disease
Pandemic/ Endemic Human Disease
Hazardous Materials
Infrastructure Failure
Radiological
Terrorism
Transportation Incidents

It is important to note that the focus of mitigation is on reducing long-term risks of damage or threats to public health and safety. Not all hazards will impact or affect all participating communities and each hazard can have different magnitudes depending on the location.

This is why you will each individually complete a hazard risk assessment in the form of a scoring sheet. Fill out the hazard risk assessment scoring sheet based on your jurisdiction.

Each hazard has four factors that will be scored between 1 and 4. See the following pages for descriptions of the ratings for each associated factor. Note that each factor does not have the same description so make sure to review the descriptions and assign accordingly.



## **Hazard Risk Assessment**

### **Scoring Descriptions**

<b>PROBABILITY</b>		
The probability score reflects the likelihood of the hazard occurring again in the future. Consider the historical occurrence.		
<b>Score</b>		<b>Description</b>
1	Unlikely	Less than 10% probability in any given year (up to 1 in 10 chance of occurring), history of events is less than 10% likely or the event is unlikely but there is a possibility of its occurrence.
2	Occasional	Between 10% and 20% probability in any given year (up to 1 in 5 chance of occurring), history of events is greater than 10% but less than 20% or the event could possibly occur.
3	Likely	Between 20% and 33% probability in any given year (up to 1 in 3 chance of occurring), history of events if greater than 20% but less than 33% or the event is likely to occur.
4	Highly Likely	More than 33% probability in any given year (event has up to a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.

<b>MAGNITUDE / SEVERITY</b>		
The magnitude is the impact of a hazard event and the extent that hazards affect the County and is measured using technical measures specific to the hazard.		
<b>Score</b>		<b>Description</b>
1	Negligible	Less than 10% of property severely damaged, shutdown of facilities and services for less than 24 hours, and/or injuries/illnesses treatable with first aid
2	Limited	10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
3	Critical	25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
4	Catastrophic	More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.

### WARNING TIME

*The speed of onset is the amount of warning time available before the hazard occurs. For many of the atmospheric natural hazards there is a considerable amount of warning time as opposed to the human caused accidental hazards that occur instantaneously or without any significant warning time.*

Score	Description
1	More than 24 hours warning time.
2	12 to 24 hours warning time.
3	6 to 12 hours warning time
4	Minimal or no warning time (up to 6 hours warning)

### DURATION

This consists of the typical amount of time that the jurisdiction is impacted by the hazard. As an example, a snowstorm will likely last several hours, whereas a lightning strike would last less than a second.

Score	Description
1	Less than 6 hours
2	Less than 1 day
3	Less than 1 week
4	More than 1 week

**Hazard Risk Assessment Summary for: \_\_\_\_\_  
(Jurisdiction)**

Hazards	Probability	Magnitude	Warning Time	Duration
Drought				
Earthquake				
Expansive Soils				
Extreme Heat				
Flooding - Flash				
Grass/Wildland Fire				
Landslide				
Levee/Dam Failure				
Flooding - Riverine				
Severe Winter Storm				
Sinkholes				
Thunderstorm/ Lighting/ Hail				
Tornado/Windstorm				
Animal/ Crop/ Plant Disease				
Pandemic/ Endemic Human Disease				
Hazardous Materials				
Infrastructure Failure				
Radiological				
Terrorism				
Transportation Incidents				

Completed by: \_\_\_\_\_

**Please complete the scores for Probability, Magnitude, Warning Time, and Duration based on the numeric criteria provided above. The weights in the assessment formula will be factored in later to generate the final risk assessment score.**

### Capability Assessment for Implimenting Your Mitigation Strategy

**Please complete this and return to Leon at our next meeting (Tuesday, April 2)**

Instructions: Write your jurisdiction below and answer whether your jurisdiction has the following regulatory documents or plans by writing Yes (Y) or No (N). Under the zoning ordinance section, write Yes (Y), No (N), or restricted residential (RR) ordinance. The 2019 Hazard Mitigation Plan Responses are below as a reference for you.

2023 Hazard Mitigation Plan Participant Responses									
Write your jurisdiction below and provide answers Yes or No for each column as to whether your jurisdiction has these documents or not.	Previous HMP Participant?	Comprehensive Plan?	Building Code?	Zoning Ordinance? Note: RR=restricted residential	Subdivision Regulations?	Floodplain Management Ordinance?	Tree- Trimming Ordinance?	Storm Water Ordinance?	Snow Removal Ordinance?

#### FOR REFERENCE

#### 2019 Hazard Mitigation Plan Responses

Communities	Previous HMP Participant?	Comprehensive Plan?	Building Code?	Zoning Ordinance? Note: RR=restricted residential	Subdivision Regulations?	Floodplain Management Ordinance?	Tree- Trimming Ordinance?	Storm Water Ordinance?	Snow Removal Ordinance?
City of Alta Vista	Y	N	Y	N	N	N	Y	Y	Y
City of Fredericksburg	Y	Y	N	Y	N	N	Y	Y	Y
City of Ionia	Y	N	Y	RR	N	N	N	Y	Y
City of Lawler	Y	Y	Y	RR	Y	Y	Y	N	Y
City of Nashua	Y	Y	Y	RR	Y	Y	Y	N	Y
City of New Hampton	Y	Y	N	Y	Y	Y	Y	Y	Y
City of North Washington	Y	N	N	N	N	N	N	N	N
Chickasaw County	Y	N	N	N	N	Y	N	N	N

# Plan Committee Meeting #2

Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan Update  
Tuesday, March 26, 2024

## Agenda

1. Welcome
2. Overview of Hazards
3. County's Historical Hazard Information (w/ probability, magnitude, duration, and warning time)
4. Handout: Hazard Risk Assessment Summary Worksheet (**Complete and Turn In**)
5. Handout: Capability Assessment (**Bring Back to Next Meeting**)
6. Previous Meeting Assignments
  - a. 2019 Mitigation Strategy Update Tables
    1. COMPLETED: New Hampton, Lawler, North Washington, Fredericksburg, New Hampton CSD
    2. NOT COMPLETED: Chickasaw County, Alta Vista, Ionia, Nashua, Nashua-Plainfield CSD, Sumner-Fredericksburg CSD,
  - b. Community Profile
    1. COMPLETED: Chickasaw County, Fredericksburg, Ionia, New Hampton,
    2. NOT COMPLETED: Lawler, North Washington, Bassett, Alta Vista, Nashua, Nashua Plainsfield CSD, New Hampton CSD, Sumner-Fredericksburg CSD
7. Next Meeting
  - a. Tuesday, April 2, 2024, at 6:00 PM – same location
8. Adjourn

# Overview of Hazards in Chickasaw County's Plan

- 20 Hazards
  - 13 Natural Hazards
  - 7 Human Caused or Technological Hazards
- 2023 State Mitigation Plan by Iowa Homeland Security and Emergency Management Department (IHSEMD)

2023 Iowa Hazard List	
Natural Hazards	
1	Drought
2	Earthquake
3	Expansive Soils
4	Extreme Heat
5	Flooding - Flash
6	Grass/Wildland Fire
7	Landslide
8	Levee/Dam Failure
9	Flooding - Riverine
10	Severe Winter Storm
11	Sinkholes
12	Thunderstorm/Lighting/Hail
13	Tornado/Windstorm
Other Hazard Types	
14	Animal/ Crop/ Plant Disease
15	Pandemic/ Endemic Human Disease
16	Hazardous Materials
17	Infrastructure Failure
18	Radiological
19	Terrorism
20	Transportation Incidents

## Hazard Risk Assessment

WARNING TIME	
The speed of onset is the amount of warning time available before the hazard occurs. For many of the atmospheric natural hazards there is a considerable amount of warning time as opposed to the human caused accidental hazards that occur instantaneously or without any significant warning time.	
Score	Description
1	More than 24 hours warning time.
2	12 to 24 hours warning time.
3	6 to 12 hours warning time
4	Minimal or no warning time (up to 6 hours warning)

DURATION	
This consists of the typical amount of time that the jurisdiction is impacted by the hazard. As an example, a snowstorm will likely last several hours, whereas a lightning strike would last less than a second.	
Score	Description
1	Less than 6 hours
2	Less than 1 day
3	Less than 1 week
4	More than 1 week

PROBABILITY	
The probability score reflects the likelihood of the hazard occurring again in the future. Consider the historical occurrence.	
Score	Description
1	Unlikely Less than 10% probability in any given year (up to 1 in 10 chance of occurring), history of events is less than 10% likely or the event is unlikely but there is a possibility of its occurrence.
2	Occasional Between 10% and 20% probability in any given year (up to 1 in 5 chance of occurring), history of events is greater than 10% but less than 20% or the event could possibly occur.
3	Likely Between 20% and 33% probability in any given year (up to 1 in 3 chance of occurring), history of events if greater than 20% but less than 33% or the event is likely to occur.
4	Highly Likely More than 33% probability in any given year (event has up to a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.

MAGNITUDE / SEVERITY	
The magnitude is the impact of a hazard event and the extent that hazards affect the County and is measured using technical measures specific to the hazard.	
Score	Description
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2	Limited 10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
3	Critical 25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
4	Catastrophic More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.

# Post Assessment Reflection



As you discussed the various hazards, what hazard stood out to you and why?



What action steps are beginning to emerge as priorities in your discussion of the various hazards?



What are some considerations that need to be through through with your jurisdiction?

## Next Week's Assignments

- Capability Assessment
  - Complete and Return Next Week
- Mitigation Strategy
  - Not Completed:
- Community Profile
  - Not Completed:







# Next Meeting

- Tuesday, April 2, 2024, at 6:00 PM

Leon Begay  
319-235-0311  
[Lbegay@inrcog.org](mailto:Lbegay@inrcog.org)

- PUBLIC MEETING AGENDA -  
Chickasaw County Multi-Jurisdictional  
Hazard Mitigation Plan Committee Meeting #3

**Date:** Tuesday, April 2, 2024

**Time:** 6:00 PM

**Place:** 260 E. Prospect Street  
New Hampton, Iowa 50659

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9. Welcome

10. Handout: Critical Facilities in Your Community Worksheet

- a. Part of your vulnerability assessment will be to list any critical facilities that are crucial for community operations, maintaining existing quality of life, and possibly house any vulnerable groups/populations.
- b. Find your community and review the list, make corrections or edits, and/or add new facilities to include in plan
- c. Turn in before you leave

11. Handout: Problem Statements and Mitigation Action Worksheet

- a. Turn in before you leave

12. Previous Meeting Assignments (Please turn in if you haven't already)

- a. Hazard Risk Assessment Summary Worksheet
  1. Need: New Hampton CSD, Summer-Fredericksburg CSD
- b. Capability Assessment
  1. Need: City of Alta Vista, City of Ionia, City of Lawler, City of Nashua, City of Bassett, Nashua Plainsfield CSD, New Hampton CSD, Sumner-Fredericksburg CSD
- c. 2019 Mitigation Strategy Update Tables
  1. Need: Chickasaw County, City of Ionia
- d. Community Profile
  1. Need: City of Bassett, New Hampton CSD, City of Protivin, Sumner-Fredericksburg Comm School District

13. Next Meeting

- a. Tuesday, April 16, 2024, at 6:00 PM – same location

14. Adjourn

**Members of the public are welcome to attend and observe the meeting.  
Committee participants are expected to attend and complete meeting materials.  
Parking Available in the Rear of Building**

For Questions or Comments, contact meeting coordinator:  
Leon Begay / INRCOG / Office: (319) 235-0311 / [lbegay@inrcog.org](mailto:lbegay@inrcog.org)

# Chickasaw County Hazard Mitigation Committee

19-Mar-24

APRIL 2 2024

NAME	REPRESENTING
Jeremy Mackintosh	Lenoir Fire
Brad Moudry	Potomac Fire + City of Potomac
Randy Taylor	Ionia
Derek Day	Ionia Fire
Fred Matlage	S-F CSI
Samantha Johnson	Nashua
Mark Minter	Lewiston Mayor
Megan Bates	City of NW
Tim Pedersen	New Hampton Police
Burt Ostert	City of Alta Vista
Ry Ambrecht	Fredericksburg
James Mitchell	Fredericksburg
Tom Johnson	NASHUA FD
STERILON DETMER	FREDERICKSBURG
Casey Mai	New Hampton
Ryan Shaver	Chickasaw County
Toby Schwickcrath	New Hampton Fire
Jay Jurens	New Hampton Schools

SHAR GERTS  
MATT KUBIN

City of New Hampton  
County

### Vulnerability Assessment: Critical Facilities

List critical facilities in your community. Critical facilities are important to the operation of a community, the quality of life, and may contain key components of the economic sector. Designated facilities for community emergency shelters should also be listed.

City of Alta Vista		Confirm whether the list of critical facilities is accurate by checking Y or N.	
Critical Facilities List (taken from 2019 Hazmit Plan)	Y	N	If you would like to change or remove any of these locations, write reason below (ex. Renamed, relocated, no longer open).
Zion Lutheran Church			
Alta Vista V.F.W.			
St. Bernard's Catholic Church			
City Library			
Schucky's			
Alta Vista Municipal Center			
City Hall/Fire Department			
Additional facilities to add to list of critical buildings? Write the name below.			

City of Fredericksburg		Confirm whether the list of critical facilities is accurate by checking Y or N.	
Community's Critical Facilities (taken from 2019 Hazmit Plan)	Y	N	If you would like to change or remove any of these locations, write reason below (ex. Renamed, relocated, no longer open).
Middle School			
Elementary School			
Community Center/City Hall			
Hillcrest Baptist Church			
St. Paul's Lutheran Church			
Upham Memorial Library			
United Methodist Church			
Whispering Willow Assisted Living			
Fredericksburg Family Health Clinic			
Fun in the Sun Daycare			
Fire Station			
Kerry Ingredients			
AVEKA Manufacturing			
Farmers Win Co-op			
Wastewater Lagoons			
Fire Station			
Additional facilities to add to list of critical buildings? Write the name below.			

Please return to INRCOG facilitator before you leave.

### Vulnerability Assessment: Critical Facilities

List critical facilities in your community. Critical facilities are important to the operation of a community, the quality of life, and may contain key components of the economic sector. Designated facilities for community emergency shelters should also be listed.

City of Ionia	Confirm whether the list of critical facilities is accurate by checking Y or N.		
Community's Critical Facilities (taken from 2019 Hazmit Plan)	Y	N	If you would like to change or remove any of these locations, write reason below (ex. Renamed, relocated, no longer open).
Water Supply			
Pump Stations			
Sewer System			
Fire Department/ Community Building			
Additional facilities to add to list of critical buildings? Write the name below.			

City of Lawler	Confirm whether the list of critical facilities is accurate by checking Y or N.		
Community's Critical Facilities (taken from 2019 Hazmit Plan)	Y	N	If you would like to change or remove any of these locations, write reason below (ex. Renamed, relocated, no longer open).
Bank of Iowa			
Hugeback Funeral Home			
American Heartland Inc.			
Lawler Library			
Kohlmeyer, Inc			
Sandean Inc.			
Mt. Carmel Church			
Mt. Carmel CCD Building			
Lawler Municipal Hall			
Hole in the Wall			
Brite Spot			
Fire Star Coop			
Cash Inc.			
Lawler Fire Station			
List additional facilities, if needed? Write the name below.			

Please return to INRCOG facilitator before you leave.

### Vulnerability Assessment: Critical Facilities

List critical facilities in your community. Critical facilities are important to the operation of a community, the quality of life, and may contain key components of the economic sector. Designated facilities for community emergency shelters should also be listed.

City of North Washington		Confirm whether the list of critical facilities is accurate by checking Y or N.	
Community's Critical Facilities (taken from 2019 Hazmit Plan)	Y	N	If you would like to change or remove any of these locations, write reason below (ex. Renamed, relocated, no longer open).
Fire Station			
List additional facilities, if needed? Write the name below.			

City of Bassett		Confirm whether the list of critical facilities is accurate by checking Y or N.	
Community's Critical Facilities	Y	N	If you would like to change or remove any of these locations, write reason below (ex. Renamed, relocated, no longer open).
City Hall/Community Hall			
Fire Station			
List additional facilities, if needed? Write the name below.			

City of Nashua		Confirm whether the list of critical facilities is accurate by checking Y or N.	
Community's Critical Facilities (taken from 2019 Hazmit Plan)	Y	N	If you would like to change or remove any of these locations, write reason below (ex. Renamed, relocated, no longer open).
Welcome Center (Tornado Shelter)			
Lift Station			
Fire Station			
Wastewater Treatment Plant			
Police Department/City Hall			
Wells			
City Shed			
List additional facilities, if needed? Write the name below.			

Please return to INRCOG facilitator before you leave.



### Vulnerability Assessment: Critical Facilities

List critical facilities in your community. Critical facilities are important to the operation of a community, the quality of life, and may contain key components of the economic sector. Designated facilities for community emergency shelters should also be listed.

City of New Hampton	Confirm whether the list of critical facilities is accurate by checking Y or N.		
Community's Critical Facilities (taken from 2019 Hazmit Plan)	Y	N	If you would like to change or remove any of these locations, write reason below (ex. Renamed, relocated, no longer open).
Fire Station			
City Hall			
New Hampton Public Library			
Wastewater Treatment Plant			
Lift Stations			
Water Towers			
Mercy Hospital			
New Hampton Police Department			
New Hampton Care Center			
New Hampton Nursing and Rehabilitation Center			
Linn Haven Rehab and Healthcare			
New Hampton Municipal Light			
Little Sprouts Day Care			
Little Ducklings Day Care			
St. Joseph Community School			
New Hampton High School and Elementary School			
List additional facilities, if needed? Write the name below.			

Please return to INRCOG facilitator before you leave.

### Vulnerability Assessment: Critical Facilities

List critical facilities in your community. Critical facilities are important to the operation of a community, the quality of life, and may contain key components of the economic sector. Designated facilities for community emergency shelters should also be listed.

County of Chickasaw County		Confirm whether the list of critical facilities is accurate by checking Y or N.	
County's Critical Facilities	Y	N	If you would like to change or remove any of these locations, write reason below (ex. Renamed, relocated, no longer open).
County Courthouse			
Emergency Communication Center			
Rescue Squad facility(s)			
County Jail			
Mercy Medical Center - New Hampton			
Sheriff's Office			
List additional facilities, if needed? Write the name below.			

City of Protivin		Confirm whether the list of critical facilities is accurate by checking Y or N.	
Community's Critical Facilities	Y	N	If you would like to change or remove any of these locations, write reason below (ex. Renamed, relocated, no longer open).
City Hall/Post Office			
Community Center			
Wastewater Treatment Lagoon			
Fire Station			
List additional facilities, if needed? Write the name below.			

Please return to INRCOG facilitator before you leave.

## **PROBLEM STATEMENTS AND MITIGATION ACTION WORKSHEET**

Each of your local hazard mitigation plans will have an updated mitigation strategy. This will be put together based on your previous plan. This worksheet will help you form new mitigation activities.

There are five types of mitigation actions provided in tables below. Each has a description and examples of associated mitigation actions/activities/programs.

**Problem Statements are** concise, short sentences that describe one main issue or challenge that needs to be addressed. Problem statements usually consist of 2-3 sentences that outline the current situation, specific problem or obstacle, and sometimes indicates its impact or significance. See below for an example.

### **Write Problem Statements and Mitigation Actions/Activities Related to a Hazard Your Community is Facing**

- (1) Please write 1 or more problem statement describing an issue or challenge in your community related to a hazard that is affecting your community.
- (2) List actions or activities that address the problem/issue.
- (3) Write the estimated timeline to complete each mitigation action line item
- (4) Put down the estimated cost of implementing the action/activity
- (5) Write the designated person that will carry out the action/activity
- (6) Write whether this item has a high, medium, or low priority to accomplish in the next 5 years.

<b>Example</b>				
<b>(1) Write Problem Statement:</b> <i>Dead ash trees are becoming a hazard with falling limbs especially during a wind storm or ice/snow. Personal property and people are at risk of falling limbs within right of way. There is no funding for tree removal in the city.</i>				
<b>2) Mitigation Action/Activity</b>  <i>Write down action steps or mitigation activities that you are looking to accomplish that address the issue above. For each action/activity you list below, fill out the columns to the right. All columns.</i>	<b>3) Timeline</b>  <i>Immediate= 1 month – 6 months Short-term = 6 months – 3 years Mid-term = 3 – 5 yrs Long-term= 5 yrs or more</i>	<b>4) Est. Cost</b>  <i>Minimal = 0 - \$10K Moderate = \$10K - \$30K High = \$30K +</i>	<b>5) Designated Person</b> <i>City clerk, city council, County EMA, committee, etc</i>	<b>6) Priority</b>  <i>High, Medium, or Low</i>
<i>Have part time maintenance worker trim hazardous tree limbs that pose threat to public right of way.</i>	<i>Immediate</i>	<i>Minimal</i>	<i>City council, fire department</i>	<i>High</i>
<i>Update city nuisance tree removal and enforce ordinance</i>	<i>Immediate</i>	<i>Minimal</i>	<i>City Council, city clerk, mayor</i>	<i>High</i>

**Instructions:** Write at least one problem statement for each type of mitigation action.

<b>Mitigation Type: Local Plans and Regulations</b> <i>Actions by administrative or regulatory processes which direct how land and buildings are developed and built. These actions also include regulations by public entities to reduce hazard losses.</i>		<b>Examples</b> <ul style="list-style-type: none"> <li>- Comprehensive plans</li> <li>- Land use ordinances</li> <li>- Development Review</li> <li>- Building Codes and Enforcement</li> <li>- Open space preservation</li> <li>- Stormwater management regulations</li> </ul>		
<b>1) Write Problem Statement(s) here:</b> <b>a)</b>				
<b>b)</b>				
<b>c)</b>				
<b>2) Mitigation Action/Activity</b> <i>Write down action steps or mitigation activities that you are looking to accomplish that address the issue above. For each action/activity you list below, fill out the columns to the right. All columns.</i>	<b>3) Timeline</b> <b>Immediate=</b> 1 month – 6 months <b>Short-term =</b> 6 months – 3 years <b>Mid-term =</b> 3 – 5 yrs <b>Long-term=</b> 5 yrs or more	<b>4) Est. Cost</b> <b>Minimal =</b> 0 - \$10K <b>Moderate =</b> \$10K - \$30K <b>High =</b> \$30K +	<b>5) Designated Person</b> City clerk, city council, County EMA, committee, etc	<b>6) Priority</b> <b>High, Medium, or Low</b>

**Instructions:** Write at least one problem statement for each type of mitigation action.

<b>Mitigation Type: Structure and Infrastructure Projects</b> <i>Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.</i>		<b>Examples</b> - Acquisitions of structures in flood prone areas	- Undergrounding utilities - Structural retrofits	- Safe rooms - Culverts
<b>2) Write Problem Statement(s) here:</b> <b>a)</b>				
<b>b)</b>				
<b>c)</b>				
<b>2) Mitigation Action/Activity</b> <i>Write down action steps or mitigation activities that you are looking to accomplish that address the issue above. For each action/activity you list below, fill out the columns to the right. All columns.</i>	<b>3) Timeline</b> <b>Immediate=</b> 1 month – 6 months <b>Short-term =</b> 6 months – 3 years <b>Mid-term =</b> 3 – 5 yrs <b>Long-term=</b> 5 yrs or more	<b>4) Est. Cost</b> <b>Minimal =</b> 0 - \$10K <b>Moderate =</b> \$10K - \$30K <b>High =</b> \$30K +	<b>5) Designated Person</b> City clerk, city council, County EMA, committee, etc	<b>6) Priority</b> High, Medium, or Low

**Instructions:** Write at least one problem statement for each type of mitigation action.

<b>Mitigation Type: Natural system protection and nature-based solutions</b> <i>Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions</i>		<b>Examples</b> - Sediment and erosion control - Stream restoration - Greenways - Rain gardens	- Controlled burns for prairie restoration & grass fire prevention	- Source water protection plans - Wetland preservation
<b>3) Write Problem Statement(s) here:</b> <b>a)</b>				
<b>b)</b>				
<b>c)</b>				
<b>2) Mitigation Action/Activity</b> <i>Write down action steps or mitigation activities that you are looking to accomplish that address the issue above. For each action/activity you list below, fill out the columns to the right. All columns.</i>	<b>3) Timeline</b> <b>Immediate</b> = 1 month – 6 months <b>Short-term</b> = 6 months – 3 years <b>Mid-term</b> = 3 – 5 yrs <b>Long-term</b> = 5 yrs or more	<b>4) Est. Cost</b> <b>Minimal</b> = 0 - \$10K <b>Moderate</b> = \$10K - \$30K <b>High</b> = \$30K +	<b>5) Designated Person</b> City clerk, city council, County EMA, committee, etc	<b>6) Priority</b> <b>High, Medium, or Low</b>

**Instructions:** Write at least one problem statement for each type of mitigation action.

<b>Mitigation Type:</b> Education and Awareness Programs <i>These types of actions keep residents informed about potential natural disasters.</i>	<b>Examples</b> - Ready Iowa - Radio or television spots - Websites w/ maps & info	- Real estate disclosure - Outreach to underserved areas -	- Outreach materials - Awareness Week -	
<b>4) Write Problem Statement(s) here:</b> <b>a)</b>				
<b>b)</b>				
<b>c)</b>				
<b>2) Mitigation Action/Activity</b> <i>Write down action steps or mitigation activities that you are looking to accomplish that address the issue above. For each action/activity you list below, fill out the columns to the right. All columns.</i>	<b>3) Timeline</b> <b>Immediate=</b> 1 month – 6 months <b>Short-term =</b> 6 months – 3 years <b>Mid-term =</b> 3 – 5 yrs <b>Long-term=</b> 5 yrs or more	<b>4) Est. Cost</b> <b>Minimal =</b> 0 - \$10K <b>Moderate =</b> \$10K - \$30K <b>High =</b> \$30K +	<b>5) Designated Person</b> City clerk, city council, County EMA, committee, etc	<b>6) Priority</b> High, Medium, or Low



**Instructions:** Write at least one problem statement for each type of mitigation action.

<b>Mitigation Type: Emergency Services</b> <i>Actions that protect people and property during and immediately after a disaster or hazard event.</i>		<b>Examples</b> - Warning systems - Emergency response services	- Protection of critical facilities.	
<b>5) Write Problem Statement(s) here:</b> <b>a)</b>				
<b>b)</b>				
<b>c)</b>				
<b>2) Mitigation Action/Activity</b> <i>Write down action steps or mitigation activities that you are looking to accomplish that address the issue above. For each action/activity you list below, fill out the columns to the right. All columns.</i>	<b>3) Timeline</b> <b>Immediate=</b> 1 month – 6 months <b>Short-term =</b> 6 months – 3 years <b>Mid-term =</b> 3 – 5 yrs <b>Long-term=</b> 5 yrs or more	<b>4) Est. Cost</b> <b>Minimal =</b> 0 - \$10K <b>Moderate =</b> \$10K - \$30K <b>High =</b> \$30K +	<b>5) Designated Person</b> City clerk, city council, County EMA, committee, etc	<b>6) Priority</b> High, Medium, or Low

# 2024 CHICKASAW COUNTY MULTI- JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

## COMMITTEE MEETING #3

April 2, 2024  
6:00 PM

Chickasaw County  
Public Health Building

### Meeting Agenda

1. Welcome
2. Handout: Critical Facilities in Your Community
  - a. Turn in before you leave
3. Handout: Problem Statements and New Mitigation Actions
  - a. Turn in before you leave
4. Previous Meeting Assignments
  - a. Community Profile
    - a. Need: City of Nashua, City of Bassett, New Hampton CSD, City of Protivin, Summer-Fredericksburg CSD
  - b. 2019 Mitigation Strategy Update Tables
    - a. Need: Chickasaw County, City of Ionia, City of Nashua
  - c. Capability Assessment
    - a. Need: City of Alta Vista, City of Ionia, City of Lawler, City of Nashua, City of Bassett, Nashua Plainsfield CSD, New Hampton CSD, Summer-Fredericksburg CSD
5. Next Meeting - Tuesday, April 16, 2024, at 6:00 PM - same location
  - a) Review Drafts of Local Hazard Mitigation Plan
  - b) Share with your boards for their review
  - c) Schedule Hazard Mitigation Plan on city council meeting agenda for May
  - d) Hold public hearing
  - e) Adopt local plans and resolutions
6. Adjourn



- Build an Understanding of Risk
  - 1) Hazard Risk Assessment
  - 2) Assess or Determine Vulnerabilities to Hazards
- Measure Your Community's Capabilities
- Measure potential losses
  - Losses occur with a hazard event
  - Usually include lives/injuries, property damage, and/or community way of life
- **Help you strategize mitigation actions**
  - Priority level
  - Estimated costs
  - Timeline to complete
  - Designated person to carry out action/activity

## Assessing Vulnerabilities: Critical Facilities in Your Community

- Which facilities (or buildings) are crucial?
- If this building was damaged or destroyed, the impact would be significant.
- Critical facilities can be:
  - Location of community operations
  - Facilities that sustain the current quality of life
  - A place with vulnerable populations



# Two Main Components to Build Your Implementation Strategy



+



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2019 Mitigation Action  
Updates

Problem Statements and  
New Mitigation Actions

Mitigation Strategy



## Structure and Infrastructure Projects

Actions that either modify existing buildings or structures to protect them from a hazard or remove them out of the hazard area.



## Natural System Protection and Nature- Based Solutions

Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions



## Education and Awareness Programs

These actions keep residents informed about potential natural disasters



## Emergency Services

Actions that protect people and property during and immediately after a disaster or hazard event



## Local Plans and Regulations

Actions by administrative or regulatory processes which direct how land and buildings are developed and built. These actions include regulations by public entities to reduce hazard losses.

# Types of Mitigation Actions

# What are problem statements

- 2 or 3 sentences related to hazards in your community
- 1<sup>st</sup> Sentence:
  - A short, concise description of the main issue or challenge that needs to be addressed.
- 2<sup>nd</sup> -3<sup>rd</sup> Sentences:
  - Describe the importance or impact of this issue and/or describe who it affects.
  - May describe a possible timeframe



## Example

Problem statement related to hazards in your community -

"Our tornado sirens are operating past their expected lifetime. It is urgent to get them replaced before they malfunction before or during an emergency. We cannot meet cost matching requirements to get awarded grants to fund new sirens until next year."

- Problem statements don't need to mention history of the problem or list reasons why this remains a problem, blame, etc.
- The problem statements have what you need to start creating list of actions to achieve the solution



## Problem Statement Worksheet

1. Write problem statement(s) for each type of mitigation action
  2. Write actions or activities that address the hazard
  3. Timeline
  4. Estimated Cost
  5. Designated Person or Partners to Complete Action Item
  6. Priority
- 

- Breaking down a large task can make your mitigation actions achievable and pragmatic.
- See your 2019 Mitigation Strategy for ideas on potential actions/activities. Feel free to re-use and edit previous action items.
- Need help? Raise your hand for assistance

## Questions for You

- A. Funding and community capabilities (i.e. people power, planning, communal efforts) are limited for every community. How did you consider this in your approach when writing new mitigation actions? (*ex. collaboration opportunities, sharing resources/technology, collaborate on grant applications*)
- B. Do you have ideas or suggestions to make your mitigation plans more accessible for your community?
- C. What funding sources are you considering to get the action/activity completed? (i.e. city general fund, mitigation grants)

## Next Steps Following Meeting #4

- A. Return any materials not yet completed, email to [lbegay@inrcog.org](mailto:lbegay@inrcog.org)
- B. Attend Meeting #4 (April 16) in two weeks
- C. Review Draft Local Hazard Mitigation Plan and comment any changes, edits
- D. Send to your boards
- E. Each community will have a public hearing at your board meeting (**May**)
  - INRCOG and/or Jeff B. will attend public hearing, answer questions, present hazard mitigation plan to your jurisdiction
- F. Council/Board votes to adopt updated hazard mitigation plan and resolution

Plan Coordinators Will Assemble the County Wide Plan

- 1. BoS adopts plan and it will be sent to state mitigation office for 1<sup>st</sup> review
- 2. Once approved, send to FEMA for final review and approval - **July 2024**

## Upcoming Meeting

- Tuesday April 16, 2023
- Same time and location
- Review of Individual Jurisdictional Plans for comment and feedback
- Public Notice in Next Edition of New Hampton Tribune (this Thursday) has April 9<sup>th</sup> announced – ignore this. I will send out a new notice for April 16<sup>th</sup> instead.



- PUBLIC MEETING AGENDA-  
Chickasaw County Multi-Jurisdictional  
Hazard Mitigation Plan Committee Meeting #4

**Date:** Tuesday April 22, 2024

**Time:** 6 PM – 7:30 PM

**Place:** 260 E. Prospect Street  
New Hampton, Iowa 50659

---

15. Welcome and Introductions

16. Discuss Plan Drafts

17. Finalize Calendar for Board Action

18. Discuss Next Steps

19. Review and Complete Previous Meeting Assignments

- a. New Hampton CSD
- b. Nashua Plainfield CSD
- c. City of Bassett
- d. City of Nashua
- e. City of Protivin

20. Adjourn

**THIS IS A PUBLIC MEETING**

**MEMBERS OF THE COMMUNITY, NEIGHBORING COUNTIES, COMMUNITY ORGS,  
FARMERS ARE INVITED TO ATTEND THIS MEETING**

**Parking Available in the Rear of Building**

For Questions or Comments, contact:  
Leon Begay / INRCOG / Office: (319) 235-0311 / lbegay@inrcog.org

Name	Represent
Jeremy Mollenberg	Lawler
Randy Taylor	Ionia (City)
Derek Day	Ionia (Fire)
Mark Muntethies	Lawler city
James Mitchell	Fredericksburg
SHERIDAN DERRIN	FREDERICKSBURG
Roy Ambrecht	Fredericksburg
Burt Ostert	Alta Vista
Amylaures	Alta Vista
Larrylaures	Alta Vista
Casey Mai	New Hampton
Matt Kuhn	County
Samantha Johnson	Nashua
Karen Clemens	New Hampton
Steve GEERTS	New Hampton

# 2024 CHICKASAW COUNTY MULTI- JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

## COMMITTEE MEETING #4

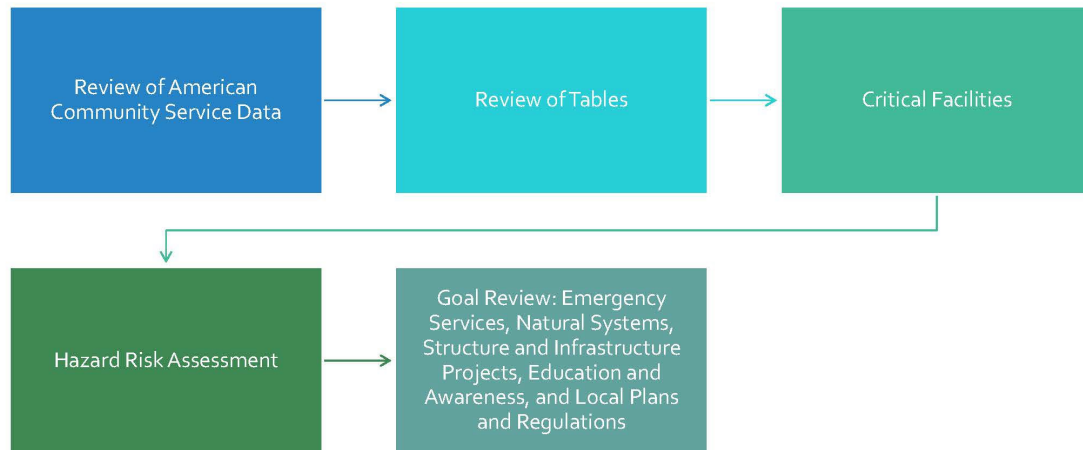
April 22, 2024  
6:00 PM

Chickasaw County  
Public Health Building

### Meeting Agenda

1. Welcome
2. Discuss Plan Draft
3. Finalize Calendar for Board Action
4. Discuss Next Steps
5. Review and Complete Previous Meeting Assignments
  1. New Hampton CSD
  2. Nashua Plainfield CSD
  3. City of Bassett
  4. City of Nashua
  5. City of Protivin
6. Adjourn

## Draft Plan Review



## Finalizing the Calendar for Board Action

- **Step 1:** Set the Public Hearing
- **Step 2:** Publish Public Hearing Notice (Leon will publish)
- **Step 3:** Send Leon any final comments to address any changes or additions to draft plan before the public hearing
- **Step 4:** Hold Public Hearing for Approval
  - Leon will provide resolution and plan for the Board's packet



## Next Steps Following Board Approval

1. Assemble the County Wide Plan following all approvals
2. Submit full plan to the Board of Supervisors for adoption
3. Submit final plan sent to Iowa Homeland Security for review
4. Once approved, FEMA begins 45-day Review

## Final Worksheet Completion

Please Stay After to Complete Final Worksheets In Your Packet

1. New Hampton CSD
2. Nashua Plainfield CSD
3. City of Bassett
4. City of Nashua
5. City of Protivin



## Questions or Comments

- Leon Begay
- [lbegay@inrcog.org](mailto:lbegay@inrcog.org)
- 319-235-0311

# 2023 CHICKASAW COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

APPENDIX P

PUBLIC NOTICES



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STATE OF IOWA

Chickasaw County,



801 Riverside Drive • Charles City, IA 50616  
For questions please call (641) 228-3211

I, Christopher Hall, Owner/Publisher, of the NEW HAMPTON TRIBUNE, in said county, do hereby state that I certify under penalty of perjury and pursuant to the laws of the State of Iowa that a notice, which is a true copy, has been printed and published each week for 1 consecutive weeks in the regular daily issues of said paper commencing with the issue of Thursday on the 28 day of March A.D., 2024 and ending with the issue of, March 28, 2024

Christopher J. Hall  
Owner/Publisher

Christine A. Rimrod  
Notary Public in and for the State of Iowa

Acknowledgement and charges for above services \$ 14.72

Subscribed and sworn to before me this 28 day of March A.D., 2024



### Legal Notice

#### 2023 CHICKASAW COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN- NING COMMITTEE - 3rd Meeting

Chickasaw County's Emergency Management Agency is holding their 3rd planning committee meeting to update the 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. The purpose of the meeting is: (a) to gather information from jurisdictions in order to update their 2023 hazard mitigation plan in accordance with regulatory criteria for federal grant assistance approval, as part a wider planning effort, and; (b) ensure previous or new County jurisdictions that participate in these meetings are in good standing and eligible for disaster mitigation grant programs.

This meeting will involve hazard selection, hazard risks, and completing meeting materials required from jurisdiction participants. The meeting will take place on Tuesday, April 2, 2024 at 6PM- 7:30PM in the Meeting Room of the Chickasaw County Public Building located at 260 E. Prospect Street, New Hampton, IA 50659. The public is invited to attend and observe the meeting.

For information about meeting details, contact the meeting coordinator, Leon Begay, (319) 235-0311, or lbe-gay@inrcog.org.

No. 23801  
3/28/24

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Christopher J. Hall  
Owner/Publisher

Christine A. Rimrod  
Notary Public in and for the State of Iowa

Acknowledgement and charges for above services \$ 14.72

Subscribed and sworn to before me this 18 day of  
April A.D., 2024



### Legal Notice

#### 2023 CHICKASAW COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING COMMITTEE 4th Meeting

Chickasaw County's Emergency Management Agency is holding their 4th committee meeting to update the 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. The meeting will take place on Tuesday, April 23rd at 6PM in the Meeting Room of the Chickasaw County Community Building located at 260 E. Prospect Street, New Hampton, IA. The public is invited to attend and observe the meeting. The purpose of the meeting is: (a) review drafts of hazard mitigation plans for each jurisdiction, and; (b) ensure previous or new County jurisdictions that participate in these meetings are in good standing and eligible for disaster mitigation grant programs.

For information about meeting details, contact the meeting coordinator, Leon Begay, (319) 235-0311, or [lbe-gay@inrcog.org](mailto:lbe-gay@inrcog.org).

No. 23869  
4/18/24

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**Chickasaw County**  
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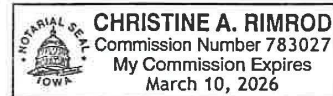
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Owner/Publisher

Christine A. Rimrod  
Notary Public in and for the State of Iowa

Acknowledgement and charges for above services \$ 10.90

Subscribed and sworn to before me this 23 day of May A.D., 2024



### Legal Notice

#### Notice of Public Hearing

Notice is hereby given that on the 3rd day of June 2024 at 9:10 AM at 8 E Prospect St, in New Hampton, Iowa, a public hearing will be held to accept input regarding the Chickasaw County Hazard Mitigation Plan recently updated by the County.

Anyone interested may appear at the above stated time and place on June 3, 2024, for the public hearing and be heard or may file written comments in person or mail to the County Auditor, Chickasaw County Courthouse, 8 E Prospect St, New Hampton, IA 50659 and be received in the County Auditor's office before 9:00 AM on the date set for said hearing. A copy of the plan available for review at the County Auditor's office or online at [www.inrcog.org/pub](http://www.inrcog.org/pub).

No. 23993  
05/23/24

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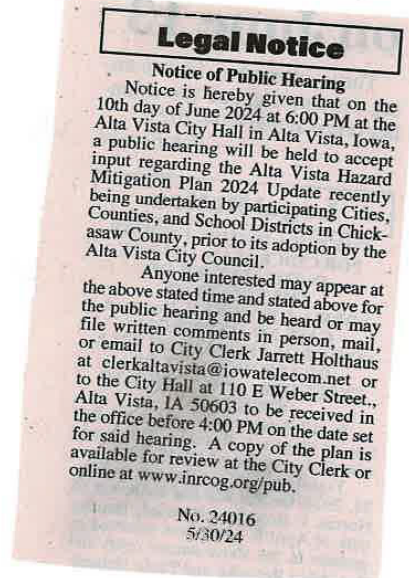
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Acknowledgement and charges for above services \$ 12.54

Subscribed and sworn to before me this 30 day of May A.D., 2024



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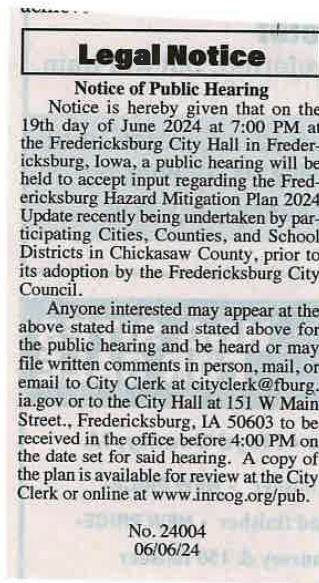
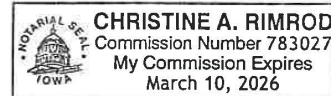
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Acknowledgement and charges for above services \$ 12.54

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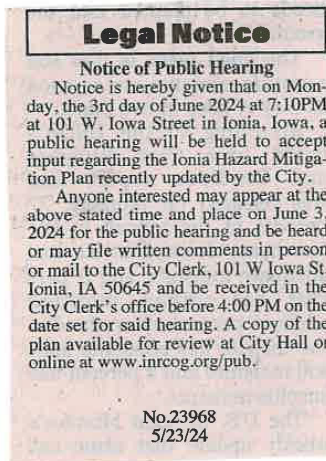
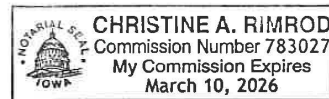
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Christopher J. Hall  
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Acknowledgement and charges for above services \$ 9.27

Subscribed and sworn to before me this 23 day of May A.D., 2024



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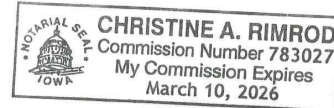
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Christopher J. Hall  
Owner/Publisher

Christine A. Rimrod  
Notary Public in and for the State of Iowa

Acknowledgement and charges for above services \$ 12.54

Subscribed and sworn to before me this 25 day of April A.D., 2024



### Legal Notice

#### NOTICE OF PUBLIC HEARING

Notice is hereby given that on the 6th day of May 2024 at 7:15 p.m. the City Council of Lawler, Iowa will hold a public hearing at the 414 E Grove St to accept input regarding the draft Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan, recently adopted by the County. Specifically, the hearing is to obtain citizen comment on the Plan prior to the City Council approving their participation in the Plan and adoption thereof.

Anyone interested may appear at the above stated time and place for the public hearing and be heard or may file written comments in person or mail to the City Clerk, of Lawler, Iowa at the 414 E Grove St Lawler, IA 52154. Written comments must be received in the City Clerk's office before 10:00 AM on the date set of said hearing. A copy of the plan is available for review at City Hall.

No. 23892  
4/25/24

001-640-6414

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Chickasaw County,

**Nashua**  
**REPORTER**  
and Weekly Nashua Post  
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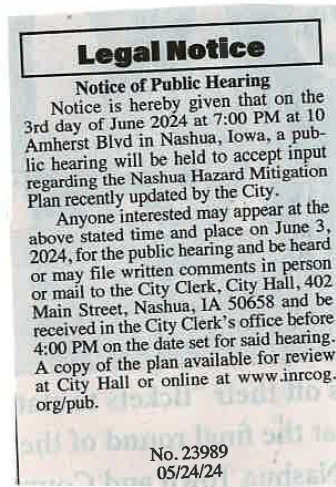
I, Christopher Hall, Owner/Publisher, of the NASHUA REPORTER, in said county, do hereby state that I certify under penalty of perjury and pursuant to the laws of the State of Iowa that a notice, which is a true copy, has been printed and published each week for 1 consecutive weeks in the regular daily issues of said paper commencing with the issue of friday on the 24 day of May A.D., 2024 and ending with the issue of, May 24, 2024.

Christopher J. Hall  
Owner/Publisher

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Notary Public in and for the State of Iowa

Acknowledgement and charges for above services \$9.81

Subscribed and sworn to before me this 24 day of May A.D., 2024



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STATE OF IOWA

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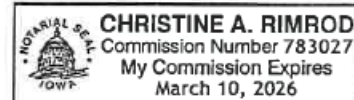
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Christopher J. Hall  
Owner/Publisher

Christine A. Rimrod  
Notary Public in and for the State of Iowa

Acknowledgement and charges for above services \$ 10.90

Subscribed and sworn to before me this 16 day of June A.D., 2024



**Legal Notice**

**Notice of Public Hearing**

Notice is hereby given that on the 20th day of May 2024 at 7:00 PM in the New Hampton Council Chambers located at 112 East Spring Street, New Hampton, IA 50659, a public hearing will be held to accept input regarding the New Hampton Hazard Mitigation Plan recently updated by the City.

Anyone interested may appear at the above stated time and place on May 20, 2024 for the public hearing and be heard or may file written comments in person or mail to the City Clerk's Office, 112 East Spring Street, New Hampton, IA 50659 and be received in the City Clerk's office before 4:00 PM on the date set for said hearing. A copy of the plan is available for review at City Hall or online at [www.inrcog.org/pub](http://www.inrcog.org/pub).

No. 23965  
05/16/23

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For questions please call (641) 228-3211

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Christopher J. Hall  
Owner/Publisher

Christine A. Rimrod  
Notary Public in and for the State of Iowa

Acknowledgement and charges for above services \$ 10.36

Subscribed and sworn to before me this 2 day of May A.D., 2024



**Legal Notice • Legal Notice**

**Notice of Public Hearing**

Notice is hereby given that on the 7th day of May 2024 at 5:30PM at 114 S. Wapsi Street, in North Washington, Iowa, a public hearing will be held to accept input regarding the North Washington Hazard Mitigation Plan recently updated by the City.

Anyone interested may appear at the above stated time and place on May 7, 2024 for the public hearing and be heard

or may file written comments in person or mail to the City Clerk, City Hall, 114 S. Wapsi Street, North Washington, Iowa to be received in the City Clerk's office before 4:00 PM on the date set for said hearing. A copy of the plan available for review at City Hall or online at [www.inrcog.org/pub](http://www.inrcog.org/pub).

No. 23922  
5/2/24

**EM**  
ENTERPRISE MEDIA

801 Riverside Drive, Charles City, IA 50616

*Iowa Northland Reg Council of Governments*  
*Attention: Leon Begay*  
*229 East Park Ave.*  
*Waterloo, IA 50703*

WATERLOO, IA 507

02 MAY 2024 PM 12 L

FIRST CLASS



5070384669



*In The Matter of*

CITY OF PROTIVIN  
PROTIVIN, IOWA

**AFFIDAVIT IN PROOF OF THE  
PUBLICATION**

**NOTICE OF  
PUBLIC HEARING**

STATE OF IOWA, HOWARD COUNTY, SS

I, Amanda Henkes, being first duly sworn on oath depose and say:

That I am one of the employees of Evans Publishing LLC,  
publisher of The Times Plain Dealer, a weekly newspaper of general  
circulation published in Howard County, State of Iowa; that the  
Public Notice

which is annexed hereto was cut from the columns of said newspaper,

Notice of Public Hearing


and said

(SEE ATTACHED)

was published in said newspaper for one week, being in the issue of said

newspaper on the 26TH day of JUNE, 2024.

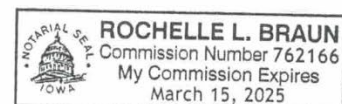
Publication fee: \$28.50

  
Affiant

Subscribed and sworn to before me and in my presence by the said

Amanda Henkes on the 26TH day of JUNE, 2024.





**Public Notice**

Notice is hereby given that on the 9th day of July 2024 at 7:00 PM at the Protivin City Hall in Protivin, Iowa, a public hearing will be held to accept input regarding the Protivin Hazard Mitigation Plan 2024 Update recently being undertaken by participating Cities, Counties, and School Districts in Chickasaw County, prior to its adoption by the Protivin City Council.

Anyone interested may appear at the above stated time and stated above for the public hearing and be heard or may file written comments in person, mail, or email to City Clerk Joane Kulish at [protcity@iowa-telecom.net](mailto:protcity@iowa-telecom.net) or to the City Hall at 221 S Main Street., Protivin, IA 52163 to be received in the office before 4:00 PM on the date set for said hearing. A copy of the plan is available for review at the City Clerk or online at [www.inrcog.org/pub](http://www.inrcog.org/pub).

Published in Cresco Times Plain Dealer  
06/26/2024

Proof of Publication

STATE OF IOWA

Chickasaw County,

**TRIBUNE**  
New Hampton Chickasaw County  
Your Community. Your Team. Your Media.  
801 Riverside Drive • Charles City, IA 50616  
For questions please call (641) 228-3211

I, Christopher Hall, Owner/Publisher, of the NEW HAMPTON TRIBUNE, in said county, do hereby state that I certify under penalty of perjury and pursuant to the laws of the State of Iowa that a notice, which is a true copy, has been printed and published each week for 1 consecutive weeks in the regular daily issues of said paper commencing with the issue of Thursday on the 6 day of June A.D., 2024 and ending with the issue of, June 6, 2024.

Christopher J. Hall  
Owner/Publisher

Christine A. Rimrod  
Notary Public in and for the State of Iowa

Acknowledgement and charges for above services \$ 14.17

Subscribed and sworn to before me this 6 day of June A.D., 2024



### Legal Notice

#### Notice of Public Hearing

Notice is hereby given that on the 17th day of June 2024 at 6:30PM at the New Hampton High School FCS Room in New Hampton, Iowa, a public hearing will be held to accept input regarding the New Hampton CSD Hazard Mitigation Plan 2024 Update recently being undertaken by participating Cities, Counties, and School Districts in Chickasaw County, prior to its adoption by the New Hampton Community School District.

Anyone interested may appear at the above stated time and stated above for the public hearing and be heard or may file written comments in person, mail, or email to Superintendent Jay Jurens at [j\\_jurens@new-hampton.k12.ia.us](mailto:j_jurens@new-hampton.k12.ia.us) or to the School District Administrative Offices at 710 West Main Street New Hampton, Iowa 50659 to be received in the office before 4:00 PM on the date set for said hearing. A copy of the plan is available for review at the School District Administrative Office or online at [www.inrcog.org/pub](http://www.inrcog.org/pub).

No. 24003  
06/06/24

PAGE 1 OF \_\_\_\_



Proof of Publication

STATE OF IOWA

Chickasaw County,

**New Hampton**  
**TRIBUNE**  
Chickasaw County  
Your Community. Your Team. Your Media.  
801 Riverside Drive • Charles City, IA 50616  
For questions please call (641) 228-3211

I, Christopher Hall, Owner/Publisher, of the NEW HAMPTON TRIBUNE, in said county, do hereby state that I certify under penalty of perjury and pursuant to the laws of the State of Iowa that a notice, which is a true copy, has been printed and published each week for 1 consecutive weeks in the regular daily issues of said paper commencing with the issue of Thursday on the 9 day of May A.D., 2024 and ending with the issue of, May 9, 2024

Christopher J. Hall  
Owner/Publisher

Christine A. Rimrod  
Notary Public in and for the State of Iowa

Acknowledgement and charges for above services \$ 14.17

Subscribed and sworn to before me this 9 day of May A.D., 2024



### Legal Notice

#### NOTICE OF PUBLIC HEARING

Notice is hereby given that on the 13th day of May 2024 at 5:30PM at the Sumner-Fredericksburg Middle School in Fredericksburg, Iowa, a public hearing will be held to accept input regarding the Sumner-Fredericksburg Hazard Mitigation Plan recently being undertaken by participating Cities, Counties, and School Districts in Chickasaw County, prior to its adoption by the Sumner-Fredericksburg Community School District.

Anyone interested may appear at the above stated time and stated above for the public hearing and be heard or may file written comments in person, mail, or email to Superintendent Fred Matlage at [matlagef@sfcougars.k12.ia.us](mailto:matlagef@sfcougars.k12.ia.us) or to the School District Administrative Offices at 802 West Sixth Street, Sumner, Iowa 50674, Iowa to be received in the office before 4:00 PM on the date set for said hearing. A copy of the plan is available for review at the School District Administrative Office or online at [www.inrcog.org/pub](http://www.inrcog.org/pub).

No.23945  
5/9/24

PAGE 1 OF \_\_\_\_

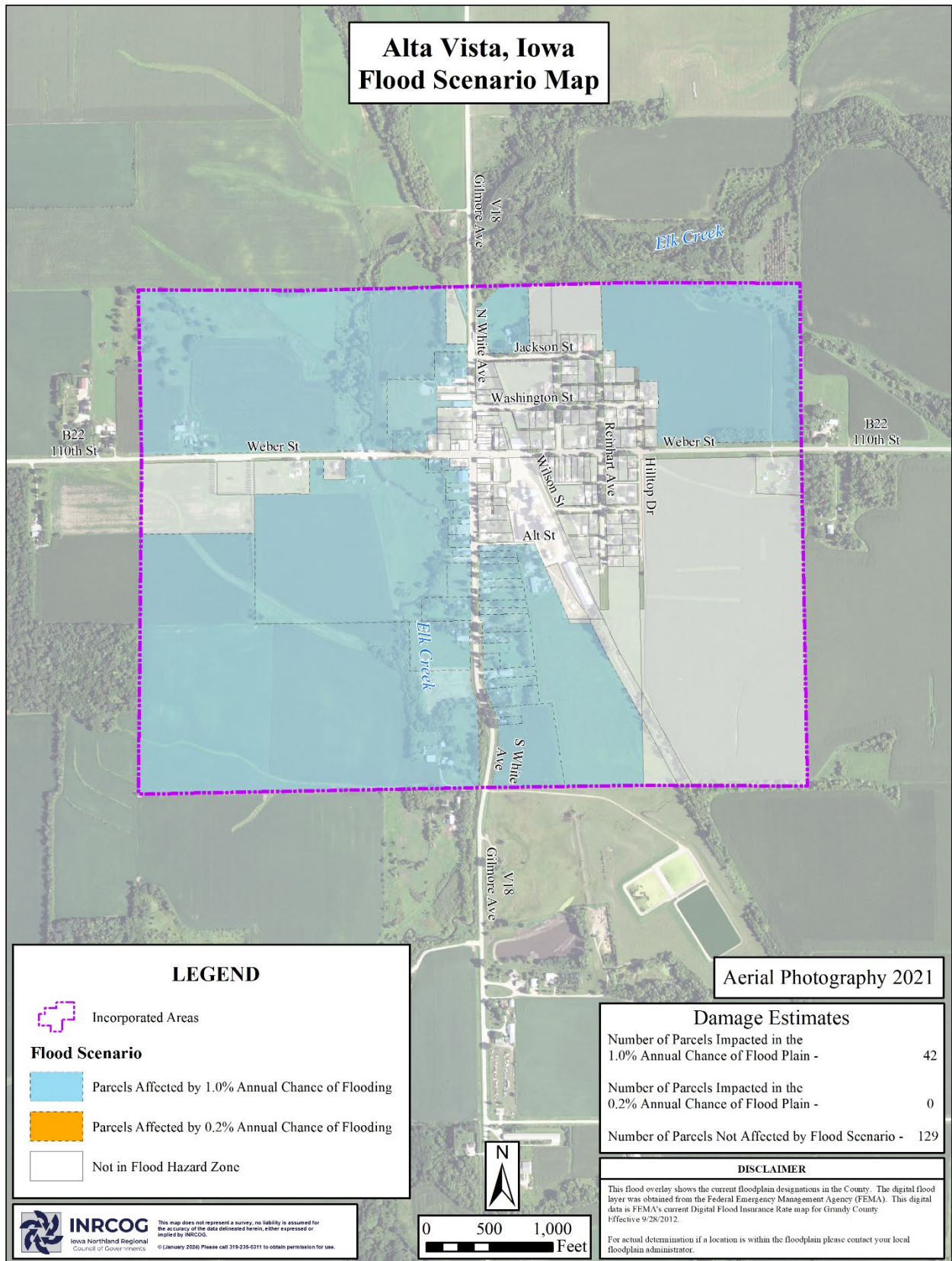
# 2023 CHICKASAW COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

## APPENDIX Q

### TORNADO AND FLOOD SCENARIO MAPS



# Alta Vista, Iowa Flood Scenario Map



## LEGEND



Incorporated Areas

### Flood Scenario



Parcels Affected by 1.0% Annual Chance of Flooding



Parcels Affected by 0.2% Annual Chance of Flooding



Not in Flood Hazard Zone



**INRCOG**  
Iowa Northland Regional  
Council of Governments

This map does not represent a survey, no liability is assumed for the accuracy of the data delineated herein, either expressed or implied by INRCOG.  
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## Aerial Photography 2021

### Damage Estimates

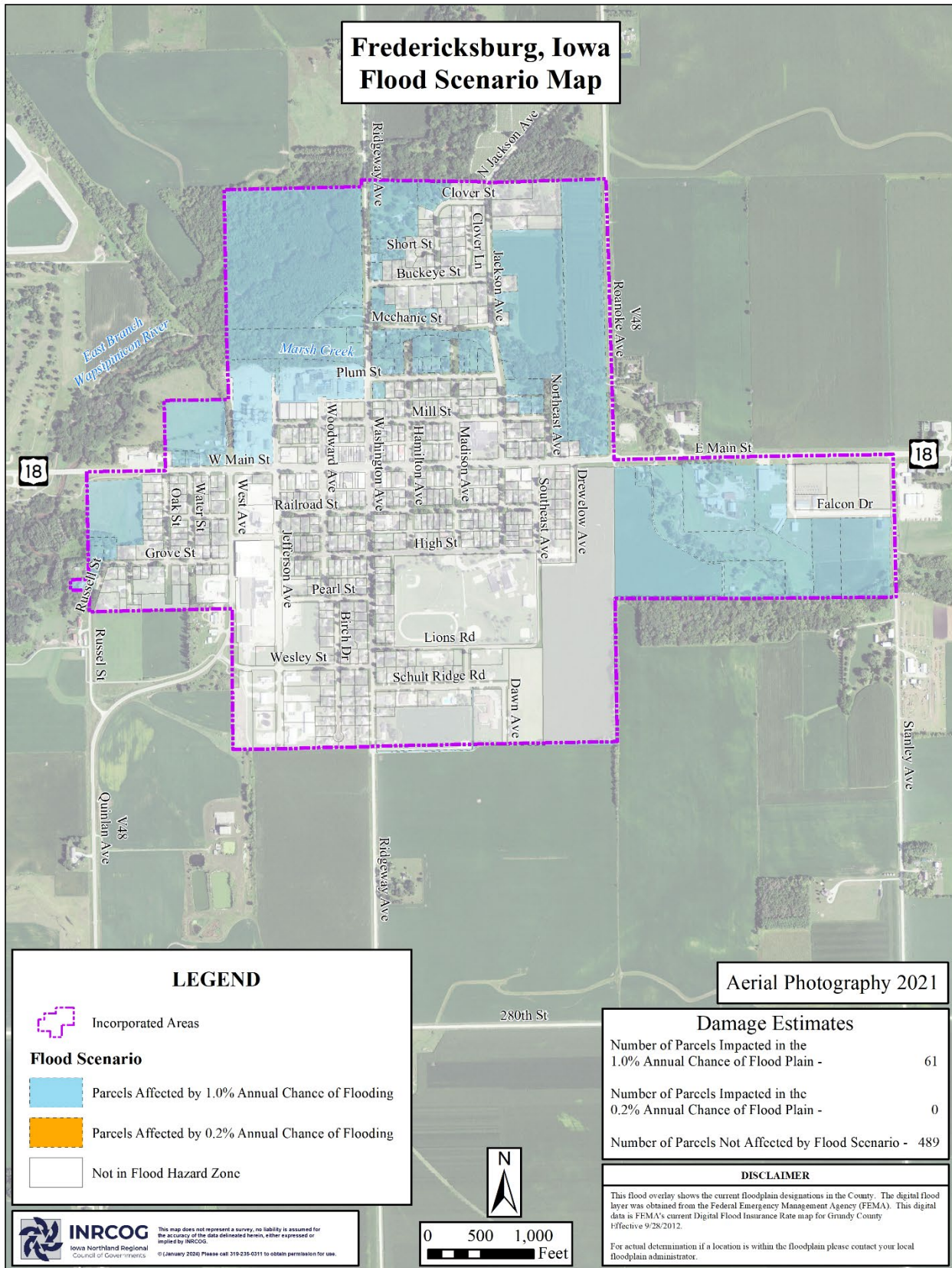
Number of Parcels Impacted in the 1.0% Annual Chance of Flood Plain -	42
Number of Parcels Impacted in the 0.2% Annual Chance of Flood Plain -	0
Number of Parcels Not Affected by Flood Scenario -	129

### DISCLAIMER

This flood overlay shows the current floodplain designations in the County. The digital flood layer was obtained from the Federal Emergency Management Agency (FEMA). This digital data is FEMA's current Digital Flood Insurance Rate map for Grundy County Effective 9/28/2012.

For actual determination if a location is within the floodplain please contact your local floodplain administrator.

# Fredericksburg, Iowa Flood Scenario Map



## LEGEND



Incorporated Areas

### Flood Scenario



Parcels Affected by 1.0% Annual Chance of Flooding



Parcels Affected by 0.2% Annual Chance of Flooding



Not in Flood Hazard Zone



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## Aerial Photography 2021

### Damage Estimates

Number of Parcels Impacted in the 1.0% Annual Chance of Flood Plain -	61
Number of Parcels Impacted in the 0.2% Annual Chance of Flood Plain -	0
Number of Parcels Not Affected by Flood Scenario -	489

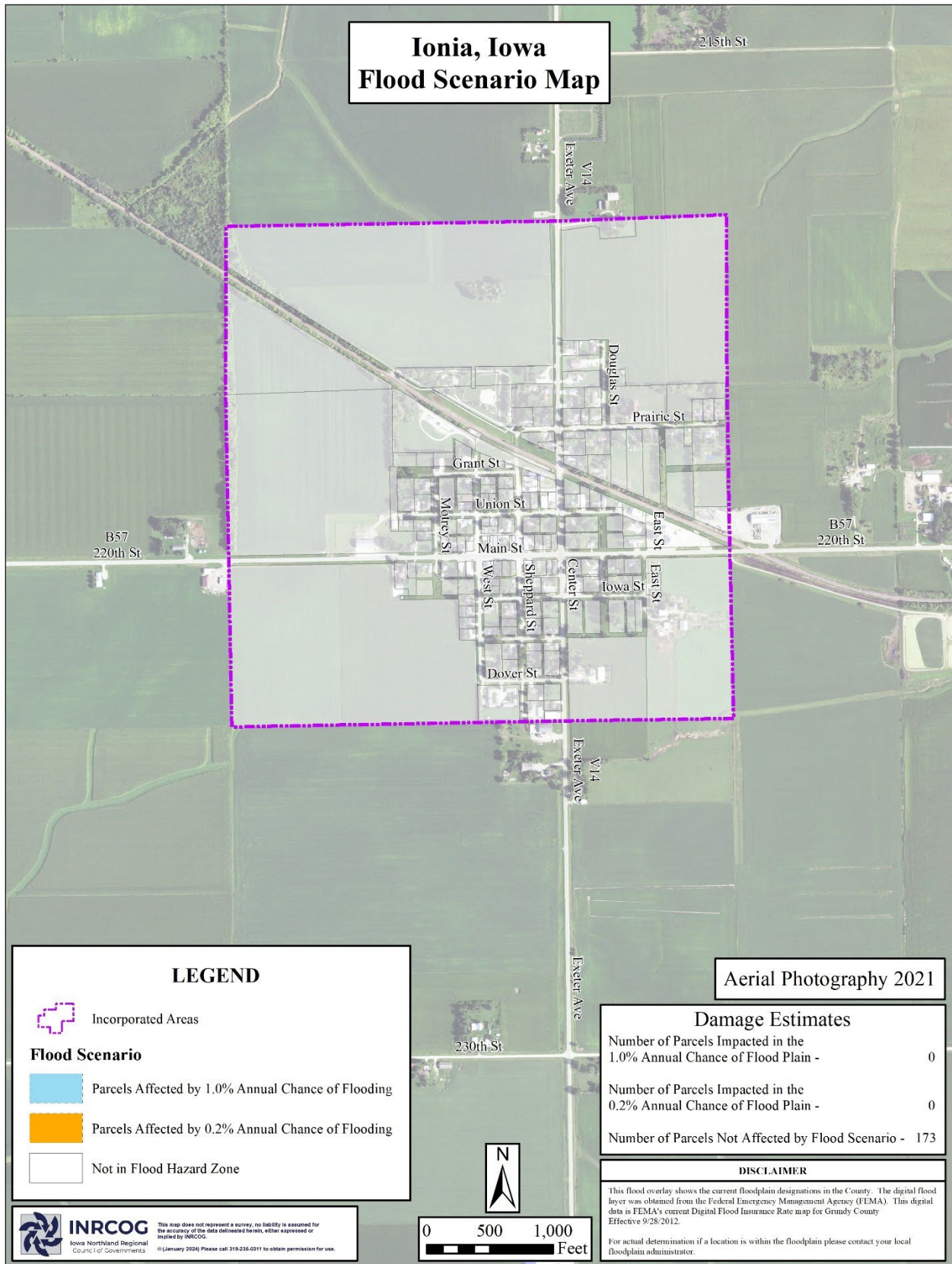
### DISCLAIMER

This flood overlay shows the current floodplain designations in the County. The digital flood layer was obtained from the Federal Emergency Management Agency (FEMA). This digital data is FEMA's current Digital Flood Insurance Rate map for Grundy County effective 9/28/2012.

For actual determination if a location is within the floodplain please contact your local floodplain administrator.



# Ionia, Iowa Flood Scenario Map



## LEGEND



Incorporated Areas

### Flood Scenario



Parcels Affected by 1.0% Annual Chance of Flooding



Parcels Affected by 0.2% Annual Chance of Flooding



Not in Flood Hazard Zone



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Feet

## Aerial Photography 2021

### Damage Estimates

Number of Parcels Impacted in the  
1.0% Annual Chance of Flood Plain - 0

Number of Parcels Impacted in the  
0.2% Annual Chance of Flood Plain - 0

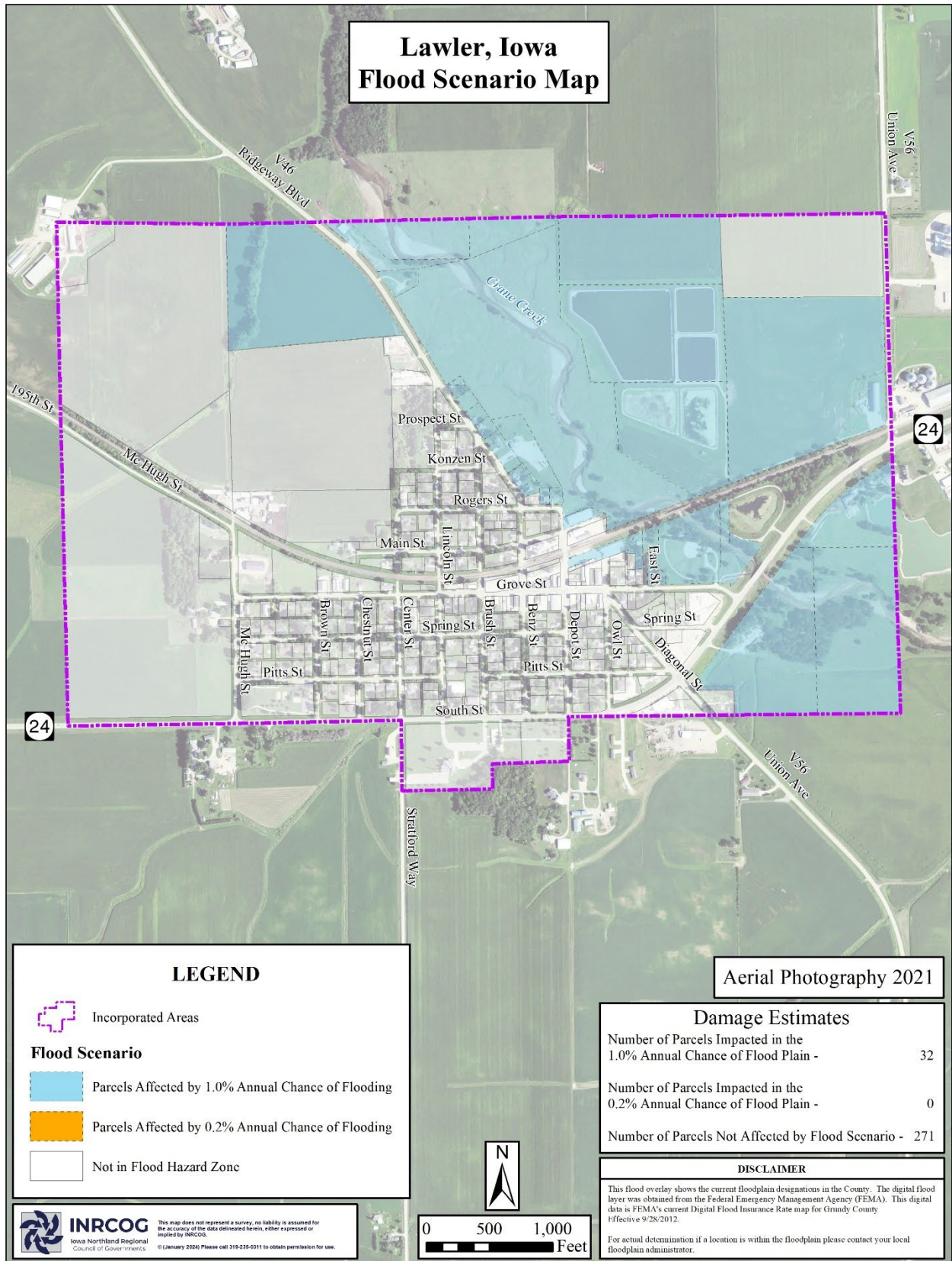
Number of Parcels Not Affected by Flood Scenario - 173

### DISCLAIMER

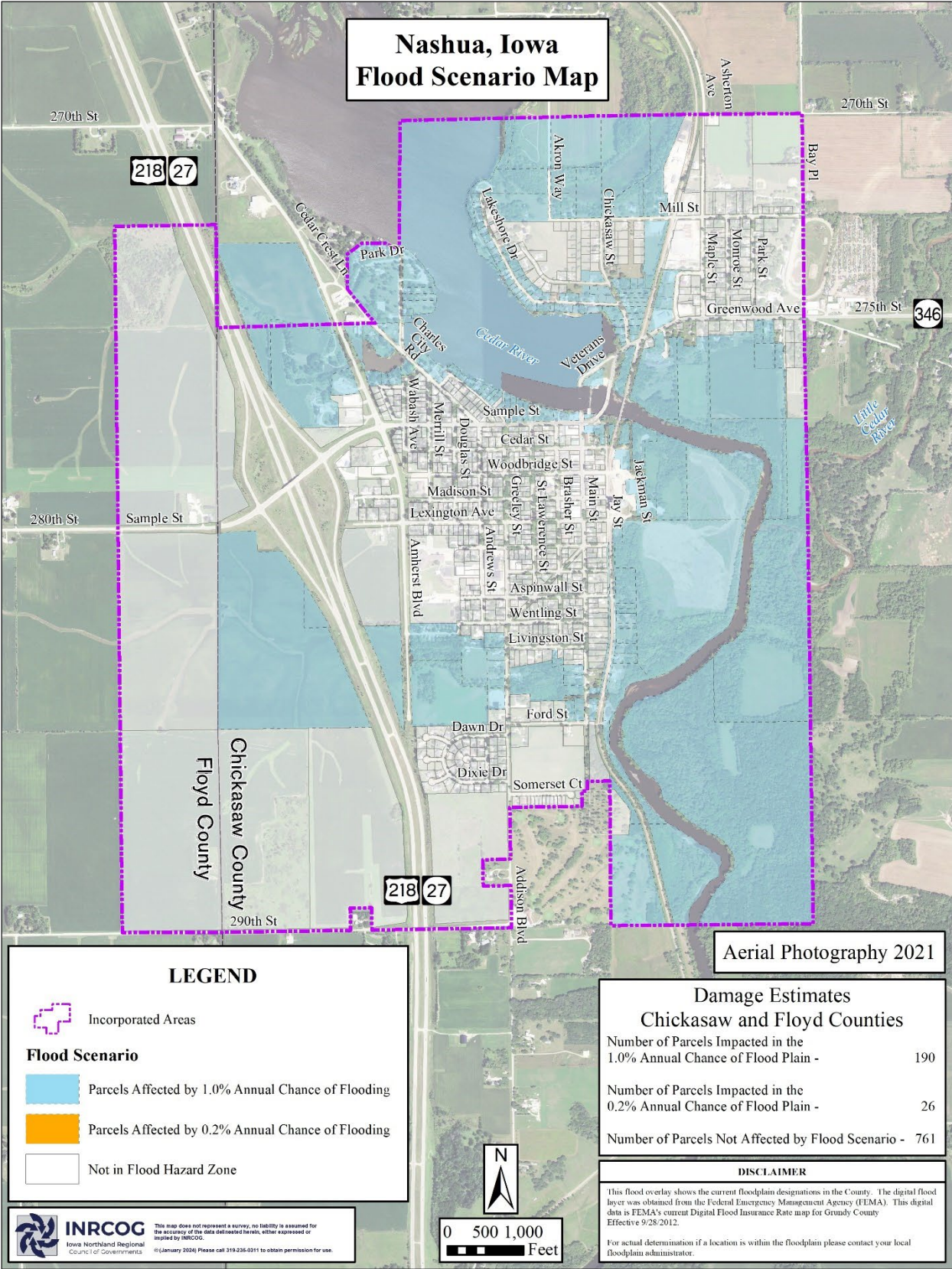
This flood overlay shows the current floodplain designations in the County. The digital flood layer was obtained from the Federal Emergency Management Agency (FEMA). This digital data is FEMA's current Digital Flood Insurance Rate map for Grundy County Effective 9/28/2012.

For actual determination if a location is within the floodplain please contact your local floodplain administrator.

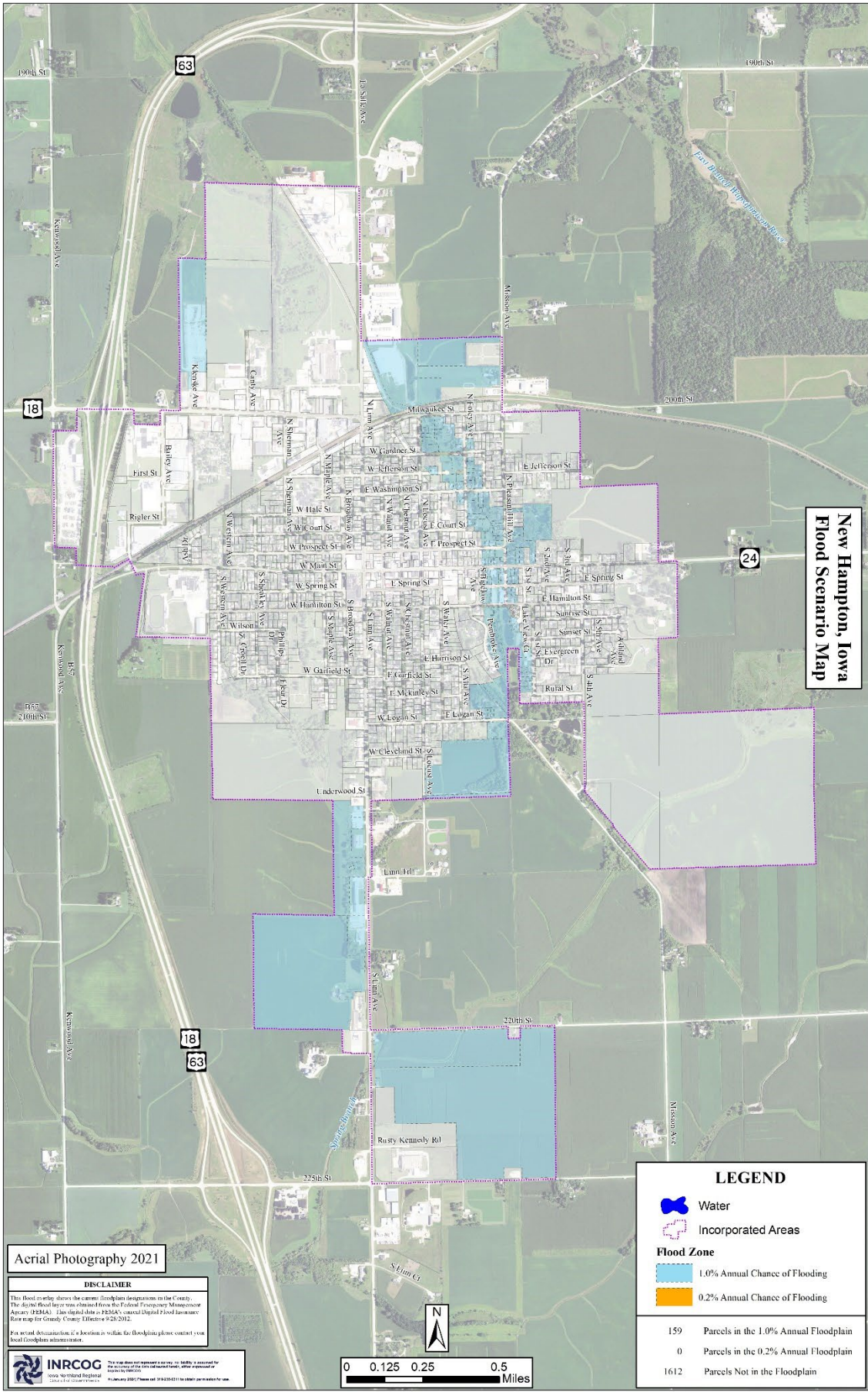
# Lawler, Iowa Flood Scenario Map



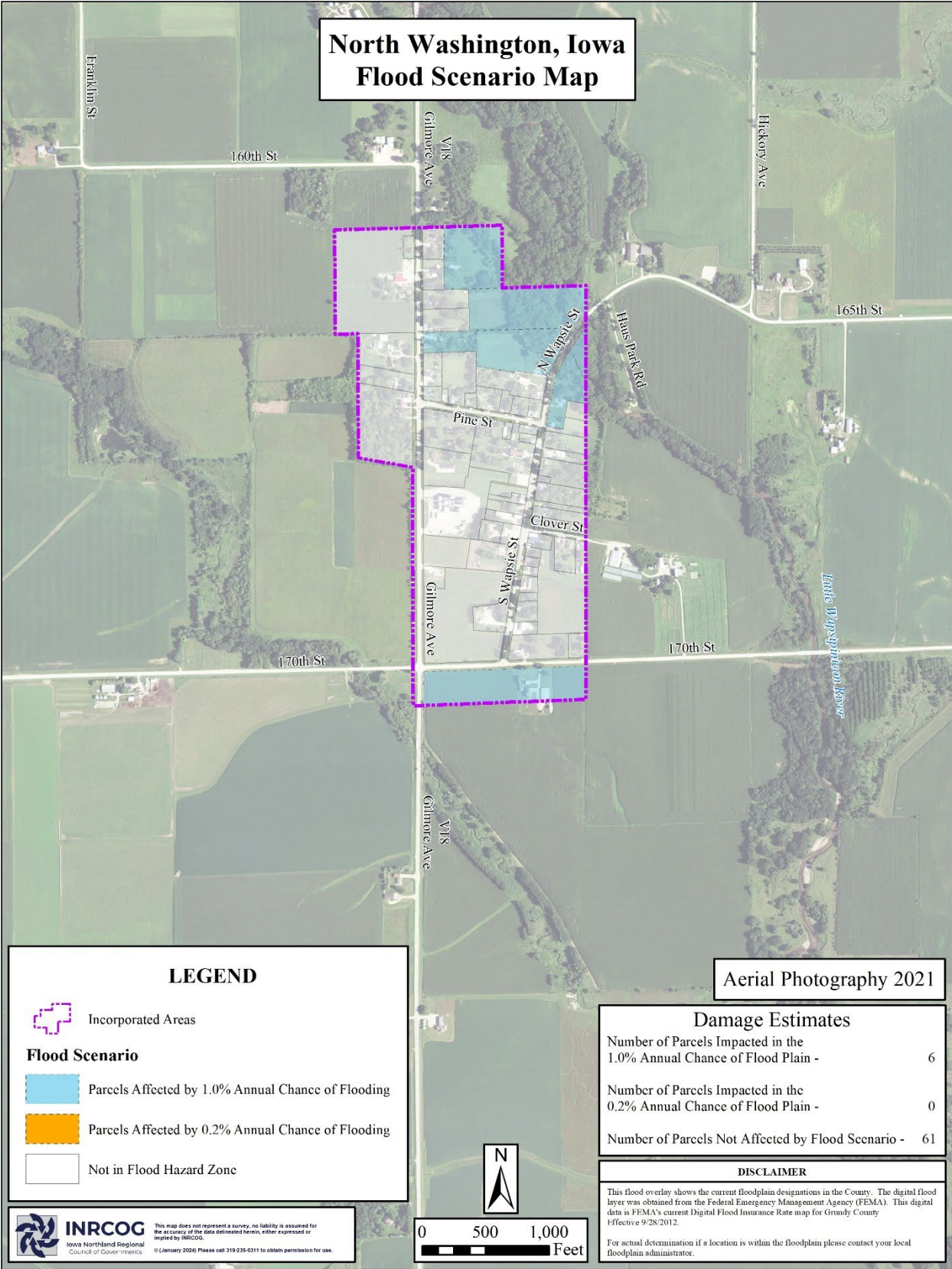














**Protivin, Iowa  
Flood Scenario Map**

Howard County  
Chickasaw County  
Chickasaw County  
Winneshiek County

Young Ave  
Bridge Ave  
Spruce Ave  
Church St  
Main St  
Commercial Ave  
Larson Ave  
South Ave  
High St  
West St  
Central St  
Residence Ave  
East St  
Chyle St  
Main St

B16  
100th St  
Windsor Ave  
Bohemian Cr  
Windsor Ave  
V-64

**LEGEND**

Incorporated Areas

**Flood Scenario**

Parcels Affected by 1.0% Annual Chance of Flooding

Parcels Affected by 0.2% Annual Chance of Flooding

Not in Flood Hazard Zone

**Damage Estimates  
Chickasaw County ONLY**

Number of Parcels Impacted in the 1.0% Annual Chance of Flood Plain -	0
Number of Parcels Impacted in the 0.2% Annual Chance of Flood Plain -	0
Number of Parcels Not Affected by Flood Scenario -	14

**DISCLAIMER**

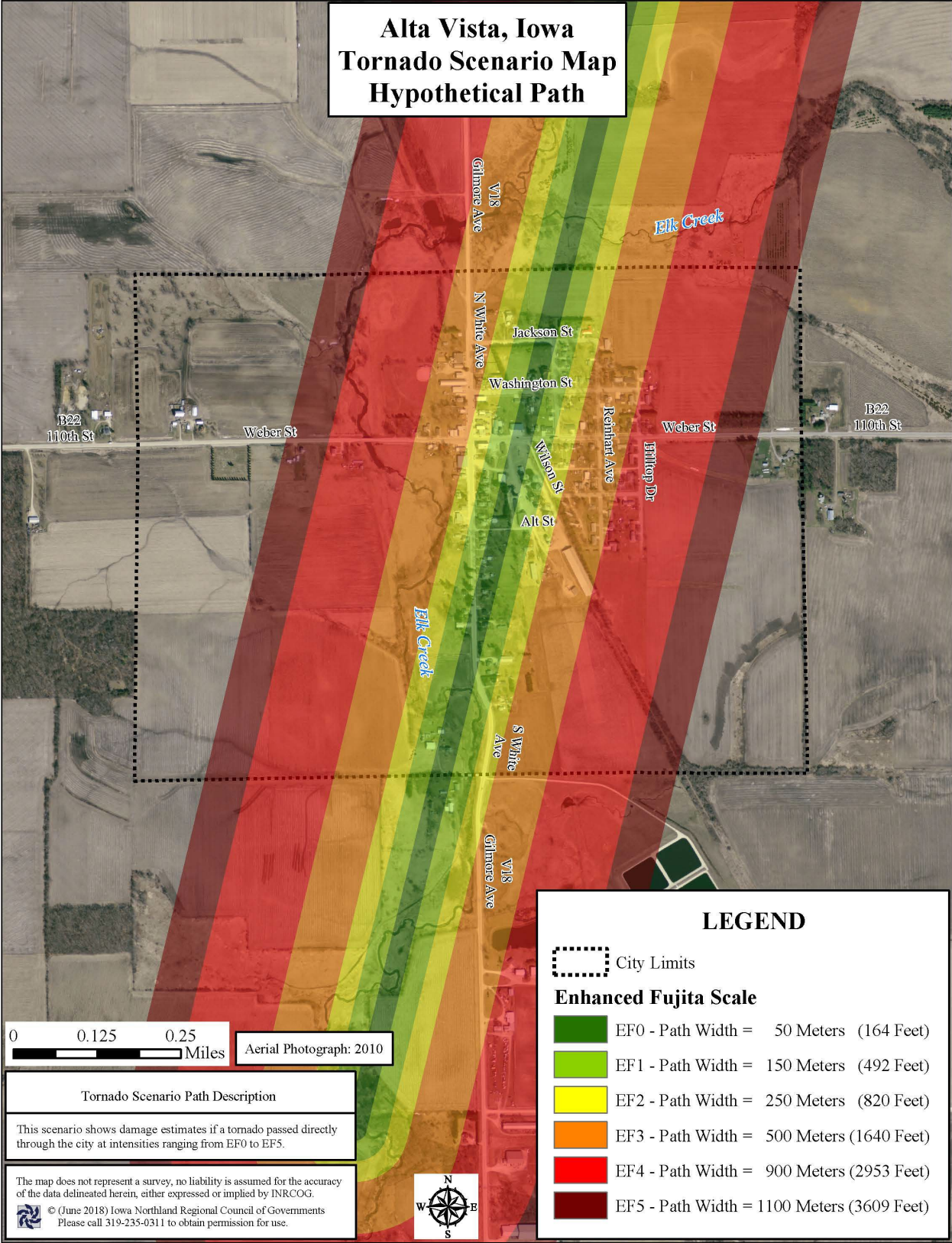
This flood or relay shows the current floodplain designations in the County. The digital flood layer was obtained from the Federal Emergency Management Agency (FEMA). This digital data is FEMA's current Digital Flood Insurance Rate map for Grundy County Effective 9/28/2012.

For actual determination if a location is within the floodplain please contact your local floodplain administrator.

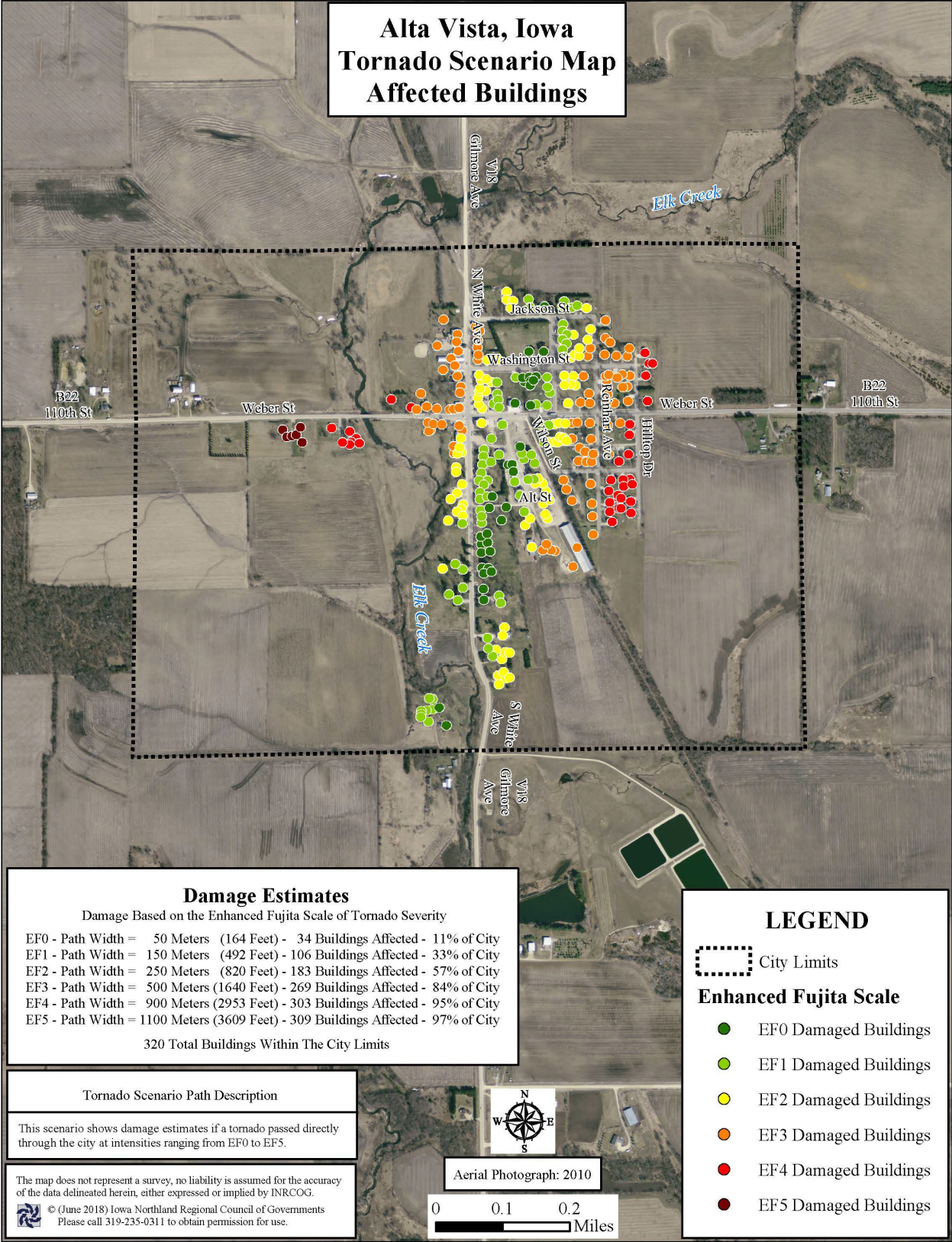
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Iowa Northland Regional Council of Governments  
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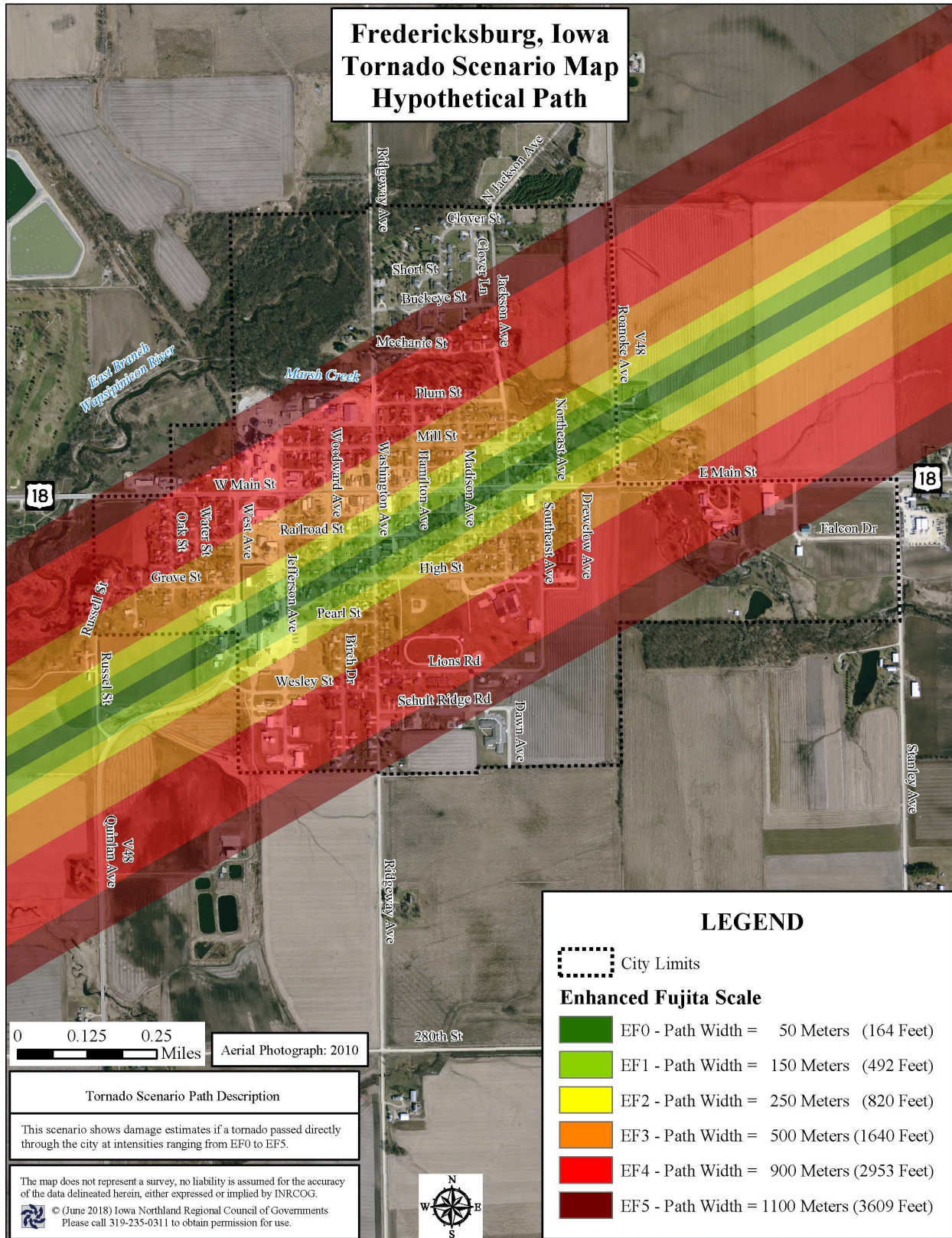




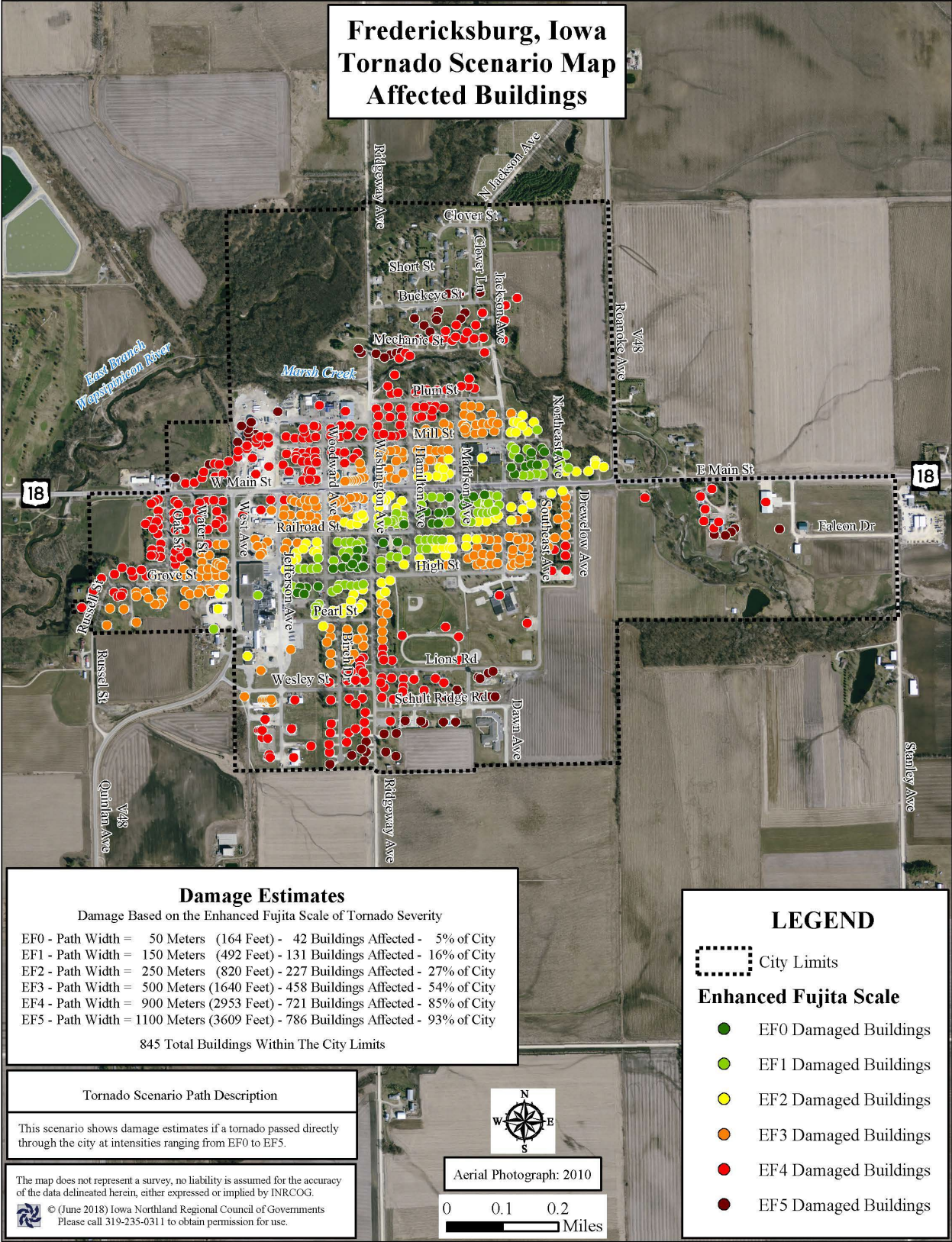




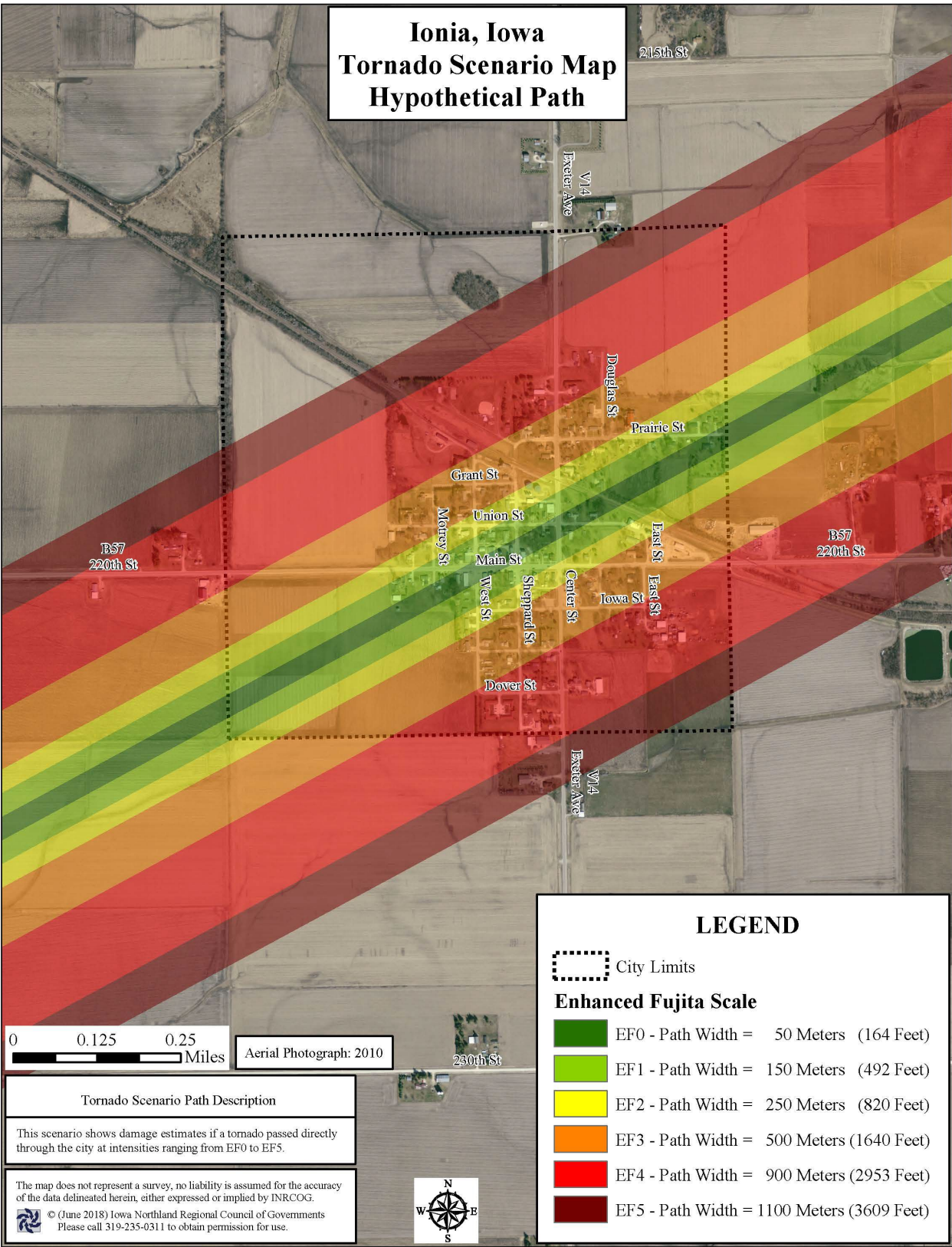


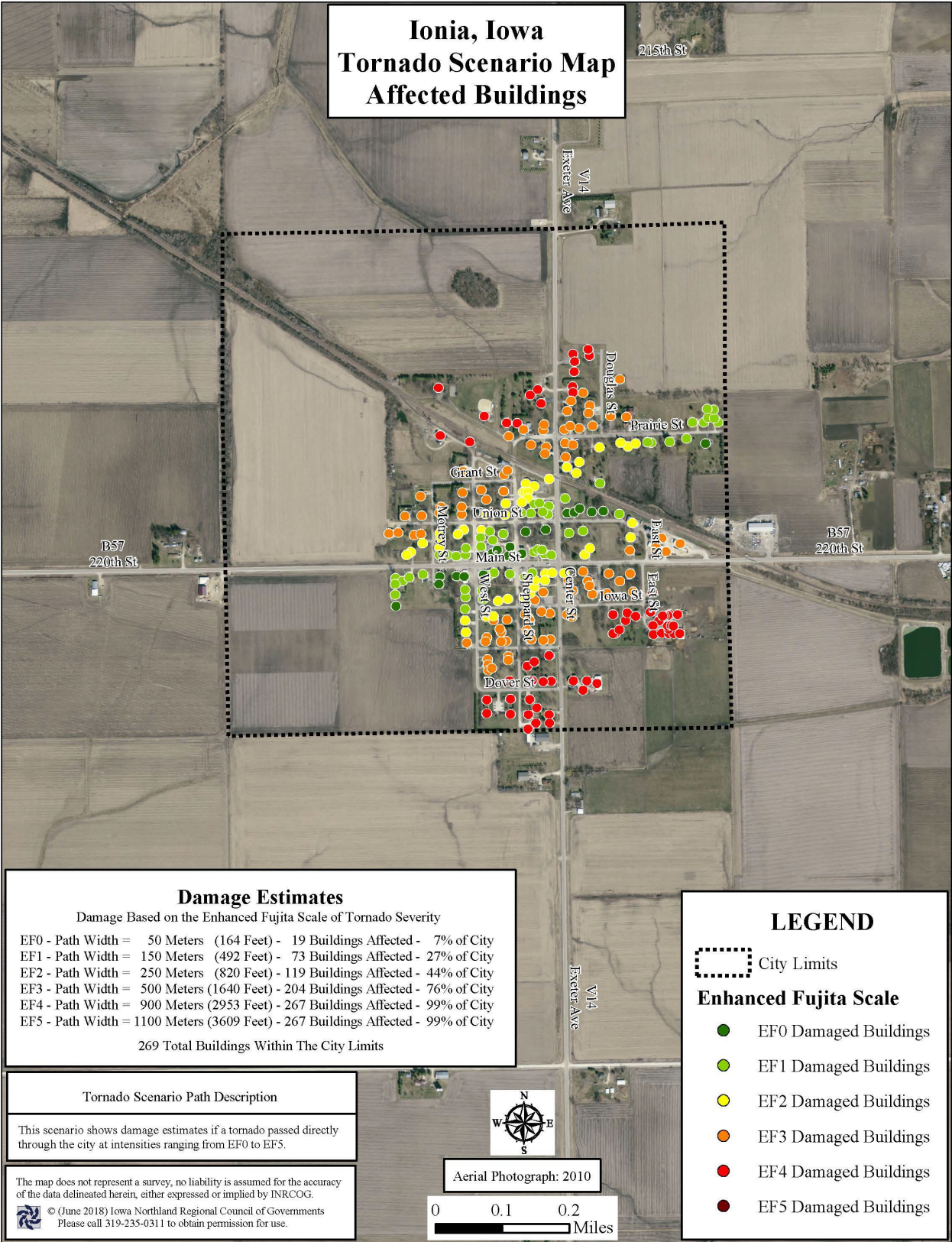




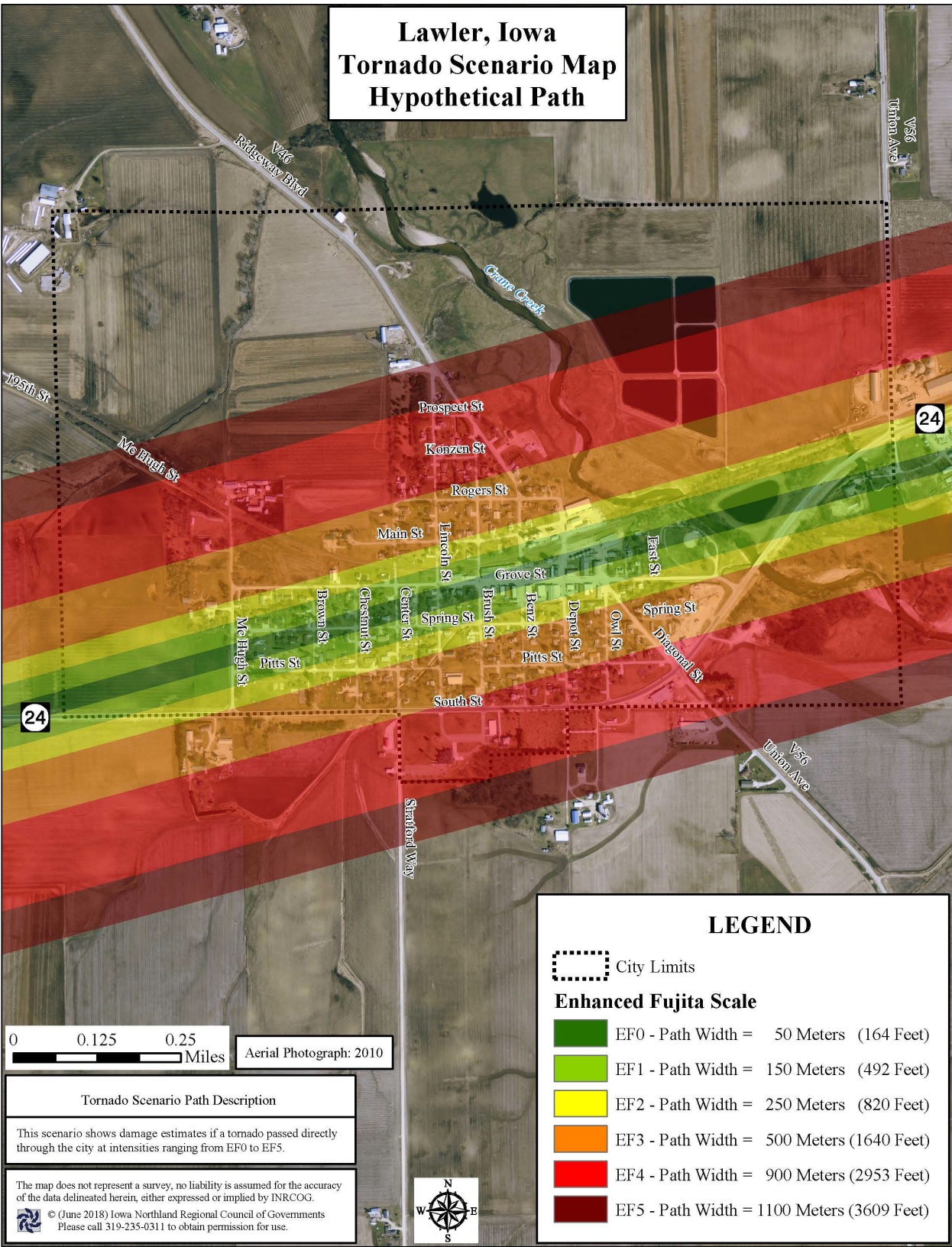




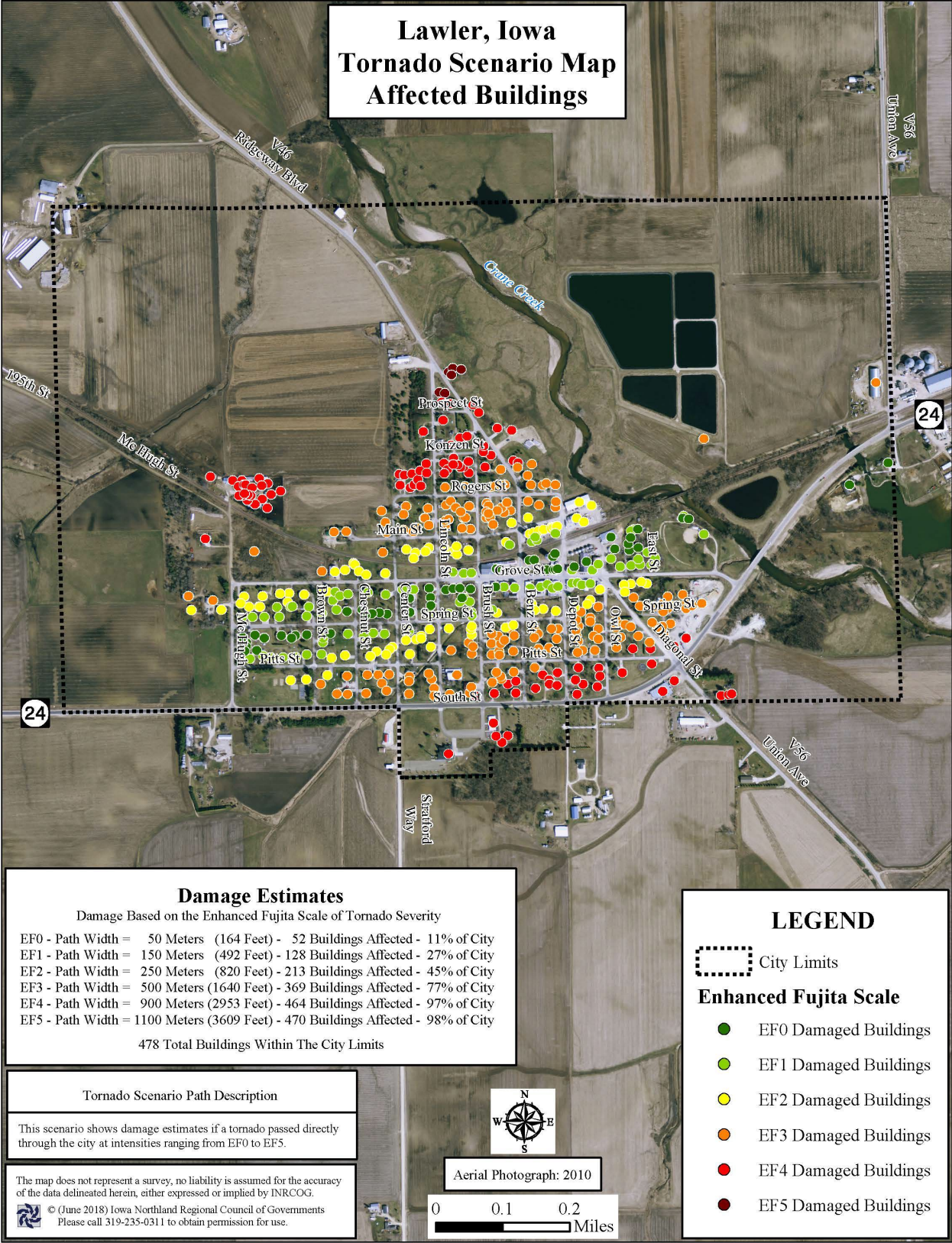




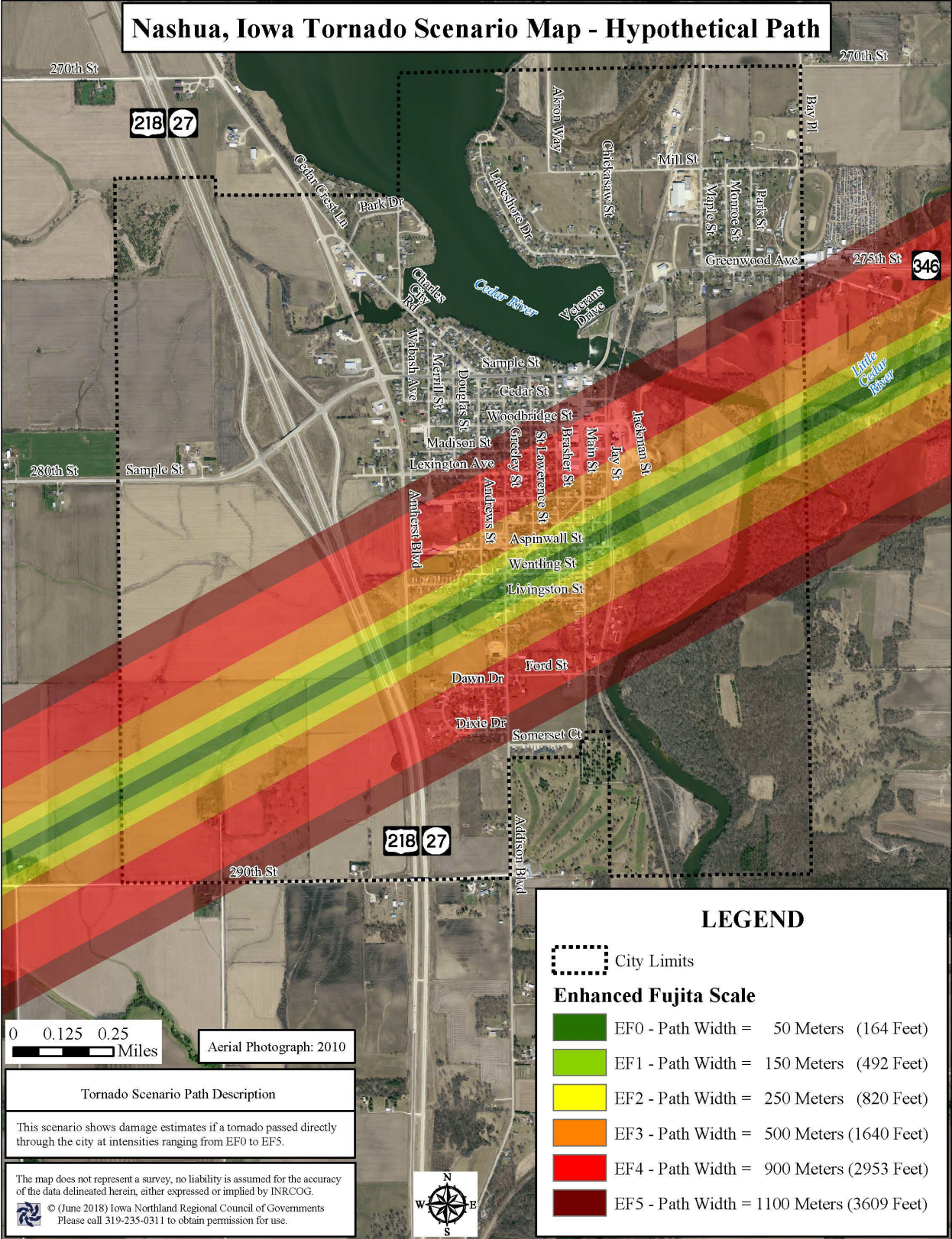




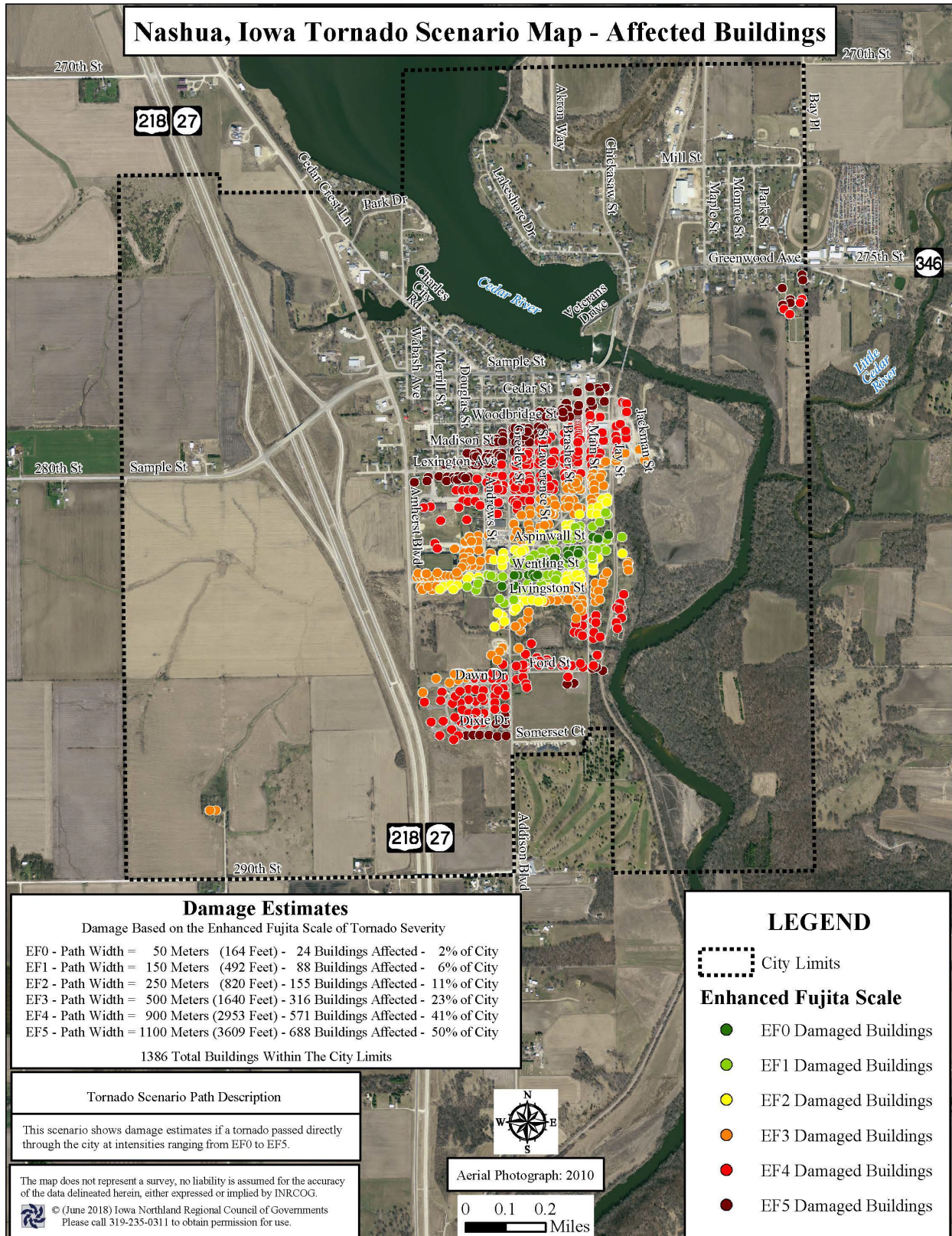




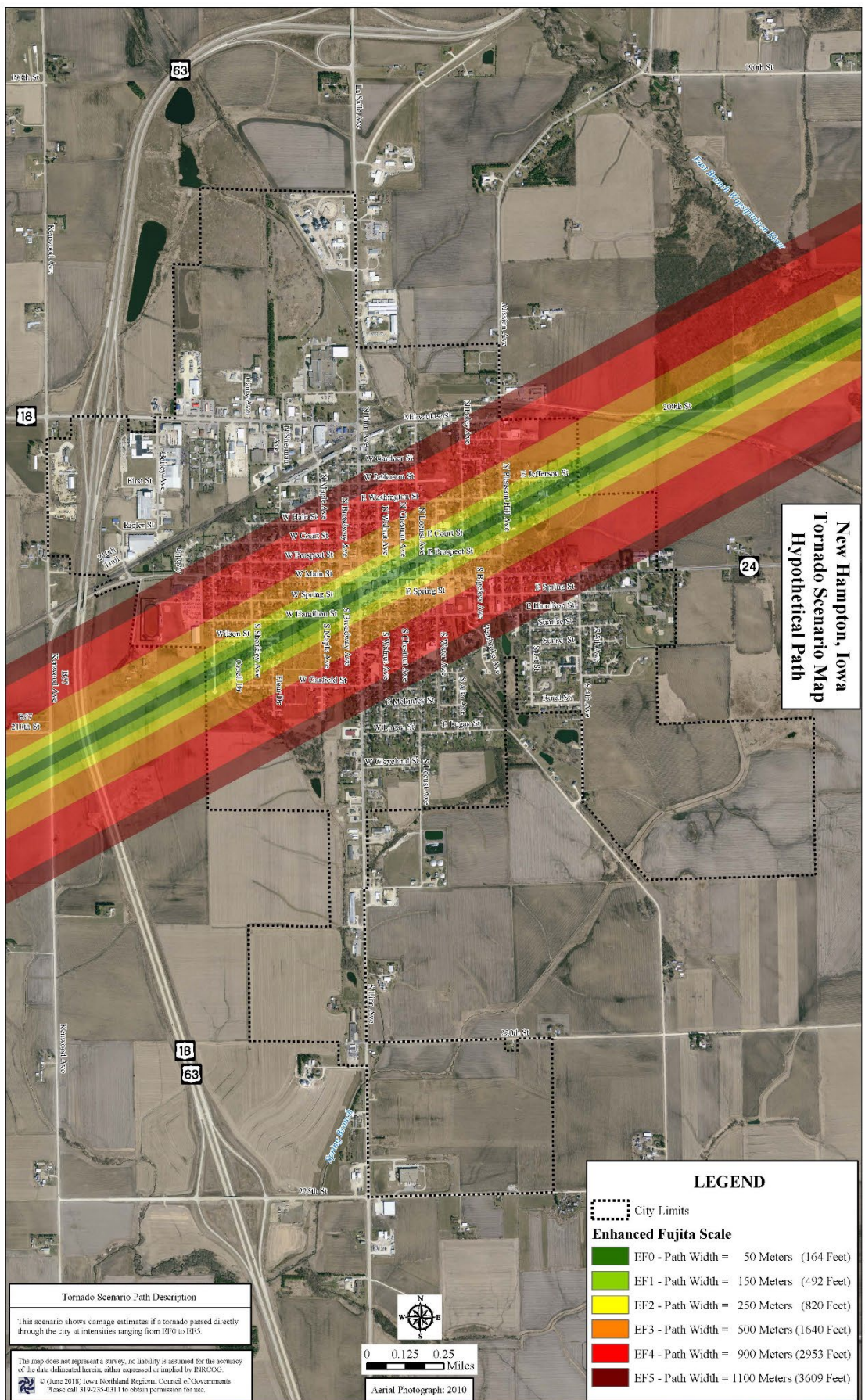






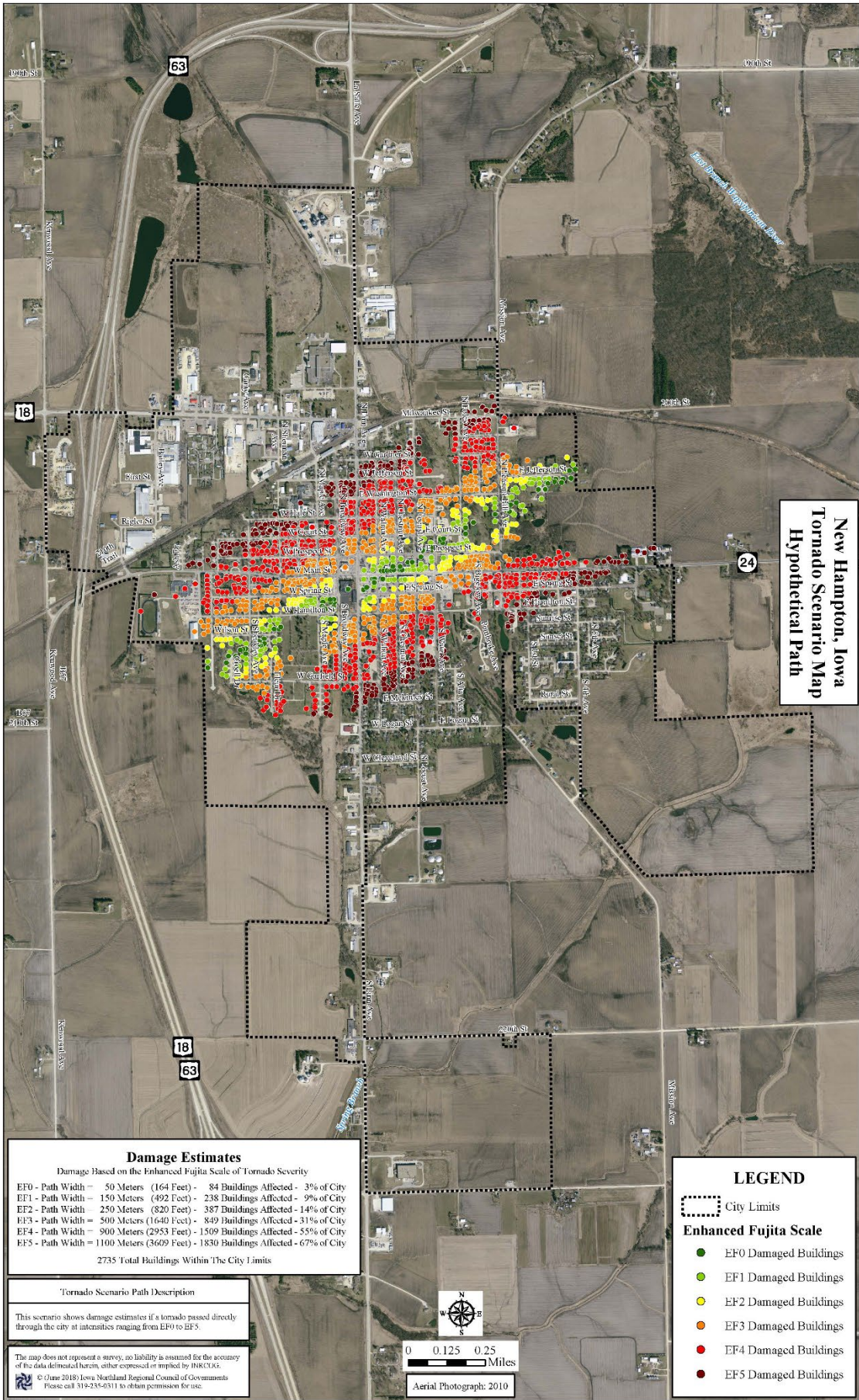




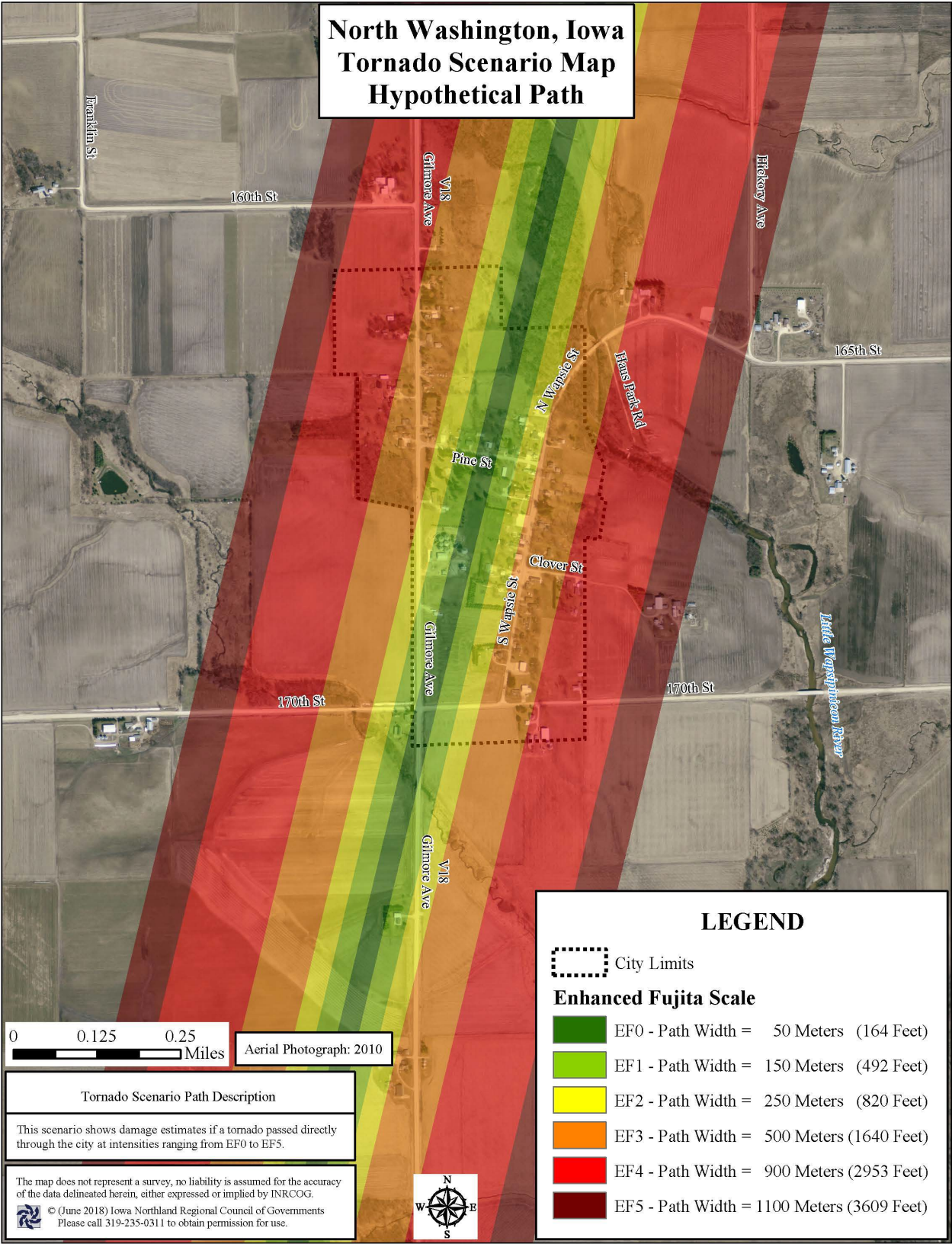


Chickasaw County Hazard Mitigation Plan

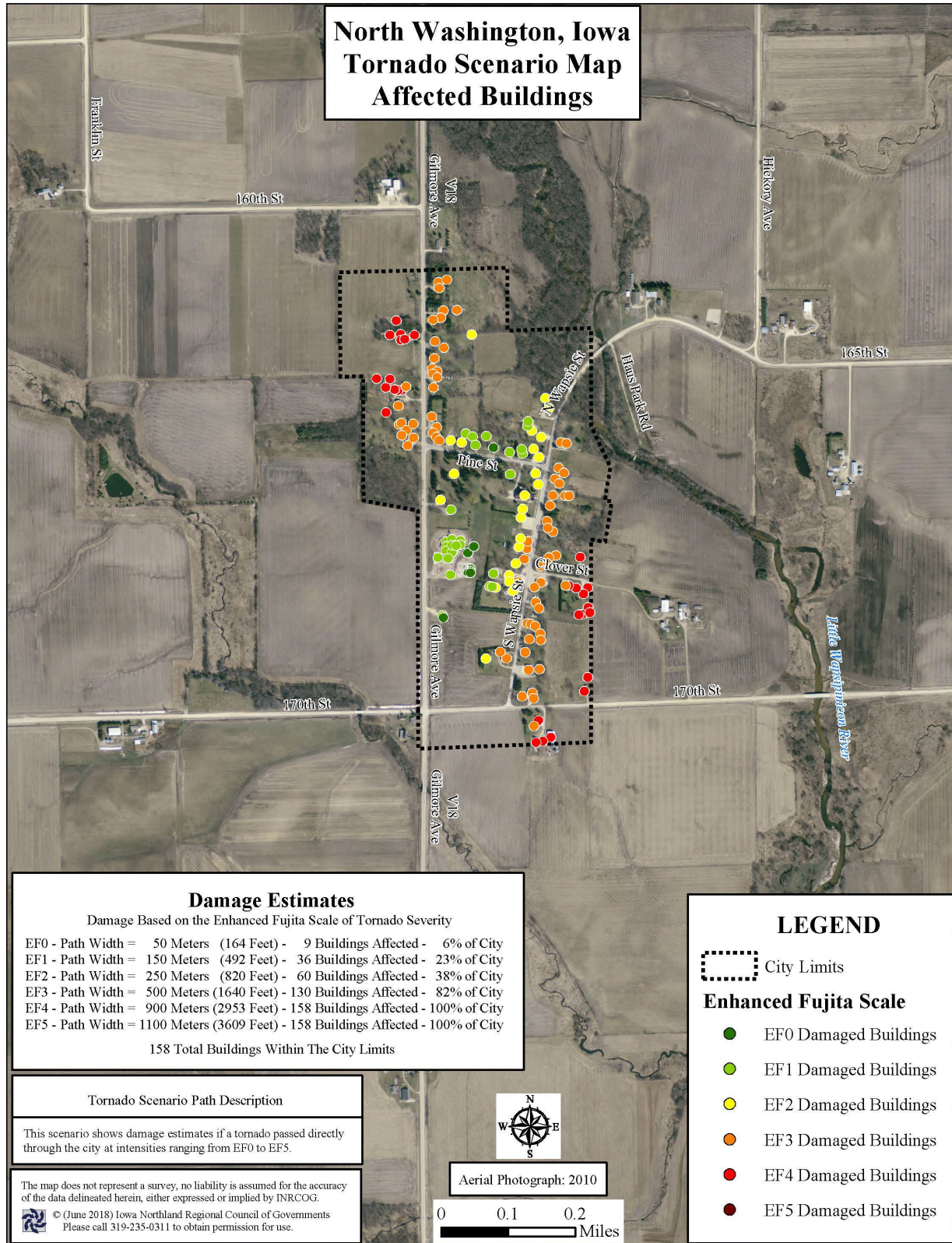












# 2024 CHICKASAW COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE

## APPENDIX R

### HAZARD MITIGATION PLAN REVIEW TOOL

# Local Mitigation Plan Review Tool

## Cover Page

The Local Mitigation Plan Review Tool (PRT) demonstrates how the local mitigation plan meets the regulation in 44 CFR § 201.6 and offers states and FEMA Mitigation Planners an opportunity to provide feedback to the local governments, including special districts.

1. The Multi-Jurisdictional Summary Sheet is a worksheet that is used to document how each jurisdiction met the requirements of the plan elements (Planning Process; Risk Assessment; Mitigation Strategy; Plan Maintenance; Plan Update; and Plan Adoption).
2. The Plan Review Checklist summarizes FEMA's evaluation of whether the plan has addressed all requirements.

*For greater clarification of the elements in the Plan Review Checklist, please see Section 4 of this guide. Definitions of the terms and phrases used in the PRT can be found in Appendix E of this guide.*

Plan Information	
<b>Jurisdiction(s)</b>	Chickasaw County, Cities of Alta Vista; Bassett; Fredericksburg; Ionia; Lawler; Nashua; New Hampton; North Washington; Protivin; School Districts of New Hampton; Sumner-Fredericksburg; Nashua-Plainfield
<b>Title of Plan</b>	2024 Multi-Jurisdictional Hazard Mitigation Plan Update for Chickasaw County, Iowa
<b>New Plan or Update</b>	Update
<b>Single- or Multi-Jurisdiction</b>	Multi-jurisdiction
<b>Date of Plan</b>	6/1/2024
Local Point of Contact	
<b>Title</b>	Isaiah Corbin, Director of Development
<b>Agency</b>	Iowa Northland Regional Council of Governments
<b>Address</b>	229 E. Park Ave. Waterloo, IA 50703
<b>Phone Number</b>	319-235-0311
<b>Email</b>	icorbin@inrcog.org

Additional Point of Contact	
<b>Title</b>	Jeff Bernatz, Chickasaw County Emergency Manager
<b>Agency</b>	Chickasaw County Emergency Management Office
<b>Address</b>	516 S. Linn Ave., New Hampton, IA 50659
<b>Phone Number</b>	319-394-2406
<b>Email</b>	j.bernatz@chickasawcounty.iowa.go

Review Information	
State Review	
<b>State Reviewer(s) and Title</b>	Jack Stinogel, Hazard Mitigation Planner
<b>State Review Date</b>	9/4/2024
FEMA Review	
<b>FEMA Reviewer(s) and Title</b>	Stephanie Drake, FEMA Planner; Danielle Curtis, CERC Planner
<b>Date Received in FEMA Region</b>	9/4/2024; 10/30/2024
<b>Plan Not Approved</b>	10/24/2024
<b>Plan Approvable Pending Adoption</b>	Click or tap to enter a date.
<b>Plan Approved</b>	12/3/2024

## Multi-Jurisdictional Summary Sheet

In the boxes for each element, mark if the element is met (Y) or not met (N).

#	Jurisdiction Name	A. Planning Process	B. Risk Assessment	C. Mitigation Strategy	D. Plan Maintenance	E. Plan Update	F. Plan Adoption	G. HHPD Requirements	H. State Requirements
1	Chickasaw County	Y	Y	Y	Y	Y	Y	N/A	N/A
2	Alta Vista	Y	Y	Y	Y	Y	Y	N/A	N/A
3	Bassett	Y	Y	Y	Y	Y	N	N/A	N/A
4	Fredericksburg	Y	Y	Y	Y	Y	Y	N/A	N/A
5	Ionia	Y	Y	Y	Y	Y	Y	N/A	N/A
6	Lawler	Y	Y	Y	Y	Y	Y	N/A	N/A
7	Nashua	Y	Y	Y	Y	Y	Y	N/A	N/A
8	New Hampton	Y	Y	Y	Y	Y	Y	N/A	N/A
9	North Washington	Y	Y	Y	Y	Y	Y	N/A	N/A
10	Protivin	Y	Y	Y	Y	Y	Y	N/A	N/A
11	New Hampton Community School District	Y	Y	Y	Y	Y	Y	N/A	N/A
12	Sumner-Fredericksburg Community School District	Y	Y	Y	Y	Y	Y	N/A	N/A
13	Nashua Plainfield Community School District	Y	Y	Y	Y	Y	Y	N/A	N/A

## Plan Review Checklist

The Plan Review Checklist is completed by FEMA. States and local governments are encouraged, but not required, to use the PRT as a checklist to ensure all requirements have been met prior to submitting the plan for review and approval. The purpose of the checklist is to identify the location of relevant or applicable content in the plan by element/sub-element and to determine if each requirement has been “met” or “not met.” FEMA completes the “required revisions” summary at the bottom of each element to clearly explain the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is “not met.” Sub-elements in each summary should be referenced using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each element and sub-element are described in detail in Section 4: Local Plan Requirements of this guide.

Plan updates must include information from the current planning process.

If some elements of the plan do not require an update, due to minimal or no changes between updates, the plan must document the reasons for that.

Multi-jurisdictional elements must cover information unique to all participating jurisdictions.

### Element A: Planning Process

Element A Requirements	Location in Plan (section and/or page number)	Met / Not Met
<b>A1. Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement 44 CFR § 201.6(c)(1))</b>		
A1-a. Does the plan document how the plan was prepared, including the schedule or time frame and activities that made up the plan’s development, as well as who was involved?	Section I, pp. 5-11 Appendix N, O	Met
A1-b. Does the plan list the jurisdiction(s) participating in the plan that seek approval, and describe how they participated in the planning process?	Section I, p. 10	Met

Element A Requirements	Location in Plan (section and/or page number)	Met / Not Met
<b>A2. Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development as well as businesses, academia, and other private and non-profit interests to be involved in the planning process? (Requirement 44 CFR § 201.6(b)(2))</b>		
A2-a. Does the plan identify all stakeholders involved or given an opportunity to be involved in the planning process, and how each stakeholder was presented with this opportunity?	Section I, pp. 7-10 Appendix O	Met
<b>A3. Does the plan document how the public was involved in the planning process during the drafting stage and prior to plan approval? (Requirement 44 CFR § 201.6(b)(1))</b>		
A3-a. Does the plan document how the public was given the opportunity to be involved in the planning process and how their feedback was included in the plan?	Section I, p. 9 Appendix N, O	Met
<b>A4. Does the plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement 44 CFR § 201.6(b)(3))</b>		
A4-a. Does the plan document what existing plans, studies, reports and technical information were reviewed for the development of the plan, as well as how they were incorporated into the document?	Section I, p. 11  Section III, p. 67  Jurisdictional Appendices A-L	Met



## ELEMENT A REQUIRED REVISIONS

Required Revision:

None.

### Strengths

- The plan includes in-depth records of the planning process. The presentation slides, agendas, and sign-in sheets support the narratives in this section.
- The plan is organized well, and it is easy for the reader to find information in each section.

### Opportunities for Improvement

- Find more ways to directly engage underserved and vulnerable populations. For instance, hold meetings outside of normal working hours. Offer a virtual or in-person option for attending meetings. Hold meetings in the areas where vulnerable groups of people live, like nursing homes.
- Consider how to mark the parts of the plan that have been updated. This will make it easy to see if and how the community's risks and priorities have changed in the past five years.

## Element B: Risk Assessment

Element B Requirements	Location in Plan (section and/or page number)	Met / Not Met
<b>B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect the jurisdiction? Does the plan also include information on previous occurrences of hazard events and on the probability of future hazard events? (Requirement 44 CFR § 201.6(c)(2)(i))</b>		
B1-a. Does the plan describe all natural hazards that can affect the jurisdiction(s) in the planning area, and does it provide the rationale if omitting any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area?	Section III, pp. 32-35, 36-52	Met

Element B Requirements	Location in Plan (section and/or page number)	Met / Not Met
B1-b. Does the plan include information on the location of each identified hazard?	<p>Section III</p> <p>Drought: p. 36</p> <p>Earthquake: p. 37</p> <p>Expansive Soils: p. 38</p> <p>Extreme Heat: p. 39</p> <p>Flash Flood: p. 40</p> <p>River Flooding: p. 41</p> <p>Grass/ Wildland Fire: pp. 42-43</p> <p>Landslide: p. 47</p> <p>Levee/ Dam Failure: pp. 48 – 49</p> <p>Severe Winter Storm: pp. 50</p> <p>Sinkholes: p. 51</p> <p>Thunderstorm: p. 52</p> <p>Tornado: p. 53</p>	Met

Element B Requirements	Location in Plan (section and/or page number)	Met / Not Met
B1-c. Does the plan describe the extent for each identified hazard?	<p>Section III, pp. 30-33</p> <p>Drought: p. 36</p> <p>Earthquake: p. 37</p> <p>Expansive Soils: p. 38</p> <p>Extreme Heat: p. 39</p> <p>Flash Flood: p. 40</p> <p>River Flooding: p. 41</p> <p>Grass/ Wildland Fire: pp. 42-43</p> <p>Landslide: p. 47</p> <p>Levee/ Dam Failure: pp. 48 – 49</p> <p>Severe Winter Storm: pp. 50</p> <p>Sinkholes: p. 51</p> <p>Thunderstorm: p. 52</p> <p>Tornado: p. 53</p> <p>Jurisdictional Appendices A-L</p>	Met

Element B Requirements	Location in Plan (section and/or page number)	Met / Not Met
B1-d. Does the plan include the history of previous hazard events for each identified hazard?	<p>Section III, p. 31</p> <p>Drought: p. 36</p> <p>Earthquake: p. 37</p> <p>Expansive Soils: p. 38</p> <p>Extreme Heat: p. 39</p> <p>Flash Flood: p. 40</p> <p>River Flooding: p. 41</p> <p>Grass/ Wildland Fire: pp. 42-43</p> <p>Landslide: p. 47</p> <p>Levee/ Dam Failure: pp. 48 – 49</p> <p>Severe Winter Storm: pp. 50</p> <p>Sinkholes: p. 51</p> <p>Thunderstorm: p. 52</p> <p>Tornado: p. 53</p>	Met

Element B Requirements	Location in Plan (section and/or page number)	Met / Not Met
<p>B1-e. Does the plan include the probability of future events for each identified hazard? Does the plan describe the effects of future conditions, including climate change (e.g., long-term weather patterns, average temperature and sea levels), on the type, location and range of anticipated intensities of identified hazards?</p>	<p>Section III, pp. 30-33</p> <p>Drought: p. 36</p> <p>Earthquake: p. 37</p> <p>Expansive Soils: p. 38</p> <p>Extreme Heat: p. 39</p> <p>Flash Flood: p. 40</p> <p>River Flooding: p. 41</p> <p>Grass/ Wildland Fire: pp. 42-43</p> <p>Landslide: p. 47</p> <p>Levee/ Dam Failure: pp. 48 – 49</p> <p>Severe Winter Storm: pp. 50</p> <p>Sinkholes: p. 51</p> <p>Thunderstorm: p. 52</p> <p>Tornado: p. 53</p> <p>pp. 71-73</p> <p>Jurisdictional Appendices A-L</p>	<p>Met</p>

Element B Requirements	Location in Plan (section and/or page number)	Met / Not Met
<p>B1-f. For participating jurisdictions in a multi-jurisdictional plan, does the plan describe any hazards that are unique to and/or vary from those affecting the overall planning area?</p>	<p>Section III, pp. 30-33</p> <p>Drought: p. 36</p> <p>Earthquake: p. 37</p> <p>Expansive Soils: p. 38</p> <p>Extreme Heat: p. 39</p> <p>Flash Flood: p. 40</p> <p>River Flooding: p. 41</p> <p>Grass/ Wildland Fire: pp. 42-43</p> <p>Landslide: p. 47</p> <p>Levee/ Dam Failure: pp. 48 – 49</p> <p>Severe Winter Storm: pp. 50</p> <p>Sinkholes: p. 51</p> <p>Thunderstorm: p. 52</p> <p>Tornado: p. 53</p> <p>Jurisdictional Appendices A-L</p>	<p>Met</p>



Element B Requirements	Location in Plan (section and/or page number)	Met / Not Met
<b>B2. Does the plan include a summary of the jurisdiction's vulnerability and the impacts on the community from the identified hazards? Does this summary also address NFIP-insured structures that have been repetitively damaged by floods? (Requirement 44 CFR § 201.6(c)(2)(ii))</b>		
B2-a. Does the plan provide an overall summary of each jurisdiction's vulnerability to the identified hazards?	Section III, pp. 60-75  Jurisdictional Appendices A-L	Met
B2-b. For each participating jurisdiction, does the plan describe the potential impacts of each of the identified hazards on each participating jurisdiction?	Section III, pp. 60-75  Jurisdictional Appendices A-L	Met
B2-c. Does the plan address NFIP-insured structures within each jurisdiction that have been repetitively damaged by floods?	Section III, p. 74  Jurisdictional Appendices A-L	Met

**ELEMENT B REQUIRED REVISIONS**

Required Revision:

None

**Strengths**

- The plan clearly identifies federal and state disaster declarations.
- The plan includes a community profile for the county and all participating jurisdictions. The profile has demographic information, development trends, and landscape features. This makes community assets and vulnerabilities clear.

**Opportunities for Improvement**

- Ensure the definitions for hazard probability are consistent throughout the plan.
- Caution is urged when applying a CPRI to determine the planning significance of a hazard -- especially using the chosen scales and definitions for probability, magnitude, warning time and duration -- as a CPRI tends to over-inflate the actual risks for some hazards and underrepresent risk from others. Regarding Magnitude/Severity (Extent) for instance, a negligible rating is defined as 10% of the structures severely damaged. With around \$1 million in structures, 10% would equate to about \$100 thousand, and there is no indication that any of the hazards have had that great of an impact. In 2018, the State of Iowa moved away from a ranking system and simply presented the relevant data points for each hazard.

**Element C: Mitigation Strategy**

Element C Requirements	Location in Plan (section and/or page number)	Met / Not Met
<b>C1. Does the plan document each participant's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement 44 CFR § 201.6(c)(3))</b>		
C1-a. Does the plan describe how the existing capabilities of each participant are available to support the mitigation strategy? Does this include a discussion of the existing building codes and land use and development ordinances or regulations?	Section IV, pp. 77-80, 87 Jurisdictional Appendices A-L	Met
C1-b. Does the plan describe each participant's ability to expand and improve the identified capabilities to achieve mitigation?	Section IV, pp. 77-80 Jurisdictional Appendices A-L	Met

Element C Requirements	Location in Plan (section and/or page number)	Met / Not Met
<b>C2. Does the plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement 44 CFR § 201.6(c)(3)(ii))</b>		
C2-a. Does the plan contain a narrative description or a table/list of their participation activities?	Section III, pp. 66, 74 Section IV, pp. 86-87 Jurisdictional Appendices A-L	Met
<b>C3. Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement 44 CFR § 201.6(c)(3)(i))</b>		
C3-a. Does the plan include goals to reduce the risk from the hazards identified in the plan?	Section IV, pp. 76 Jurisdictional Appendices A-L	Met
<b>C4. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement 44 CFR § 201.6(c)(3)(ii))</b>		
C4-a. Does the plan include an analysis of a comprehensive range of actions/projects that each jurisdiction considered to reduce the impacts of hazards identified in the risk assessment?	Section IV, pp. 90-95 Jurisdictional Appendices A-L	Met
C4-b. Does the plan include one or more action(s) per jurisdiction for each of the hazards as identified within the plan's risk assessment?	Section IV, pp. 90-95 Jurisdictional Appendices A-L	Met
<b>C5. Does the plan contain an action plan that describes how the actions identified will be prioritized (including a cost-benefit review), implemented, and administered by each jurisdiction? (Requirement 44 CFR § 201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))</b>		
C5-a. Does the plan describe the criteria used for prioritizing actions?	Section IV, pp. 88-89	Met
C5-b. Does the plan provide the position, office, department or agency responsible for implementing/administrating the identified mitigation actions, as well as potential funding sources and expected time frame?	Section IV, pp. 89-95 Jurisdiction Appendices A-L	Met

**ELEMENT C REQUIRED REVISIONS**

Required Revision:

None

**Strengths**

- The plan's goals and mitigation actions are integrated with other local planning efforts. This will help communities carry out the mitigation strategy.
- The plan includes a broad range of mitigation action types that are clearly categorized.
- The mitigation strategy includes actions that span more than five years. This shows that the committee is considering the long-term impacts of mitigation efforts.

**Opportunities for Improvement**

- Consider potential alternative funding sources for mitigation actions. Think about resources you may use through other federal agencies, state programs, regional planning agencies, nonprofits, etc. The [Environmental Protection Agency](#) has grants available for resilience projects.
- It is not clear to the reader who is responsible in each jurisdiction for implementing and enforcing the NFIP. Consider adding clarifying language and consistent notation of NFIP information for each jurisdiction such as the table on p. 17 of the Alta Vista profile.
- Regarding element C5-a, page 88 of the plan describes how the committee determined the mitigation action priority level based on resources and capabilities but does not elaborate on what these factors were and how they were weighed. Consider providing more detail on the criteria for prioritizing mitigation actions. Criteria should include an emphasis on weighing costs and benefits.

**Element D: Plan Maintenance**

Element D Requirements	Location in Plan (section and/or page number)	Met / Not Met
<b>D1. Is there discussion of how each community will continue public participation in the plan maintenance process? (Requirement 44 CFR § 201.6(c)(4)(iii))</b>		
D1-a. Does the plan describe how communities will continue to seek future public participation after the plan has been approved?	Section V, pp. 96-101	Met

Element D Requirements	Location in Plan (section and/or page number)	Met / Not Met
<b>D2. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a five-year cycle)? (Requirement 44 CFR § 201.6(c)(4)(i))</b>		
D2-a. Does the plan describe the process that will be followed to track the progress/status of the mitigation actions identified within the Mitigation Strategy, along with when this process will occur and who will be responsible for the process?	Section V, pp. 96-101	Met
D2-b. Does the plan describe the process that will be followed to evaluate the plan for effectiveness? This process must identify the criteria that will be used to evaluate the information in the plan, along with when this process will occur and who will be responsible.	Section V, pp. 96-101	Met
D2-c. Does the plan describe the process that will be followed to update the plan, along with when this process will occur and who will be responsible for the process?	Section V, p. 97	Met
<b>D3. Does the plan describe a process by which each community will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement 44 CFR § 201.6(c)(4)(ii))</b>		
D3-a. Does the plan describe the process the community will follow to integrate the ideas, information and strategy of the mitigation plan into other planning mechanisms?	Section V: pp. 96-101	Met
D3-b. Does the plan identify the planning mechanisms for each plan participant into which the ideas, information and strategy from the mitigation plan may be integrated?	Section V: pp. 96-101	Met
D3-c. For multi-jurisdictional plans, does the plan describe each participant's individual process for integrating information from the mitigation strategy into their identified planning mechanisms?	Section V: pp. 96-101	Met

**ELEMENT D REQUIRED REVISIONS**

Required Revision:

None

**Strengths**

- Including plan evaluation comments from the previous plan in Appendix N is a great way to show how the previous plan stayed current and the updated plan incorporated updates from each jurisdiction. This is a good system to continue for future updates.
- Keeping the plan online is a good way to give the public the opportunity to provide feedback throughout the life of the plan.

**Opportunities for Improvement**

- Provide more detail on how the planning team will directly engage with underserved and vulnerable populations during the next five years. An equitable public outreach strategy does not end when the plan is adopted. Use the vulnerable assets assessment in each of the jurisdictional appendices to inform outreach to the vulnerable groups that were identified.

**Element E: Plan Update**

Element E Requirements	Location in Plan (section and/or page number)	Met / Not Met
<b>E1. Was the plan revised to reflect changes in development? (Requirement 44 CFR § 201.6(d)(3))</b>		
E1-a. Does the plan describe the changes in development that have occurred in hazard-prone areas that have increased or decreased each community's vulnerability since the previous plan was approved?	Section III: p. 71	Met
<b>E2. Was the plan revised to reflect changes in priorities and progress in local mitigation efforts? (Requirement 44 CFR § 201.6(d)(3))</b>		
E2-a. Does the plan describe how it was revised due to changes in community priorities?	Section I, p. 7  Jurisdictional Appendices A-L	Met
E2-b. Does the plan include a status update for all mitigation actions identified in the previous mitigation plan?	Appendix N	Met



Element E Requirements	Location in Plan (section and/or page number)	Met / Not Met
E2-c. Does the plan describe how jurisdictions integrated the mitigation plan, when appropriate, into other planning mechanisms?	Section I, p. 11	Met
<b>ELEMENT E REQUIRED REVISIONS</b>		
<p>Required Revision:</p> <p>None.</p> <p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>Appendix N is detailed and clearly shows the progress of previous mitigation actions, including details as to why some actions were canceled or delayed.</li> </ul> <p><b>Opportunities for Improvement</b></p> <ul style="list-style-type: none"> <li>Provide any lessons learned or success stories from mitigation actions that have been implemented since the last plan. This is a good opportunity to show progress in community resilience.</li> <li>Regarding element E2-a, it is unclear how the updated plan was revised due to changes in community priorities. Consider explaining changes in priorities for each jurisdiction were considered in the plan update. Priorities are defined by each jurisdiction and may include political, economic, recent disasters, etc. Alternatively, if no changes have occurred in priorities since the 2019 plan, state this.</li> </ul>		

## Element F: Plan Adoption

Element F Requirements	Location in Plan (section and/or page number)	Met / Not Met
<b>F1. For single-jurisdictional plans, has the governing body of the jurisdiction formally adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))</b>		
F1-a. Does the participant include documentation of adoption?	<p>Appendix M</p> <p>HMP cannot be adopted before official FEMA approval.</p>	Met

Element F Requirements	Location in Plan (section and/or page number)	Met / Not Met
<b>F2. For multi-jurisdictional plans, has the governing body of each jurisdiction officially adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))</b>		
F2-a. Did each participant adopt the plan and provide documentation of that adoption?	Appendix M	Not Met
<b>ELEMENT F REQUIRED REVISIONS</b>		
<p>Required Revision:</p> <p>F2-a. An adoption resolution was provided for each jurisdiction except Bassett. A resolution must be provided within one year of the HMP's approval for Bassett to be approved. Participating jurisdictions that adopt the plan more than one year after APA status has been issued must either:</p> <ul style="list-style-type: none"> <li>• Validate that their information in the plan remains current with respect to both the risk assessment (no recent hazard events, no changes in development) and their mitigation strategy (no changes necessary); or</li> <li>• Make the necessary updates before submitting the adoption resolution to FEMA.</li> </ul>		

## Element G: High Hazard Potential Dams (Optional)

HHPD Requirements	Location in Plan (section and/or page number)	Met / Not Met
<b>HHPD1. Did the plan describe the incorporation of existing plans, studies, reports and technical information for HHPDs?</b>		
HHPD1-a. Does the plan describe how the local government worked with local dam owners and/or the state dam safety agency?		N/A
HHPD1-b. Does the plan incorporate information shared by the state and/or local dam owners?		N/A
<b>HHPD2. Did the plan address HHPDs in the risk assessment?</b>		
HHPD2-a. Does the plan describe the risks and vulnerabilities to and from HHPDs?		N/A
HHPD2-b. Does the plan document the limitations and describe how to address deficiencies?		N/A

HHPD Requirements	Location in Plan (section and/or page number)	Met / Not Met
<b>HHPD3. Did the plan include mitigation goals to reduce long-term vulnerabilities from HHPDs?</b>		
HHPD3-a. Does the plan address how to reduce vulnerabilities to and from HHPDs as part of its own goals or with other long-term strategies?		N/A
HHPD3-b. Does the plan link proposed actions to reducing long-term vulnerabilities that are consistent with its goals?		N/A
<b>HHPD4-a. Did the plan include actions that address HHPDs and prioritize mitigation actions to reduce vulnerabilities from HHPDs?</b>		
HHPD4-a. Does the plan describe specific actions to address HHPDs?		N/A
HHPD4-b. Does the plan describe the criteria used to prioritize actions related to HHPDs?		N/A
HHPD4-c. Does the plan identify the position, office, department or agency responsible for implementing and administering the action to mitigate hazards to or from HHPDs?		N/A
<b>HHPD Required Revisions</b>		
<p>Required Revision:</p> <p>None.</p> <p>No high hazard dams were identified within the planning area and therefore the plan was not evaluated for HHPD criteria.</p>		