Jasper County
Hazard Mitigation Plan
2022 - 2027

This plan maintains Hazard Mitigation Assistance (HMA) funding eligibility for participating jurisdictions from March 7, 2023 to March 6, 2028. The plan was prepared by the East Central Iowa Council of Governments (ECICOG) in partnership with the Jasper County Emergency Management Agency.

Jasper County
- IOWA -

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The appendix to this plan is available as a separate document.

Introduction

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August 2020 Derecho Event Debrief Meeting
Jasper County Emergency Management

Hazard Mitigation Planning Overview

The primary purpose of hazard mitigation planning is to identify how a community can minimize the negative impacts—such as death, injury, property damage, and community disruption—of natural, technological, and human-caused hazards. For Iowa and Jasper County, recurring natural disasters such as windstorms, tornadoes, flooding, and severe winter storms have made local hazard mitigation planning essential. Local hazard mitigation plans are, at a minimum, required to:

- Document the planning process
- Identify hazards and assess risks
- Document mitigation strategies and priorities
- If applicable, provide an update to the previously approved plan(s)
- Establish a local plan incorporation and maintenance process

The participating jurisdictions are required to formally adopt the plan for FEMA approval. The county, city, and school districts within a planning area are the typical jurisdictions participating in a hazard mitigation plan.

The secondary purpose of hazard mitigation planning is to maintain a local government's eligibility to apply for the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Assistance (HMA) funding, which includes which includes the Pre-Disaster Mitigation (PDM) program, Hazard Mitigation Grant Program (HMGP), and the Flood Mitigation Assistance (FMA) program. HMGP grant funding is made available following a Presidential Disaster Declaration while PDM and FMA funding is nationally competitive and awarded on an annual cycle. Upon approval of this plan, the county, cities, and school districts included in this plan are eligible to apply for HMA funding to complete their mitigation strategy.

The importance of hazard mitigation planning was recognized at the federal level in the Robert T. Stafford Disaster Relief and Emergency Assistance Act, which was amended most recently by the Disaster Mitigation Act of 2000 (DMA 2000). The current federal requirements for local hazard mitigation planning that are required for eligibility for HMA are contained in Title 44 of the Code of Federal Regulations §201.6. DMA 2000 repealed previously established mitigation planning provisions and replaced them with requirements that emphasize the need to coordinate mitigation planning and implementation.

Jasper County Hazard Mitigation Plan

Plan Background

This plan is a multi-jurisdictional hazard mitigation plan for Jasper County, Iowa and participating jurisdictions within the county. It is an update to the *Jasper County, Iowa Multi-Jurisdictional Hazard Mitigation Plan* approved on August 30, 2016. In partnership with the Jasper County Emergency Management Agency (EMA) and participating jurisdictions, the plan was developed by the East Central Iowa Council of Governments (ECICOG). ECICOG is a regional planning agency in Cedar Rapids that provides planning and grant administration services in Benton, Iowa, Johnson, Jones, Linn, and Washington County. Jasper County is in a region with no local council of governments, and ECICOG was a planning consultant approved by the State of Iowa to provide planning services for this plan. The development of this plan was funded by the Iowa Department of Homeland Security and Emergency Management (HSEMD) and Jasper County Emergency Management Agency.

This plan fulfills the requirements of the Stafford Act, DMA 2000, and Title 44 of the Code of Federal Regulations §201.6. Throughout the development of this plan, the consultant balanced applicable federal legislation and local priorities to provide Jasper County with an approved, value-added plan.

Plan development began January 2021 and occurred over an 18 – month period that involved collaboration among local officials, staff, Jasper County EMA, and ECICOG. The planning consultant facilitated research, public meetings, and a public comment period. The plan was submitted to HSEMD for initial review on May 16, 2022 and to FEMA for final review on January 27, 2023. Upon approval and adoption by participating jurisdictions, this plan is effective for five years and maintains eligibility for HMA funding. The plan received FEMA-approval on March 7, 2022.

PLAN EFFECTIVE PERIOD

Approval Date: March 7, 2023
Expiration Date: March 6, 2028

Plan Participants

The planning area for a multi-jurisdictional hazard mitigation plan includes multiple jurisdictions with common climate and geography. Jurisdictions are either contiguous or located in proximity. In Iowa, the planning area for a multi-jurisdictional plan typically includes an entire county. In Jasper County, the planning area includes the unincorporated areas, cities, and school districts. See Table 1 for a list of jurisdictions included in this plan.

Table 1: Jasper County Hazard Mitigation Plan Participants

Jurisdiction	2016 – 2021 Plan	2022 – 2027 Plan
Jasper County	X	X
Baxter	X	X
Colfax	X	X
Kellogg	X	X
Lambs Grove	X	X
Lynnville	X	X
Mingo	X	X
Monroe	X	X
Newton	X	X
Oakland Acres	X	X
Prairie City	X	X
Reasnor	X	X
Sully	X	X
Valeria	X	X
Baxter Community School District	X	X
Colfax-Mingo Community School District	X	X
Lynnville-Sully Community School District	X	X
Newton Community School District	X	X
PCM Community School District	X	X

Plan Development

A hazard mitigation plan is the product of a multi-year planning process that involves collaboration between officials, staff, and residents in participating jurisdictions. The process is completed by a coordinator, usually a planner, who works with each jurisdiction, HSEMD, and FEMA Region 7. The primary goals of the planner are to ensure the planning process and final document focus on the mitigation priorities of participating jurisdictions and fulfill regulatory requirements.

Planning Consultant

In partnership with Jasper County Emergency Management and participating jurisdictions, the plan was developed by the East Central Iowa Council of Governments (ECICOG). ECICOG is a regional planning agency in Cedar Rapids that provides planning and grant administration services in Benton, Iowa, Johnson, Jones, Linn, and Washington County. Jasper County is in a region with no local council of governments, and ECICOG was a planning consultant approved by the State of Iowa to provide planning services for this plan. ECICOG's planning staff have knowledge and experience in multi-jurisdictional hazard mitigation planning after developing FEMA-approved plans for multiple counties in its traditional service area. For more information about ECICOG, visit the agency website at www.ecicog.org.

Review and Research

Throughout the plan development process, existing documents and data for each jurisdiction were reviewed for relevance and potential inclusion in this plan. Other documents incorporated into the content of this plan include local regulatory documents, planning and procedure documents, and maps. Jurisdictions included in this plan are diverse in purpose and size so the types of documents available vary for each jurisdiction. In each jurisdiction's Operations & Resources, the jurisdiction-specific documents incorporated into the content or development of this plan are described. A valuable source of information, referenced often in this plan, is the *Iowa Hazard Mitigation Plan 2018* prepared by HSEMD.

In addition to existing documents, research was completed to include current information for each jurisdiction in the plan. The bulk of this research consists of database searches for hazard event information relevant to Jasper County. The databases used are cited throughout the plan. Discussions with planning committee members provide invaluable local perspective that complements the available data.

To ensure this plan meets regulatory requirements, the October 2011 version of the *Local Mitigation Plan Review Guide*, provided by the FEMA, was referenced regularly throughout the plan development process. The planning process was designed to meet or exceed the basic requirements presented in the guide for a multi-jurisdictional plan.

Planning Meetings

To begin the plan update process, a countywide plan introduction and goal setting meeting was held on August 10, 2021 at the Jasper County Community Center in Newton. Meeting participants included staff and officials from the county and several, not all, communities and school districts. The planning consultant provided an overview of hazard mitigation planning and HMA grant programs. Goals from the current plan were reviewed, and new, revised goals were discussed for the plan update. Goals were finalized after meeting participants confirmed the revised goals in a feedback survey that was sent by the planning consultant after the meeting.

Plan update kick-off meetings were held on August 19, 2021 to provide all Jasper County jurisdictions with an overview of hazard mitigation planning, HMA grant programs, and requirements for participating in the plan update process. Two kick-off meetings were held virtually, via Zoom, in the morning and evening to provide attendance flexibility for staff and officials. Basic participation requirements included forming a local planning committee, hosting a community meeting, and adopting the plan by resolution.

Following the kick-off meetings, the planning consultant worked directly with a primary contact in each jurisdiction. With guidance from the consultant, the primary contact identified and invited members of the community to serve on the local planning committee, scheduled a local planning meeting, and posted a public meeting notice. To maintain an open plan development process, a public meeting was held in each jurisdiction. Every person in attendance at the planning meeting was considered a member of the respective jurisdiction's planning committee. A schedule of local planning meetings is shown in Table 2.

Table 2: Local Planning Meetings

Jurisdiction	Meeting Date	Location
Jasper County	January 20, 2022	Jasper County EOC
Baxter	December 14, 2021	City Hall
Colfax	December 8, 2021	City Hall
Kellogg	November 17, 2021	Fire Department
Lambs Grove	December 7, 2021	Virtual via Zoom
Lynnville	November 1, 2021	City Hall
Mingo	October 27, 2021	Virtual via Zoom
Monroe	December 20, 2021	Virtual via Zoom
Newton	December 7, 2021	City Hall
Oakland Acres	December 14, 2021	Virtual via Zoom
Prairie City	November 22, 2021	Virtual via Zoom
Reasnor	December 3, 2021	Virtual via Zoom
Sully	December 13, 2021	City Hall
Valeria	December 13, 2021	City Hall

Table 2: Local Planning Meetings Continued

Jurisdiction	Meeting Date	Location
Baxter Community School District	December 2, 2021	Baxter Elementary School
Colfax-Mingo Community School District	April 22, 2022	Virtual via Zoom
Lynnville-Sully Community School District	March 15, 2022	Virtual via Zoom
Newton Community School District	January 18, 2022	Virtual via Zoom
PCM Community School District	January 5, 2022	Virtual via Zoom

During the local planning meetings, a consistent set of agenda items was followed for all types and sizes of jurisdictions. The agenda is included below. The community summary referenced in the meeting agenda includes hazard prioritization, critical facilities, vulnerable populations, operations and resources, and mitigation strategy update and prioritization.

PLANNING MEETING AGENDA

1. Introductions
2. Hazard Mitigation Planning Overview
3. Hazard Mitigation Funding
4. Review and Update Community Summary
5. Next Steps
6. Questions

Preceding each meeting, the planning consultant prepared and provided documentation with relevant information for each agenda item so the planning committee could prepare for the meeting. Documentation was also posted online to the planning consultant's public engagement page for the plan update process, which is available at www.talkto.ecicog.org/jasper-hazmit.

For review and future updates of this plan, the members of each jurisdiction's planning committee can provide valuable context regarding the information discussed, especially local knowledge, and final decisions about the jurisdiction's mitigation strategy. Documentation for all planning meetings include the following items: 1) public notice, 2) agenda, and 4) planning committee members. The documentation for each jurisdiction is included in the appendix.

Survey

In addition to local planning meetings, an online survey was administered to allow the public to provide additional feedback focused on hazard prioritization in Jasper County. The purpose of the survey was to understand which hazards the public thought were most important to prepare for in Jasper County. Each jurisdiction was responsible for promoting the survey before their local planning meeting. Depending on the preferred method for communicating with their community, the survey was promoted by the jurisdiction on social media, newsletter, etc. There were eighty-three responses to the survey. During local planning meetings, basic results were discussed and compared to the risk assessment. Hazard priority survey results are discussed in more detail in the Risk Assessment chapter of this plan.

Online Public Engagement

The planning consultant, ECICOG, uses EngagementHQ for planning projects, which is an online community engagement platform. ECICOG developed and maintained a project page for the Jasper County hazard mitigation plan update process, which is available at www.talkto.ecicog.org/jasper-hazmit. The page included basic information about hazard mitigation planning, local planning meeting schedule, meeting and jurisdiction documents, surveys, and plan.

Jasper County Hazard Mitigation Plan Page on ECICOG Online Public Engagement Platform

Plan Writing

This plan was written by ECICOG based on the review of the existing *Jasper County Multi-jurisdictional Hazard Mitigation Plan* approved on August 30, 2016, relevant documents, research, and discussion at local planning meetings with each jurisdiction's planning committee. Plan writing was ongoing throughout the plan development process. The planning committee in each jurisdiction had the opportunity to provide feedback before the plan was posted for public comment to eliminate factual errors and clarify the mitigation strategy, if needed.

Public Comment

The 30-day public comment period for this plan began May 13, 2022 and ended June 11, 2022. The plan and plan review survey were posted on ECICOG's online public engagement project page, which is available at www.talkto.ecicog.org/jasper-hazmit. The public, officials, and planning committee members could provide comments and ask questions by completing the plan review survey or directly submitting comments and questions to the planning consultant.

To announce the public comment period, a news release with information about the public comment period was sent to each participating jurisdiction, local media, and emergency management coordinators in surrounding counties—Polk, Story, Marshall, Tama, Poweshiek, Mahaska, Marion, and Warren. Specifically inviting surrounding counties to participate in the public comment period allows for potential regional cooperation beyond Jasper County because the mitigation strategies and action plans are not yet final with plan adoption and FEMA approval.

Four responses to the plan review survey were received. Of the four, two came from respondents from Newton, one from the Newton Community School District, and one from Jasper County Emergency Management. Two of the respondents did not have any comments or revisions to suggest. One respondent noted that "the draft plan is very thorough in [its] representation of all the communities and school districts."

One respondent submitted a comment stating concerns about the risks from the tornado and windstorm hazard to people living in mobile homes and muti-family housing. The primary concern was people living in this type of housing do not currently have access to a safe storm shelter and will not likely have access unless grant money is made available to residents. The planning consultant and Jasper County Emergency Management reached out to the individual who submitted this comment to discuss their concern, explain Hazard Mitigation Assistance funding eligibility, and the general decision-making process for prioritizing hazards and identifying potential mitigation actions.

The planning committee in each jurisdiction had the opportunity to provide feedback before the plan was posted for public comment to eliminate factual errors and clarify the mitigation strategy, if needed. Most planning committee comments were to clarify the jurisdiction's critical facilities, operations and resources, and mitigation actions. Since this plan affects eligibility for mitigation project funding, planning committees wanted to ensure the overall mitigation strategy reflected local risk and priorities in their jurisdiction.

Plan Review and Revision

During the public comment period, the draft version of this plan was concurrently reviewed by HSEMD's hazard mitigation planner and FEMA Region 7 plan reviewers. Required plan edits included the following: information will be included here, if applicable.

Plan Approval and Adoption

This plan was submitted for public comment, review, and approval on May 13, 2022. An initial review of the plan was completed by Iowa's hazard mitigation planner with HSEMD. After the state review process, the plan was submitted to the FEMA Region 7 plan reviewers for final review and approval on Month ##, 2022. Jasper County adopted the initial draft of the plan by resolution on Month ##, 2022, and the plan was officially approved on Month ##, 2022.

PLAN EFFECTIVE PERIOD

Approval Date: Month ##, 2022
Expiration Date: Month ##, 2022

Plan Goals

To begin the plan update process, a countywide plan introduction and goal setting meeting was held on August 10, 2021 at the Jasper County Community Center in Newton. Meeting participants included staff and officials from the county and several, not all, communities and school districts. The planning consultant provided an overview of hazard mitigation planning and HMA grant programs. Goals from the 2016 - 2021 plan, included below, were reviewed.

2016 – 2021 Hazard Mitigation Goals

1. Minimize injuries and loss of life due to the impacts of natural hazards.
2. Reduce or eliminate damages to property due to natural hazards.
3. Manage response operations with or without state and federal Assistance.
4. Help ensure timely resumption of business operations.
5. Return to pre-disaster conditions in a timely and pre-planned manner.

New, revised goals were discussed for the plan update. Goals were finalized after meeting participants reviewed the revised goals in a goal setting survey posted on ECICOG's online public engagement project page, which is available at www.talkto.ecicog.org/jasper-hazmit.

The main revision to the goals was to add a greater focus on resiliency and education. A minor revision to the goals was to reference hazards generally rather than natural hazards because the plan includes natural, technological, and human-caused hazards. The full list of hazards considered in this plan are based on the hazards identified for Iowa in the *Iowa Hazard Mitigation Plan 2018*. The new, revised goals are included below.

2022 – 2027 Hazard Mitigation Goals

1. Minimize injury and loss of life due to hazards.
2. Minimize damage to property due to hazards.
3. Build and maintain resilient infrastructure to minimize community, economic, and environmental disruption due to hazards.
4. Educate the public about hazards and resources available.

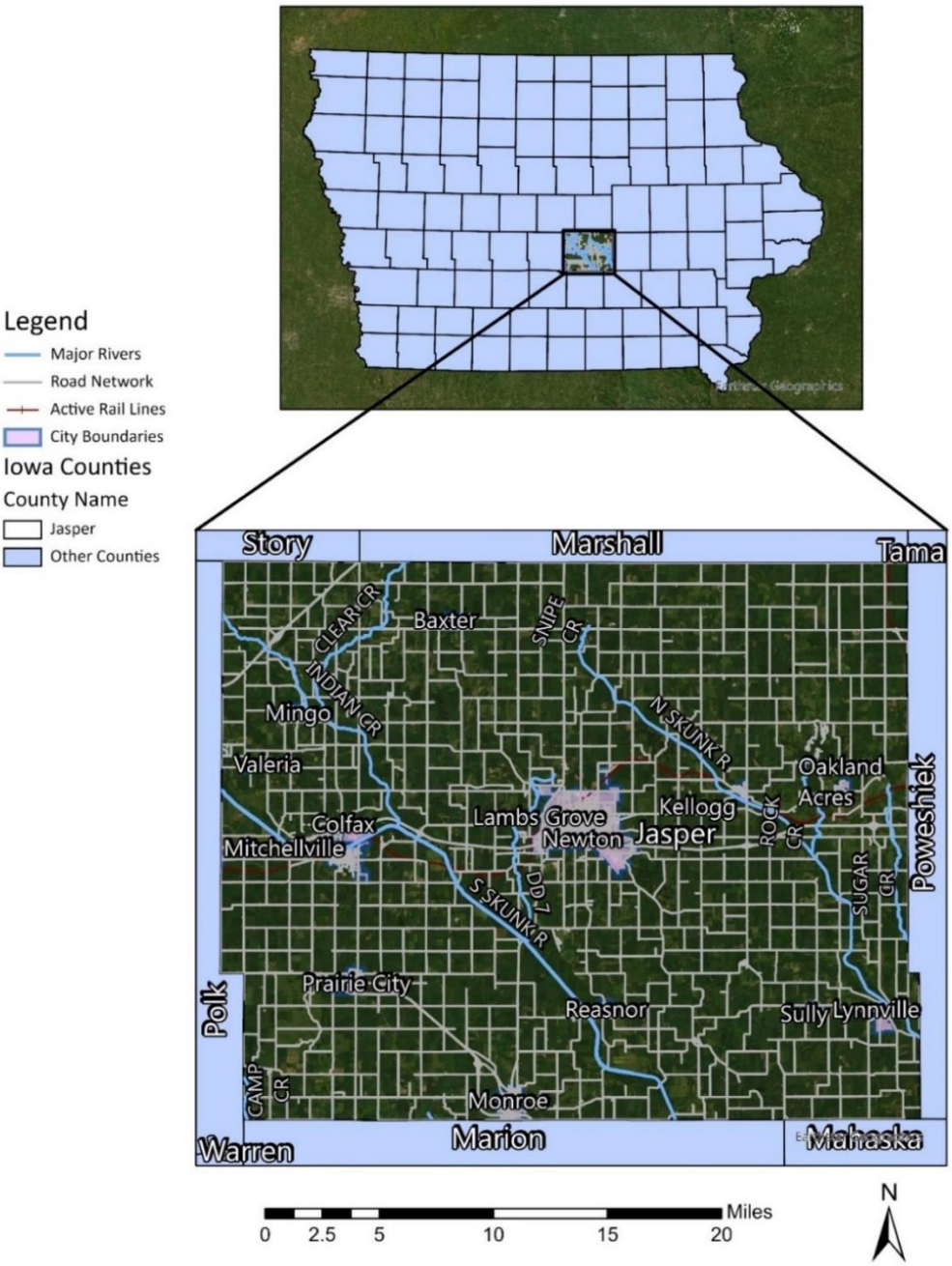
Throughout the development process of this plan, the new goals were used as a guide for planning committee discussion and decision making.

County Profile

Planning Area and Population

Jasper County is located in central Iowa, and its county seat is Newton. A map of the county and its location within Iowa is shown in Map 1.

Map 1: Jasper County Planning Area



Data Source: Iowa Geospatial Data, 2021

Jasper County's total population grew by 2.6% from 2010 to 2020, increasing from 36,842 to 37,813. Refer to Table 3. Most counties in Iowa are experiencing population declines. Jasper County's overall population stability is likely attributable to its proximity to Polk County, home of Des Moines, the State's capital, and largest economic center. The Des Moines metropolitan area has the most robust population growth in the Iowa.

Table 3: Jasper County Population Change 2010 – 2020

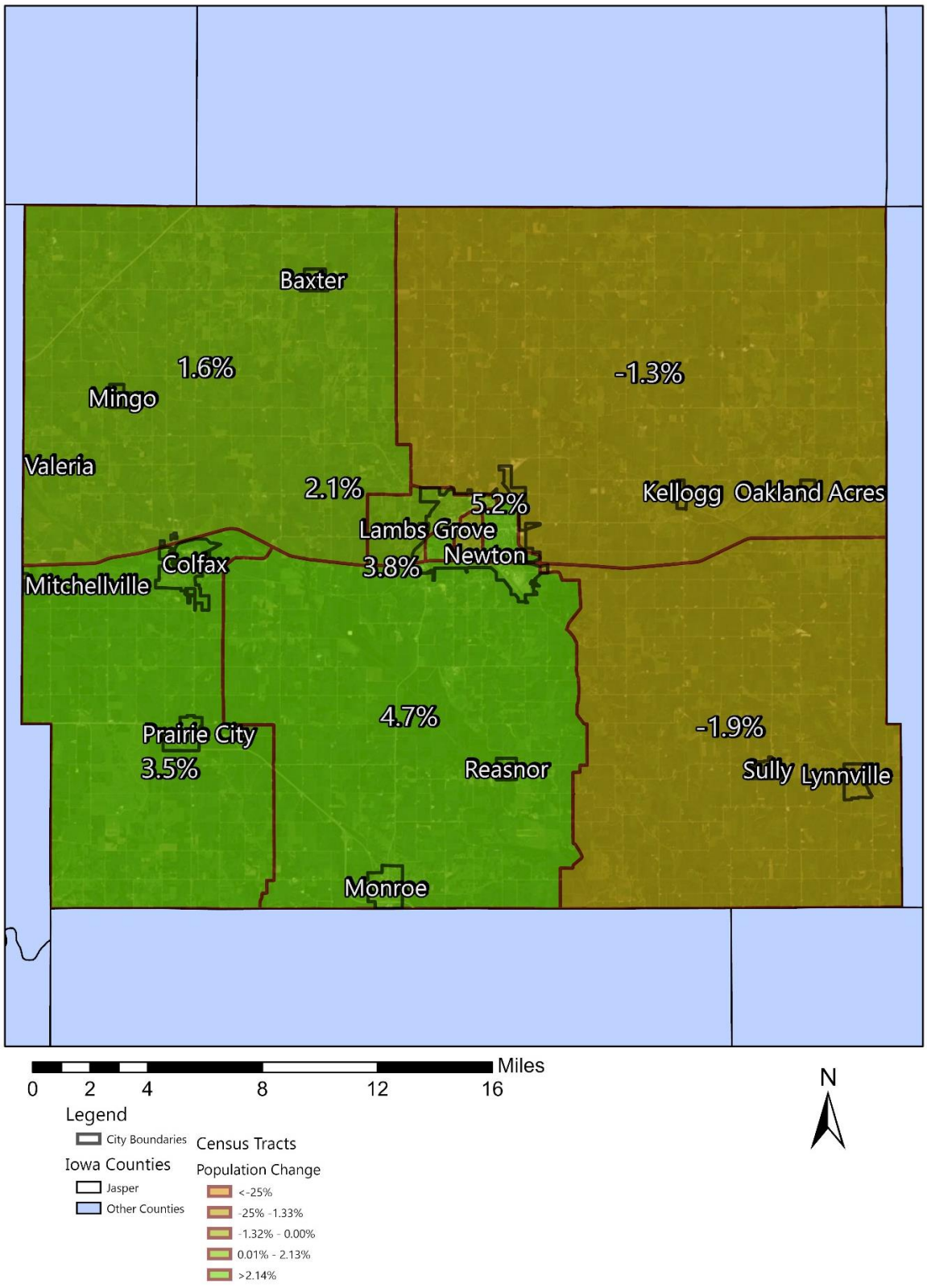
Community	2010	2020	Change	% Change
Baxter	1,101	962	-139	-12.6%
Colfax	2,093	2,255	162	7.7%
Kellogg	599	606	7	1.2%
Lambs Grove	172	174	2	1.2%
Lynnville	379	380	1	0.3%
Mingo	302	302	0	0.0%
Monroe	1830	1967	137	7.5%
Newton	15,254	15,760	506	3.3%
Oakland Acres	156	176	20	12.8%
Prairie City	1,680	1,700	20	1.2%
Reasnor	152	152	0	0.0%
Sully	821	881	60	7.3%
Valeria	57	39	-18	-31.6%
Unincorporated	12,246	12,459	213	1.7%
Total	36,6842	37,813	971	2.6%

Source: 2020 U.S. Census

In Jasper County, roughly two out of three residents live in incorporated cities, with the remaining third living in unincorporated rural areas. The largest incorporated city is Newton, which had a population of 15,760 in the 2020. The smallest community is Valeria, which had a population of 39 in 2020. Valeria and Baxter both experienced declines from 2010 to 2020, whereas Mingo and Reasnor's populations. All other communities saw an increase in population, even if only by one person. The communities of Newton, Sully, Monroe, Colfax, and Oakland Acres had the highest growth rates from 2010 to 2020.

Using census tract data from 2010 to 2020, the regional patterns of population growth or decline within the county is evident. Refer to Map 2. The tracts in the western portion of Jasper County experience growth, which is likely due to the influence of Des Moines. The tracts in the eastern portion of the county experienced a decline.

Map 2: Jasper County Population Change 2010 – 2020 by Census Tract



Data Source: 2010 and 2020 U.S. Census Data

It should be noted, a tract was created specifically for the Newton Correctional Facility in the 2020 Census to count this specific population separately in Jasper County. In future plan updates, growth from the correctional facility versus Jasper County's communities will be reflected in the population change by census tract. Overall, the 2020 Census data for cities and unincorporated areas reflect the general growth and decline in the individual tracts.

During the local planning meetings with jurisdictions located in the areas that experienced growth, the likelihood and plans for future growth were discussed to address future hazard risk in their mitigation strategy. A larger population or new development can stretch existing resources, especially emergency services and water infrastructure. Hazard risk areas, particularly for flooding, should be considered for new land development.

Local plans, ordinances, and building codes were discussed as options for mitigating the negative impacts of hazards. Other considerations include warning siren coverage, backup power generation capabilities for expanded facilities and infrastructure, and additional shelter space for a larger population during disaster response and recovery. The magnitude and severity of hazards from historical occurrences were used as a general guide for prioritizing hazards and potential mitigation actions relative to future growth with the understanding that future hazard events will likely be more severe due to climate change.

School Districts

There are six community school districts throughout Jasper County that provide educational services to children in kindergarten through grade twelve. A map of the districts with facilities located within Jasper County is shown in Map 3. Some of the school districts' service areas extend into other counties, and some students who reside in Jasper County attend school at a facility in another county. In many areas, school districts also provide amenities to the public, such as libraries and recreational opportunities.

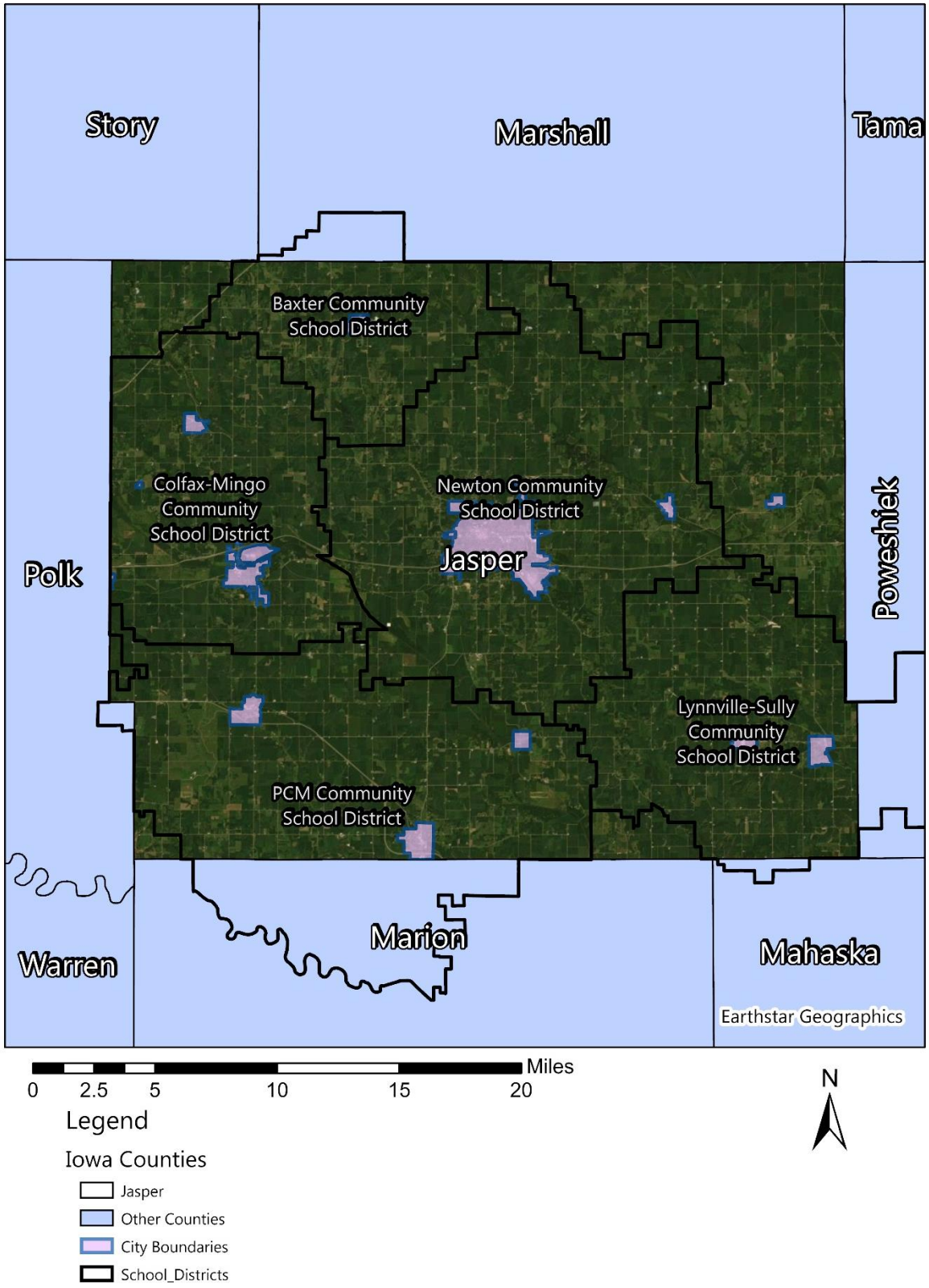
The largest school district in Jasper County in terms of enrollment is the Newton Community School District, which enrolled 2,765 students in the 2021-2022 academic year. The smallest district was the Baxter Community School District, which enrolled 451 students in the 2021-2022 academic year. Refer to Table 4.

Table 4: Jasper County School District Certified Enrollment 2017 - 2022

District	2017 - 2018	2019 - 2020	2020 - 2021	2021 - 2022
Baxter	422.8	416.1	440.3	451.3
Colfax-Mingo	643.2	700.1	669.8	669.5
Lynnville-Sully	486.3	503.8	497.8	518.0
Newton	2,828.1	2,852.5	2,786.7	2,765.2
Prairie City-Monroe	1,056.1	1,064.4	1,057.3	1,055.7

Source: Iowa Department of Education, 2021

Map 3: Jasper County Planning Area School Districts



Data Source: Iowa Geospatial Data, 2021

Risk Assessment

Photo Credit

Union Cemetery damage from tornado on March 5, 2022
City of Newton

Introduction

A risk assessment was completed in a basic three-step process for Jasper County. First, hazards that can affect the planning area were identified. Second, possible impacts of each hazard were identified. And third, based on historical occurrences, potential severity, and local knowledge, a priority level was assigned to each hazard.

Hazard Identification

In the Iowa Comprehensive Emergency Plan—Part B of the *Iowa Hazard Mitigation Plan 2018*, a statewide risk assessment identifies a broad spectrum of hazards that can occur in the state, including natural, technological, and human-caused hazards. For Jasper County, all the hazards in the statewide plan are included in the risk assessment in order to prepare as complete a mitigation strategy as possible. As is the case statewide, variations in where hazards can occur within Jasper County exist, so detailed profiles for each hazard are prepared to reflect those variations. All hazards included in Iowa County's risk assessment are listed below.

Several of the hazards in the statewide plan present so remote a possibility of affecting Jasper County that they are by default excluded in each jurisdiction's hazard prioritization. The jurisdictions had the option to rank an excluded hazard. In Jasper County, excluded hazards include earthquake, expansive soils, grass and wildland fire, landslide, and sinkholes. Justification for excluding hazards is included in a hazard profile in this section of the plan.

Natural Hazards

- Animal, Plant, and Crop Disease
- Drought
- Earthquake
- Expansive Soils
- Extreme Heat
- Flood
- Grass or Wildland Fire
- Human Disease
- Landslide
- Severe Winter Storm
- Sinkholes
- Thunderstorm, Lightning, and Hail
- Tornado and Windstorm

Technological Hazards

- Hazardous Materials Incident
- Infrastructure Failure
- Levee and Dam Failure
- Radiological Incident
- Transportation Incident

Human Caused Hazards

- Terrorism

Hazard Impact Assessment

To understand the potential impact of hazards that can occur in Jasper County, profiles were prepared using historical data, existing hazard mitigation plans, local knowledge, and the risk assessment criteria in the Iowa Hazard Mitigation Plan 2018. Hazard profiles include a description of the hazard and possible areas of impact. Although Jasper County is a geographically small portion of Iowa, there are variations, sometimes to a large degree, in where hazards are likely to occur. For this risk assessment, hazards are categorized as countywide hazards or local hazards. The hazard profiles also summarize the probability of future occurrences, potential magnitude and severity, amount of warning time available, and typical duration of each hazard.

Assessment Criteria

The information provided in the hazard impact assessment—probability, magnitude and severity, warning time, and duration—reflects the criteria used to assess risk. To determine the extent a mitigation strategy should focus on one or more hazards, the full set of hazards that can potentially affect Iowa County were assessed using these criteria. Each criterion of the prioritization process is detailed in Table 5 – 8. In the hazard profiles, each element of the assessment is discussed in the context of Jasper County. In the next chapter, each hazard's risk is plotted on a risk grid, with axes of probability and impact (magnitude and severity). The scores for duration and warning time are weighted less and incorporated into the scores for probability and impact.

Probability

Probability reflects the likelihood of the hazard occurring again in the future, considering both the hazard's historical occurrence and the projected likelihood of the hazard occurring in any given year. See scoring criteria in Table 5.

Table 5: Probability Scoring Criteria

Score	Description	
1	Unlikely	Less than 10% probability in any given year, history of events is less than 10%, or event is unlikely but there is a possibility of occurrence
2	Occasional	Greater than 10% up to 19% probability in any given year, history of events is greater than 10% up to 19%, or the event could possibly occur
3	Likely	Greater than 19% up to 33% probability in any given year, history of events is greater than 20% up to 33%, or the event is likely to occur
4	Highly Likely	More than 33% probability in any given year, history of events is greater than 33% likely, or the event is highly likely to occur

Magnitude and Severity

The magnitude and severity of the impacts of a hazard event is related directly to the extent that a hazard affects the community. It is rated using technical measures specific to the hazard, which are ideally determined with standard scientific scales. This is also a function of when the event occurs, year-round or seasonal, the location affected, the resilience of the community, and the effectiveness of emergency response and disaster recovery efforts. See scoring criteria in Table 6.

Table 6: Magnitude and Severity Scoring Criteria

Score	Description	
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	Greater than 10% up to 25% of property severely damaged, shutdown of facilities and services for more than a week, and/or injuries/illnesses that do not result in permanent disability
3	Critical	Greater than 25% up to 50% of property severely damaged, shutdown of facilities and services for at least 2 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

Warning time or the speed of onset is the amount of warning time available before a hazard occurs. The average rather than shortest or longest warning time is considered in the hazard assessment. For many natural 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. See scoring criteria in Table 7.

Table 7: Warning Time Scoring Criteria

Score	Description
0.25	More than 24 hours warning time
0.5	More than 12 up to 24 hours warning time
0.75	6 to 12 hours warning time
1	Minimal or no warning (less than 6 hours warning)

Duration

Duration is the typical amount of time that the community is impacted by a hazard. As an example, a snowstorm will likely last several hours, whereas a lightning strike would last less than a second. See scoring criteria in Table 8.

Table 8: Duration Scoring Criteria

Score	Description
0.25	Less than 6 hours
0.5	Less than 1 day
0.75	Less than 1 week
1	More than 1 week

Data Limitations

Data collected for many of the natural hazards is from the National Centers for Environmental Information (NCEI). This database is the most comprehensive and detailed available for natural hazards; however, there are some limitations. Information from this source can be queried by county, but the data returned is for an event. For example, if a tornado started in Polk County, moved through part of Jasper County, and then continued into Poweshiek County, it would be counted as one event. Data for injuries, fatalities, and storm damage would be presented for the whole event in a set of query results for Jasper County, even if some of those effects occurred outside of Jasper County.

Conversely, NCEI data is for reported effects, so damage that occurred may not be represented in the data. For example, a blizzard event on 2/1/2011 has an episode narrative that begins, “A tremendous blizzard, one of the worst in memory…,” and goes on to outline the closing of the University of Iowa in Johnson County and the death of man in Henry County. The episode record in the queried table reports property damage and fatalities as $0.00 and 0, respectively. Despite these limitations, the NCEI data provides a comprehensive overview of the frequency of hazard events, and often detailed information about hazard effects is included.

Other data sources, such as the National Flood Hazard Layer, the National Drought Monitor, and others are limited by our understanding of precise local conditions. While these sources are accurate, they cannot perfectly model or account for the scope and severity of disasters

Natural Hazards

A natural hazard is an event occurring due to climate, geology, or hydrology that will negatively impact people or the environment.

Animal, Plant, and Crop Disease

Animal, plant, and crop disease is an outbreak of disease or infestation that can be transmitted from animal to animal or plant to plant. The outbreak may have an adverse effect on human health, significant economic ramifications, or cause significant livestock or crop production losses.

Potential Hazard Area

The potential hazard area for animal, plant, and crop disease in Jasper County is primarily agricultural and recreational areas, however this hazard can also impact urban areas.

Historical Occurrences

In Iowa, there are several major reportable animal diseases, including Avian Flu, Bovine Spongiform Encephalopathy (BSE or Mad Cow Disease), Chronic Wasting Disease, Exotic Newcastle Disease, Foot and Mouth Disease, Johne's Disease, Psuedorabies, Scrapie, and West Nile Virus.

In 2014 – 2015, the United States saw the largest ever outbreak of highly pathogenic avian influenza, with Iowa one of the hardest hit states in the nation. The H5N2 strain struck 70 premises of commercial or backyard flocks in Iowa, and nationwide, over 50 million commercial birds were lost to the virus or depopulation efforts to stop the spread of the disease. The outbreak led to an estimated loss of $1.6 billion and $3.3 billion overall impact on the US economy. Jasper County had no reported incidents. However, the outbreak is demonstrative of the magnitude and volatility of communicable disease that periodically occurs in the United States. In 2022, an outbreak of the H5N1 Avian Flu has been confirmed in Iowa and required the destruction of millions of chickens and turkeys.

Over the past 15 years, cases of Scrapie, which affects sheep, have significantly decreased. Four areas in Iowa have confirmed cases of Chronic Wasting Disease (CWD) in captive White Tail Deer. Those herds have been depopulated. CWD has also been observed in wild deer in Iowa, but not yet in Jasper County. In 2020, no equine cases of West Nile Virus, the virus that causes West Nile fever, were reported in Iowa. In 2019 there were three cases in the state, but none were near Jasper County. In 2018, there were 24 cases, several in counties neighboring Jasper County, but none in Jasper County.

Plant disease and infestations occur throughout Iowa, but most cases are relatively isolated and have not reached an outbreak level. For Iowa's major crops, chemical and non-chemical methods are used to prevent and manage disease and infestations.

Reports from Iowa State University Extension and Outreach have confirmed cases of historically uncommon crop diseases like Physoderma, which is a fungus that can cause corn stalks to break, and Goss's Wilt, a bacterium that can destroy a corn plant. Disease affecting seedlings in corn and soybean crops were reported in 2013, primarily in southeast Iowa. Pest populations that are resistant to genetic modification and chemical management methods have been confirmed across Iowa.

As for Iowa's landscape, a major concern is the Emerald Ash Borer. Efforts to eradicate beetle populations cannot effectively protect large numbers of ash trees. The Emerald Ash Borer's presence in Jasper County was confirmed in 2014. A statewide quarantine is in place to prevent the spread of the insect to other states. Iowans are discouraged from transporting firewood to other counties in the state to prevent a larger statewide infestation.

Magnitude and Severity

If a major outbreak of an animal, plant, or crop disease were to occur in Jasper County, areas beyond the county would be potentially impacted. If animals are affected, a major disease could significantly limit or eliminate the ability to move, slaughter, and export animals and animal products, which could result in a shutdown of facilities. A major disease outbreak could have widespread public health and economic impacts in Iowa, the nation, and even the entire globe. If crops and plants are affected by an outbreak, similar consequences to public health and economic activity in industries associated with crops would likely occur. Monoculture agriculture and low genetic diversity amongst crops creates additional vulnerability to severe outbreaks. Some disease impacts could also cause environmental damage, especially if the affected species plays an important role in its ecosystem.

Warning Time

Animals and plants that are infected with a disease or pest can transmit the disease or pest before the issue is realized. Iowa would only have warning time if an event occurred in another state or region.

Duration

Response and recovery from a major disease or infestation is lengthy, with some producers potentially unable to sustain operations. In addition, diseases and infestations can reoccur, causing repeated losses.

Drought

Drought is a prolonged lack of precipitation producing severe dry conditions. Four types of drought conditions are relevant in Iowa: meteorological drought, hydrological drought, agricultural drought, and socio-economic drought. Meteorological drought is a lack of precipitation. Hydrological drought is a decline in surface and groundwater. Agricultural drought is a lack of moisture in soil. A socio-economic drought is a shortage of water that affects people's daily usage.

Potential Hazard Area

The potential hazard area for drought in Jasper County is countywide due to the widespread nature of this hazard. Typically, rural areas are more severely impacted by this hazard.

Historical Occurrences

A detailed weekly record of drought across the entire country is provided by the U.S. Drought Monitor. The monitor shows the percentage of a selected area that is in drought conditions across five categories of drought. The drought categories are shown in Figure 1. From abnormally dry through exceptional, the categories reflect more severe conditions and impacts. In addition to the percentage of area covered by different categories of drought, each record also contains a figure for the Drought Severity and Coverage Index (DSCI). This number approximates the severity of drought in a region with a weighted sum of the categories of drought for the selected areas, i.e., one point per percentage point of area categorized as abnormally dry, two points per percentage point of area categorized as moderate drought, etc. Weeks with a higher DSCI score tend to exhibit more severe conditions than weeks with lower scores.

Figure 1: U.S. Drought Monitor Drought Categories

			Ranges				
Category	Description	Possible Impacts	Palmer Drought Severity Index (PDSI)	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)	Objective Drought Indicator Blends (Percentiles)
D0	Abnormally Dry	Going into drought: ▪ short-term dryness slowing planting, growth of crops or pastures Coming out of drought: ▪ some lingering water deficits ▪ pastures or crops not fully recovered	-1.0 to -1.9	21 to 30	21 to 30	-0.5 to -0.7	21 to 30
D1	Moderate Drought	▪ Some damage to crops, pastures ▪ Streams, reservoirs, or wells low, some water shortages developing or imminent ▪ Voluntary water-use restrictions requested	-2.0 to -2.9	11 to 20	11 to 20	-0.8 to -1.2	11 to 20
D2	Severe Drought	▪ Crop or pasture losses likely ▪ Water shortages common ▪ Water restrictions imposed	-3.0 to -3.9	6 to 10	6 to 10	-1.3 to -1.5	6 to 10
D3	Extreme Drought	▪ Major crop/pasture losses ▪ Widespread water shortages or restrictions	-4.0 to -4.9	3 to 5	3 to 5	-1.6 to -1.9	3 to 5
D4	Exceptional Drought	▪ Exceptional and widespread crop/pasture losses ▪ Shortages of water in reservoirs, streams, and wells creating water emergencies	-5.0 or less	0 to 2	0 to 2	-2.0 or less	0 to 2

Source: U.S. Drought Monitor

From 2000 – 2021, there have been 25 events with 20 percent or more of Jasper County experiencing drought conditions. All drought events have lasted more than two weeks, and the average duration is a little more than four months. Refer to Table 9. The most recent drought event began in April 2021. It should be noted, the coverage of 20 percent was selected somewhat arbitrarily but represents a threshold at which widespread crop damage is possible.

Table 9: Drought Affecting 20% or More of Jasper County 2000 - 2021

Start	End	Duration
1/6/2000	7/13/2000	28 weeks
9/7/2000	2/8/2001	22 weeks
7/19/2001	8/16/2001	5 weeks
1/10/2002	1/31/2002	4 weeks
3/21/2002	4/25/2002	6 weeks
7/11/2002	8/8/2002	5 weeks
12/5/2002	5/8/2003	23 weeks
6/19/2003	6/26/2003	2 weeks
8/14/2003	2/19/2004	25 weeks
11/26/2003	12/31/2003	3 weeks
10/28/2004	11/18/2004	4 weeks
12/23/2004	2/10/2005	8 weeks
7/28/2005	8/11/2005	3 weeks
8/25/2005	8/17/2006	51 weeks
12/21/2006	1/18/2007	5 weeks
7/19/2007	8/23/2007	6 weeks
8/4/2011	12/15/2011	19 weeks
5/24/2012	4/18/2013	48 weeks
7/25/2013	6/19/2014	47 weeks
6/2/2016	8/11/2016	11 weeks
6/15/2017	5/17/2018	48 weeks
7/26/2018	9/6/2018	7 weeks
8/1/2019	9/19/2019	8 weeks
7/16/2020	1/21/2021	28 weeks
4/29/2021	Ongoing	---
Total	25 events	

Source: U.S. Drought Monitor, 2021

Since 2000, there have been eight moderate or severe drought events covering 20% or more of Jasper County. The most severe drought event occurred in 2012, which was a historic drought that affected large swaths of the United States and Canada. Jasper County experienced severe drought (D3) during the growing season, and it covered the entire county. No drought event has been classified as exceptional (D4) in Jasper County. Refer to Table 10.

Table 10: Severe (D2) or Higher Drought Affecting 20% or More of Jasper County 2000 - 2021

Event Period	Duration	Extent Max Severity	Max Severity	Max DSCI
2/29/2000 - 6/20/2000	16 weeks	100%	D2	300
4/29/2003	1 week	71%	D2	271
9/02/2003 - 10/28/2003	8 weeks	100%	D2	300
7/18/2006 - 7/25/2006	1 weeks	45%	D2	239
7/17/2012 - 4/02/2013	37 weeks	100%	D3	400
8/27/2013 - 2/18/2014	25 weeks	100%	D2	300
9/1/2020 - 9/08/2020	1 week	54%	D2	254
6/15/2021 - 6/22/2021	Ongoing	75%	D2	275
Total	8 events			

Source: U.S. Drought Monitor, 2021

Probability

Based on past drought events, the overall probability of any category of drought occurring is highly likely or more than 33% in any given year. The probability of a moderate or severe drought covering 20% or more of Jasper County is more than 33% in any given year. However, many drought events in Iowa and the Midwest are mild and short in duration. Overall, the probability estimate is based on historical occurrences per the U.S. Drought Monitor, the *Iowa Hazard Mitigation Plan 2018*, and local knowledge.

Magnitude and Severity

Droughts are typically widespread, affecting a large area. If a drought occurs in Jasper County, it is likely most of central Iowa or even the Midwest is experiencing drought conditions. Local conditions, typically intensity, vary during a widespread drought.

People are vulnerable during a drought if water supplies are significantly reduced, but typically there are secondary sources of water available in Iowa. Most often, people are affected by higher food prices during and after periods of major drought. Wildlife and livestock are more likely to be vulnerable during a drought when there is a limited supply of water.

The agricultural sector of the economy, especially in Iowa, would be impacted by a widespread and long-term drought. Due to the reliance on precipitation and water supply for irrigation, crops are extremely vulnerable. During a drought, rural areas usually experience most negative impacts.

A long-term, severe drought can decrease stream flow and water table levels, which can limit the amount of water available to residents. In certain circumstances, it may be necessary to place restrictions on industries that use large amounts of water. In exceptional circumstances, it may be necessary to place restrictions on the amount of water residents may use. Residential restrictions are usually placed on activities like watering the lawn or washing vehicles.

Fire suppression may be challenging during drought conditions due to dry vegetation and limited water supply. Most property losses would likely be livestock and crops. On the other hand, infrastructure can be affected due to drying soils and low water levels around dams.

In Jasper County, widespread drought conditions could severely damage up to 25% of property, primarily crops. While the overall impact on the county would be considered limited, the direct impacts on rural areas may be critical. If drought conditions were severe enough to significantly reduce available water supply, urban areas in Jasper County would be directly impacted.

Warning Time

Drought warning is directly related to the ability to predict conditions that produce drought, primarily precipitation and temperature. There are many variables, and it is difficult to predict a drought in advance. An area may already be in a drought before it is recognized. While drought warning may not come until the drought is already occurring, the secondary effects may be predicted weeks in advance.

Duration

Drought conditions are part of normal climate fluctuations in the United States. According to Iowa and Jasper County's drought history, most drought events affect the state for a period of weeks to months. However, climate change makes longer, more severe droughts more likely.

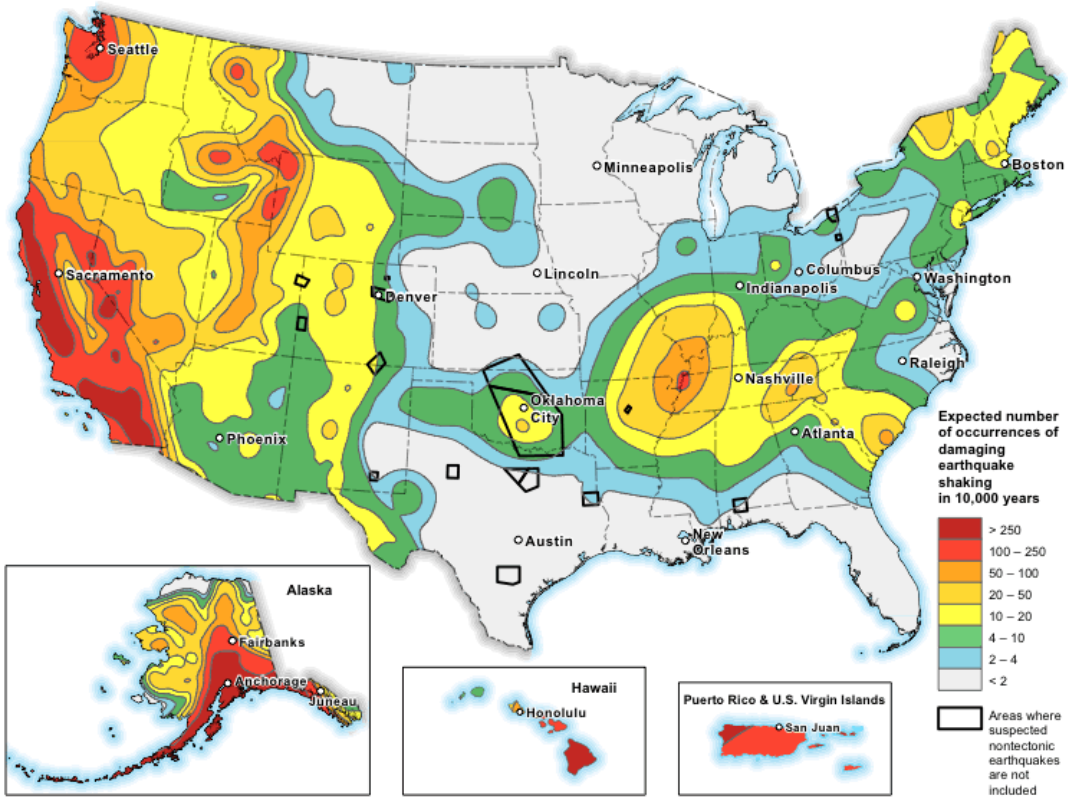
Earthquake

An earthquake is a sudden shaking or vibration of the earth's crust that may impose a direct threat to life and property. The shaking or vibration is caused by the breaking and shifting of rock beneath the earth's surface. The three general classes of earthquakes are tectonic, volcanic, and artificially produced.

Excluded Hazard

The number of expected *damaging* earthquakes in Iowa is less than two in 10,000 years. Refer to the earthquake probabilistic map in Map 4.

Map 4: Earthquake Probabilistic Map for the United States



Source: U.S. Geological Survey, 1990

The possibility remains for Iowa to occasionally feel shaking from an earthquake, but the probability of damage occurring from the hazard is extremely low. Therefore, earthquakes are excluded from this hazard assessment.

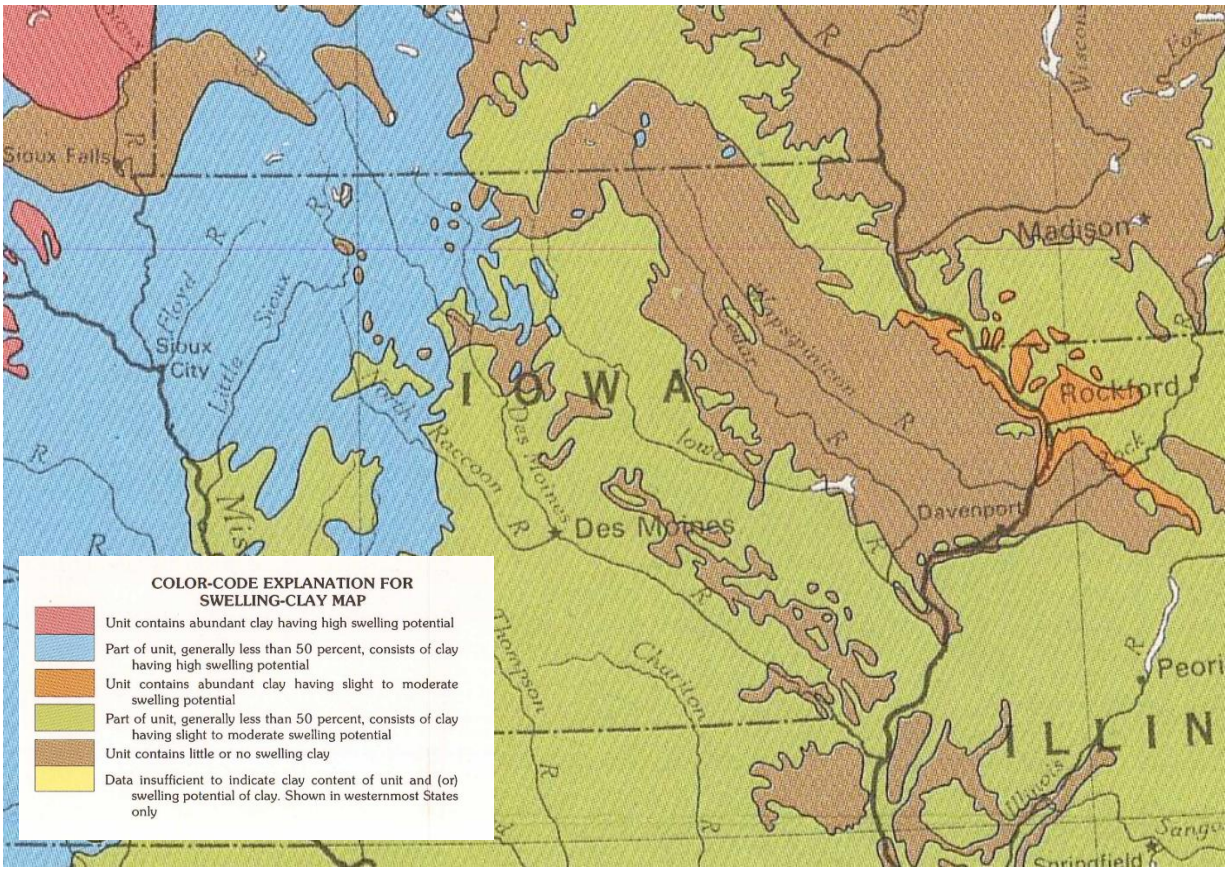
Expansive Soils

Soils and soft rock that tend to swell or shrink excessively due to changes in moisture content are commonly known as expansive soils. The effects of expansive soils are most prevalent in regions of moderate to high precipitation, where prolonged periods of drought are followed by long periods of rainfall.

Excluded Hazard

The content of swelling clay soils is low in Jasper County, and there is a lack of historical data for losses related to expansive soils statewide. The *Iowa Hazard Mitigation Plan 2018* states, "impact from this hazard has not attracted enough attention for anyone to keep track of losses due to the hazards. So, no comprehensive data is available to compare past losses across the state" (3-32).

Map 5: Iowa Swelling Clay Soils in 1989



Source: U.S. Geological Service, 1989

Furthermore, Map 5 shows that Jasper County was assessed by the U.S. Geological Survey (USGS) as having soils "contain little to no swelling clay" or partially "[but] generally less than 50%, consists of clay having slight to moderate swelling potential." Because of these factors, expansive soils are excluded from this risk assessment.

Extreme Heat

Extreme heat is a temperature hotter or more humid than average for a location at that time of year. This includes three successive days of 90+ degree Fahrenheit or one day with a temperature or heat index exceeding 100 degrees Fahrenheit.

Potential Hazard Area

The potential hazard area for an extreme heat event is countywide in Jasper County.

Historical Occurrences

From 2000 – 2021, Jasper County experienced one heat event and three excessive heat events. Refer to Table 11. As defined by the National Center for Environmental Information (NCEI) Storm Events Database, a heat event is whenever heat index values meet or exceed locally established advisory thresholds. This type of event does not fully meet the description of an extreme heat event in Iowa, but data from NCEI is included because it includes deaths, injuries, and damage related to heat events. None of the heat events, as defined by NCEI, resulted in deaths or injuries, but there was property damage reported in 2011.

Table 11: Jasper County Heat and Excessive Heat Events 2000 – 2021

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
JASPER (ZONE)	8/5/2011	0	0	0	0
JASPER (ZONE)	7/15/2011	0	0	$135,000	0
JASPER (ZONE)	7/20/2016	0	0	0	0
JASPER (ZONE)	7/15/2019	0	0	0	0
Total	4 events	0	0	0	0

Source: NCEI Storm Events Database, February 2022

To identify extreme heat events, as defined in Iowa, data from Weather Underground was used to estimate extreme heat events that have occurred within Jasper County Weather Underground compiles information from a variety of sources to provide users current, forecasted, and archived weather data. There is no data available specifically for Jasper County, so data was used from the Des Moines International Airport. The airport is the nearest location with available data, which is approximately 35 miles west of Newton.

From 2000 – 2021, there were 52 separate events where there was an extreme heat event of 90 degrees or more for three or more days. There were occurrences in every year except 2000, 2004, 2008, and 2014. Refer to Table 12.

Table 12: Extreme Heat Events at Des Moines International Airport 2000 – 2021

Year	Events by Time Period	Total Days
2000		0
2001	7/30 - 8/2, 8/4 - 8/9	10
2002	6/29 - 7/1, 7/30 - 8/1	6
2003	8/15 - 8/21, 8/24 - 8/27	11
2004		0
2005	6/21 - 6/24, 7/14 - 7/17, 7/20 - 7/25, 8/1 - 8 /3, 9/3 - 9/5, 9/9 - 9/11	23
2006	6/6 - 6/8, 7/15 - 7/19, 7/30 - 8/1	11
2007	7/16 - 7/18, 8/10 - 8/14	8
2008		0
2009	6/21 - 6/23, 8/12 - 8/14	6
2010	8/10 - 8/12	3
2011	6/6 - 6/8, 7/15 - 7/27, 7/30 - 8/3	21
2012	6/27 - 7/7, 7/14 - 7/19, 7/21 - 7/26, 7/29 - 8/3, 8/6 - 8/8, 8/27 - 8/31	37
2013	7/15 - 7/19, 8/24 - 8/31, 9/5 - 9/10	19
2014		0
2015	7/12 - 7/14, 9/3 - 9/6	7
2016	6/9 - 6/15, 7/20 - 7/23	11
2017	6/10 - 6/13, 7/9 - 7/11, 7/15 - 7/22, 9/22 - 9/24	18
2018	5/26 - 5/29, 6/15 - 6/18, 7/9 - 7/13, 8/3 - 8/5	16
2019	6/29 - 7/2, 7/18 - 7/20	7
2020	7/4 - 7/8, 8/23 - 8/28	11
2021	6/15 - 6/19, 7/23 - 7/29, 8/10 - 8/12, 8/23 - 8/25	18
Total	52 events	243

Source: Weather Underground

Probability

Historical occurrences indicate that extreme heat events are common in Jasper County. Higher than normal temperatures due to climate change may increase the likelihood of an extreme heat event occurring in the Midwest, Iowa, and Jasper County. The probability is highly likely, more than 33% in any given year, for an extreme heat event to occur in Jasper County.

Magnitude and Severity

An extreme heat event typically affects a large geographic area, sometimes as large as an entire region of the United States. If an extreme heat event were to occur in Jasper County, the entire county and beyond would likely be impacted.

Humans, outdoor pets, and livestock are vulnerable during extreme heat events. Heatstroke, sunstroke, cramps, exhaustion, and fatigue can be caused by prolonged heat exposure and/or physical activity. Certain groups of people like very young, elderly, and outdoor workers are especially vulnerable to extreme heat events.

In more urban areas, the heat island effect and air stagnation can exacerbate the already dangerous conditions for humans and animals during an extreme heat event. In Jasper County, the majority of cities do not have large, densely developed areas, but some areas of cities could experience relatively higher temperatures than rural areas of the county. In rural areas, which is the majority of Jasper County, livestock loss and reduced crop yields can occur in extreme heat events. Throughout the county, extreme heat events can damage buildings and infrastructure, which can result in shutdown of facilities for an extended period of time.

Based on historical occurrences, the magnitude and severity of an extreme heat event in Iowa County would likely be limited although the impacts could be more severe.

Warning Time

Extreme heat events are predictable within a few degrees approximately three days before the event may occur. Variations in local conditions can affect the actual temperature within a matter of hours or even minutes, so warning time may be less. With as much warning time as possible, the National Weather Service will initiate alert procedures when the heat index is expected to exceed 105 degrees Fahrenheit for at least two consecutive days.

Duration

An extreme heat event by definition is three consecutive days of 90+ degree Fahrenheit temperature of one day with a 100+ degree Fahrenheit temperature or heat index. Based on local knowledge of past extreme heat events in the state and Jasper County, an event can last a week or longer.

Flood

In a flash flood event, water levels rise at an extremely fast rate with minimal to no warning. Common causes include heavy precipitation over a short period of time, rapid snowmelt, ice jam release, frozen ground, saturated soil, or impermeable surfaces like pavement.

In a river flood event, water levels of a tributary or body of water exceed capacity and cover adjacent land that is not typically covered in water. In this plan, flooding of creeks and other water bodies is included in this hazard.

Potential Hazard Area

The potential hazard areas for a flood are generally the areas designated as a floodplain by the Federal Emergency Management Agency (FEMA). Refer to Map 6 – 9 in the risk assessment maps section. The flood hazard layer is also shown in the critical facilities maps for each jurisdiction. It should be noted that flooding is not limited to designated floodplains. Uncommon climate conditions and changes in development patterns can affect what areas ultimately experience water inundation.

Flash flooding can occur in any area of Jasper County. Certain areas have a greater potential to be affected due to factors such as low elevation, nearby waterways, insufficient storm water management, intense urban or agricultural development, etc. All jurisdictions in the planning area have the potential for at least some minor flash flooding issues.

Historical Occurrences

From 2000-2021, there have been five documented flash flood events throughout Jasper County. Refer to Table 13. It should be noted, NCEI data identifies the area where a flash flood event began, which may not be the only area impacted by the event. For the reported flash flood events, there were no deaths or injuries, but there was property damage totaling $635,000 reported across the entire area affected by the hazard events. No crop damage was reported. No injuries or fatalities were reported either.

Table 13: Jasper County Flash Flood Events 2000 – 2021

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
COLFAX	6/3/2008	0	0	$50,000	0
COLFAX	6/8/2008	0	0	$10,000	0
NEWTON MUNI ARPT	7/7/2010	0	0	$25,000	0
KELLOGG	5/26/2013	0	0	$450,000	0
TURNER	5/26/2013	0	0	$100,000	0
Total	5 events	0	0	$635,000	0

Source: NCEI Storm Events Database, February 2022

Due to the major variability in flash flooding among communities and data limitations, flash flooding events and areas of concern in the future were discussed in greater detail compared to other hazards during local planning meetings. Local knowledge is extremely helpful for this hazard, and it is reflected in the local hazard prioritization and mitigation strategy.

In Jasper County, 26 recorded river flood events occurred between 2000 and 2021. There were no deaths or injuries associated with these flood events, however there was property damage and crop damage totaling $1.6 million and $21.6 million respectively. Refer to Table 14. The 2013 flood led to massive crop losses throughout the state, however not all the damage directly attributed to the floods themselves. In many cases, farmers were unable to plant crops. The most recent river flood events occurred in 2018, but no damage estimates were recorded.

Table 14: Jasper County River Flood Events 2000 - 2021

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
JASPER (ZONE)	6/24/2000	0	0	$50,000	$75,000
JASPER (ZONE)	3/15/2001	0	0	$5,000	0
JASPER (ZONE)	3/23/2001	0	0	$7,500	0
JASPER (ZONE)	6/12/2001	0	0	$25,000	$50,000
JASPER (ZONE)	6/13/2002	0	0	$10,000	$20,000
JASPER (ZONE)	5/4/2003	0	0	$5,000	0
JASPER (ZONE)	5/9/2003	0	0	$5,000	0
JASPER (ZONE)	5/22/2004	0	0	$100,000	$298,039.22
JASPER (ZONE)	5/13/2005	0	0	$30,000	0
JASPER (ZONE)	6/26/2005	0	0	$74,070	$50,000
COLFAX	3/14/2007	0	0	$50,000	0
COLFAX	4/25/2007	0	0	$25,000	0
VALERIA	5/31/2008	0	0	$10,000	$50,000
VALERIA	6/1/2008	0	0	$200,000	$100,000
CLYDE	6/12/2010	0	0	0	$20,000,000
VALERIA	6/28/2010	0	0	$25,000	$100,000
VALERIA	8/9/2010	0	0	$400,000	$500,000
METZ	5/26/2013	0	0	$50,000	0
KELLOGG	5/26/2013	0	0	$250,000	0
VALERIA	6/1/2013	0	0	0	0
GALESBURG	9/1/2015	0	0	$100,000	$250,000
GALESBURG	12/15/2015	0	0	$50,000	0
BAXTER	6/26/2018	0	0	$100,000	$100,000
SEARSBORO	10/9/2018	0	0	$50,000	$50,000
GODDARD	3/13/2019	0	0	$5,000	0
GALESBURG	3/15/2019	0	0	0	0
Total	26 events	0	0	$1,626,570	$21,643,039.22

Source: NCEI Storm Events Database, February 2022

Jasper County's largest rivers are the South Skunk and North Skunk Rivers. Jasper County was not as severely impacted by the Great Flood of 2008 as Cedar Rapids or Iowa City, but it is still denoted because it was a historic event in Iowa. At the Colfax Station, a USGS stream gauge, the South Skunk River has an action level at 15 feet, flood stage at 18 feet, moderate flood stage at 19 feet, and major flood stage at 21 feet. The South Skunk River reached flood stage on 6/1/08 and crested at approximately 20 feet, a moderate flood, on 6/15/08. The flooding required sandbagging to protect areas in the northern portion of Colfax.

There is another USGS stream gauge on Indian Creek near Mingo. It has an action level of 13 feet, and a flood stage of 14 feet. There are no defined moderate or major flood stages defined at this location. Since its installation in 2007, it has detected 10 separate flood stage events, with the most severe flood occurring in 2010 with a stage of almost 18 feet.

The Iowa Flood Center installed stream gauges on the North Skunk River at Kellogg and the South Skunk River at Reasnor, but this was done after the 2008 flood. There is a USGS stream gauge that was in use during the event, but it is located downstream and not useful to Jasper County. Going forward, data from the Iowa Flood Center gauge will be useful in studying floods near Kellogg.

Repetitive Loss Properties

In certain areas of the county, several properties have been damaged by multiple flood events. These properties are considered repetitive loss properties. The technical definition of a repetitive loss property, as defined by the National Flood Insurance Program (NFIP), is a property that has received two or more claim payments through the NFIP of more than $1,000 with in a ten-year period. Basic, not detailed information about these properties, is provided by the Iowa Department of Natural Resources due to privacy concerns for property owners.

As of April 2022, there were six repetitive loss properties in Jasper County. Three properties are located in Colfax, and three properties are located in unincorporated areas. The total repetitive loss payments from the NFIP for damage to these properties is almost $327,500. Unlike most repetitive loss properties, the properties in Colfax are located within a 500-year floodplain rather than a 100-year floodplain.

Probability

Historical occurrences indicate that flash flood events occurred sporadically over the years. Minor flash flood events, which are not always reflected in the data available, occur frequently in some areas according to local knowledge. The probability of a flash flood occurring in Jasper County is likely or greater than 19% up to 33% in any given year.

River flood events are more likely to occur in low lying areas near bodies of water, and these locations are more likely to be in the designated flood hazard areas identified by FEMA. The communities of Colfax, Kellogg, Lynnville, Reasnor, and unincorporated Jasper County all have significant portions of their communities in the floodplain or immediately adjacent to a major river or stream that floods. Based on historical occurrences and local knowledge, the probability of river flooding in Jasper County is likely or greater than 19% up to 33% in any given year.

Magnitude and Severity

With flood hazard mapping, vulnerability to loss of life and property damage from river flooding is well identified in Jasper County. FEMA has delineated the probable extent of the 100-year flood hazard areas in Jasper County. These maps are Flood Insurance Rate Maps (FIRMs), which show properties that have a 1% chance (Zone A/AE) or a 0.2% chance (Zone B) of being affected by flooding in any given year. For the designated floodplain in Jasper County, refer to the risk assessment maps.

In addition to the current FIRMs, the Iowa Flood Center, Iowa DNR, and FEMA partnered to develop the Iowa Flood Information System (IFIS). The IFIS is a web interface with interactive maps and tools that can be used to understand potential flood risk. To explore information available for Jasper County, visit https://ifis.iowafloodcenter.org/ifis/. Currently, there a four stream gauges in Jasper County that are monitored by IFIS. Figure 2, in the risk assessment maps section, shows the stream gauge reporting tool provided by IFIS. Flood inundation maps are another tool that has been developed by the Iowa Flood Center, but it is not currently available for jurisdictions in Jasper County.

In 2022, the Iowa Department of Natural Resources (DNR) is nearing completion of its Two-Dimensional Base Level Elevation (2D BLE) Mapping Project. The project was initiated after the Great Flood of 2008, because nearly a third of Iowa did not have Flood Insurance Rate Maps (FIRMs) and nearly half of Iowa was using data that was 20 - 30 years old. The new risk data from the 2D BLE project will provide a more comprehensive understanding of flood risk in cities and rural areas. When complete, this information will be free to all of Iowa, and it can be used as best available data for regulatory purposes.

A flash flood event can impact areas far from a tributary or body of water. Streets can become swift moving rivers, and basements can become deathtraps because flash floods can fill them with water in minutes. Nearly half of all flash flood fatalities occur because motorists try to traverse water-covered roads and bridges and are swept away by the current.

Buildings, infrastructure, and land can be eroded, extensively damaged, or destroyed in a flood event. Disruption or complete shutdown of essential facilities and services like major travel routes, water distribution, and wastewater treatment facilities often occurs during severe flood events. Depending on severity, overall disruption may occur for just a few hours causing minor inconveniences or up to months causing major environmental and economic impacts in the county and State.

Potential impacts of flooding include injury and loss of life. River flooding does not have as high of risk to human life as does flash flooding mostly because of the slow onset of river flooding. People in a flood zone, downstream from a dam or levee, or in low-lying areas are especially vulnerable in any type of flood event. In addition, people located in areas with narrow stream channels, saturated soil, or on land with large amounts of impermeable surfaces are likely to be impacted in the event of a significant rainfall.

Warning Time

Flash floods are somewhat unpredictable, but there are factors that can indicate the likelihood of a flash flood event occurring in an area. Flash floods can occur within a few minutes or hours of excessive rainfall, a dam or levee failure, or a sudden release of water held by an ice jam. Weather surveillance radar is being used to improve monitoring capabilities of intense rainfall. Knowledge of the watershed characteristics, modeling, monitoring, and warning systems increases the predictability of flash floods. Depending on the location in the watershed, warning times can be increased. The National Weather Service (NWS) forecasts the height of flood crests, the data, and time the flow is expected to occur at a particular location.

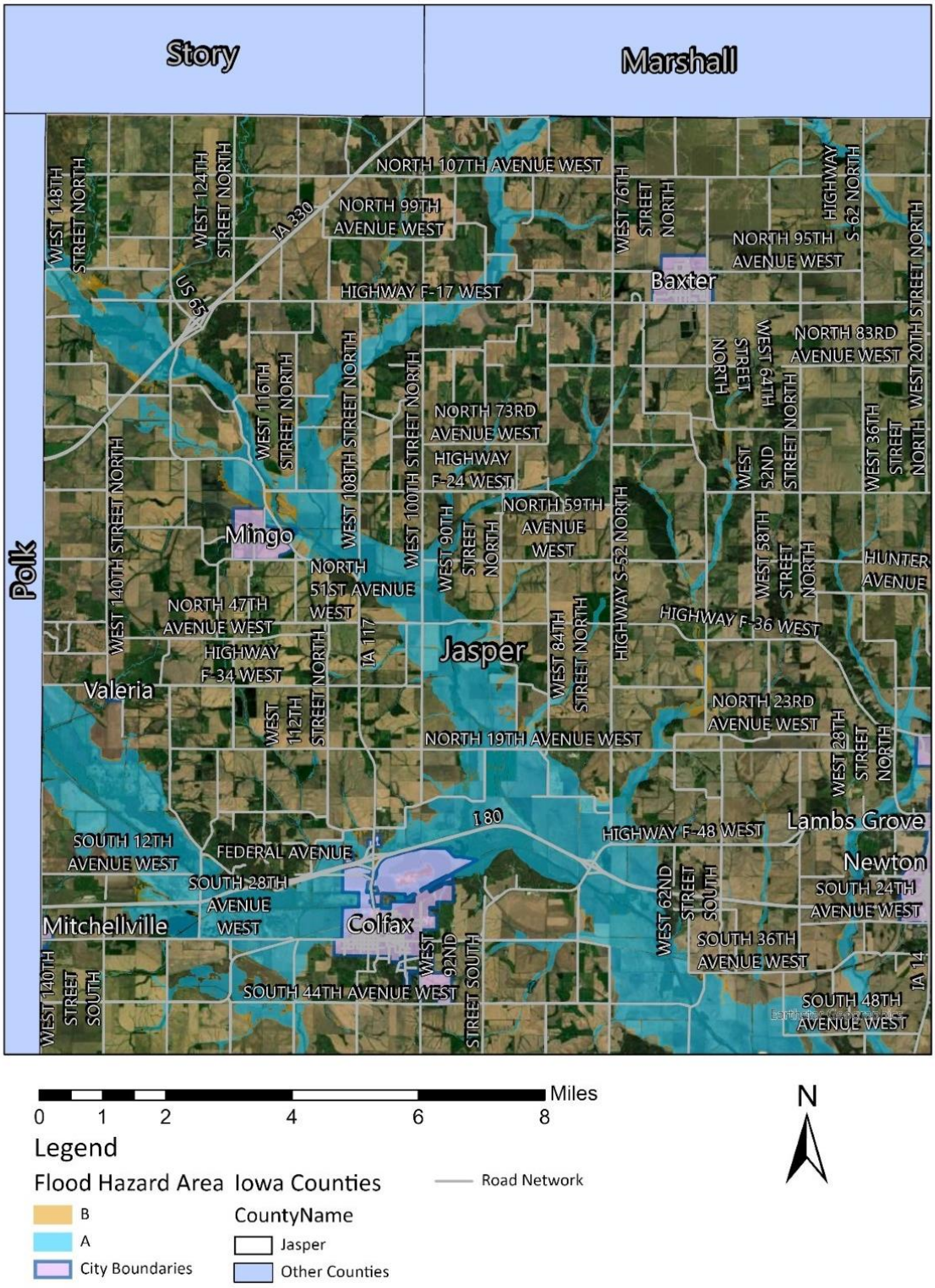
Gauges along streams and rain gauges provide information for flood warnings. Providing a warning is possible for river flood events because a flood usually develops over the course of several days. The NWS provides flood forecasts for Iowa, and now, IFIS provides information and forecasts. Flood warnings are issued over mass notification systems and television stations. People in the path of river floods usually have time to take appropriate actions to limit harm to themselves and property.

Duration

Response to a flash flood event is usually shorter-term relative to a river flood event, requiring just days or weeks depending on the severity of the event. Response to a river flood is usually extensive and requires months and even up to years to adequately recover.

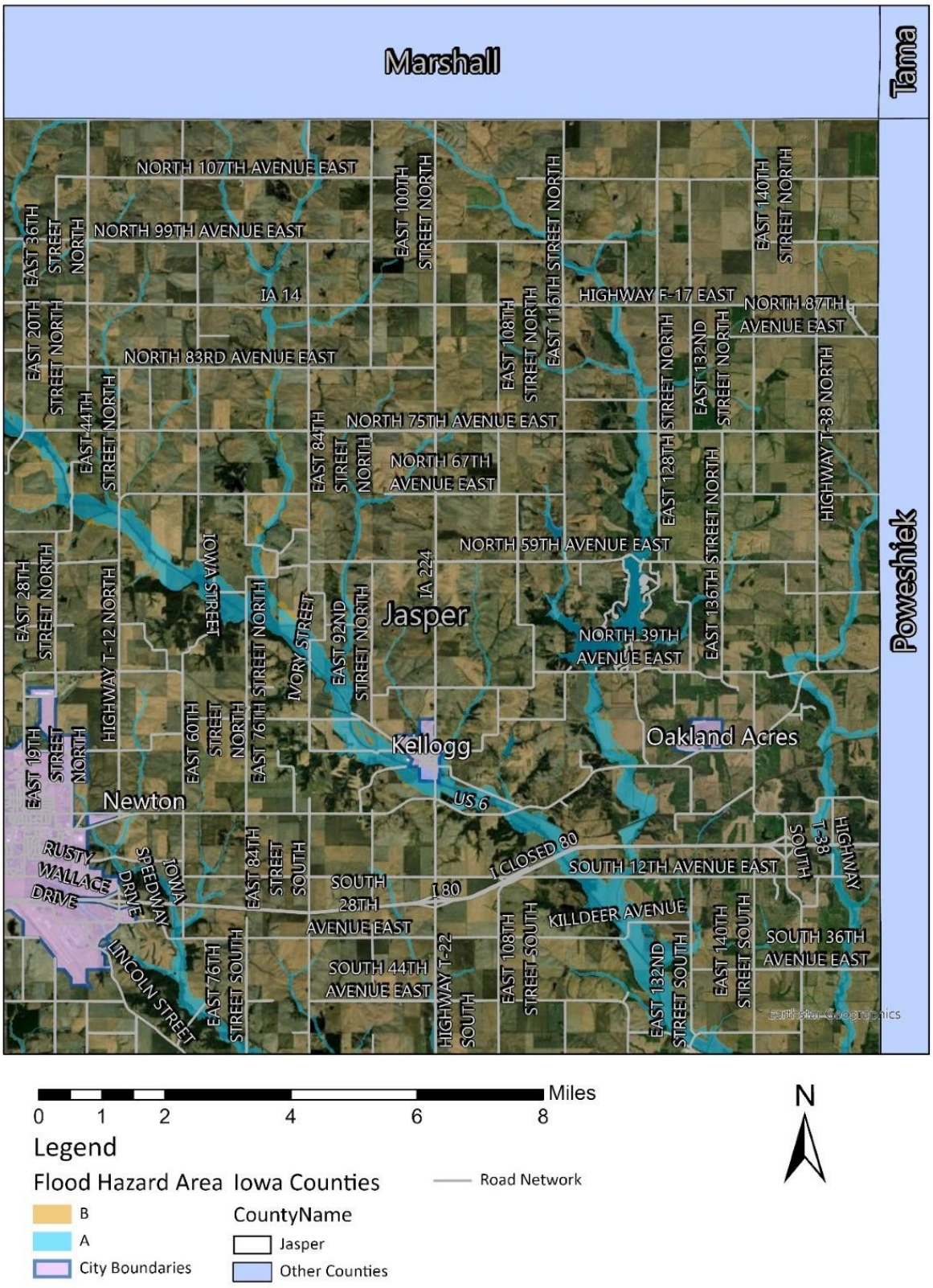
Risk Assessment Maps

Map 6: Northwest Jasper County Flood Hazard Zones



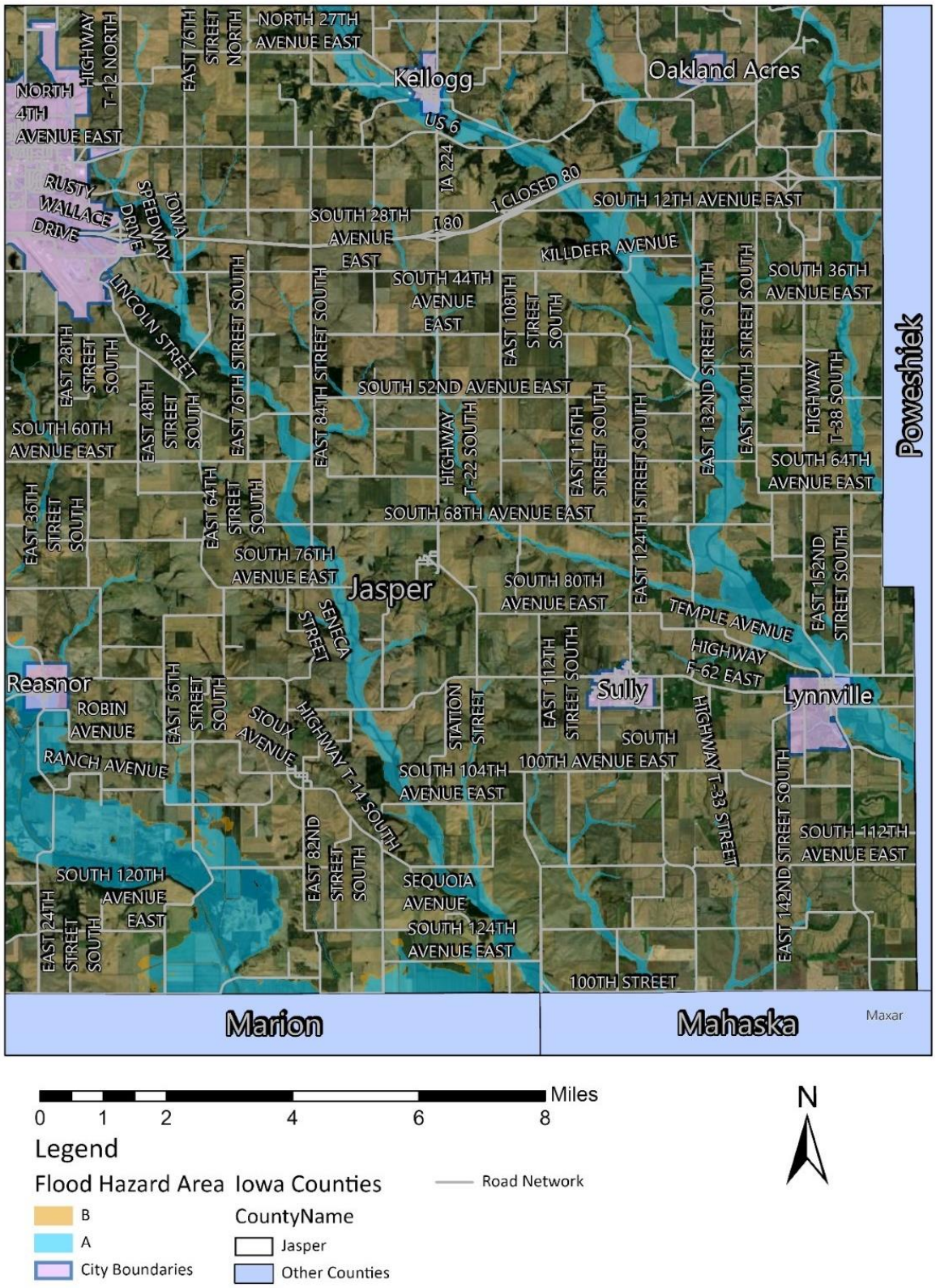
Data Source: FEMA National Flood Hazard Layer, 2018

Map 7: Northeast Jasper County Flood Hazard Zones



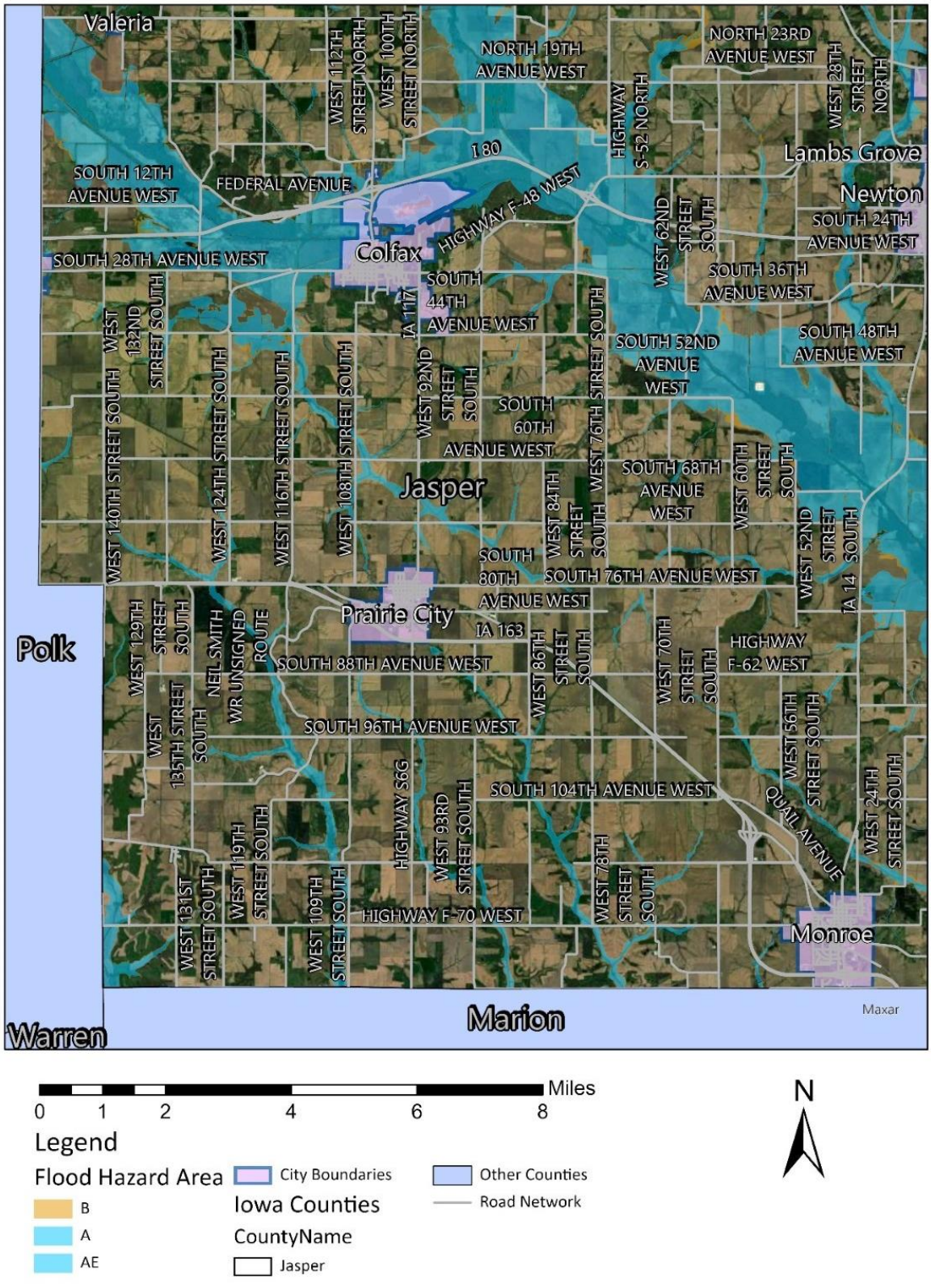
Data Source: FEMA National Flood Hazard Layer, 2018

Map 8: Southeast Jasper County Flood Hazard Zones



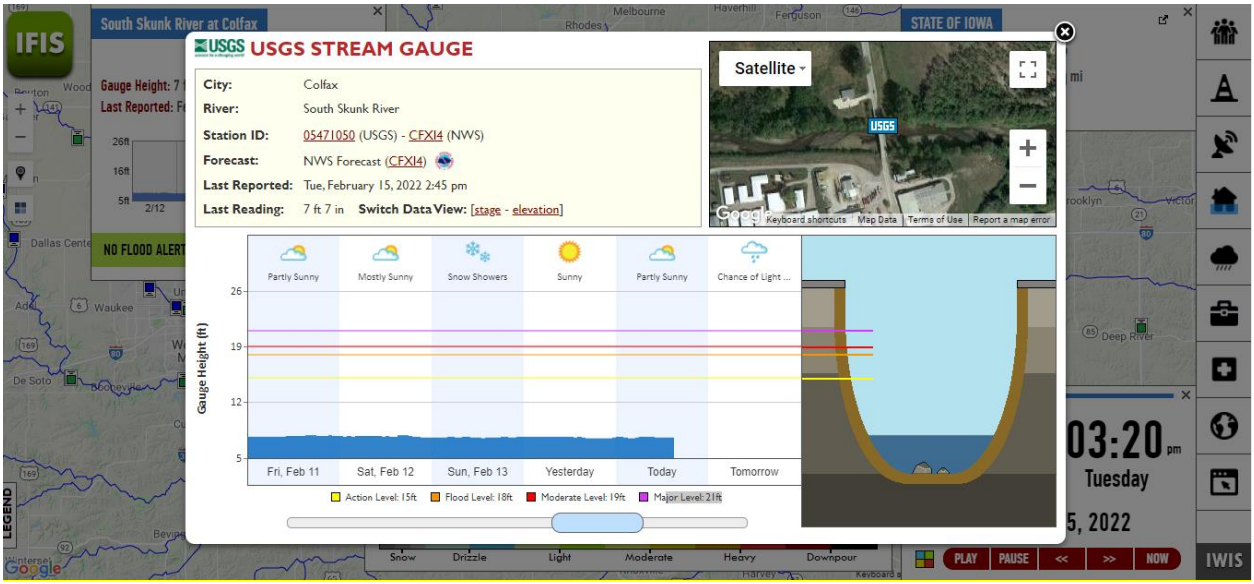
Data Source: FEMA National Flood Hazard Layer, 2018

Map 9: Southwest Jasper County Flood Hazard Zones



Data Source: FEMA National Flood Hazard Layer, 2018

Figure 2: Iowa Flood Information System (IFIS) Stream Gauge Interface



Source: Iowa Flood Center, February 2022

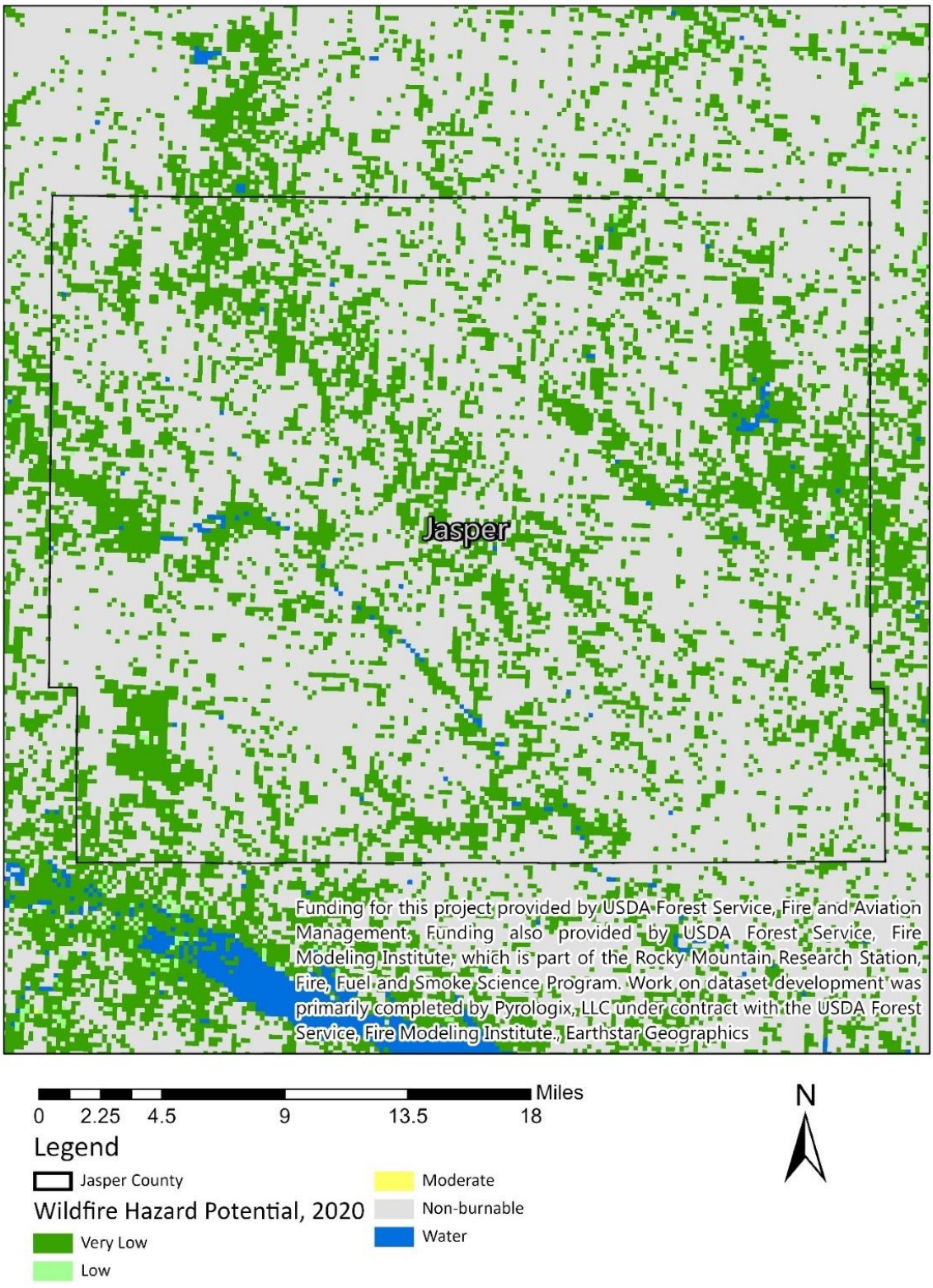
Grass or Wildland Fire

A grass or wildland fire is an uncontrolled fire that threatens life and property in a grassy or wooded area. Grass and wildland fires can occur when conditions are favorable, such as periods of drought when natural vegetation would be drier and subject to combustibility.

Excluded Hazard

According to the *Iowa Hazard Mitigation Plan 2018*, "a grass fire or wildland fire is not a cropland fire … Wildland or grass fires occur in natural, wild areas." The plan also references the wildlife hazard potential (WHP) map, see Map 10 on the following page, developed by the U.S. Department of Agriculture (USDA) Forest Service's Fire Modeling Institute. The map was designed to "depict the relative potential for wildfire that would be difficult for suppression resources to contain." Jasper County is a mixture of lands categorized as non-burnable or low or very low hazard potential. The highest risk classification in Jasper County is low. Due to having only low hazard areas for grass or wildland fires, grass and wildland fire is excluded from this hazard assessment.

Map 10: Wildfire Hazard Potential Map 2020



Data Source: USDA Wildlife Hazard Potential Layer, 2020

Human Disease

A human disease event is a medical, health, or sanitation threat to the public such as contamination, epidemics, pandemics, plagues, and insect infestations. A human disease event requires regular, frequent, and timely information regarding the individual cases to prevent and control the spread of the disease.

Potential Hazard Area

The potential hazard area for human disease events in Jasper County is countywide.

Historical Occurrences

In Iowa, there are 50 reportable communicable diseases. Previously there had been 49, but the COVID-19 pandemic added a new category. A case of any reportable communicable disease must be reported to the county health department if detected by hospitals or healthcare providers. The Jasper County Health Department investigates these diseases and maintains reports, which are shared with the Iowa Department of Public Health (IDPH) and the Centers for Disease Control and Prevention (CDC). IDPH releases an annual report of notifiable and other diseases. Table 15 reports common diseases for Jasper County in 2017. A recent report with comparable data has not been released.

Table 15: Common Reportable Diseases for Jasper County in 2017

Disease	Cases
Anaplasmosis/Ehrlichiosis	0
Campylobacteriosis	19
CRE	0
Cryptosporidiosis	4
Cyclosporiasis	0
E. coli (STEC)	4
Giardiasis	2
Hemolytic Uremic Syndrome	0
Hepatitis A	1
Hepatitis B (acute)	0
Hepatitis B (chronic)	2
Hepatitis D	0
Lacrosse encephalitis	0
Legionellosis	1
Listeriosis	0
Lyme Disease	2
Malaria	1

Source: Iowa Department of Public Health, 2017

Table 15: Common Reportable Diseases for Jasper County in 2017 Continued

Disease	Cases
Mumps	0
Pertussis	0
Q Fever	0
Rocky Mountain Spotted Fever	1
Salmonellosis	10
Shigellosis	1
Tetanus	0
Tularemia	0
West Nile Virus	0
Total	48

Source: Iowa Department of Public Health, 2017

In 2017, the reportable disease with the most cases, a total of 19, was Campylobacteriosis, which is an infection causing diarrhea, fever, and stomach cramps. This infection is typically caused by consuming raw or undercooked poultry or something that touched the contaminated meat. The second highest reportable disease is Salmonellosis, commonly known as Salmonella infection, with a total of 10 cases. This is infection is typically caused by consuming raw or undercooked meat, poultry, eggs, or egg products. In 2017, there were two influenza outbreaks recorded at long-term care facilities in Jasper County.

Since 2020, the world has been impacted by the COVID-19 pandemic. By February 2022, in the third year of the pandemic, there were 418 million reported cases of COVID-19 worldwide, resulting in 5.85 million deaths. In the United States, there were over 78 million reported cases, resulting in 928,000 deaths. In Jasper County, there were almost 8,500 reported cases, resulting in 101 deaths. The reported cases and deaths continue to rise, although more slowly due to the availability of vaccines and treatments, as the pandemic continues worldwide.

Past pandemics and epidemics in the United States include the 1918 Flu, the 1920s Diphtheria epidemic, polio, the 1957 Avian Flu, the 1980s measles outbreak, the HIV/AIDs crisis, whooping cough, and the 2009 Swine Flu. The United States all but eliminated smallpox in the late 1940s, before it was eradicated worldwide. These human disease events were resolved or made manageable with vaccines or other preventive medicine and practices.

Probability

Historically, pandemics occur approximately every 30 years in Iowa. Influenza occurs every year across the world. Influenza viruses spread cyclically through a population for a few months and become less prevalent or move to another are of the world due to travel. Influenza usually occurs in the fall and winter months in the United States, but this type of human disease event is typically manageable at the local level.

While the rate of infections from influenza increases and decreases seasonally in a predictable manner, many people will have some immunity from previous exposure and vaccination. Receiving an annual vaccine can help prevent the spread of infection and hospitalization due to influenza. In contrast, a pandemic occurs when a new strain of influenza or another virus causes a global outbreak. People have little to no immunity because there is no past exposure. This type of human disease event can begin any time of year.

Although this plan was developed during the COVID-19 pandemic, the probability of another major human disease event of such magnitude occurring in the near future is unlikely or less than 10% chance in any given year. Moving forward, COVID-19 will likely impact areas of the world cyclically like influenza. Due to historical occurrences, a globalized economy, and land development causing more interactions with wildlife, there is a possibility of a new human disease event in the future.

Magnitude and Severity

The specific pathogen causing the human disease event determines the area of impact, severity of symptoms, and loss of human life. Potential impacts can be experienced at a local community level to the entire world. Due to a globalized economy and transportation system, diseases can spread across the world within months, weeks, and even days. Symptoms may be mild and treatable or cause severe illness and death. The COVID-19 pandemic has demonstrated the variability of impact a human disease event can have on people and areas of the world based on personal circumstances and available resources.

Jasper County's healthcare system, and others throughout Iowa, experienced many challenges during the COVID-19 pandemic. Due to high patient volumes, hospitals and health care facilities reached maximum capacity several times. Transferring patients elsewhere, especially those needing a level of healthcare not available in Jasper County, was challenging because other hospitals and healthcare facilities were at maximum capacity. Hospitals and healthcare facilities had difficulty maintaining appropriate staffing levels to provide care, and emergency medical services struggled to provide services due to a lack of volunteers. Initially, hospitals and healthcare facilities did not have sufficient personal protection equipment (PPE) such as masks and face shields to prevent the spread of the virus. When available, storing and managing additional supplies, such as PPE, tests, anti-viral medicines, and vaccines was a challenge.

In addition to widespread illness, death, and healthcare system challenges, the COVID-19 pandemic caused major disruptions to the global economy, government operations, education, and everyday life. Disruptions included closure or capacity restrictions for businesses, supply chain issues, a transition of work and school to remote or hybrid arrangements, quarantine, and implementation of mitigation strategies including barriers, masks, physical distance, and improved sanitation practices. Workforce availability continues to be a challenge in many sectors of the economy, especially service sectors that require an in-person presence.

Public health agencies and healthcare providers work to reduce the spread of diseases in Iowa to limit the impact and severity of a human disease event. Agencies use community-based prevention, monitor current infectious disease trends, and provide early detection and treatment for infected persons. If available, public health agencies and healthcare providers encourage the public to get vaccines and follow practices that reduce the spread of infections.

Typically, the people who are most vulnerable to severe illness or death in a human disease event are the elderly, young children, immunocompromised, people with underlying chronic health conditions, and people who engage in high-risk activities. During the COVID-19 pandemic, people living in group homes or care facilities and people with jobs that required an in-person presence were especially vulnerable.

Population data by age from the 2020 U.S. Census is not available. The most recent estimate data available is from the 2019 American Community Survey. In 2019, the population under 5 in Jasper County was approximately 5.9% of the population, like the broader United States. In 2019, the population over 65 was approximately 18.9% in Jasper County versus 16.4% in the broader United States. The higher proportion of elderly people may make it more likely for a human disease event to reach a critical level in Jasper County.

Warning Time

The Jasper County Health Department, IDPH, and the CDC monitor reports submitted by healthcare providers, hospitals, and labs to identify patterns. Monitoring agencies are proactive in providing information to healthcare professionals and the public.

The public is reminded to prepare for typical human disease events like influenza before the common time of year this virus spreads throughout Iowa and the United States. For other human disease events, the public is informed of initial outbreaks, which are confirmed cases of a disease. For most human disease events there is minimal to little warning.

When there is a potential for a human disease event such as contamination of water supplies from infrastructure failure, flooding, or other hazards, there is also minimal to no warning for the public. The Iowa Department of Natural Resources and local governments issue warnings as soon as possible, but contamination will most likely already be present in water supplies.

Duration

The duration of a human disease event is highly variable depending on the pathogen. In many cases, outbreaks can last weeks to months. However, as demonstrated by the COVID-19 pandemic, a human disease event can last for several years.

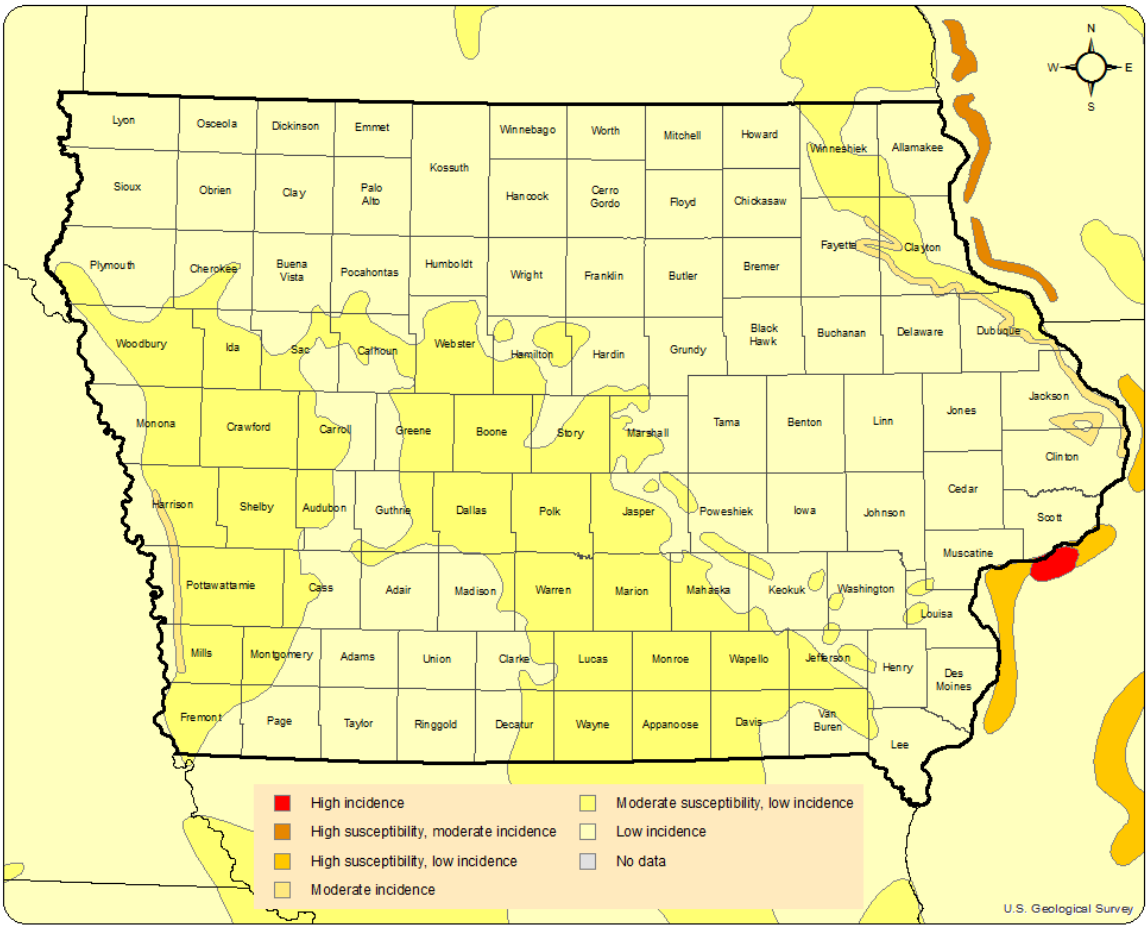
Landslide

A landslide occurs when rock, earth, or debris, moves down a slope under the force of gravity and water. Landslides may be small or large and can move at slow or very fast speeds. In addition to geological conditions, landslides can occur because of rainstorms, fires, earthquakes, and development that modifies slope and drainage.

Excluded Hazard

There have been no reported landslides in Iowa resulting in injury or death, according to the *Iowa Hazard Mitigation Plan 2018*. About a third of Jasper County is a low-incidence area for landslide events. Most of the county, about two-thirds, is a moderately susceptible area, but with low occurrence for landslide events. Refer to Map 11, which is the United States Geological Survey (USGS) for landslide susceptibility referenced in the Iowa plan (3-55). Due to the lack of historical data or high susceptibility, landslide is excluded from this risk assessment.

Map 11: Iowa Landslide Susceptibility 2010



Source: U.S. Geological Survey, 2010

Severe Winter Storm

Severe winter storm conditions that can affect daily activities include blizzards, heavy snow, blowing snow, freezing rain, heavy sleet, and extreme cold. Blizzard conditions are winter storms lasting at least three hours with sustained winds of 35 mph or greater, reduced visibility to a quarter mile or less, and whiteout conditions.

Potential Hazard Area

The potential hazard area for severe winter storms in Jasper County is countywide.

Historical Occurrences

From 2000 – 2021, there were 23 recorded winter storms events in Jasper County. For the recorded winter storms, there were no deaths or injuries reported in Jasper County. However, over $750,000 in property damage has been reported. In 2007, a winter storm caused $500,000 worth of reported damage. Refer to Table 16.

Table 16: Jasper County Winter Storm Events 2000 - 2021

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
JASPER (ZONE)	1/19/2000	0	0	$1,000	0
JASPER (ZONE)	2/17/2000	0	0	$10,000	0
JASPER (ZONE)	12/10/2000	0	0	$24,900	0
JASPER (ZONE)	2/8/2001	0	0	$50,000	0
JASPER (ZONE)	2/14/2003	0	0	$5,000	0
JASPER (ZONE)	2/12/2007	0	0	0	0
JASPER (ZONE)	2/24/2007	0	0	$500,000	0
JASPER (ZONE)	2/5/2008	0	0	$10,000	0
JASPER (ZONE)	2/17/2008	0	0	$25,000	0
JASPER (ZONE)	12/18/2008	0	0	$15,000	0
JASPER (ZONE)	1/6/2010	0	0	$25,000	0
JASPER (ZONE)	12/19/2012	0	0	$25,000	0
JASPER (ZONE)	1/30/2013	0	0	$25,000	0
JASPER (ZONE)	2/4/2014	0	0	0	0
JASPER (ZONE)	2/1/2015	0	0	$50,000	0
JASPER (ZONE)	11/20/2015	0	0	0	0
JASPER (ZONE)	12/28/2015	0	0	0	0
JASPER (ZONE)	2/5/2018	0	0	0	0
JASPER (ZONE)	1/18/2019	0	0	0	0
JASPER (ZONE)	1/22/2019	0	0	0	0
JASPER (ZONE)	2/11/2019	0	0	0	0
JASPER (ZONE)	2/16/2019	0	0	0	0
JASPER (ZONE)	1/17/2020	0	0	0	0
Total	23 events	0	0	$765,900	0

Source: NCEI, February 2022

In the National Centers for Environmental Information (NCEI) Storm Events Database, a winter storm event is defined as an event that has more than one significant hazard such as snow, ice, or sleet and meets or exceeds 12 and/or 24-hour warning criteria for at least one of the precipitation elements.

In addition to winter storm events, there have been seven recorded blizzards in Jasper County from 2000 – 2021. There were no reported deaths or injuries, but there was $485,000 in reported property damage. Refer to Table 17.

Table 17: Jasper County Blizzard Events 2000 – 2021

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
JASPER (ZONE)	12/9/2009	0	0	$50,000	0
JASPER (ZONE)	1/25/2010	0	0	$75,000	0
JASPER (ZONE)	12/11/2010	0	0	$75,000	0
JASPER (ZONE)	2/1/2011	0	0	$25,000	0
JASPER (ZONE)	12/20/2012	0	0	$50,000	0
JASPER (ZONE)	1/16/2014	0	0	$10,000	0
JASPER (ZONE)	2/4/2021	0	0	0	0
Total	7 events	0	0	$485,000	0

Source: NCEI, February 2022

The blizzard event in 2009 was then described as the worst blizzard to affect Iowa in over 40 years according to the narrative portion of the NCEI data. The 2012 blizzard was of comparable intensity, yet more widespread, and was responsible for $250,000 of damage. According to Radio Iowa, a local media organization, this episode dumped 8.3” of snow in Newton and “helped knock out to power of tens-of-thousands.” In both these instances, major disruptions to roads resulted in the closures of nearly all businesses and school in the state until the snow could be cleared.

A heavy snow event is another type of severe winter storm event recorded in the NCEI Storm Events Database. A heavy snow event is defined as an accumulation of four inches or more of snow in 12 hours or less or six inches or more in 24 hours or less. In Jasper County, 16 heavy snow events were recorded from 2000 – 2021. No deaths or injuries were reported, but there was $165,000 in reported property damage. Refer to Table 18.

Table 18: Jasper County Heavy Snow Events 2000 – 2021

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
JASPER (ZONE)	3/15/2001	0	0	$25,000	0
JASPER (ZONE)	1/4/2004	0	0	$5,000	0
JASPER (ZONE)	2/5/2004	0	0	0	0
JASPER (ZONE)	3/15/2004	0	0	$10,000	0
JASPER (ZONE)	1/4/2005	0	0	$10,000	0
JASPER (ZONE)	1/20/2007	0	0	0	0
JASPER (ZONE)	1/9/2009	0	0	0	0
JASPER (ZONE)	2/13/2009	0	0	0	0
JASPER (ZONE)	12/7/2009	0	0	$10,000	0
JASPER (ZONE)	3/19/2010	0	0	0	0
JASPER (ZONE)	2/26/2013	0	0	$5,000	0
JASPER (ZONE)	5/2/2013	0	0	$100,000	0
JASPER (ZONE)	12/22/2013	0	0	0	0
JASPER (ZONE)	1/5/2015	0	0	0	0
JASPER (ZONE)	12/29/2020	0	0	0	0
JASPER (ZONE)	1/25/2021	0	0	0	0
Total	16 events	0	0	$165,000	0

Source: NCEI, February 2022

Ice storms can be especially dangerous as they result in poor driving conditions that can easily lead to accidents causing injury or death. Ice storms often cause power outages, which is dangerous in Iowa's cold temperatures during the winter, and property damage. From 2000 – 2021, there have been six recorded ice storms in Jasper County. No deaths and injuries were reported, but there was $265,000 in reported damage. Refer to Table 19.

Table 19: Jasper County Ice Storm Events 2000 – 2021

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
JASPER (ZONE)	02/08/2001	0	0	$75,000	0
JASPER (ZONE)	12/01/2007	0	0	$10,000	0
JASPER (ZONE)	12/11/2007	0	0	$75,000	0
JASPER (ZONE)	12/27/2008	0	0	$5,000	0
JASPER (ZONE)	01/20/2010	0	0	$100,000	0
JASPER (ZONE)	01/15/2017	0	0	0	0
Total	6 events	0	0	$265,000	0

Source: NCEI, February 2022

Extreme cold and wind chill is also included in the severe winter storm definition, because it is a dangerous component of Iowa's winter season. From 2000 – 2021, there have been seven recorded extreme cold or wind chill events in Jasper County. No deaths, injuries, or property damage was reported. Refer to Table 20.

Table 20: Jasper County Extreme Cold/Wind Chill Events 2000 – 2021

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
JASPER (ZONE)	1/5/2014	0	0	0	0
JASPER (ZONE)	1/6/2015	0	0	0	0
JASPER (ZONE)	12/18/2016	0	0	0	0
JASPER (ZONE)	12/31/2017	0	0	0	0
JASPER (ZONE)	1/1/2018	0	0	0	0
JASPER (ZONE)	1/29/2019	0	0	0	0
JASPER (ZONE)	2/13/2020	0	0	0	0
Total	7 events	0	0	0	0

Source: NCEI, February 2022

Probability

Historical occurrences indicate that several winter storm events can occur annually in Jasper County, so the probability of a winter storm event occurring each year is highly likely or greater than 33%. If a winter is severe, it is possible for all the types of winter events to occur in a season. The frequency of severe winter storm events depends on the overall severity of a particular winter season. As historical occurrences indicated, Jasper County can be affected by several severe winter storm events in one year, but there can be years with few or no severe winter storm events.

Magnitude and Severity

Winter storms usually impact several counties during a single event. Due to the size and environmental changes a storm brings as it travels across a region, there will be a considerable degree of local variation in storm intensity and precipitation totals. The presence of snow or ice, high winds, and low temperatures can make a significant difference in how a severe winter storm event will impact a community.

During a winter storm event, people, pets, and livestock are susceptible to frostbite or hypothermia. The people primarily at risk are engaged in outdoor activity such as shoveling snow, digging out vehicles, or assisted stranded motorists. The elderly and very young are also vulnerable during a winter storm event. Businesses and schools will often close during extreme cold or heavy precipitation conditions to protect the safety of patrons, workers, students, and bus drivers.

Heavy snows, blizzards, and ice storms can immobilize transportation systems, damage trees and power lines, and collapse buildings and communication towers. The potential for drifting snow is substantially higher in open country than in urban areas where buildings, trees, and other features obstruct the wind. Severe ice storms have caused total electric power outages over large areas of Iowa and rendered assistance unavailable to those in need due to impassable roads.

To ensure transportation systems can safely and efficiently move people and goods, the Iowa Department of Transportation, Jasper County, and local governments are responsible for treatment and snow removal on streets and highways. Severe winter storm conditions can slow or stop the flow of vital supplies and disrupt emergency services. The emergency needs for rural residents and farms may be especially difficult to provide.

In Jasper County, a severe winter storm event can reach a critical level primarily due to the potential risk of human injury or death. It is possible that a shutdown of services and facilities could last more than one week if the storm causes a major power outage. This severity estimate is based on historical occurrences, the *Iowa Hazard Mitigation Plan 2018,* and local knowledge.

Warning Time

The National Weather Service provides winter weather notifications that are prompt and widely distributed in Iowa. Notifications include winter storm watch, winter storm warning, blizzard warning, winter weather advisory, and freeze advisory. Weather information is provided on the radio, television, weather alert radios, subscription alert services through local emergency management agencies, social media, and Wireless Emergency Alerts sent to cell phones and other devices connected to communication towers. For winter storm events, accurate information is usually available up to a few days in advance.

Duration

Although a severe winter storm typically only lasts a few hours, the event can have long-lasting impacts on a community that could stretch beyond a week. Dangerous road conditions and/or electrical power outages can affect a community, especially rural areas, for an extended period. It is also possible that a severe winter storm event can last several days due to multiple individual storm events occurring in rapid succession in a short period of time.

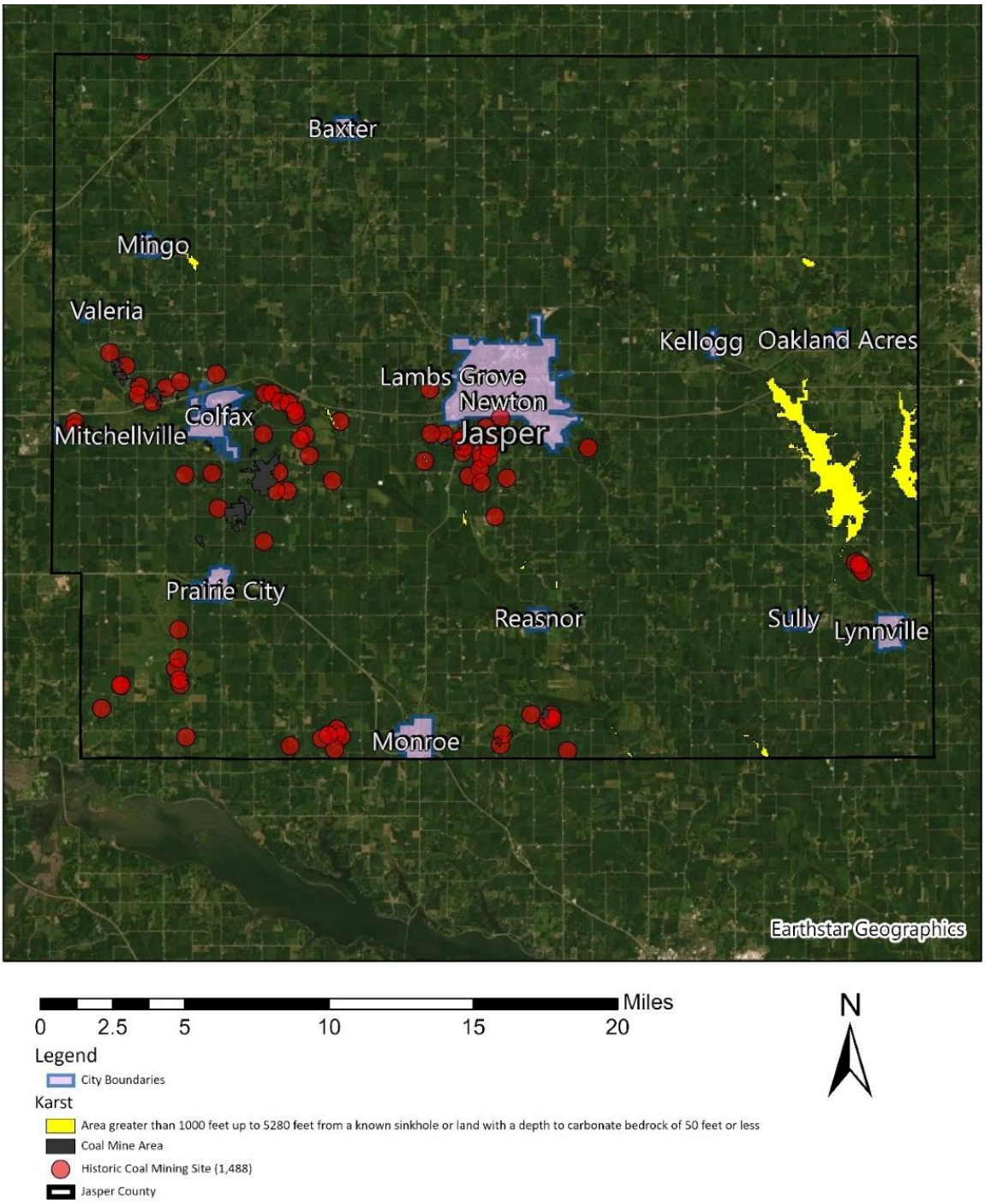
Sinkholes

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 localized collapse. The cause of most sinkholes are human activities such as underground mining, groundwater or petroleum withdraw, and soil erosion. Sinkholes are also common in areas of Karst topography due to the erosion of soluble rocks like limestone in subsurface areas.

Excluded Hazard

There is no record of sinkholes occurring in Jasper County. There are 80 historic coal mines in Jasper County, most were operated around the turn of the 20th century. Some areas, primarily in the eastern portion of the county, have Karst topography. Areas with Karst topography do not overlap with incorporated cities or populated areas. Refer to Map 12 on the following page. Since there is no overlap between mining activities, Karst topography, and cities, sinkholes are excluded from this risk assessment.

Map 12: Sinkhole Risk in Jasper County



Data Source: HSEMD, Iowa Hazard Mitigation Layer, 2022

Thunderstorm, Lightning, and Hail

A thunderstorm can occur singly, in clusters, or in lines resulting in heavy rains, winds reaching or exceeding 58 mph, tornadoes, or hails. Most thunderstorms produce only thunder, lightning, and rain.

Severe thunderstorms, however, can produce tornadoes, straight-line winds, microbursts above 58 mph, lightning, hails, and flooding. The National Weather Service considers a thunderstorm severe if it produces hail at least 1 inch in diameter, winds 58 mph or higher, or tornadoes. Straight-line winds can often exceed 60 mph, are common occurrences, and are often mistaken for tornadoes. Thunderstorms have caused other hazards such as flash and river flooding.

Lightning is an electrical discharge from the buildup of positive and negative charges within a thunderstorm. The temperature of lightning can reach 50,000 degrees Fahrenheit in a split second. The rapid heating, expansion, and cooling of air near lightning creates thunder.

A hailstorm is an outgrowth of a severe thunderstorm in which pellets or irregularly shaped lumps of ice, otherwise known as hail, fall with rain. Hail can be smaller than a pea or as large as a softball.

Potential Hazard Area

The potential hazard area for a thunderstorm, lighting, and hail in Jasper County is countywide.

Historical Occurrences

From 2000 – 2021, there were 112 reported thunderstorm wind events occurring over 62 distinct days. NCEI data defines a thunderstorm wind event as winds, arising from convection, occurring within 30 minutes of lightning being observed or detected. Wind speed is at least 58 mph, or the wind causes a fatality, injury, or damage. Due to the large volume of thunderstorm wind events, the data table is limited to 2010 – 2021.Refer to Table 21.

Table 21: Jasper County Thunderstorm Wind Events 2010 – 2021

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
SULLY	4/6/2010	0	0	0	0
SULLY	4/6/2010	0	0	$25,000	0
TURNER	4/6/2010	0	0	$20,000	0
TURNER	4/6/2010	0	0	$50,000	0
PRAIRIE CITY	7/23/2010	0	0	$35,000	0
SULLY	9/21/2010	0	0	$100,000	0
NEWTON	6/9/2011	0	0	$5,000	0
NEWTON ARPT	6/20/2011	0	0	$15,000	0
BAXTER	7/11/2011	0	0	$15,000	$ 10,000
MONROE	7/11/2011	0	0	$15,000	$ 10,000

Source: NCEI, February 2022

Table 21: Jasper County Thunderstorm Wind Events 2010 – 2021 Continued

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
SULLY	7/22/2011	0	0	$5,000	0
REASNOR	4/14/2012	0	0	$50,000	0
KILLDUFF	4/14/2012	0	0	$75,000	0
METZ	6/29/2012	0	0	0	0
COLFAX	7/25/2012	0	0	$5,000	0
MINGO	5/29/2013	0	0	0	$ 10,000
VANDALIA	8/6/2013	0	0	$2,000	0
MONROE	10/4/2013	0	0	$2,000	0
MONROE	10/4/2013	0	0	$5,000	0
PRAIRIE CITY	5/11/2014	0	0	$3,000	0
PRAIRIE CITY	6/17/2014	0	0	$5,000	0
MONROE	6/17/2014	0	0	$2,000	0
NEWTON	6/30/2014	0	0	$50,000	0
PRAIRIE CITY	8/31/2014	0	0	0	0
PRAIRIE CITY	11/11/2015	0	0	0	0
PRAIRIE CITY	11/11/2015	0	0	$60,000	0
NEWTON	11/11/2015	0	0	$5,000	0
CLYDE	8/4/2016	0	0	$5,000	0
MONROE	5/17/2017	0	0	0	0
COLFAX	5/17/2017	0	0	0	0
NEWTON ARPT	6/15/2017	0	0	0	0
LYNNVILLE	6/6/2018	0	0	0	0
NEWTON	6/6/2018	0	0	0	0
METZ	5/24/2019	0	0	0	0
SULLY	7/20/2019	0	0	$1,000	0
NEWTON ARPT	5/25/2020	0	0	0	0
KELLOGG	5/25/2020	0	0	$30,000	0
NEWTON ARPT	6/22/2020	0	0	0	0
KILLDUFF	6/22/2020	0	0	0	0
MONROE	7/14/2020	0	0	0	0
COLFAX	8/10/2020	0	0	0	0
COLFAX	8/10/2020	0	0	0	0
NEWTON	8/10/2020	0	0	0	0
PRAIRIE CITY	8/10/2020	0	0	0	0
PRAIRIE CITY	12/15/2021	0	0	0	0
Total	45 events	0	0	$585,000	$30,000

Source: NCEI, February 2022

From 2000 – 2021, there were only five recorded events for lightning, however lightning occurs as part of thunderstorms frequently every year. These instances were recorded separately from other severe weather events in NCEI data because they caused property damage. There were no deaths or injuries or reported, and there was $69,000 in reported property damage. Refer to Table 22.

Table 22: Jasper County Lightning Events 2000 – 2021

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
NEWTON	6/13/2000	0	0	$1,000	0
SULLY	7/10/2000	0	0	$1,000	0
NEWTON	7/26/2000	0	0	$12,000	0
KELLOGG	6/25/2003	0	0	$5,000	0
MONROE	3/6/2010	0	0	$50,000	0
Total	5 events	0	0	$69,000	0

Source: NCEI, February 2022

From 2000 – 2021, there were 163 recorded hail events. There were no reported injuries or deaths, and there was $383,000 in reported property damage and $190,000 in crop damage. Due to the large volume of hail events, the data table is limited to 2010 – 2021. Refer to Table 23.

Table 23: Jasper County Hail Events 2010 – 2021

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
MONROE	4/6/2010	0	0	$3,000	0
MONROE	4/6/2010	0	0	$3,000	0
MONROE	4/6/2010	0	0	$10,000	0
METZ	9/18/2010	0	0	$3,000	$25,000
BAXTER	3/22/2011	0	0	$1,000	0
BAXTER	6/8/2011	0	0	$2,000	$10,000
BAXTER	6/8/2011	0	0	$3,000	$10,000
BAXTER	6/8/2011	0	0	$10,000	$10,000
BAXTER	6/8/2011	0	0	$15,000	$10,000
TURNER	7/22/2011	0	0	0	$5,000
PRAIRIE CITY	5/2/2012	0	0	0	0
NEWTON	6/29/2012	0	0	$100,000	$10,000
KELLOGG	6/29/2012	0	0	$10,000	$5,000
NEWTON	9/7/2012	0	0	$10,000	0
TURNER	9/7/2012	0	0	$5,000	$5,000
CLYDE	5/19/2013	0	0	$1,000	0
NEWBURG	5/19/2013	0	0	$1,000	0
VALERIA	5/29/2013	0	0	$5,000	$25,000
KELLOGG	7/22/2013	0	0	0	$10,000

Source: NCEI, February 2022

Table 23: Jasper County Hail Events 2010 – 2021 Continued

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
VANDALIA	8/6/2013	0	0	$5,000	$15,000
MONROE	8/6/2013	0	0	$25,000	$15,000
MONROE	8/6/2013	0	0	$20,000	0
MONROE	8/6/2013	0	0	$3,000	$15,000
MONROE	8/6/2013	0	0	$100,000	0
MONROE	8/6/2013	0	0	$3,000	0
BAXTER	9/19/2013	0	0	$3,000	0
NEWBURG	4/12/2014	0	0	$1,000	0
CLYDE	5/20/2014	0	0	$1,000	0
REASNOR	8/2/2015	0	0	0	0
MONROE	8/2/2015	0	0	$20,000	0
VALERIA	5/26/2016	0	0	0	0
SULLY	3/6/2017	0	0	0	0
PRAIRIE CITY	4/15/2017	0	0	0	0
COLFAX	6/15/2017	0	0	0	0
NEWTON	6/15/2017	0	0	0	0
NEWTON	6/15/2017	0	0	0	0
NEWTON	6/15/2017	0	0	0	0
NEWTON	6/15/2017	0	0	0	0
NEWTON MUNI ARPT	6/15/2017	0	0	0	0
NEWTON MUNI ARPT	6/15/2017	0	0	0	0
MONROE	5/25/2018	0	0	0	0
LYNNVILLE	8/31/2018	0	0	0	0
KELLOGG	9/18/2018	0	0	0	0
NEWTON	4/7/2019	0	0	0	0
NEWTON	4/7/2019	0	0	0	0
NEWTON	5/16/2019	0	0	$ 20,000	$20,000
NEWBURG	6/28/2019	0	0	0	0
BAXTER	7/11/2020	0	0	0	0
KELLOGG	7/11/2020	0	0	0	0
Total	27 events	0	0	$383,000	$190,000

Source: NCEI, February 2022

Probability

On average, Iowa experiences 30 to 50 thunderstorm days per year. Several of these thunderstorm days include Jasper County each year. Because of the humid continental climate in Iowa, the conditions that create severe thunderstorms are typically present. To become severe, a storm needs moisture to form clouds and rain, relatively warm and unstable air that can rise rapidly, and weather fronts and convective systems that lift air masses.

In Jasper County, it is highly likely a thunderstorm and lighting event will occur at least once each year, if not several times during a severe summer season. Thunderstorm and lightning events are the mostly frequently occurring hazard in Jasper County. A hail event is highly likely with a probability of occurring at least once each year. In a year with severe weather, Jasper County will likely experience several hail events in the spring and summer months. This probability estimate is based on historical occurrences, the *Iowa Hazard Mitigation Plan 2018*, and local knowledge.

Magnitude and Severity

Severe thunderstorms can be quite expansive with areas of localized severe conditions. Most severe thunderstorm cells are between 5 and 25 miles wide with larger areas of heavy rain and strong winds around the main cell. Depending on the size, a thunderstorm can affect several or just one community in Jasper County.

Like tornadoes, thunderstorms and lightning can cause death, serious injury, and substantial property damage. People in unprotected areas, mobile homes, or automobiles are particularly vulnerable during a thunderstorm. Sudden, strong winds often accompany a severe thunderstorm. Strong winds may blow down trees, power lines, homes, especially mobile homes, and businesses. High winds can also push vehicles off the road. Straight-line winds are typically responsible for most damage during a thunderstorm event.

Lightning presents the greatest immediate danger to people and animals during a thunderstorm. The intensity of the energy contained in a lightning strike can electrocute people, pets, and livestock. People and animals outdoors, especially under a tree, near some other kind of natural lightning rod, in or on water, and on or near hilltops are at greatest risk. According to the National Weather Service, approximately 270 people were struck by lightning on average each year from 2009 – 2018. Twenty-seven of those victims died, with the rest suffering some degree of disability. Lightning can also split trees, ignite fires, and cause electrical failures.

Thunderstorms can produce hail that can cause injury to humans and animals and damage to homes, businesses, and vehicles. Flash floods and tornadoes can develop during thunderstorms. People in automobiles, mobile homes, or low-lying areas when flash flooding occurs may be in danger. Floods and flash floods are the number one cause of weather-related deaths in the United States. One or more severe thunderstorms occurring over a short period, especially on saturated ground, can lead to flooding and cause extensive power and communication outages and agricultural damage.

In Jasper County, when a future thunderstorm event occurs, the magnitude and severity will likely be limited. Injuries will likely not result in permanent disability. Still, storms can be deadly. Severe damage could potentially affect 10% to 25% of Jasper County, and facilities may be shut down for a week or more.

The land area affected by a hail event is often the same size or smaller than the area affected by the storm that produces the hail. Typically, a hail event occurs within a 15-mile diameter around the center of the storm. Historical hail events in Jasper County have impacted entire communities.

Hail events are rarely a direct cause of death but can cause injuries to humans, pets, and livestock that are outdoors during a storm. Hail can cause widespread damage to buildings, infrastructure, and vehicles. Damage to buildings is usually limited to damaged windows, roofs, and exteriors.

Agricultural crops are vulnerable because hail can strip leaves or destroy plants. The peak time for hail events to occur in Iowa overlaps with the agricultural season, making damage a common risk. Factoring crop damage, hail events can cause millions in damage annually in Iowa. It is important to note, most of the financial impacts of hail damage for farmers are covered by insurance. The economic impacts from the shortage of a particular crop, though, may impact livestock, biodiesel, and food producers. Often, the costs are passed to consumers.

In a future hail event in Jasper County, the magnitude and severity of the event is likely to be limited based on historical occurrences. For property damage, 10% to 25% could be severely damaged, and injuries would not likely result in permanent disability. There is a possibility that some facilities and services may be shut down, but the disruption would likely be less than a week.

Warning Time

The National Weather Service provides severe weather notifications that are prompt and widely distributed in Iowa. Notifications include thunderstorm watch and thunderstorm warning. Weather information is provided on the radio, television, weather alert radios, subscription alert services through local emergency management agencies, social media, and Wireless Emergency Alerts sent to cell phones and other devices connected to communication towers. The Jasper County Emergency Management Agency uses the Alert Iowa system to send community and weather alerts through text message. Weather forecasting and severe weather notifications issued by the National Weather Service usually provide residents and visitors adequate warning time, which is 12 to 24 hours.

Hail events can usually be predicted in conjunction with a thunderstorm that has conditions suitable for producing hail. When the National Weather Service releases a severe thunderstorm watch or warning, they will include information about potential hail hazards. Some hail events can have a sudden onset if the weather is volatile, typically when conditions are ideal for a tornado.

Locally, Jasper County activates its outdoor siren warning system when windspeeds are predicted to exceed 72 mph. Warning sirens are tested at regular times to ensure they operate properly. Residents are reminded that aside from tests, sirens going off means that a life-threatening condition is present and that they must seek shelter immediately.

Duration

Depending on the size and severity of a thunderstorm and lightning event, the negative impacts can affect a community for a relatively short period of time. Thunderstorm and lightning events occur in conjunction with other hazards like floods, hail, and tornadoes, which can affect a community for an extended time due to damage and shutdown of facilities and services. A thunderstorm and lighting event will likely impact Jasper County for less than a day. Hail events typically lasts no more than six hours. In most occurrences, hail events last a few minutes within a larger storm that occurs over several hours.

Tornado and Windstorm

A tornado is a violent whirling wind with a rotating funnel shaped cloud that extends downward. Rotating wind speeds can exceed 300 mph and travel across the ground at average lineal speeds of 25-30 mph. A tornado path can be a few yards to a mile wide, but an average tornado is a few hundred yards wide. A tornado can move over land for distances ranging from short hops to miles.

Before 2007, the Fujita Scale was used to rate the magnitude of a tornado. The scale is a range of values for wind speed, frequency, average damage path width, and potential damage. The current rating scale is the Enhanced Fujita Scale, which uses more accurate ranges for wind speed and analysis of damage. Refer to Table 24 for a broad description of the scale.

Table 24: Fujita Tornado Classification

Fujita Scale (Before 2007)			Enhanced Fujita Scale (After 2007)		
Rating	**Windspeed**	**Damage**	**Rating**	**Windspeed**	**Damage**
F0	40-72 mph	Light	EF0	68-85 mph	Light
F1	73-112 mph	Moderate	EF1	86-110 mph	Moderate
F2	113-157 mph	Considerable	EF2	111-135 mph	Considerable
F3	158-206 mph	Severe	EF3	136-165 mph	Severe
F4	207-260 mph	Devastating	EF4	166-200 mph	Devastating
F5	261-318 mph	Incredible	EF5	200 + mph	Incredible

A windstorm is the extreme wind associated with severe storms. Windstorms may have a destructive path up to tens of miles wide. These events can produce straight line winds of more than 64 knots or approximately 73 mph. The Beaufort Scale, which ranges from 0 – 12, is typically used to determine the magnitude of a windstorm. Refer to Table 25.

Table 25: Beaufort Wind Speed Classification

Beaufort Scale	Description	Wind Speed (knots)	Wind Speed (mph)*
0	Calm	<1	<1
1	Light air	1-3	1-3.5
2	Light breeze	4-6	3.5-7
3	Gentle breeze	7-10	7-11.5
4	Moderate breeze	11-16	11.5-18.5
5	Fresh breeze	17-21	18.5-24
6	Strong breeze	22-27	24-31
7	Near gale	28-33	31-38
8	Gale	34-40	38-46
9	Strong gale	41-47	46-54
10	Storm	48-55	54-63.5
11	Violent storm	56-63	63.5-73.5
12	Hurricane	>64	>73.5

*Wind speed is rounded to the nearest half mph relative to knots to provide a familiar measure of speed.

Potential Hazard Area

The potential hazard area for tornadoes and windstorms is countywide in Jasper County.

Historical Occurrences

From 2000 – 2021, there have been 21 recorded tornadoes in Jasper County. From 2000 – 2007, the most powerful tornado recorded was an F1 tornado in April 2001 that caused $10,000 of damage. From 2007 – 2021, the most powerful tornado was an EF2 in September 2007, causing $1 million in reported property damage and $500,000 in reported crop damage. Most tornadoes in Jasper County have caused less than $5,000 in reported damage. One tornado in 2008 had two reported injuries. Refer to Table 26.

Table 26: Jasper County Tornadoes 2000 – 2021

Location Start	Location End	Date	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
COLFAX	BAXTER	4/11/2001	F1	0	0	$10,000	0
NEWTON	NEWTON	5/22/2004	F0	0	0	0	0
NEWTON	NEWTON	5/22/2004	F0	0	0	0	0
NEWTON	NEWTON	5/22/2004	F0	0	0	0	0
NEWBURG	NEWBURG	5/22/2004	F0	0	0	0	0
BAXTER	BAXTER	5/22/2004	F0	0	0	$5,000	$2,000
SULLY ARPT	LYNNVILLE	9/30/2007	EF2	0	0	$1,000,000	$500,000
PRAIRIE CITY	METZ	6/5/2008	EF1	0	0	$75,000	0
REASNOR	TURNER	6/5/2008	EF1	0	2	$250,000	$5,000
NEWTON	NEWBURG	6/5/2008	EF0	0	0	$25,000	0
VALERIA	VALERIA	7/27/2008	EF0	0	0	0	0
NEWTON ARPT	NEWTON ARPT	7/27/2008	EF0	0	0	0	0
BAXTER	KELLOGG	7/6/2014	EF0	0	0	0	$50,000
KELLOGG	KELLOGG	7/6/2014	EF0	0	0	0	$1,000
PRAIRIE CITY	PRAIRIE CITY	5/3/2018	EF0	0	0	0	0
KROHN FLD	KROHN FLD	5/3/2018	EF0	0	0	0	0
COLFAX	PRAIRIE CITY	7/19/2018	EF0	0	0	0	$1,000
PRAIRIE CITY	PRAIRIE CITY	7/19/2018	EF0	0	0	0	$800
MONROE	MONROE	7/19/2018	EF0	0	0	$8,000	$1,500
MINGO	UNKNOWN	9/22/2019	EFU	0	0	0	$100
NEWTON ARPT	NEWTON ARPT	12/15/2021	EF0	0	0	$50,000	0
Total		21 events		0	2	$1,423,000	$561,400

Source: NCEI, February 2022

A tornado event that is not yet available through NCEI data, occurred on March 5, 2022. Moving across Iowa, a powerful storm system produced several tornadoes. The most severe tornado was an EF4 tornado that originated in the Winterset area and travelled into Jasper County north of Newton. The tornado did not kill or injure anyone in Jasper County. Six deaths were reported in Madison County, and one death was reported in Lucas County. The tornado was the most powerful tornado recorded in Jasper County, and it caused over $2.2 million in reported damage.

A funnel cloud is a visible predictor for a tornado event. In Jasper County, there have been nine recorded funnel cloud events from 2000 – 2021. Refer to Table 27.

Table 27: Jasper County Funnel Cloud Events 2000 – 2021

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
BAXTER	5/29/2008	0	0	0	0
LYNNVILLE	6/18/2011	0	0	0	0
KELLOGG	8/17/2015	0	0	0	0
COLFAX	7/19/2018	0	0	0	0
MONROE	7/19/2018	0	0	0	0
CLYDE	7/19/2018	0	0	0	0
COLFAX	8/16/2018	0	0	0	0
METZ	10/1/2019	0	0	0	0
MONROE	8/12/2021	0	0	0	0
Total	9 events	0	0	0	0

Source: NCEI, February 2022

Windstorm events are recorded in several different categories in the National Center for Environmental Information (NCEI) Storm Events Database. These categories include high wind, strong wind, and thunderstorm wind.

High wind is defined as sustained non-convective winds of 40 mph or greater lasting for one hour or longer, or gusts of 58 mph or greater for any duration. In Jasper County, there were 21 recorded high wind events from 2000 – 2021. There were no report deaths or injuries, but there was $585,110 in reported property damage and $25,000 in crop damage. Refer to Table 28.

Table 28: Jasper County High Wind Events 2000 – 2021

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
JASPER (ZONE)	3/8/2000	0	0	$10,000	0
JASPER (ZONE)	4/7/2001	0	0	$50,000	0
JASPER (ZONE)	3/9/2002	0	0	$50,000	0
JASPER (ZONE)	5/30/2003	0	0	$25,000	0

Source: NCEI, February 2022

Table 28: Jasper County High Wind Events 2000 – 2021 Continued

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
JASPER (ZONE)	11/12/2003	0	0	$50,000	0
JASPER (ZONE)	4/18/2004	0	0	$80,000	0
JASPER (ZONE)	4/27/2004	0	0	$75,110	0
JASPER (ZONE)	12/12/2004	0	0	$50,000	0
JASPER (ZONE)	1/22/2005	0	0	$10,000	0
JASPER (ZONE)	5/8/2005	0	0	$20,000	0
JASPER (ZONE)	6/8/2005	0	0	$20,000	0
JASPER (ZONE)	11/12/2005	0	0	$50,000	0
JASPER (ZONE)	1/24/2006	0	0	$10,000	0
JASPER (ZONE)	10/26/2008	0	0	$25,000	$25,000
JASPER (ZONE)	6/13/2011	0	0	$20,000	0
JASPER (ZONE)	1/1/2012	0	0	$10,000	0
JASPER (ZONE)	5/27/2013	0	0	$5,000	0
JASPER (ZONE)	1/26/2014	0	0	$25,000	0
JASPER (ZONE)	11/11/2015	0	0	0	0
JASPER (ZONE)	12/12/2021	0	0	0	0
JASPER (ZONE)	12/15/2021	0	0	0	0
Total	21 events	0	0	$585,110	$25,000

Source: NCEI, February 2022

A strong wind event is defined as non-convective winds gusting less than 58 mph, or sustained winds less than 40 mph, resulting in a fatality, injury, or damage. From 2000 – 2021, there were no reports of strong wind events in Jasper County.

A thunderstorm wind event is defined as winds, arising from convection, occurring within 30 minutes of lightning being observed or detected. Wind speed is at least 58 mph, or the wind causes a fatality, injury, or damage. From 2000 – 2021, there were over 100 reported thunderstorm wind events. This historical data is considered in the risk assessment for Thunderstorm, Lighting, and Hail and Tornado and Windstorm hazards due to the broad definition used to record events in the NCEI Storm Events Database. Refer to Table 21 included in the Thunderstorm, Lighting, and Hail hazard assessment for thunderstorm wind events in Jasper County.

Of the events recorded in the thunderstorm wind category, the most significant event is the derecho in August 2020. A derecho is a type of windstorm event with sudden drops in atmospheric pressure that produce extremely powerful winds that travel in a straight line. In Jasper County, wind speeds reached an estimated 80 mph. The most powerful wind speeds reached up to 140 mph in nearby Linn County, which is equivalent to a Category 4 hurricane. The derecho caused three deaths in Iowa. Approximately $7.5 billion in damage was reported across Iowa, and Jasper County had over $16.5 million in reported damage. To date, this derecho is the costliest thunderstorm wind event in United States history.

Probability

According to the *Iowa Hazard Mitigation Plan 2018*, Iowa averages 35 tornadoes per year, so they are common statewide. In Jasper County, 21 tornadoes were recorded from 2000 – 2021, occurring every few years. Funnel clouds are an indicator of tornadoes, but those are documented less frequently. The entire United States is subject to various typed of windstorm events. According to the *Iowa Hazard Mitigation Plan 2018*, Iowa has experienced over 1,500 windstorm events, including wind associated with thunderstorms, straight-line winds, and funnel clouds.

The probability a tornado or windstorm event will occur in Jasper is highly likely or greater than 33% chance in any given year. This probability estimate is based on historical occurrences, the *Iowa Hazard Mitigation Plan 2018*, and local knowledge. In the future, it is likely climate change will cause more frequent and severe tornado and windstorm events. The resulting events may also occur during atypical times of the year.

Magnitude and Severity

The most severe tornado recorded in Jasper County, an EF4, occurred in March 2022. An EF4 tornado can cause devastating damage, but this type of tornado is less common in Iowa. Historical occurrences indicate an EF0 or EF1 tornado is more likely, but a more severe tornado is possible.

During either a tornado or windstorm event, anybody located in or near the path of the destructive winds is vulnerable. Extremely powerful winds are dangerous because they can strike structures with incredible force. They are also capable of picking up debris and turning normally sturdy objects like cars into projectiles. Populations that are more vulnerable during these events are those who live in mobile or manufactured homes, people who are recreating outdoors or camping at the time of the event, outdoor workers, motorists, the elderly, the young, those with disabilities or limited mobility, and residents or workers in buildings lacking basements.

Generally, the destructive path of a tornado is a few hundred feet wide, but some tornadoes can leave a path of destruction up to a mile wide. Large hail, strong or straight-line winds, heavy rains, flash flooding, and lightning are some of the other hazards associated with severe storms, The occurrence of other hazards in combination with a tornado may cause significant damage to a wider area. In rare tornado events, entire neighborhoods or communities have been destroyed.

Windstorms can have a destructive path that is several miles wide. Much like tornadoes, large hail, strong or straight-line winds, heavy rains, flash flooding, and lightning are some of the other hazards associated with severe storms. The occurrence of other hazards in combination with a windstorm may cause significant damage to a wider area.

It is often difficult to separate windstorm damage from tornado damage when wind speed exceeds 72 mph. In the August 2020 derecho event, Jasper County experienced winds equivalent to a Category 1 hurricane. Nearby, Linn County experienced winds equivalent to a Category 4 hurricane so it possible for windstorms of this severity to impact Iowa.

Damage from a tornado or windstorm can range from broken tree branches, shingle damage to roofs, and broken windows to total and complete destruction of well-built structures, infrastructure, and large trees. Tornadoes and windstorms can also impact critical infrastructure and services, especially electrical power. Buried services such as water and gas are less vulnerable but can be negatively affected by their system components located above ground.

For Jasper County, it is important to note that crop damage can occur during a tornado or windstorm event. Windstorm events can flatten fields, break plant stalks, or twist plants making it difficult to harvest crops. Windstorm events can reduce yields or destroy a crop. Factoring crop damage, widespread tornado and windstorm events can cause millions in damage annually in Iowa. It is important to note, most of the financial impacts of windstorm damage for farmers are covered by insurance. The economic impacts from the shortage of a particular crop, though, may impact livestock, biodiesel, and food producers. Often, the costs are passed to consumers.

If a typical tornado or windstorm were to occur in Jasper County, the magnitude and severity would likely be limited. A future tornado or windstorm event may result in injuries that do not result in permanent disability, 10% to 25% of a jurisdiction's property being severely damaged, and shutdown of facilities and services for approximately a week. This magnitude and severity estimate is based on historical occurrences, the *Iowa Hazard Mitigation Plan 2018*, and local knowledge. In the future, it is likely climate change will cause more frequent and severe tornado and windstorm events.

Warning Time

Advancement in weather forecasting has allowed a tornado watch to be issued hours in advance. The best lead time is approximately 30 minutes. A tornado can change paths very quickly, limiting the amount of warning time for people its path. Outside of weather forecasting, there may not be visible indicators of a tornado on the ground due to reduced visibility caused by blowing dust or driving in rain and hail. These factors limit the ability to spot and visually confirm a tornado. A future tornado event in Jasper County will likely have minimal warning time of less than six hours. In some cases, there may be no warning time.

The National Weather Service has developed a windstorm warning system that issues windstorm watches 12 to 24 hours in advance. Advisories are issued when existing or imminent windstorms could impact an area. Like tornado warnings, the typical warning time for a windstorm is 30 minutes.

Locally, Jasper County activates its outdoor siren warning system when windspeeds are predicted to exceed 72 mph. Warning sirens are tested at regular times to ensure they operate properly. Residents are reminded that aside from tests, sirens going off means that a life-threatening condition is present and that they must seek shelter immediately.

Weather information is provided on the radio, television, weather alert radios, subscription alert services through local emergency management agencies, social media, and Wireless Emergency Alerts sent to cell phones and other devices connected to communication towers. The Jasper County Emergency Management Agency uses the Alert Iowa system to send community and weather alerts through text message.

Duration

Normally a tornado will stay on the ground for no more than 20 minutes. However, a tornado can touch the ground several times in different areas. Typically, local response during the tornado event is for immediate threat to life and property. In the aftermath of a tornado, response efforts are for the individuals, services, and structures that were negatively impacted by the tornado. Tornado events occur in clusters of multiple tornadoes, typically over the course of a few hours. Windstorms events also typically last a several hours, usually not more than a day. However, these events can cause widespread and catastrophic devastation requiring days, weeks, and even years of recovery.

Technological Hazards

A technological hazard is an event involving a man-made structure, equipment, or substance that will negatively impact people or the environment.

Hazardous Materials Incident

Generally, a hazardous materials incident includes the accidental release of flammable, explosive, toxic, noxious, corrosive, oxidizing, or radioactive substances, irritants, or mixtures that can pose a risk to life, health, or property. They may require evacuation. A hazardous materials event includes fixed hazardous materials, transportation of hazardous materials, and pipeline transportation.

A fixed hazardous materials incident is the accidental release of hazardous materials during handling, storage, or production at facility. Fixed incidents generally affect a localized area.

A transportation hazardous materials incident involves the accidental release of hazardous materials during the transport of materials. Transportation incidents generally affect the area where the incident occurs.

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. An underground 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.

Potential Hazard Area

The potential hazard area for a hazardous materials incident event is conditionally identified as the entire county. Areas surrounding facilities using hazardous materials, which are required to report materials through a Tier II form, or along transportation infrastructure are immediate potential hazard areas. Soil at lower elevation, water downstream, or air downwind would become contaminated if hazardous materials spread. Refer to Maps 13 – 16 in the risk assessment maps section for the locations of these facilities. Jasper County contains approximately 90 miles of gas transmission pipelines and 97 miles of hazardous liquid pipelines. Refer to Map 17, which shows the approximate location of pipelines and the locations of pipeline spills since 2000.

Historical Occurrences

From 2000 – 2021, there were 134 total reported hazardous material incidents in Jasper County. Twenty-four incidents involved over 500 gallons or 500 pounds of material. Refer to Table 29. Most incidents involved relatively small amounts of agriculture-related material, and the response and management were within the capacity of the business handling the material.

Table 29: Hazardous Materials Incidents of 500 lbs./500 gal. or More 2000 - 2021

Reported Date	Mode	Material	Amount
1/2/2001	Theft	Ammonia	800 gal.
4/11/2001	Handling And Storage	Diesel Fuel	560 gal.
6/17/2002	Transportation	Callisto	1000 gal.
3/25/2003	Handling And Storage	Water	500 gal.
8/18/2003	Handling And Storage	Water	900 gal.
12/17/2004	Manure	Manure	500 gal.
3/17/2005	Handling And Storage	Nitrogen fertilizer	6,000 gal.
4/13/2006	Handling And Storage	Ammonia	1,200 lbs.
1/8/2007	Manure	Manure	1,500 lbs.
4/30/2008	Manure	Manure	4,000 (g or lbs.)
11/28/2008	Handling And Storage	Ammonia	1,275 gal.
11/15/2009	Handling And Storage	Ammonia	2,000 lbs.
3/6/2010	Manure	Hog manure	26,024 gal.
4/2/2010	Handling And Storage	Ammonia	3,200 lbs.
4/9/2012	Transportation	Ammonia	500 gal.
11/22/2012	Handling And Storage	Ammonia	850 gal.
6/18/2014	Transportation	Feed additive	9,000 lbs.
10/15/2015	Manure	Manure	8,000 gal.
11/21/2015	Transportation	Sodium Permanganate	1,375 gal.
4/11/2017	Transportation	Urea fertilizer	1,300 gal.
10/15/2019	Transportation	Lime sludge	7,800 lbs.
10/24/2019	Handling And Storage	Diesel Fuel	500 gal.
11/6/2019	Transportation	Diesel Fuel	500 gal.
11/21/2021	Manure	Manure	500 gal.
Total	24 events		

Source: NCEI, February 2022

Since 2000, the largest solid material spill involved 9,000 pounds of feed additive. The largest liquid spill involved 26,024 gallons of hog manure. Most incidents involve transportation, handling, or storage accidents, but other spills occur due to theft.

Per the National Pipeline Mapping System, there have been three pipeline incidents in Jasper County since 2008. A natural gas pipeline had an undisclosed or unknown amount of natural gas escape approximately half a mile from downtown Mingo in 2008. A refined petroleum pipeline had a spill of 1,050 gallons approximately 4.5 miles east-northeast of Prairie City in 2013. A natural gas transmission pipeline had an incident where an undisclosed or unknown amount of natural gas escaped approximately 1.5 miles north of Prairie City in 2013.

Probability

Minor hazardous materials incidents occur fairly frequently in Jasper County. Most incidents are not a major threat due to the small quantities or immediate containment. Any of the frequent incidents could become a major event if the amount of material is large and/or released in a densely populated or environmentally sensitive area. The probability of a hazardous materials incident that would be more than a minor incident is likely or between 19% and 33% in any given year.

Magnitude and Severity

People, pets, livestock, and vegetation near facilities producing, storing, or transporting hazardous materials are at risk. Some hazardous materials may cause immediate death, disablement, or illness if absorbed through the skin, injected, ingested, or inhaled. Some chemicals may cause pain and burns upon contact with skin. Some substances will damage the digestive system if ingested and can be dangerous if distributed through the body through the blood. Injected substances for the same reason are dangerous. Other substances, especially those contained in fine particulate matter, could damage lung tissues when inhaled, which is also extremely dangerous.

Populations downstream, downwind, and downhill of a released substance are particularly vulnerable. Depending on the characteristics of the substance release, a larger area may be in danger of explosion, absorption, injection, ingestion, or inhalation. Occupants of areas previously contaminated by a persistent material may also be harmed either directly or through consumption of contaminated food and water. Many substances may not cause acute issues at low doses. However, consistent, long-term exposure may cause damage.

Most hazardous materials incidents are localized and are quickly contained or stabilized by highly trained fire departments and hazardous materials response teams. Depending on the characteristics of the hazardous material and the volume of material involved, the affected area can be as small as a room or as large as five square miles or more. Many times, additional regions outside the immediately affected are evacuated as a precautionary measure. More widespread effects occur when the material contaminates a source of water or is carried in the air.

Facilities are required to have an off-site consequence plan that addresses the population of the surrounding area. Responding personnel are required to be trained to HAZMAT Operations Level to respond to the scene, and those personnel who come into direct contact with hazardous materials are required to have HAZMAT Technician level training.

Throughout Jasper County, there are fixed facilities with hazardous materials including farm cooperatives, manufacturers, water and wastewater treatment facilities, etc. Major transportation routes, such as highways, railroad lines, and pipelines are also potential locations where hazardous materials incidents can occur.

Hazardous materials incidents can be widespread and severe, with potentially immediate, direct, and devastating consequence to public health. Events can also cause longer-term, indirect consequences to public health. Historical occurrences in Jasper County have had negligible impact.

Warning Time

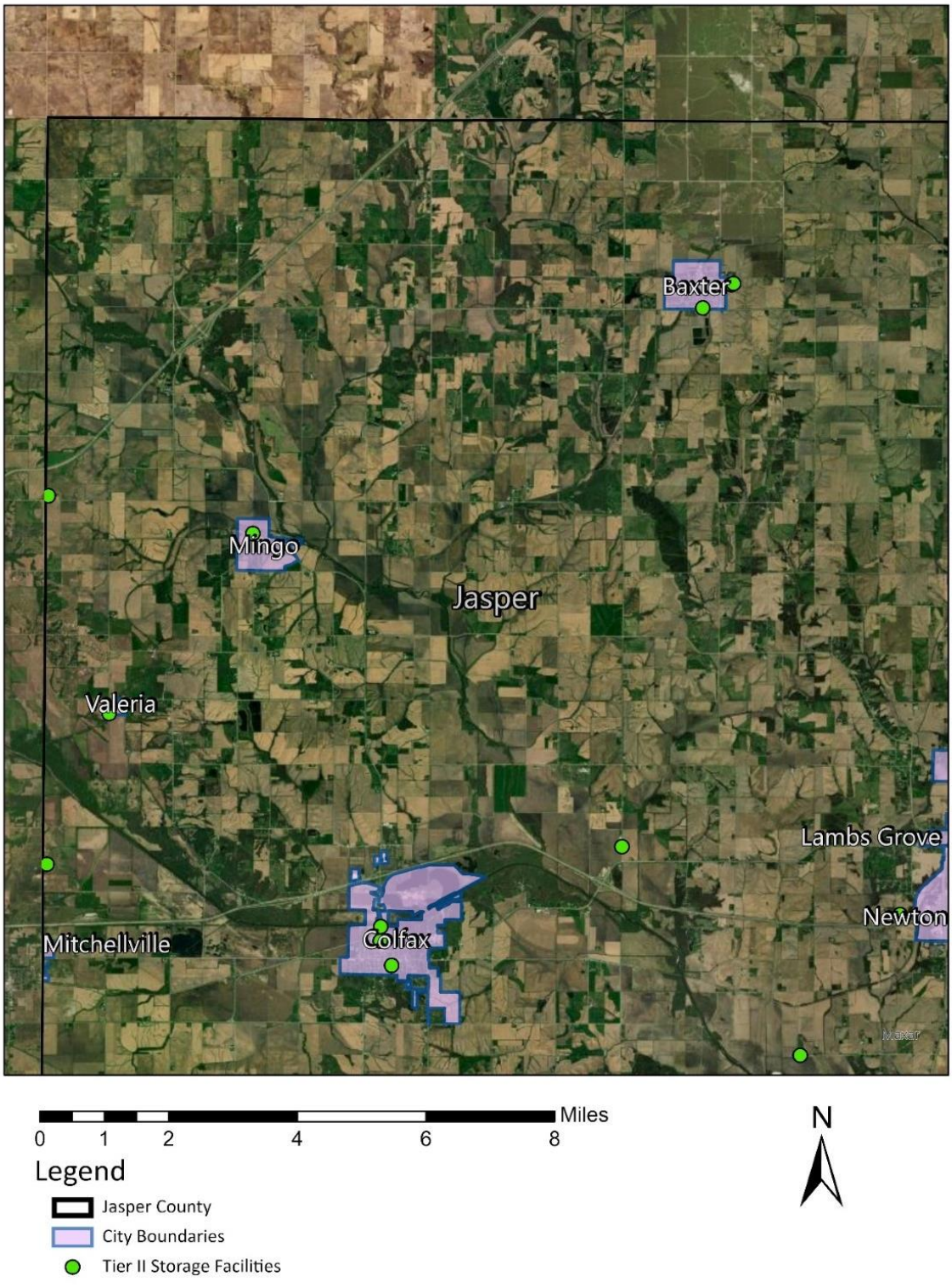
Hazardous materials incidents usually occur rapidly with minimal or no warning. Even if reported immediately, people in the area have very little time to react or evacuate. During some events, sheltering in-place is the best alternative to evacuation because there is no time to evacuate safely. Mass notification systems, television, radio, and weather radios disseminate emergency messages about incidents. Messages will include information about when the incident began, the origin, the area impacted, and instructions to those in the impacted area to either evacuate or shelter in-place, and how to stay updated on the incident.

Duration

A hazardous materials incident can affect a community for a short period of time if the amount of material is relatively small and well-contained depending on the toxicity and longevity of the material. In other instances, a hazardous material event can be widespread, extremely dangerous, and require long-term remediation and recovery if there are large quantities of the material, the material is particularly toxic, the material takes a long time to breakdown into less harmful substances, or the material is difficult to safely dispose of. Response to a hazardous material event is generally limited to the immediate effect, but the response is expanded for environmental emergencies. Public health impacts may be monitored over the long-term.

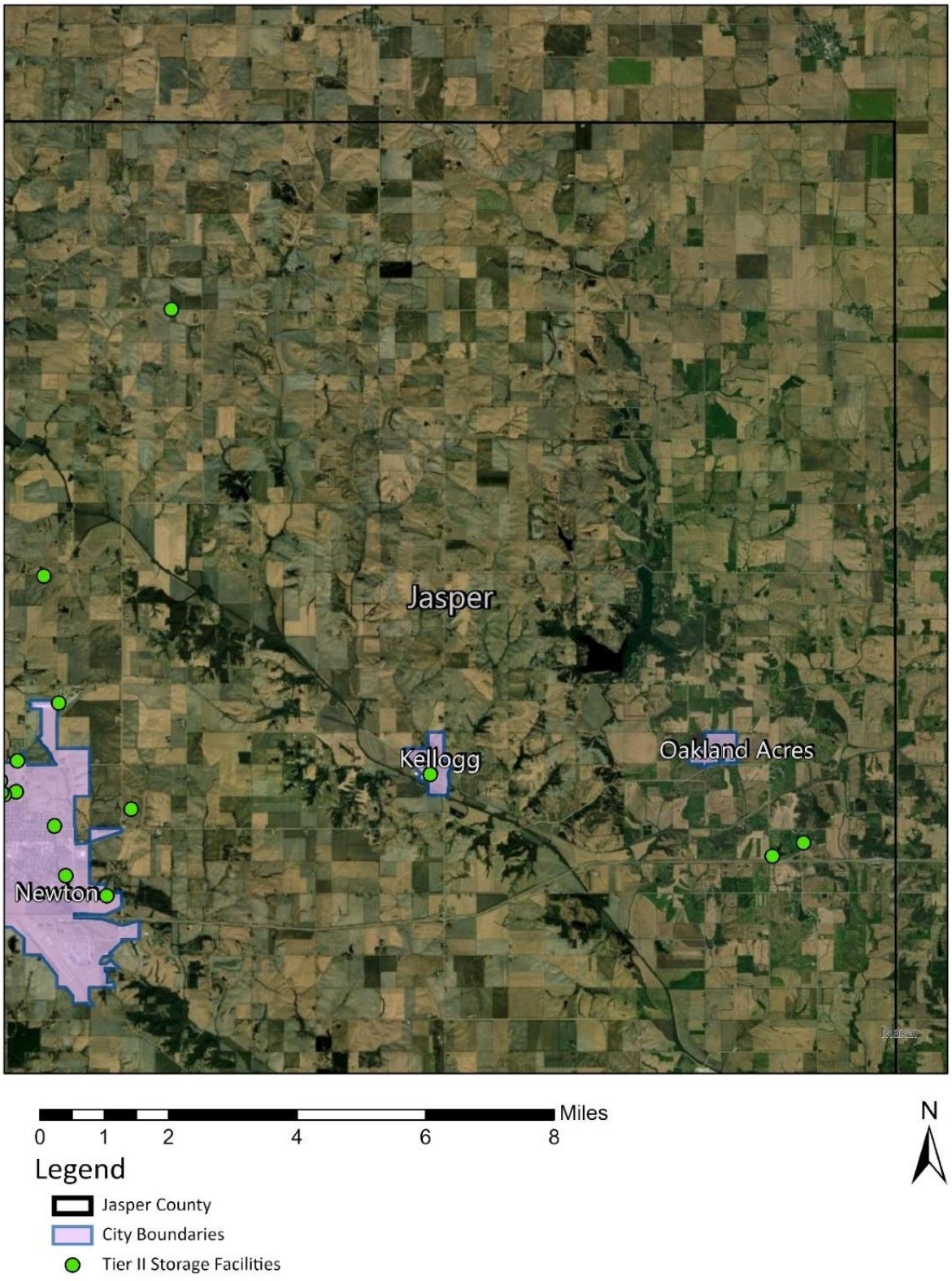
Risk Assessment Maps

Map 13: Tier II Storage Facilities in Northwest Jasper County



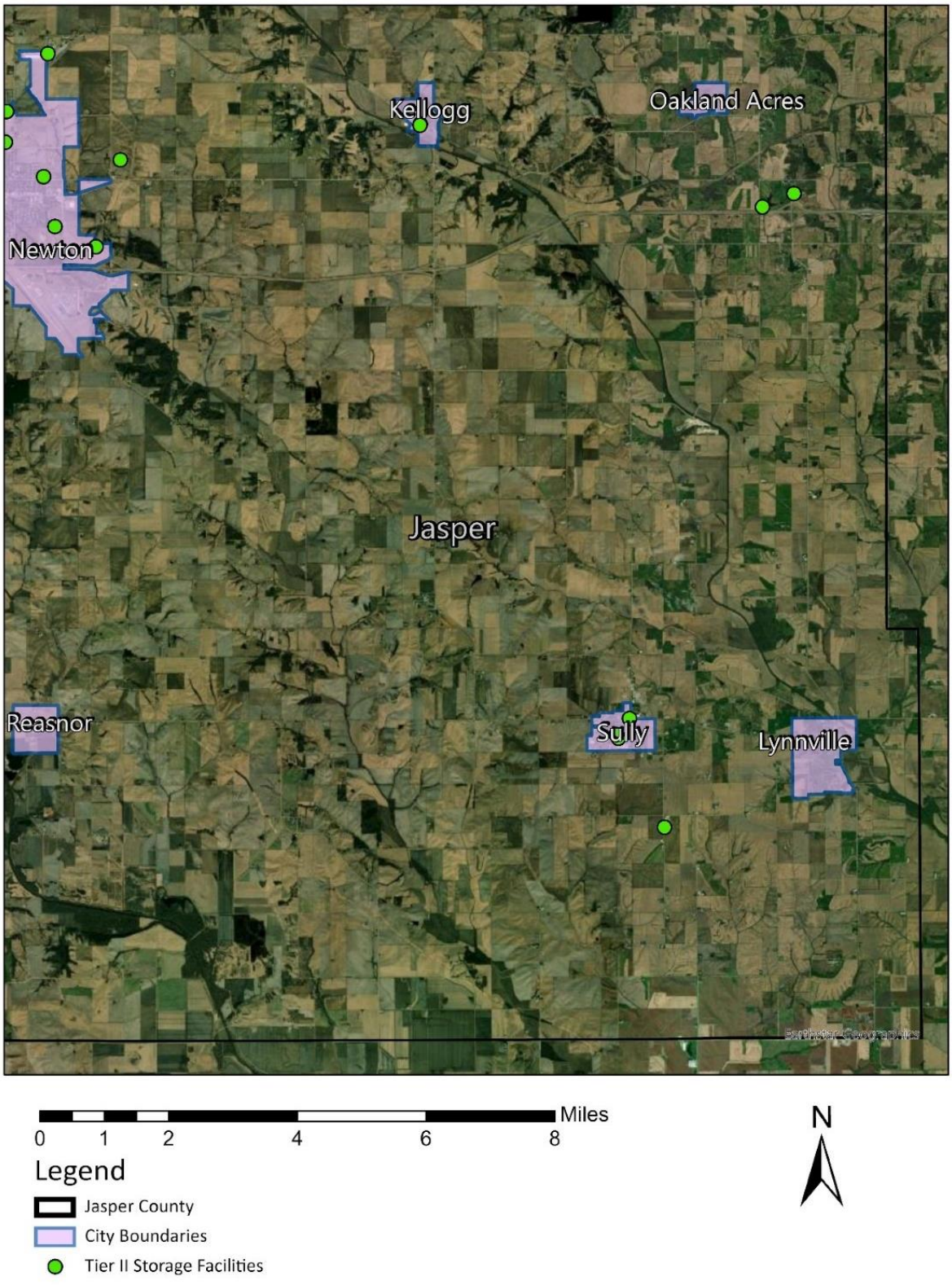
Data Source: Iowa DNR Iowa Geospatial Data, 2021

Map 14: Tier II Storage Facilities in Northeast Jasper County



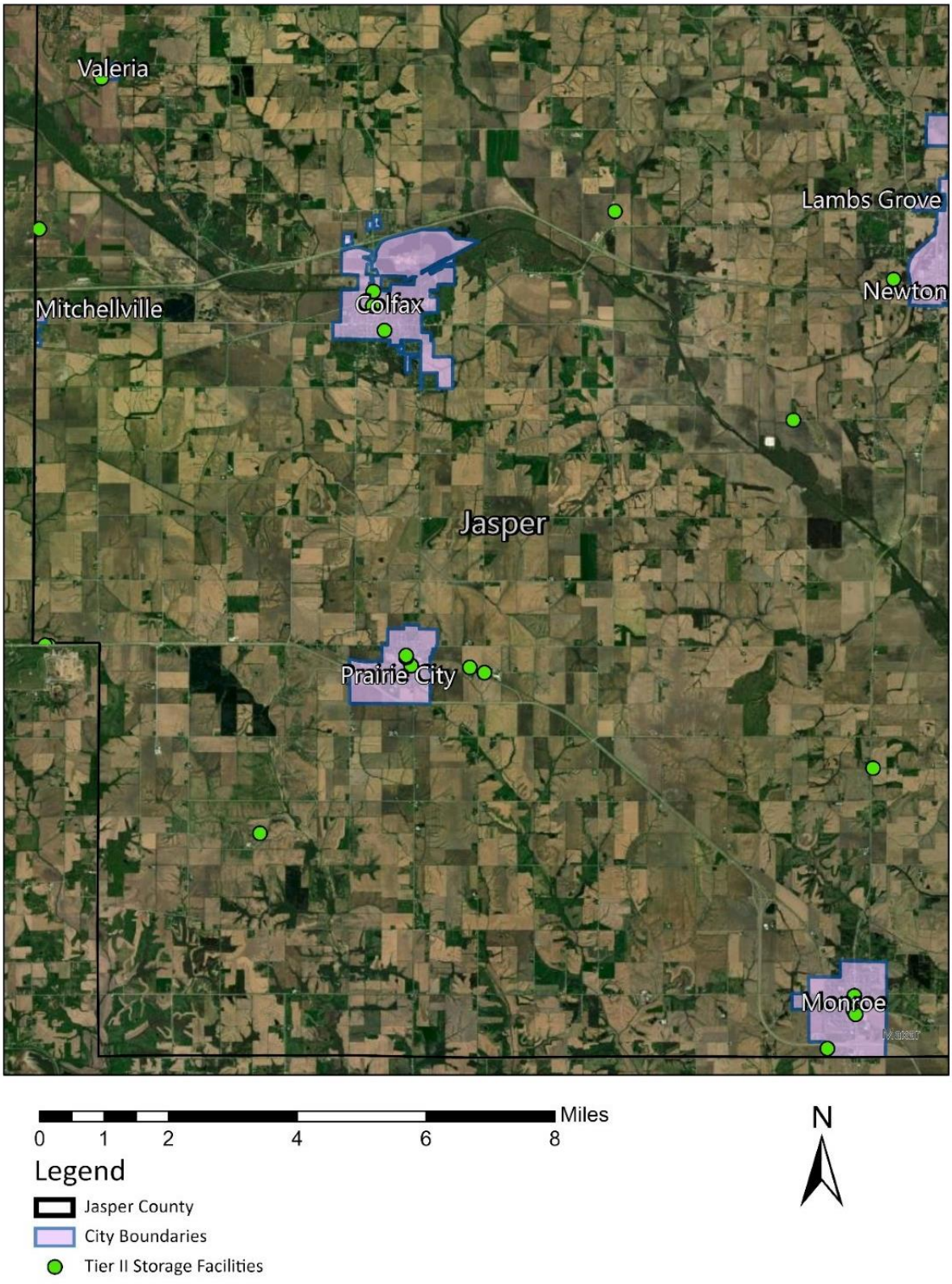
Data Source: Iowa DNR Iowa Geospatial Data, 2021

Map 15: Tier II Storage Facilities in Southeast Jasper County



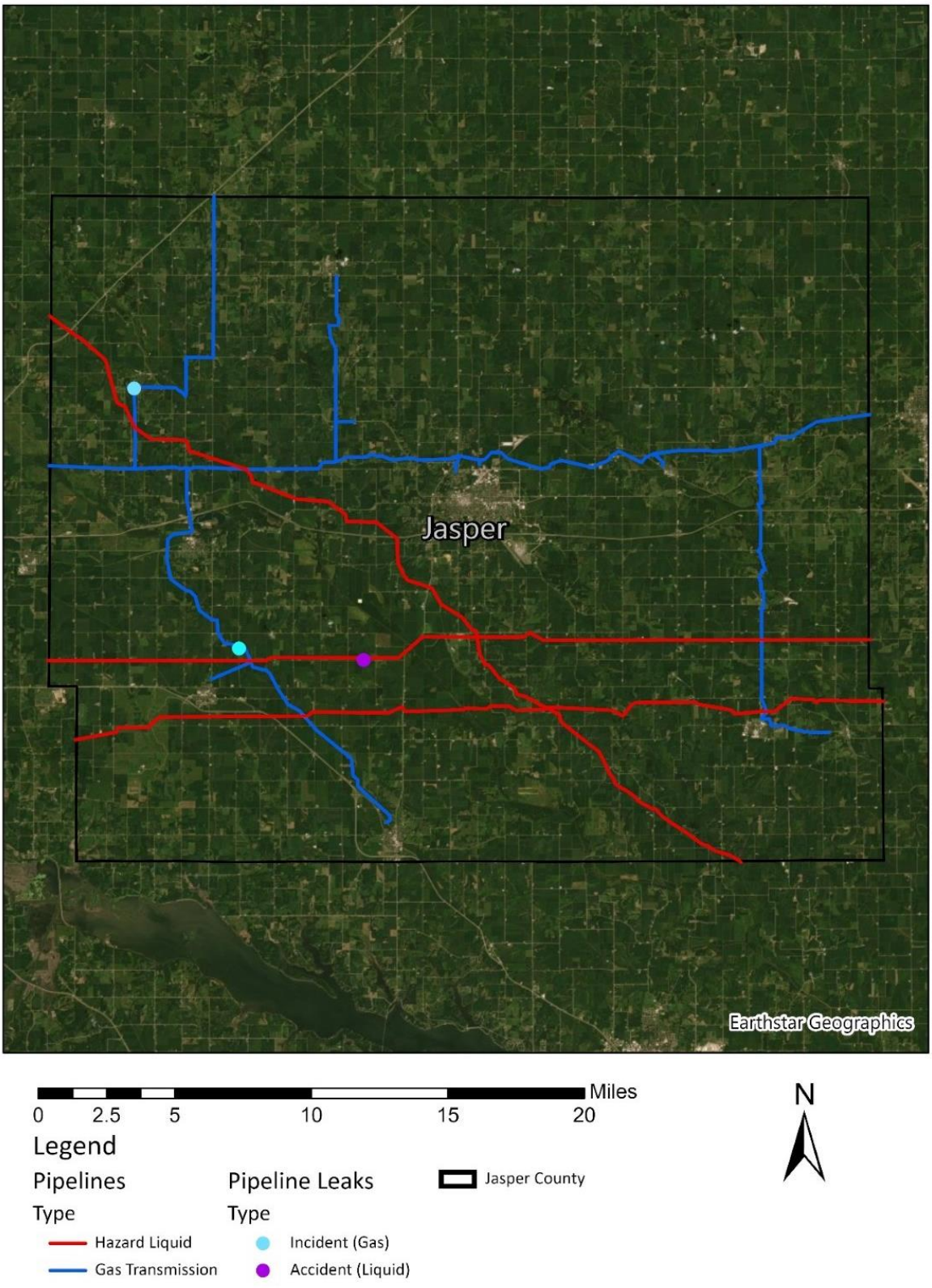
Data Source: Iowa DNR Iowa Geospatial Data, 2021

Map 16: Tier II Storage Facilities in Southwest Jasper County



Data Source: Iowa DNR Iowa Geospatial Data, 2021

Map 17: Hazardous Liquid and Gas Transmission Lines and Incidents 2008 – 2021



Data Source: National Pipeline Mapping Service, 2021

Infrastructure Failure

This hazard encompasses communication failure, energy failure, structural failure, and structural fire. This includes an extended interruption, widespread breakdown, or collapse of any public or private infrastructure that threatens life and property.

Potential Hazard Area

The potential hazard area for infrastructure failure in Jasper County is countywide.

Historical Occurrences

There have been no widespread communication failures in Jasper County. There are typically multiple power outages every year in Jasper County, with widespread loss of service occurring during natural disasters. The most recent and widespread power outage occurred during the derecho in August 2022 and lasted for several days. Statewide, over 585,000 customers lost power, and over 444,000 wireless customers were affected by disrupted services.

Most major and minor infrastructure failures, such as roads, bridges, or water infrastructure occur due to natural hazards that occur in Jasper County. The persistent infrastructure failure that occurs in Jasper County is stormwater and wastewater backup due to insufficient capacity during heavy rains or infiltration due to cracks in sewer lines.

Degrading transportation infrastructure is a consistent issue across the entire State of Iowa and is exacerbated by repeated deferred maintenance and repair. Bridges are typically difficult to maintain due to the high cost of repair and replacement to meet modern safety standards. The American Society of Civil Engineers gives Iowa's infrastructure a "C," with 60% of its bridges either in fair or poor condition.

Structural fires are a relatively frequent occurrence in communities, but most are quickly extinguished by on-site personnel or local fire departments. In Jasper County, there have been structural fires requiring emergency response and recovery efforts, but local capabilities have been sufficient.

Probability

No widespread communications failures have occurred in Iowa or Jasper County. Local incidents due to weather conditions, equipment failure, excavation incidents, and traffic accidents have been reported, but outages have usually been resolved in a timely manner. Widespread and long-term communications losses are unlikely due to backup systems.

An extended interruption of electric, petroleum, or natural gas service, by an actual or impeding shortage of energy, could create a healthcare issue and possibly mass panic. International events could affect supplies of energy while regional and local conditions could affect distribution. Energy systems are more robust against international pressures when powered by locally available and renewable sources, such as wind or solar energy.

Local and state events such as severe winter storms can disrupt power distribution systems. If disruptions are long lasting, public shelters may need to be opened to provide shelter from extreme cold or extreme heat. Stockpiles of energy products like power generators or fuel can eliminate immediate-term disruption. The United States maintains a strategic petroleum reserve that can partially cover short-term disruptions.

In Jasper County, there have been structural failures, primarily from severe weather events. Throughout Jasper County, local jurisdictions inspect and maintain structures or enforce local regulations to prevent failures that can cause injury, death, or property damage. Most often, structures are closed or decommissioned before a major failure event can occur. The probability of structural failure occurring is likely or between a 19% and 33% change in any given year.

Structural fires are a frequent occurrence in some communities, but nearly all are quickly resolved by being extinguished by on-site personnel or local fire departments. In Jasper County, there have been structural fires requiring emergency response and recovery efforts, but local capabilities have been sufficient. The probability of a structural fire occurring is likely or between a 19% and 33% change in any given year.

Magnitude and Severity

Most critical communication systems have backup and redundant designs to provide continuity of service. It should be noted that Jasper County's E911 communications system is based in Newton, with communication sites located throughout the county. If a communications failure were to affect the main communication center, the entire network would be affected and at risk, especially if the failure event occurred during an underlying hazard event.

Energy failure, or power outages, can be widespread and last for several hours or a few days. Depending on the time of year, an extended period without power can be dangerous in extreme heat or extreme cold conditions. Power outages can limit the use of pumps or other necessary equipment to protect structures during other hazards, like flash flood, that may affect an area during the outage. Many people rely on rechargeable mobile phones, which limit their ability to communicate or request emergency services.

Any structure in Jasper County could become hazardous in the event of flooding, fire, high winds, or other natural events. All structures are vulnerable to normal deterioration and damage from the natural elements. Expected increases in traffic volume and weight will likely increase the vulnerability of transportation infrastructure and facilities in Jasper County. The impacts of failed structures would likely be contained to the immediate area and adjacent properties. The area could be as small as a single house with severe damage. Damage to multi-storied buildings have the potential to impact more people and cause more economic damage. Damage to a communication structure could limit the ability of people to request emergency services. It can also limit the ability of local government to provide such services. An impassable road or bridge may isolate a community.

Occupants of older structures with outdated electrical systems not built to current fire codes are particularly vulnerable to fires. Structures with combustible materials are more vulnerable than steel or concrete structures. In addition, structures without early detection devices such as smoke alarms are more likely to be completely destroyed before containment by response agencies.

Structures in areas served by older, smaller, or otherwise inadequate water distribution infrastructure area also at significant risk. The fire death risk for elderly and children under 5 is more than twice that of the general population.

With modern training, equipment, fire detection devices, and building regulations and inspections, most fires can be quickly contained and limited to the immediate structure involved. If present, highly combustible materials or high winds can threaten a larger area. The density of neighborhoods is also a factor that may make occupants more vulnerable to a fire potentially spreading.

Warning Time

A communications failure would likely occur with little or no warning, and it would take longer for people to be notified. Some communications may be shut down for a short time for improvements or maintenance. These operations are conducted during periods of low demand, with advance notice that services will be unavailable temporarily.

A typical, more frequent infrastructure failure would be a power outage. Power outages occur without warning, but they often occur due to weather-related events such as thunderstorms, tornadoes, windstorms, severe winter storms, and floods. Warnings for these types of events typically warn of the possibility of a power outage, but it is difficult to predict the extent and duration of a power outage until it occurs. There are times where power outages occur due to human error in the operation of the utility or construction activities, but these are typically not widespread and resolved quickly.

A structure that suddenly experiences catastrophic failure will likely do so with little to no warning. Regular building inspections and code enforcement usually prevents failure and removes people from danger. Factors that contribute to building failures include substandard workmanship, fire, explosion, overloading of snow and ice, flooding, high wind, erosion, chemical erosion, subsidence, extreme termite infestation, and lack of upkeep.

Fires usually start with little or no warning time, smoke detectors and alert devices can save lives by warning occupants of the danger.

Duration

Aside from structural failures and fires, which are handled by local response personnel, communication failures and energy outages are usually widespread in nature and indefinite in duration, often requiring outside resources to assist in emergency response.

Levee and Dam Failure

Levee failures occur when a levee is unintentionally breached and can be attributed to the loss of structural integrity of a flood wall or berm by erosion, piping, saturation, or under seepage causing water to inundate what are supposed to be flood-protected areas. At times, levee breaches are done intentionally to control flooding and hydrology.

Dam failure is the uncontrolled release of impounded water resulting in downstream flooding, which can affect life and property. Dams are constructed for a variety of uses, including flood control, erosion control, water supply impoundment, hydroelectric power generation, and recreation.

Dams are classified as being high, moderate, or low hazard to indicate the potential impacts of a failure. The classifications do not consider the likelihood of failure, merely the consequences. See Table 30.

Table 30: Dam Classification

Classification	Description
High Hazard	Failure may result in loss of life and extensive damage.
Significant Hazard	Failure may damage isolated homes, industrial locations, commercial areas, moderately travelled roads, interrupt utility services, but without a substantial risk of loss of life. Either that or the dam and its impoundment are important to the welfare of the public. Factors primarily include water supply, but also include public recreation or features in private development complexes.
Low Hazard	Failure would be limited to loss of the dam, farm outbuildings, agricultural lands, and lesser used roads. The loss of life is unlikely.

Potential Hazard Area

There are levees present in Jasper County, primarily along the South Skunk River and its immediate tributaries. The levees are largely in unincorporated Jasper County, with some nearby Colfax and Reasnor. According to the National Flood Hazard Layer from FEMA, most levees in Jasper County provide protection to agricultural land, nearby residences, and natural areas. The main levee structures in Colfax surround Quarry Springs Park and nearby areas. The structure protects nearby businesses, buildings, and infrastructure. The levees generally do not provide protection to densely developed or populated areas throughout the county. See Maps 18 – 22 in the Risk Assessment Maps section.

There are 53, low hazard, dams throughout Jasper County. Five dams are considered significant hazard dams. The areas in proximity to these dams or downstream at a lower elevation would be impacted by a dam failure. For the low hazard dams, the impacted area would be minimal. For the significant hazard dams, the impacted area would be relatively minimal but potentially disruptive to transportation and services. See Maps 23 - 27 in the risk assessment maps section.

Historical Occurrences

There are no recorded levee or dam failure events in Jasper County. In addition, local knowledge from planning meetings in each jurisdiction did not indicate any minor levee or dam failure events that have occurred within the county.

Probability

The Iowa Department of Natural Resources (DNR) regularly inspects major dams and levee structures. Since these structures are closely monitored and maintained and there no historical occurrences, the probability of a failure is unlikely or less than 10% in any given year.

Magnitude and Severity

There are levees present in Jasper County, primarily along the South Skunk River and its immediate tributaries. The levees are largely in unincorporated Jasper County, with some nearby Colfax and Reasnor. According to the National Flood Hazard Layer from FEMA, most levees in Jasper County provide protection to agricultural land, and nearby residences, and natural areas. The main levee structures in Colfax surround Quarry Springs Park and nearby areas. The structure protects nearby businesses, buildings, and infrastructure. The levees generally do not provide protection to densely developed or populated areas throughout the county.

Most of the dams located within or upstream of Jasper County are rated as low hazard potential so failure would likely result in flooding of the surrounding area and downstream flood prone areas. There are five significant hazard dams located within Jasper County.

Rock Creek Lake Dam is in the Rock Creek Lake State Park recreational area. The park is surrounded by agricultural land. The park contains a large campground with 200 campsites. Oakland Acres is located 1.9 miles southeast of the park, and Kellogg is located 3.1 miles west southwest. Neither community is considered at risk from failure of the dam.

The park is staffed and when threatening weather that may result in flash flooding is forecast, campers are evacuated. Highway 6 is at risk from flash flooding and could sustain damage that would result in a temporary shutdown of the highway if the dam failed. An inundation map has not been developed for this dam.

The Newton KOA Campground Dam is located near the KOA Campground in Newton along Interstate 80. Similar to Rock Creek Lake, when there is threatening weather that may result in flash flooding is forecast, campers are evacuated. Areas immediately surround the dam are agricultural, and it is unlikely Interstate 80 would be impacted by a failure.

The Harsha, Rankins Brothers, and Johnston dams are located in unincorporated areas and surrounded by agricultural land. No communities are at risk from failure of these dams. The primary purposes of these dams are stock or small fishpond.

There are no high hazard dams located within the Lake Red Rock, South Skunk, and North Skunk watersheds, which are the three major watersheds that contain Jasper County. Adjacent upstream watersheds do not contain high hazard dams. Overall, the risk of dam failure outside of Jasper County having a major impact on the county is unlikely. Refer to Map 28 in the Risk Assessment Maps section.

Warning Time

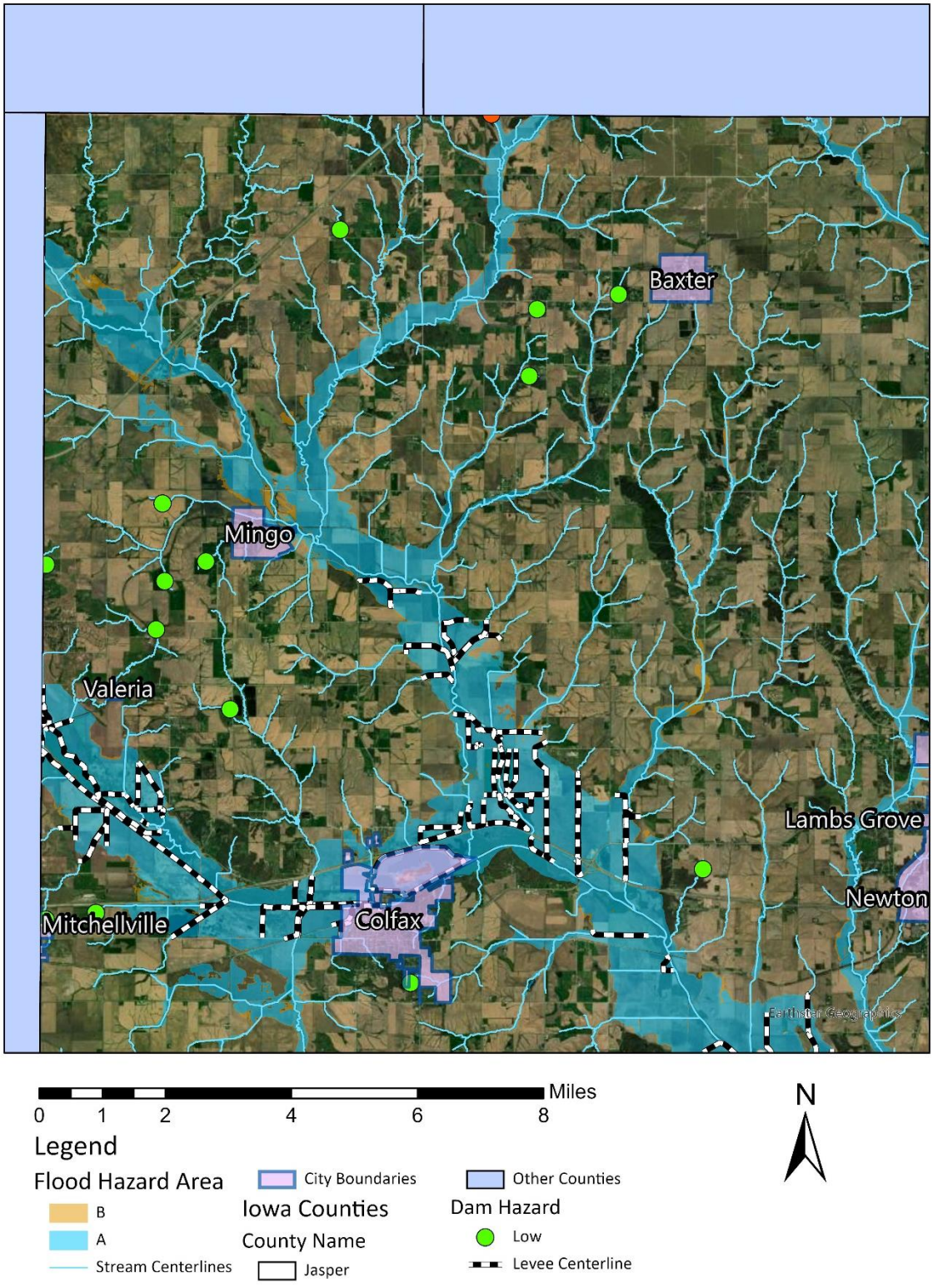
There is little to no warning if structures are not monitored, which is more likely for small, private flood protection structures and dams. Because major structures are monitored, if a major levee or dam were to fail, there would likely be a few hours up to a few days for the surrounding and vulnerable downstream areas to evacuate. It is possible that unforeseen weaknesses in a levee or dam could cause a failure with minimal to no warning time.

Duration

Depending on the severity of the event, response to a levee or dam failure could be extensive and require a wide array of recovery efforts. These include reconstructing flood control or dam structures, repairing or rebuilding damaged property, and removing or relocating structures. The disaster level dam or levee failure would likely exceed the capacity of local government and require assistance from state and federal agencies to assist in the long-term response and recovery.

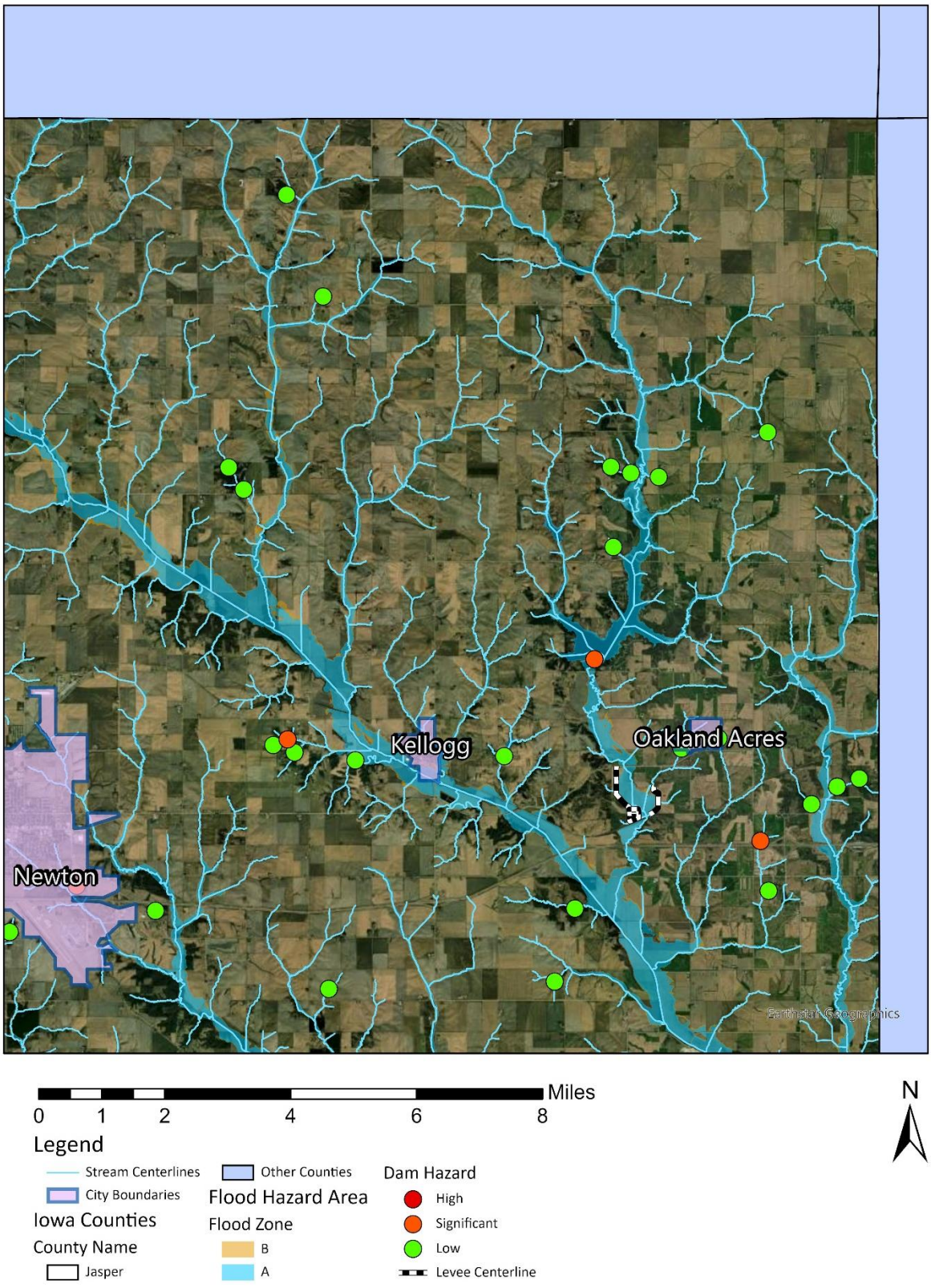
Risk Assessment Maps

Map 18: Northwest Jasper County Levees and Dams



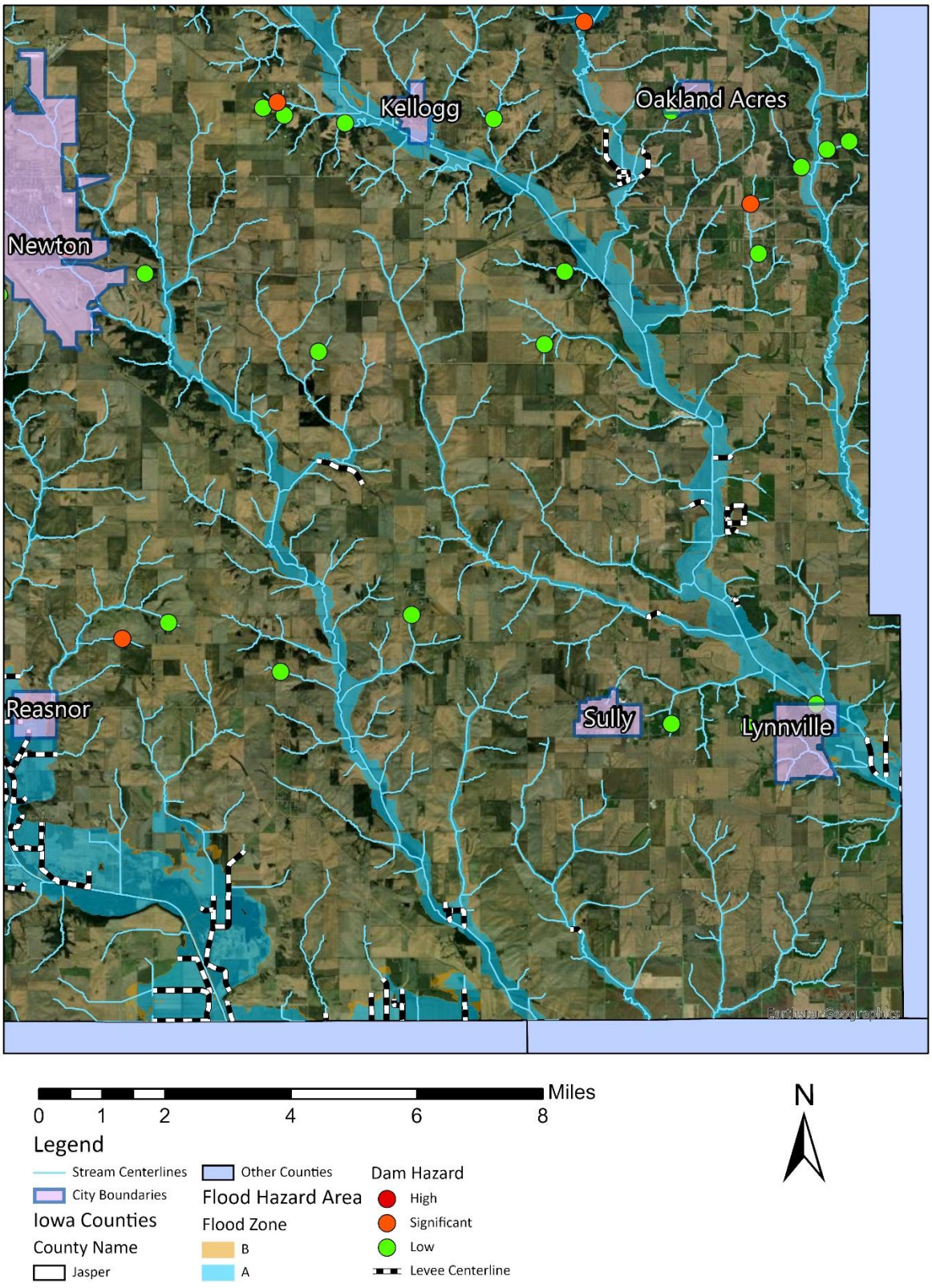
Data Source: IHSEM Iowa Hazard Mitigation Layer, 2021

Map 19: Northeast Jasper County Levees and Dams



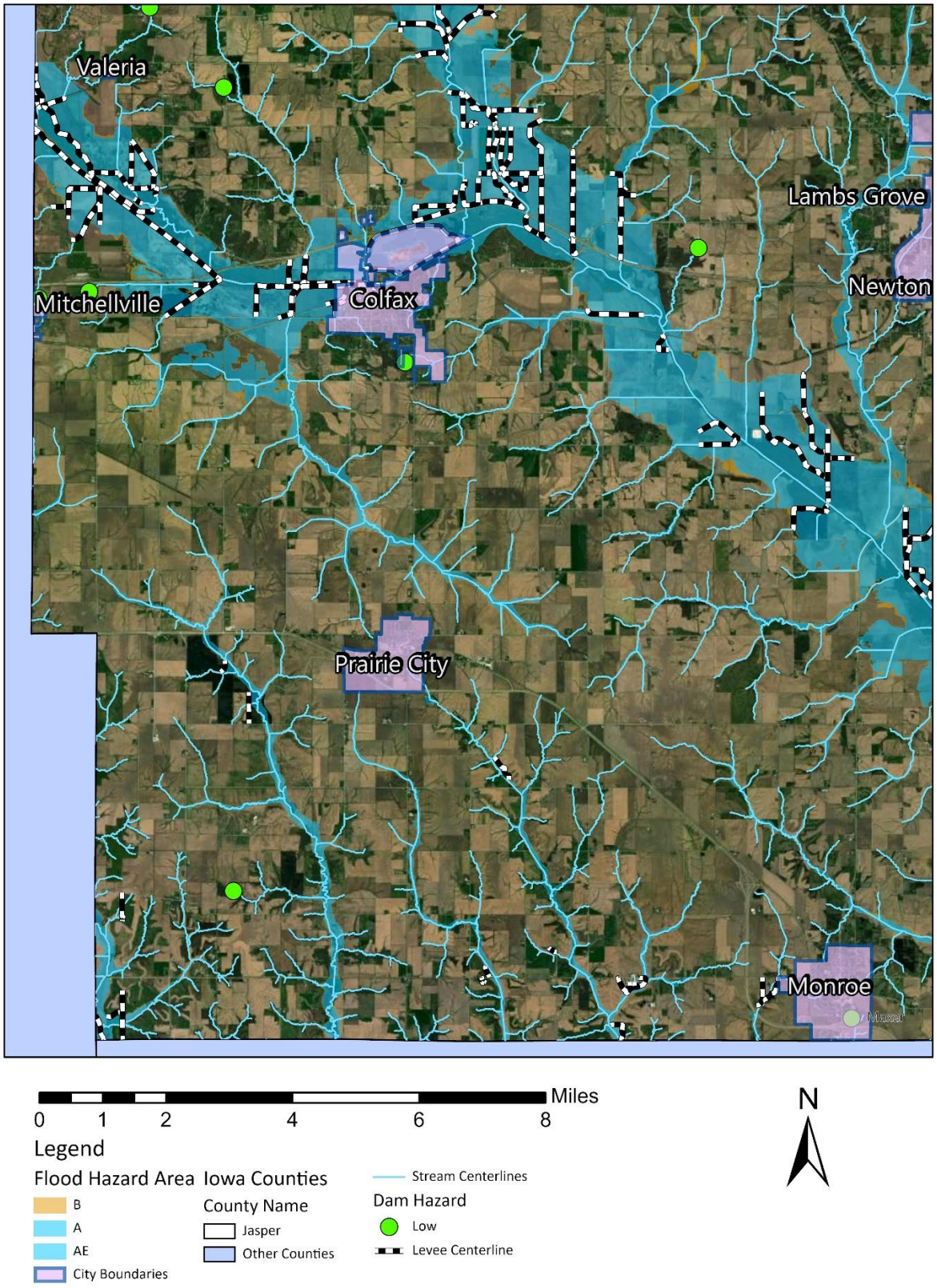
Data Source: IHSEM Iowa Hazard Mitigation Layer, 2021

Map 20: Southeast Jasper County Levees and Dams



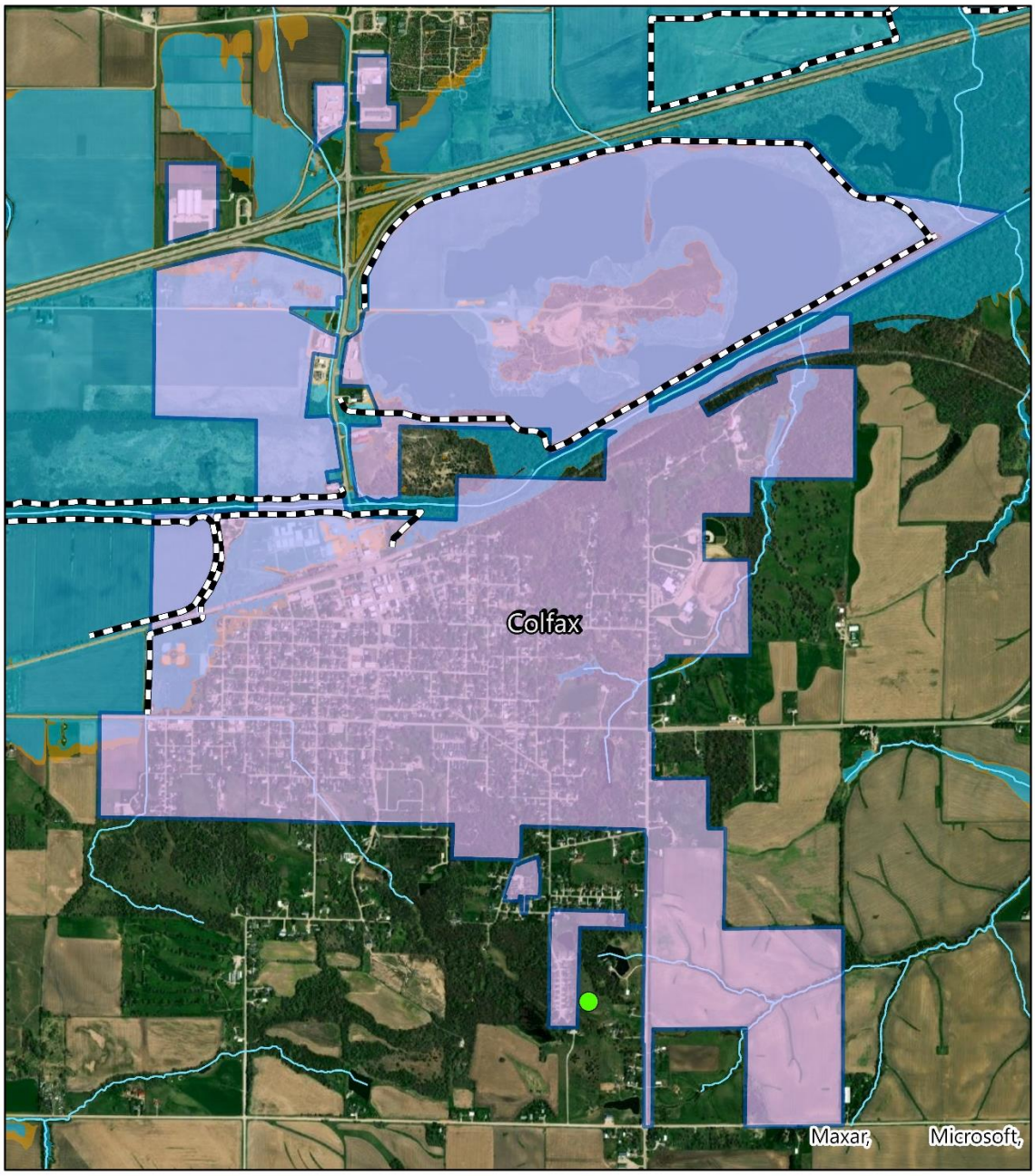
Data Source: IHSEM Iowa Hazard Mitigation Layer, 2021

Map 21: Southwest Jasper County Levees and Dams



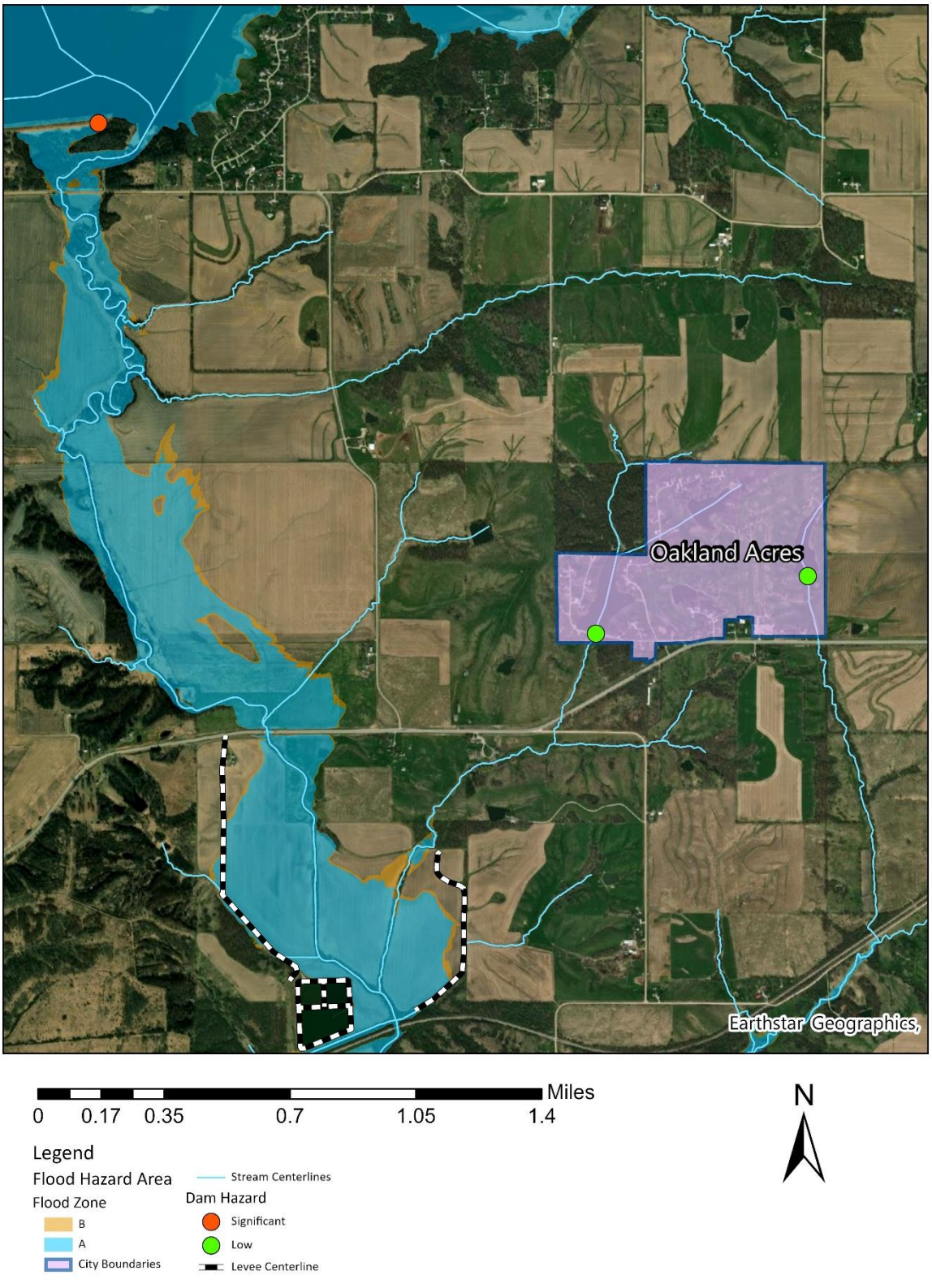
Data Source: IHSEM Iowa Hazard Mitigation Layer, 2021

Map 22: Colfax Area Levees



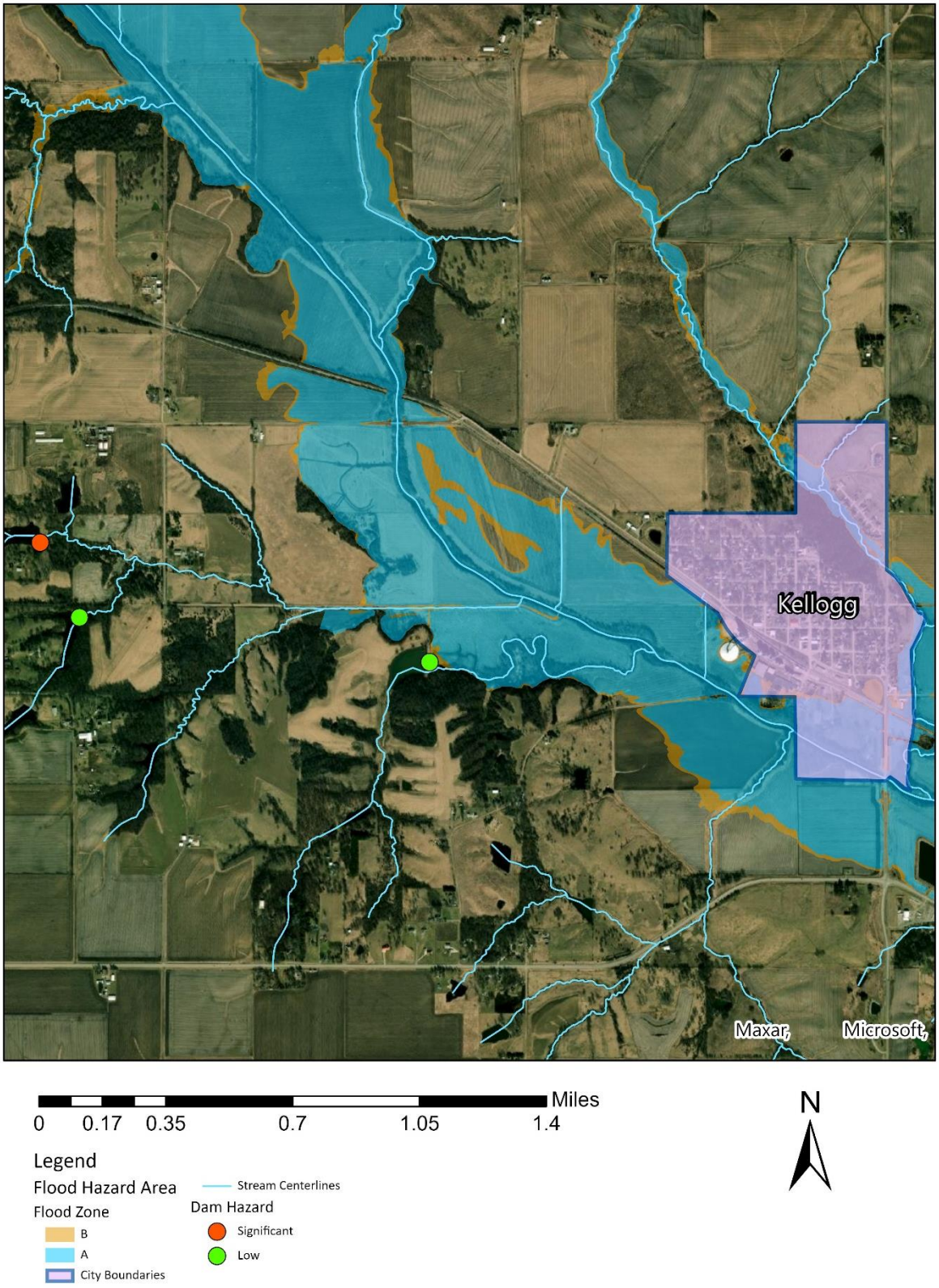
Data Source: IHSEM Iowa Hazard Mitigation Layer, 2021

Map 23: Rock Creek Dam Area



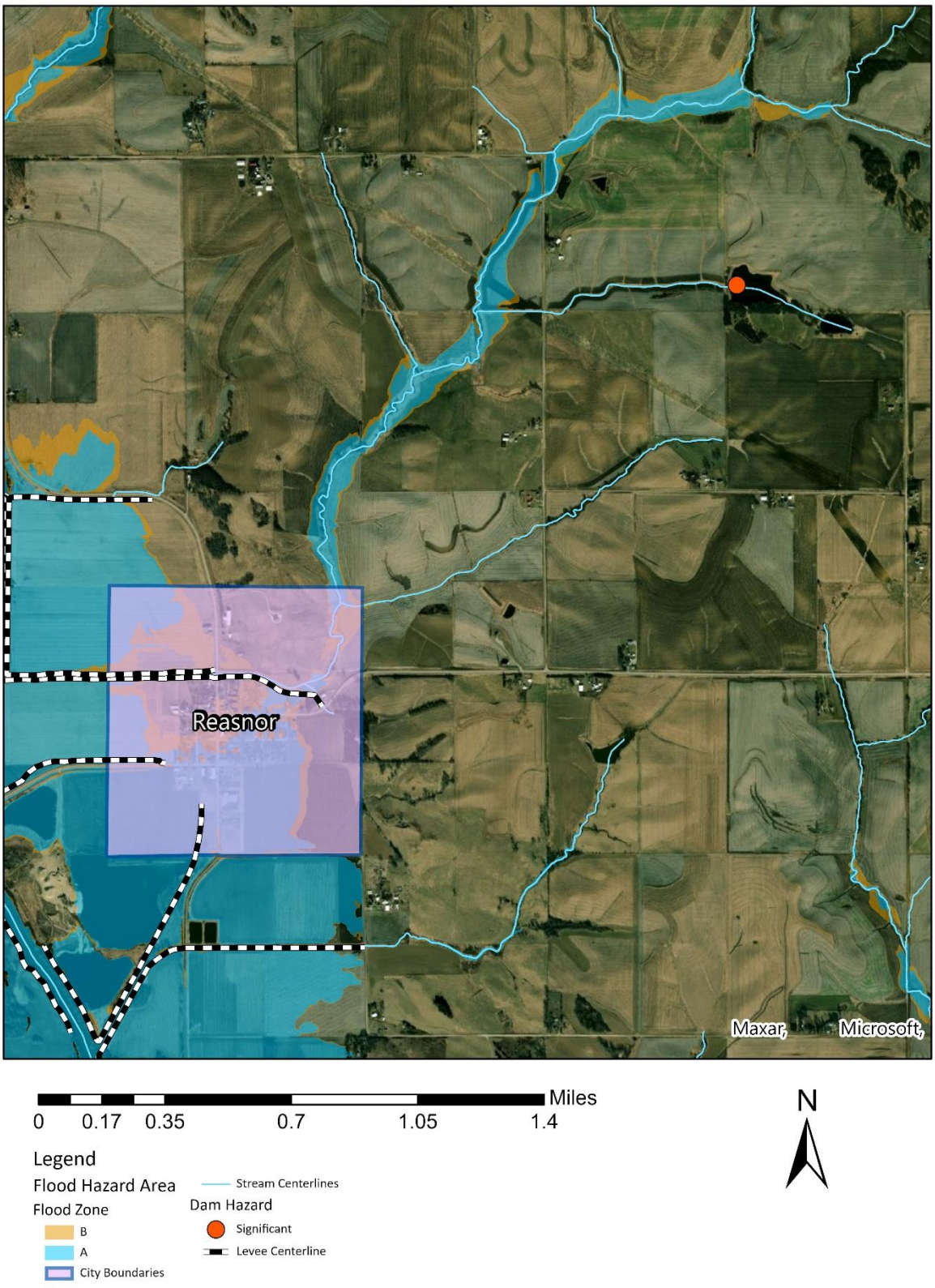
Data Source: IHSEM Iowa Hazard Mitigation Layer, 2021

Map 24: Harsha Dam Area



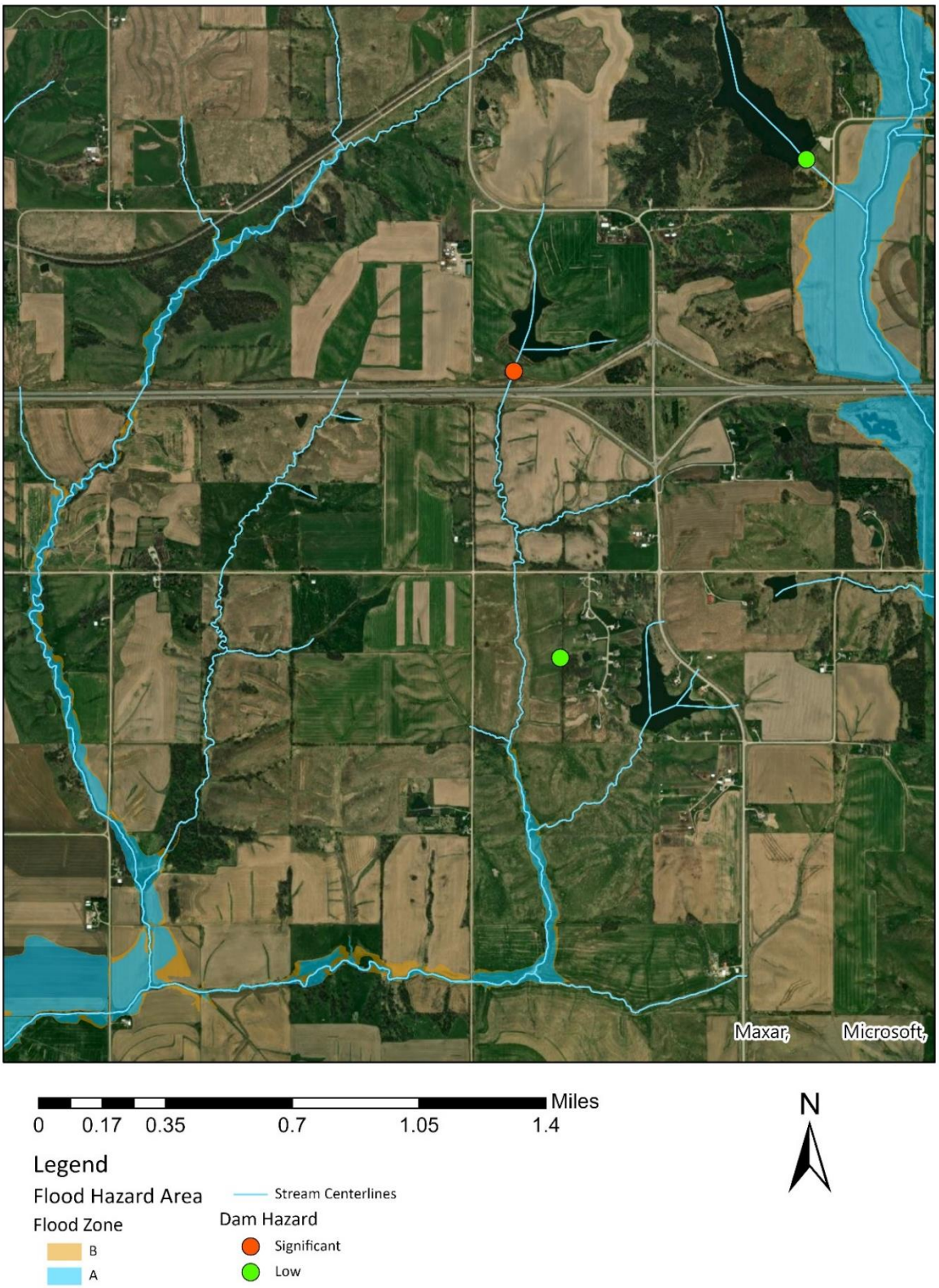
Data Source: IHSEM Iowa Hazard Mitigation Layer, 2021

Map 25: Rankins Brothers Dam Area



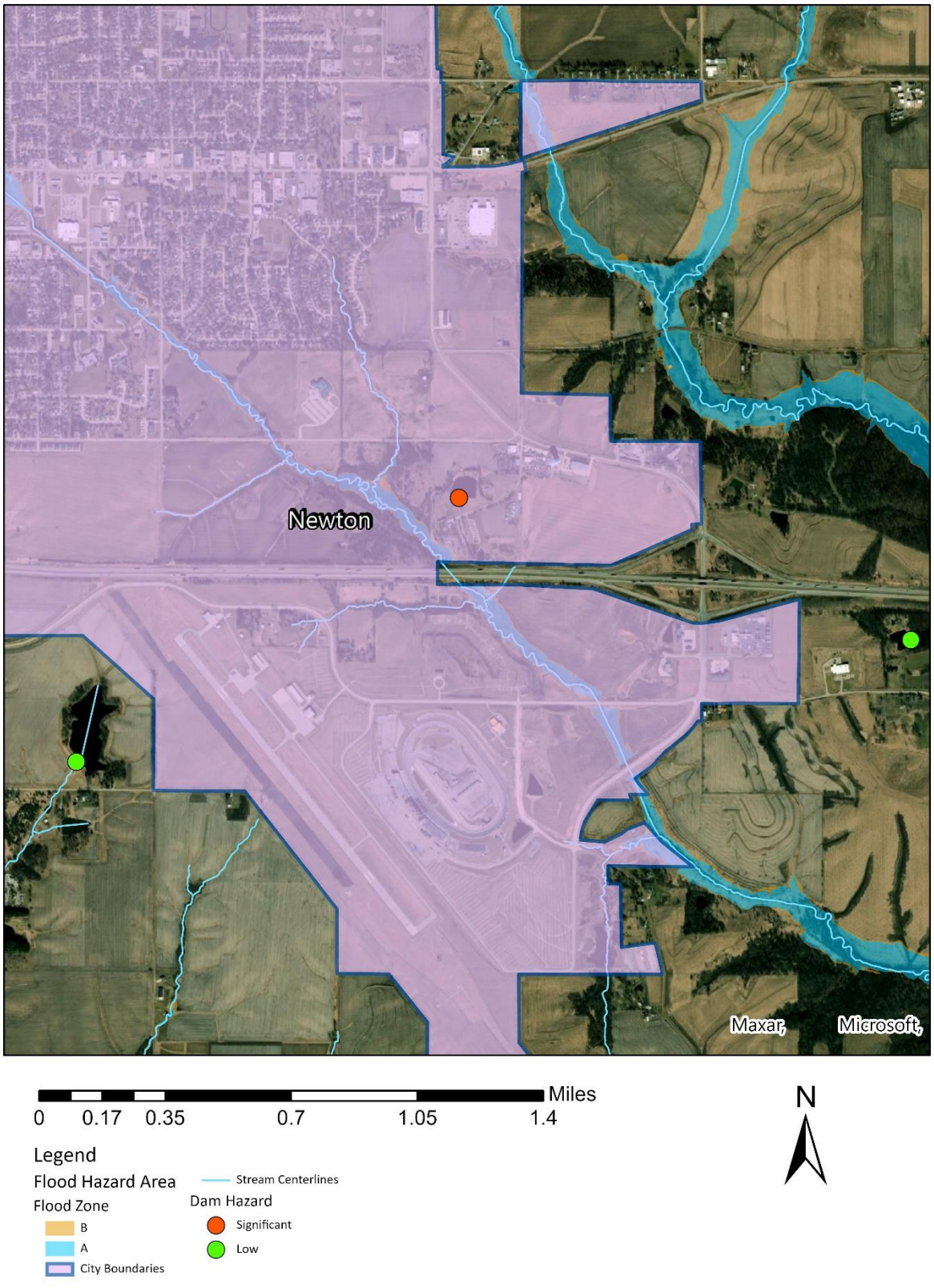
Data Source: IHSEM Iowa Hazard Mitigation Layer, 2021

Map 26: Johnston Dam Area

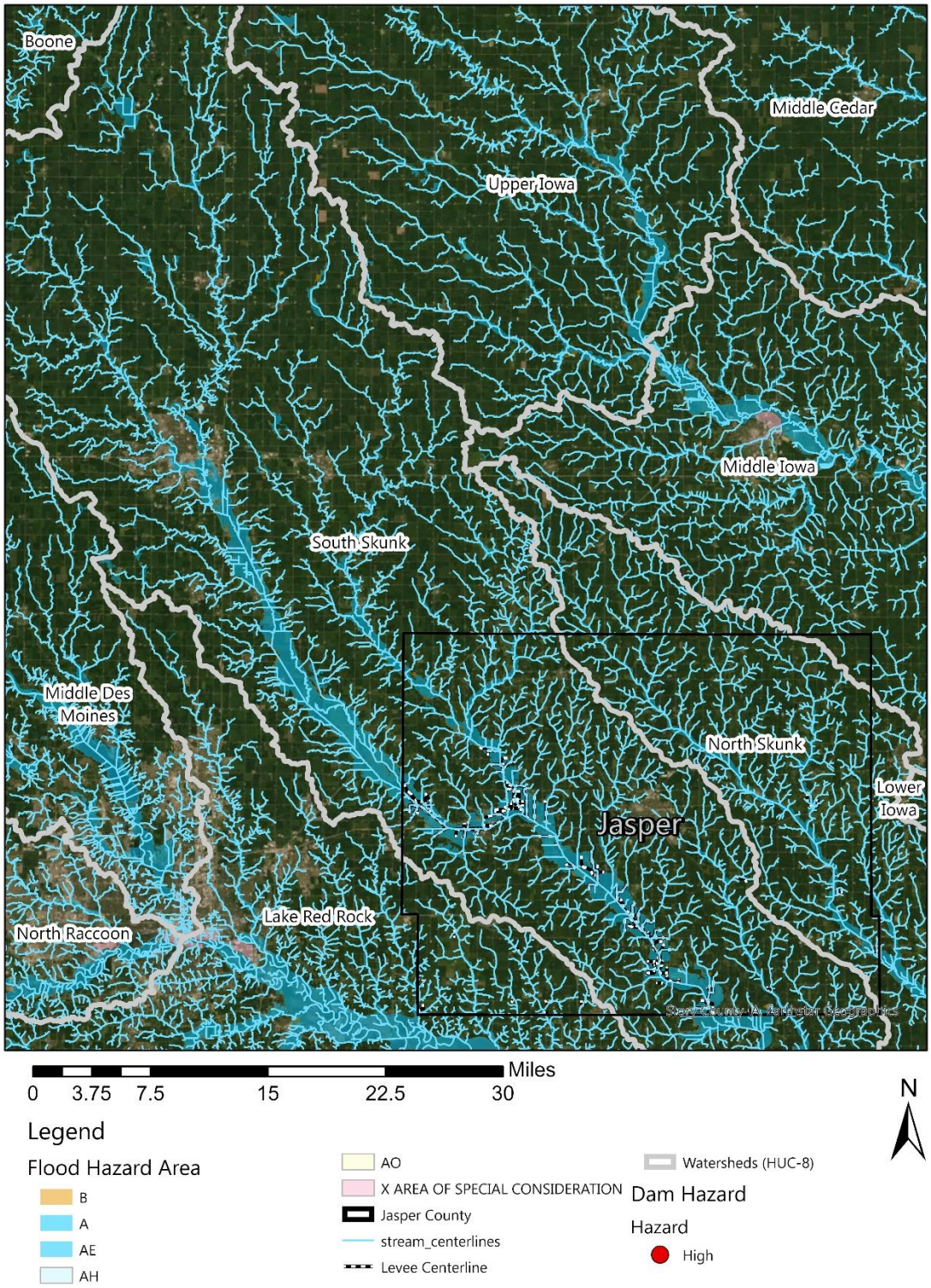


Data Source: IHSEM Iowa Hazard Mitigation Layer, 2021

Map 27: Newton KOA Campground Dam Area



Map 28: High Hazard Dams by Watershed



Data Source: IHSEM Iowa Hazard Mitigation Layer, 2021

It should be noted there are no high hazard dams to display within the geographic area display in the map, which indicates no major risk from dams outside of Jasper County.

Radiological Incident

A radiological incident is a release of radiological material in transport or at a facility, including but not limited to power plants, hospitals, laboratories, and other facilities with radiological materials.

Potential Hazard Area

The potential hazard area for a radiological hazard incident in Jasper County is countywide but limited primarily to transportation routes.

Historical Occurrences

There is no recorded radiological incident in Jasper County or Iowa.

Probability

Historically, there has been no release of radiological material from a facility in Iowa or even the United States. Iowa has one nuclear power plant located near Palo in Linn County, which is approximately 60 miles from Jasper County. The facility, the Duane Arnold Energy Center, is currently in the decommissioning process before a complete stop in operations. There are three nuclear power plants located in the states surrounding Iowa. Due to distance, the facility in Iowa and surrounding states have a low probability of being a risk to Jasper County.

There has been no transportation-related radiological incident in Iowa. Transportation-related incidents are the most common type of radiological incident because of the high frequency of shipments and the number of people involved in the chain of custody. Radiological materials are transported through the United States and Iowa regularly.

Operators of facilities with radiological materials and transporters of radiological waste are trained in the packaging, handling, and disposal of materials. In addition, the shipment of radiological materials is regulated, so the likelihood of an accident is unlikely, but still possible. The odds of an incident are unlikely, less than a 10% chance per year.

Magnitude and Severity

Sources of radiological materials include medical products, industrial products, nuclear power plant fuel, nuclear weapons, and waste from hospitals, laboratories, nuclear reactors, and military facilities.

In the U.S., there have been no deaths or injuries from radiation recorded among the public. Each of the nuclear facilities in the country identifies a 10-mile radius Emergency Planning Zone and a 50-mile radius Ingestion Pathway Zone. Jasper County is not located in either type of zone, greatly reducing the risk of severe consequences.

Depending on the level of exposure, radiation can cause loss of life and long and short-term health effects. Nuclear radiation above normal levels can damage human tissue. Time, distance, and shielding minimize radiation exposure to the body.

Specialized training is needed to respond to these types of incidents. If inadequately trained personnel attempt to respond, the impacts could be the same as those for the public exposed to the materials. Proper training and equipment reduce the risk to response personnel.
If land and facilities impacted by a radiological incident cannot be used for weeks, months, or years, the loss of production could be devastating. Economic impacts would be multi-sector and long-lasting, especially in and around the impacted area.

Warning Time

A radiological incident could occur with little or no warning. Ionizing radiation cannot be detected with the human senses, so detection instruments are needed to indicate the existence of radiation. Distance from the incident would dictate the amount of time needed to for exposure to become potentially damaging.

Duration

Responding and recovering from the effects of a radiological incident in or around Iowa could be extensive. An incident would require resources and assistance from several federal agencies to determine and evaluate the threat to life and the environment in the impacted area.

Transportation Incident

A transportation incident is generally an accident involving any mode of transportation that directly threatens life and results in a combination of death, injury, property damage, or adverse impacts to a community's capabilities to provide emergency services.

An air transportation incident may involve military, commercial, or private aircraft. Air transportation incidents can occur in the air or on the ground. Incident can occur at or near an airport, in remote unpopulated areas, residential areas, or dense urban areas.

A highway transportation incident can be a single or multi-vehicle incident requiring response exceeding normal daily capabilities.

A railway transportation incident may include derailment, collision, and at-grade highway crossing accidents. Train incidents can result from a variety of causes including human error, mechanical failure, faulty signals, or problems with the track. Results of an incident can range from minor "track hops" to catastrophic hazardous materials incidents and even human or animal casualties.

A waterway incident involves any incident with a water vessel. Waterway incidents may include events in which a person or object fall through ice on partially frozen bodies of water.

Potential Hazard Area

The potential hazard area for a transportation incident in Jasper County is countywide, but transportation infrastructure and the surrounding areas are the primary potential hazard areas. For an air transportation incident, any area near an airport or below an aircraft's flight path is a potential hazard area. For a waterway incident, any body of water and the surrounding areas could be affected.

Historical Occurrences

From 2000 – 2021, there were two airway incidents recorded in Jasper County. Refer to Table 31. Jasper County has two airports located in Newton and Sully, and both crashes occurred near the airport during the takeoff or landing phase of flight. In addition to airports, the hospital in Newton operates an air ambulance service. There are no reported airway incidents for air ambulance service in Jasper County.

Table 31: Jasper County Airway Incidents 2000 - 2021

Date	Location	Deaths
9/9/2006	Newton	1
6/1/2000	Sully	0
Total	2 events	1

Source: National Transportation Safety Board Database, March 2022

Overall, highway transportation incidents in Jasper County are regularly handled by local authorities and emergency responders. Highway transportation incidents will rarely exceed the capacity of local jurisdictions because the local emergency responders complete ongoing and interagency training for incidents that could occur along major and minor travel routes. Incidents that could exceed local capabilities are crashes involving a large number of vehicles or large amounts of dangerous materials. One major transportation incident was a 40-car pile-up on Interstate 80 just west of Newton in February 2021 following a major snowfall event.

It should be noted that automobile accidents data may not be reported in detail in every jurisdiction in Jasper County. Throughout the United States and Iowa, there is a high annual frequency of automobile crashes. Only a small number of accidents result in a fatality, but many accidents result in injuries. From 2001 – 2021, there were 6,360 total automobile accidents, involving 9,390 vehicles that resulted in 242 serious injuries and 62 fatalities. Refer to Table 32.

Table 32: Jasper County Automobile Accidents 2011 - 2021

Year	Crashes	Fatalities	Serious Injuries	Minor Injuries	Possibly Injury	Property Damage Only
2011	449	14	22	49	92	272
2012	473	5	17	75	125	251
2013	504	7	29	54	113	301
2014	517	5	24	72	100	316
2015	568	5	19	77	108	359
2016	584	4	30	96	75	379
2017	583	4	17	88	97	377
2018	707	4	24	71	112	496
2019	711	6	19	82	85	519
2020	575	4	17	85	84	385
2021	689	4	24	82	113	466
Total	6,360	62	242	831	1,104	4,121

Source: Iowa Crash Analysis Tool, March 2022

A major transportation incident concern in participating jurisdictions is train incidents involving vehicles at railroad crossings. This type of accident occurs when drivers go around the gate, go through the gate, stop on the tracks, or do not stop. According to the Federal Railroad Administration, there have been six at-grade collisions involving a railroad locomotive and an automobile since 2000. Two of these collisions resulted in injuries, but none resulted in fatalities. None of these incidents involved hazardous materials.

Since 2000, there have been six rail-equipment accidents. This type of accident involves derailment, malfunction at the highway-rail crossing, or a load not properly secured. One of the accidents involved hazardous materials on the train.

For waterway incidents, there is no comprehensive data available at the county or local level. Data for recreational watercraft accidents is available at the state level. From 2005 – 2020 there were 600 boat accidents involving 749 vessels that resulted in 419 injuries and 92 deaths. Refer to Table 33.

Table 33: Iowa Boating Incidents 2005 - 2020

Year	Accidents	Vessels	Injuries	Deaths
2005	53	68	46	9
2006	40	47	34	5
2007	47	56	31	9
2008	38	54	30	0
2009	37	45	29	3
2010	54	65	40	6
2011	38	46	25	4
2012	33	41	25	11
2013	24	28	17	3
2014	33	41	15	7
2015	36	45	24	3
2016	37	49	20	7
2017	40	53	26	4
2018	31	36	19	8
2019	21	26	15	5
2020	38	49	23	8
Total	600	749	419	92

Source: U.S. Coast Guard Boating Safety Resource Center, 2021

State, county and local recreation areas in Jasper County have boat ramps and water access points that enable access to lakes, ponds, rivers, and streams. The largest lake is located at Rock Creek State Park, which allows boats to operate at speeds up to 5 miles per hour. Even at low speeds, there is a risk for a waterway incident. On any waterway in Jasper County, there is a risk for a waterway incident. According to local knowledge, there have been no reported incidents involving watercraft that exceed local capabilities in Jasper County.

Probability

Since 2000, there were two airway transportation incidents in Jasper County. Commercial flight paths over the county, two municipal airports, and an air ambulance service present a risk for an air transportation incident to occur within the county. Limited historical occurrences and a general track record of low incidents in the air industry indicate a low probability, but the risk does exist. Overall, the probability of airway transportation incident in the future is unlikely or less than a 10% chance in any given year.

On average, a few minor automobile accidents occur daily in Jasper County. The probability of this type of traffic incident is likely or greater than 33% in any given year. For major automobile accidents, there are typically a few each month that result in serious injury or death in Jasper County. Overall, the probability of an accident that involves a large number of vehicles and/or large number of injuries and fatalities is unlikely or less than a 10% chance per year.

There have been few waterway incidents that exceed local capabilities across Iowa and none in Jasper County according to local knowledge. Based on historical occurrences, the probability of a waterway incident occurring is unlikely or less than 10% in any given year.

Magnitude and Severity

For airway accidents, people onboard the aircraft are most vulnerable, with a high probability of serious injury or death. Statistics from the National Transportation Safety Board (NTSB) show that 75% of airway accidents occur during takeoff and landing. As a result, the most vulnerable areas are adjacent or near airports. Areas below flight paths at risk but much less likely to be directly impacted by an airway accident. Jasper County has two municipal airports in Newton and Sully. While hospitals are not full-service airports, some hospitals have helipads that are used by air ambulances to transport patients. While rare, there have been accidents involving air ambulances. The hospital in Newton has an air ambulance service, so there is a possibility of an accident. There has not been an accident involving an air ambulance in Jasper County.

The magnitude of an incident depends on the type of aircraft, number of passengers, and materials involved. An air ambulance accident has the potential to be a very dangerous situation because a patient is often onboard, and a crash at the hospital could reduce its capacity to provide care. If a cargo plane transporting volatile or hazardous substances were involved in an accident, the area of impact would be significantly larger than the area for an accident involving a small personal aircraft carrying stable materials. Most accidents would affect a small area and the people onboard.

Any driver or passenger of a vehicle on a road is vulnerable to highway transportation incident. Truck drivers, delivery personnel, and commuters are more likely to experience transportation incident due to more in a vehicle or driving during busier travel times. During rush hours, holidays, and major events, the number of people on the road is significantly higher, which increases the odds of an accident. Motorcyclists are much more vulnerable to serious injury or death if involved in an accident compared to a vehicle. Pedestrians and cyclists are not allowed on the interstate, but they are allowed on most roads throughout the state, including highways and relatively high-speed roads in urban and rural areas. Pedestrians and cyclists are extremely vulnerable if struck by a vehicle, with high probability of serious injury or death.

Jasper County is crisscrossed by city streets, county roads, Iowa highways. It is also bisected by Interstate 80. Refer to the risk assessment maps for major transportation infrastructure in Jasper County. Highway incidents are usually contained to areas on the roadway or directly adjacent to the roadway.

Extensive segments of the transportation system can be impacted during significant weather events, such a large snowstorms and floods. Major accidents involving a large number of cars or multiple accidents in a short span of road can also impact transportation systems. The area of impact can extend beyond the localized area of the involved vehicles, especially if hazardous materials are involved.

There are two major railways in Jasper County including a Union Pacific and Iowa Interstate line. The Union Pacific line is limited to a small corner of the county in rural areas, so its potential hazard is relatively small. The Iowa Interstate line bisects Jasper County and runs through Colfax, Jasper, and Kellogg. Refer to the risk assessment maps. People and property near railroad tracks, crossings, sidings, switching stations, and loading and unloading ports are most at risk. Further way from railroad tracks and facilities, people are vulnerable to large-scale incidents usually when a hazardous materials incident is involved, too.

Rail and highway incidents are usually limited to areas in and near at-grade crossing. Rarely, the incident will result in widespread effects. The direct area of impact is usually quite small but depending on the vehicles and materials involved, the area could be extensive. If hazardous materials are involved, there is a potential for the impacted area to span miles, especially if they can contaminate water supplies, water distribution systems, storm water systems, streams, or protected habitats.

Operators and passengers of watercraft are most vulnerable in a waterway incident. The maximum extent of a waterway incident would in most cases be limited. Impacts would mostly likely not extend beyond the immediate are of the incident. The only exception would include a search and rescue operation that would extend the impacted area downstream.

For transportation incidents in Jasper County, the potential magnitude and severity is estimated to be limited. A transportation incident could result in injuries, up to 10% to 25% of property damaged, and shutdown of facilities for a week. The property damage estimate is estimated relatively high, because if a transportation incident were to occur in a small jurisdiction, a high percentage of the community can be impacted. Overall, the magnitude and severity estimate is based on historical occurrences, the *Iowa Hazard Mitigation Plan 2018*, and local knowledge

Warning Time

The warning time prior to an aircraft accident could vary from several minutes to mere seconds. Crew members aboard a troubled aircraft can radio to ground crew to prepare for an emergency, but little can be done from the ground to lessen the impact. Rarely, there is adequate time to position emergency response services at the potential area of impact.

Highway incidents usually have no warning. Before and during severe weather events, travelers, response agencies, and hospitals are notified of hazardous travel conditions. Flash flooding is a common travel hazard in Jasper County, and warnings are often issued several hours before the flood may occur.

Weather information is provided on the radio, television, weather alert radios, subscription alert services through local emergency management agencies, social media, and Wireless Emergency Alerts sent to cell phones and other devices connected to communication towers. The Jasper County Emergency Management Agency uses the Alert Iowa system to send community and weather alerts through text message.

Like transportation incidents, a railway incident would likely occur with no warning. There may be a limited amount of time to warn the people in the potential hazard area, but often there is no time.

Leading causes of waterway incidents are inclement weather and operator error. Recreational accidents often involve alcohol or passenger recklessness. There is usually little to no warning. For accidents due to inclement weather, forecasts are usually available hours to days in advance to make decisions regarding safe water recreation, but sudden changes in weather can occur with little to no warning.

Duration

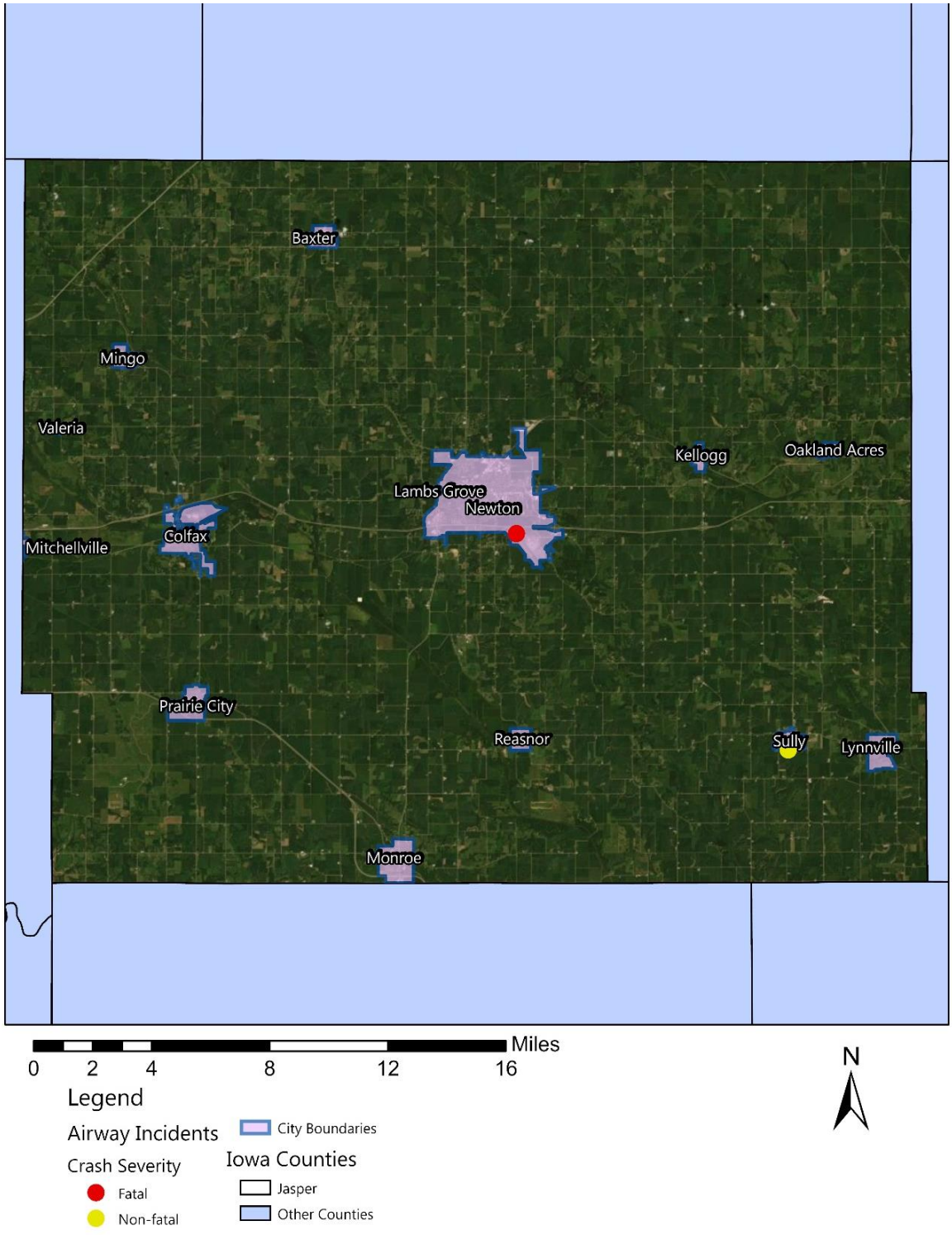
Transportation incidents, particularly rail, air, and waterway are likely to require extensive response and resources to protect the life and safety of the people involved in the incident. Surface transportation incidents, not involving rail, are usually resolved in a few hours allowing normal traffic flow to resume.

Railway incidents may take longer to resolve because an investigation must be conducted, debris and/or spilled material must be cleared, and the rail infrastructure may need repair before normal service can resume. If a hazardous material is involved, remediation of contaminated area may be required.

Airway incidents may result in the partial or complete closure of an airport if the accident occurred at the airport. An investigation must be conducted, and debris must be cleared. Airway incidents occurring in other areas may result in a similar interruption if buildings or infrastructure are involved.

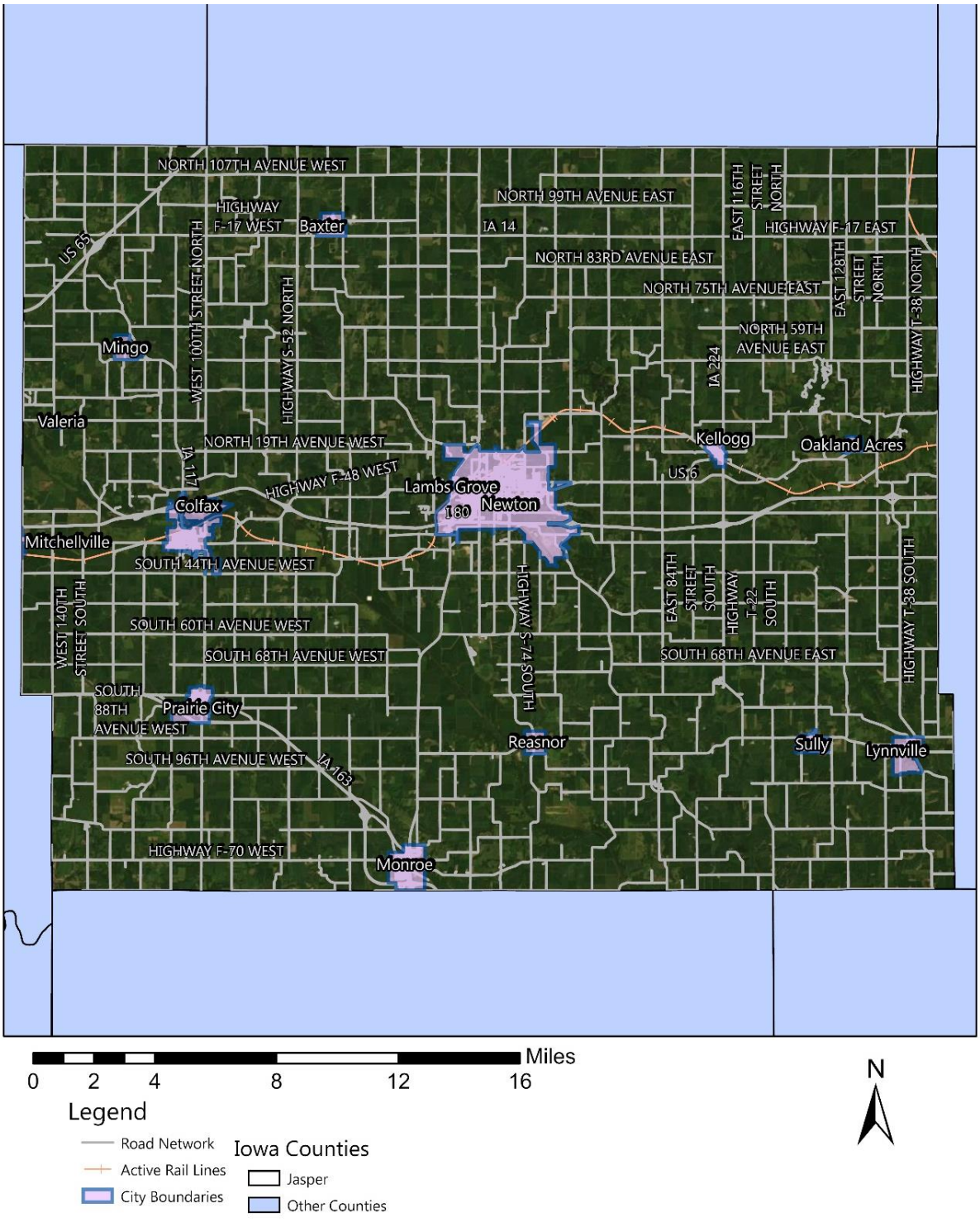
Risk Assessment Maps

Map 29: Airway Incidents in Jasper County 2000 - 2021



Data Source: National Transportation Safety Board, 2021

Map 30: Jasper County Surface Transportation Network



Data Source: Iowa Department of Transportation, 2021

Human Caused Hazards

A human caused hazard is an event occurring due to intentional human actions that will negatively impact people or the environment.

Terrorism

Terrorism broadly includes enemy attacks, biological terrorism, agro-terrorism, chemical terrorism, conventional terrorism, cyber terrorism, radiological terrorism, and public disorder. This includes the use of multiple outlets to demonstrate unlawful force, violence, and/or threat against persons or property causing intentional harm for purposes of intimidation, coercion, or ransom in violation of the criminal laws of the United States. These actions may cause massive destruction and extensive casualties.

Potential Hazard Area

The potential hazard area for a terrorism event in Jasper County is countywide.

Historical Occurrences

Jasper County has not been the direct target of a major terrorism event. There have been threats and potential acts of terrorism, but none have resulted in injury, death, or destruction.

Probability

The federal government monitors the international political and military activities of groups around the world and would notify the State of Iowa of escalating military threats. There are many small military installations throughout Iowa, and most are Iowa National Guard assets spread throughout the State comprising various military units and functions.

There have been no enemy attacks in Iowa in modern times. It is a remote possibility due to international conflicts and the large number of nuclear weapons still in existence throughout the world. Although a few areas are relatively dense with development and population in Jasper County, in a military attack on the United States, it is unlikely that Iowa and Jasper County would be a primary target.

Despite not experiencing a full-blown terrorism event, Iowa has experienced many terrorist threats. Most incidents have been limited to reported powders, threats, and hoaxes. Beginning in October 2001, following the original “Amerithrax” scares, Iowa experienced a large of number of reports of a suspicious powder.

Incidents of agro-terrorism have occurred throughout Iowa. In the past ten years, animal rights activists have vandalized or released animals in agricultural facilities. There have been cases of vandalism of agricultural facilities or incidents of disgruntled employees causing damage to animals and animal products. In Jasper County, agro-terrorism is possible due to the considerable number of agricultural facilities located within the county.

Chemical terrorism has been limited in Iowa. Throughout the United States, public officials have received suspicious letters, which does happen in Iowa. In 2005, a subject mailed “rat poison” to several state and local officials, which resulted in the closure of a postal office and the emergency room at a hospital in Des Moines. There was another event where people broke into a city’s water supply, and they were suspected of depositing chemicals into the water. There have been releases of anhydrous ammonia by people engaged in drug manufacturing, but terrorism was not likely the intent.

Iowa has experienced many bomb threats. During the spring of 2002, 18 pipe bombs were found in mailboxes in five states stretching from Illinois to Texas, including Iowa. Six people were injured in the bombings in Iowa and Illinois. In 2005 and 2006, pipe bombs were used in attempted murder cases in two Iowa cities.

It is difficult to track cyber terrorism incidents and threats, but there are confirmed instances where account information has been compromised. Primary targets of cyber terrorism are financial institutions and government institutions. Cyber-attacks can also occur against critical infrastructure such as energy and water utilities from both state sponsored and non-state sponsored actors. In Jasper County there are potential targets of cyberterrorism.

There is no history of radiological terrorism in Iowa. Iowa has one nuclear power plant located near Palo in Linn County, which is approximately 60 miles from Jasper County. The facility, the Duane Arnold Energy Center, is currently in the decommissioning process before a complete stop in operations. This facility could be a potential target. Nuclear energy facilities in other parts of the world have been the targets of either terrorist or military operations. Otherwise, there is international concern regarding unstable countries developing and using nuclear weapons. It is unlikely that radiological terrorism could affect Iowa and the Midwest, but potential targets are in the region.

For public disorder, there have been no recent mass demonstrations, or direct conflicts among large groups of citizens, as in marches, protest rallies, riots, and non-peaceful strikes in Iowa. Although large-scale destructive civil disturbances are rare, the potential exists for an incident to occur. Alcohol is often involved in public disorder, especially related to college campuses, sporting events, and concerts.

As for public disorder, there have been no recent mass demonstrations, or direct conflicts among large groups of citizens, as in marches, protest rallies, riots, and non-peaceful strikes in Iowa. Although large-scale destructive civil disturbances are rare, the potential exists for an incident to occur. Alcohol is often involved in public disorder, especially related to college campuses, sporting events, and concerts

Labor strikes and work stoppages are not considered in this hazard unless they become a threat to the community. Vandalism is usually initiated by a small number of individuals and limited to a small target group or institution. Overall, most events of this type are within the capacity of local law enforcement.

School shooting events in Iowa and the United States have increased the awareness of school safety. Per data from the Center for Homeland Defense and Security, since 2009, there have been 12 school shootings in Iowa. School shooting occur sporadically, often with gaps of one or two years. School shootings have occurred in both large and small communities, as well as at elementary, middle, and high schools. Most schools in Jasper County have security cameras, limited access entrance systems, active shooter training for staff, and safety protocols for allowing people to enter school buildings

Magnitude and Severity

For all types of terrorism, people who are targets, people located within targets, or people located within or near a targeted area are extremely vulnerable. The potential injuries and deaths caused by a terrorism event depend on the type of terrorism, the scale of the event, and whether the terrorism attempt is successful. In general, it is difficult to predict potential targets.

The type, scale, and success of a terrorism attempt will also determine how much of Jasper County can be potentially impacted by the terrorism event. Some terrorism attempts are limited in scale with specific targets while others are widespread. If a terrorism event is large scale, it is likely more than just Jasper County will be impacted by the event. Aside from public disorder events, a terrorism event has the potential to affect the entire county.

Warning Time

The United States federal government monitors worldwide political and military activity. The state and local governments and residents would be put on heightened alert during periods of intense political or military conflict. With Iowa's position in the interior of the U.S., there would likely be significant warning time of an impending foreign enemy attack.

Acts of terrorism can be immediate and often come after little or no warning. Explosions are usually instantaneous, but the threat is not gone until the area is deemed clear. There are occasions when terrorists have warned the targeted organization/group beforehand, but often attacks come without previous threat. Terrorists threaten people and facilities through bomb threats or other scare tactics. Even if a threat is shallow, precautions must be taken to first ensure the safety of people and property.

Duration

The response to terrorism, as defined in this plan, would be extensive and require outside resources and response from state and federal agencies in both the response to the direct threat to life and property and investigation of crimes.

Presidential Disaster Declarations

The Robert T. Stafford Disaster Relief and Emergency Assistance Act authorizes the President of the United States to issue a disaster declaration when the President has determined that a disaster has caused damage of such severity that it is beyond the capacity of state and local government to respond and assist with recovery. A presidential declaration allows the federal government to aid the most affected areas, primarily with financial assistance from the Federal Emergency Management Agency (FEMA). This assistance can be Public Assistance, Individual Assistance, and Hazard Mitigation Assistance.

From 2000 – 2021, Jasper County has been included in eight presidential major disaster declarations. Refer to Table 34 for the hazard events that led to those declarations and the Public and Individual Assistance amounts provided by FEMA. In all declarations, Jasper County is one of several counties covered by the declaration. One disaster declaration was in response to severe winter weather, which would be classified as a severe winter storm event in this plan. The remaining seven disaster declarations were in response to severe spring and summer weather, which would be classified as flood, thunderstorm, lighting, and hail, and/or tornado and windstorm events in this plan.

Table 34: Jasper County Presidential Major Disaster Declarations 2000 – 2021

Date	Declaration	Hazard	Public Assistance	Individual Assistance
5/19/2004-6/24/2004	DR-1518-IA	Severe Storms Flooding Tornadoes	$14,795,285.63	$6,190,448.70
2/23/2007-3/2/2007	DR-1688-IA	Winter Storms	$65,377,279.14	0
5/25/2008-8/13/2008	DR-1763-IA	Severe Storms Flooding Tornadoes	$1,155,438,930.30	$138,749,926.87
6/1/2010-8/31/2010	DR-1930-IA	Severe storms Flooding Tornadoes	$52,178,015.97	$26,438,629.85
5/19/2013-6/14/2013	DR-4126-IA	Severe Storms Tornadoes Flooding	$20,510,097.83	0
6/26/2014-7/7/2014	DR-4187-IA	Severe Storms Tornadoes Straight-line Winds Flooding	$14,356,475.03	0
3/12/2019	DR-4421-IA	Severe Storms Flooding	$174,638,505.21	$15,339,113.18
1/20/2020	DR-4483-IA	Human Disease	$229,061,864.14	$18,707,435.20
8/10/2020	DR-4557-IA	Severe Storms	$53,647,136.47	$11,423,336.69
Total	8		$1,780,003,589.72	$216,848,890.49

It should be noted the public and individual assistance figures in Table 34 encompass funds for the entire disaster area, not just the funds flowing directly into Jasper County. Also, these figures do not necessarily represent the entirety of federal funding assistance provided for these disasters. There have been congressional acts, earmarks, stimulus payments, and funds through federal agencies besides FEMA to respond and recover to disasters. For just major disaster declarations, there has been over $1.7 billion in Public Assistance and over $216 million in Individual Assistance for areas impacted disasters since 2000.

Since 2000, Jasper County has been included in two presidential emergency declarations. The natural disaster-related declaration, EM-3239-IA, was declared to manage the influx of people in Iowa who evacuated areas affected by Hurricane Katrina in August 2005. This declaration is noted specifically, because it illustrates the widespread impacts disasters in other areas of the United States can have on Jasper County and Iowa.

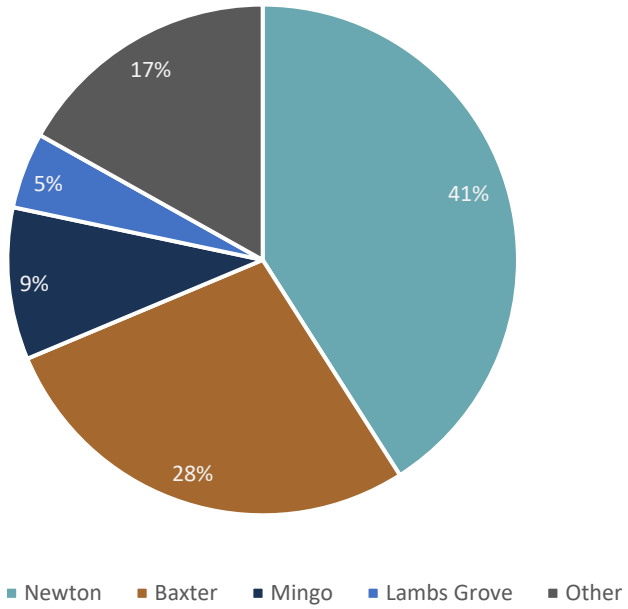
In the following chapter, the hazards considered under this plan are prioritized based on the data collected for the risk assessment. The hazard events that were to exceed local response capabilities, i.e. received a presidential disaster declaration, reinforce the priority levels that result from the weighted average of four criteria, probability, magnitude and severity, warning time, and duration. The winter weather and summer weather hazards that cause these events are all rated with high priority as they present a persistent, frequent, and severe hazard to Jasper County.

Hazard Priority Survey

To gather community input regarding hazard prioritization in Jasper County, a hazard prioritization survey was posted on ECICOG's online public engagement project page, which is available at www.talkto.ecicog.org/jasper-hazmit. Responses were collected from October 20, 2021 until December 11, 2021, and the survey was completed 83 times.

Of the people who completed the survey, 34 (41%) were from Newton, 23 (28%) from Baxter, 8 (10%) from Mingo, and 4 (5%) were from Lambs Grove as the largest contributors. The communities of Monroe, Colfax, Kellogg, Lynnville, Reasnor, Prairie City, other communities, and Baxter Community Schools comprise the remaining 14 responses (17%). There were no responses from the communities of Oakland Acres, Valeria, unincorporated Jasper County, and the Colfax-Mingo, Lynnville-Sully, Newton, and Prairie City-Monroe School Districts. Refer to Chart 1.

Chart 1: Respondents by Jurisdiction



Respondents were asked to select the five hazards they felt were most important to prepare for in Jasper County, and 69 responses were submitted. The top five hazards, in order, were tornado and windstorm, severe winter storm, infrastructure failure, pandemic human disease, and thunderstorm, hail, and lightning. Refer to Figure 3. Transportation incidents were the sixth rated hazard, with a few less votes than thunderstorm, hail, and lightning. Radiological incidents and dam and levee failure received the least votes.

Figure 3: Top Five Hazards per Hazard Priority Survey

Respondents were also asked if they had been severely impacted by a disaster. Thirty-one (37%) responded they had been, whereas 52 (63%) responded they had not been severely impacted by a disaster. The people who had been severe impacted were asked to provide further details, and most indicated they were negatively impacted by the derecho in August 2020. A few people indicated they had been negatively impacted by the COVID-19 pandemic. One respondent recalled the flood events in 2008, which was the only response about an event prior to 2020.

Hazard Prioritization

Photo Credit

Woodland Field damage from tornado on March 5, 2022
City of Newton

Introduction

The full set of hazards that can potentially affect Jasper County were prioritized using the criteria outlined in the previous chapter—probability, magnitude and severity, warning time, and duration—to determine the extent a mitigation strategy should focus on one or more hazards. Descriptions of the criteria are shown in Tables 5 – 8, starting on page 26. For ease of assessment of the results of this evaluation, each hazard in the plan is represented on a risk grid, with the axes of probability and magnitude. Refer to Chart 2. The scores for warning time and duration are integrated into the probability and magnitude scores, respectively, with each providing up to one additional point for the axes. A hazard that is further from the origin would be a higher priority hazard to address through mitigation than one that is closer to the origin based on the countywide risk assessment. The distance from the origin for each hazard is included in each data label.

The risk grid score is used to determine the priority level of each hazard by ranking the hazards from 1 to 3, with 1 being assigned to the top third of hazards with the highest score and so on. Refer to Table 35 for the description of each priority level. The full summary of scoring for each criterion, the corresponding risk grid score, and priority levels are shown in Table 36. Because of the local variability of risks, each participating jurisdiction determines the priority level that is appropriate for their community. The countywide assessment and priority level from the 2016 – 2021 plan was used by each participating jurisdiction as a base for their specific hazard risk assessment.

Table 35: Hazard Priority Level

Hazard Priority		Description
1	High	Risk assessment score is high relative to other hazards; hazards may have occurred recently with severe impacts and long-term recovery; the hazard is generally a high priority in the community; the planning committee will identify potential mitigation projects
2	Medium	Risk assessment score is mid-range relative to other hazards; mitigation actions for hazards may already be complete or in progress; the hazard is generally a medium priority in the community; the planning committee will identify potential mitigation projects that may also address other hazards
3	Low	Risk assessment score is low relative to other hazards; mitigation actions for hazards may already be complete; the hazard is generally a low priority in the community; the planning committee may discuss potential mitigation projects

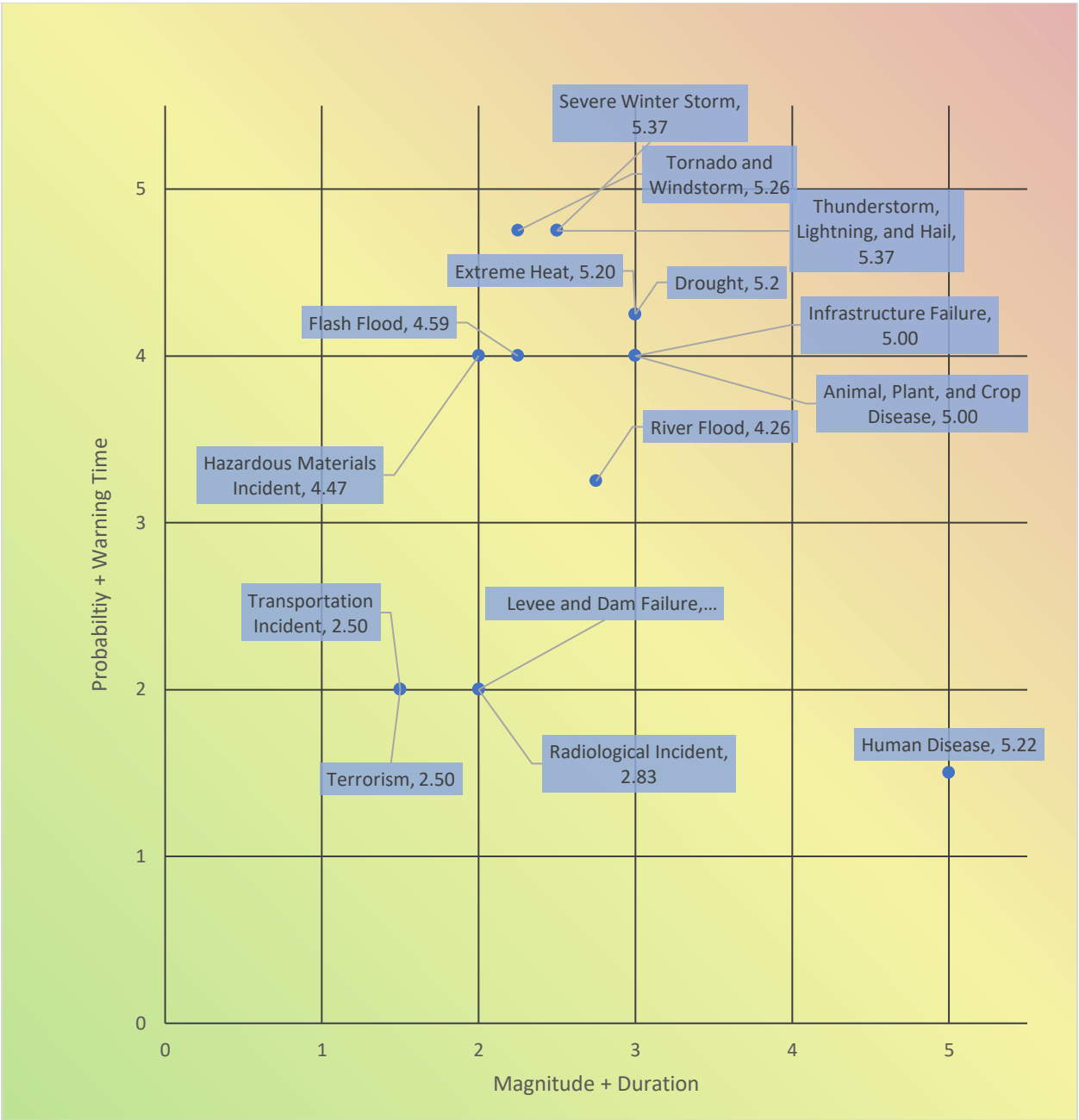
Each local planning committee was given an opportunity to modify the priority level of hazards to reflect local conditions and priorities. Priorities for the 2016 – 2021 plan and plan update are included in each jurisdictions prioritization list to document changes.

The countywide hazard risk assessment results for Jasper County are included in Table 36. The assessment was used by each participating jurisdiction as a base for their specific hazard risk assessment. The planning committee was given an opportunity to modify the priority level of hazards to reflect local conditions and priorities.

Table 36: Jasper County Countywide Hazard Analysis and Risk Assessment

Hazard	Probability	Magnitude and Severity	Warning Time	Duration	Probability + Warning Time	Magnitude and Severity + Duration	Risk Grid Score	Priority Level
Animal, Plant, and Crop Disease	3	2	1	1	4	3	5.00	1
Drought	4	2	0.25	1	4.25	3	5.20	1
Extreme Heat	4	2	0.25	1	4.25	3	5.20	1
Flash Flood	3	2	1	0.25	4	2.25	4.59	2
River Flood	3	2	0.25	0.75	3.25	2.75	4.26	2
Human Disease	1	4	0.5	1	1.5	5	5.22	1
Severe Winter Storm	4	2	0.75	0.5	4.75	2.5	5.37	1
Thunderstorm, Lightning, and Hail	4	2	0.75	0.5	4.75	2.5	5.37	1
Tornado and Windstorm	4	2	0.75	0.25	4.75	2.25	5.26	1
Hazardous Materials Incident	3	1	1	1	4	2	4.47	2
Infrastructure Failure	3	2	1	1	4	3	5.00	1
Levee and Dam Failure	1	1	1	1	2	2	2.83	3
Radiological Incident	1	1	1	1	2	2	2.83	3
Transportation Incident	1	1	1	0.5	2	1.5	2.50	3
Terrorism	1	1	1	0.5	2	1.5	2.50	3

Chart 2: Jasper County Risk Assessment Grid



Jurisdiction Hazard Prioritization

The planning committee for each jurisdiction had the opportunity to review the countywide hazard risk analysis and assessment, including the risk grid. Using the countywide assessment, information from the 2017 – 2021 plan, and local knowledge, the planning committee determined the priority level for each hazard in their community. Due to low risk, lack of historical occurrences, or the hazard being addressed by other plans, some hazards were excluded by the planning committee. The hazard prioritization for each jurisdiction is included in this section of the plan.

Jasper County Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 37.

Table 37: Jasper County Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	2
Drought	2	3
Extreme Heat	2	3
Flash Flood	3	3
River Flood	3	2
Human Disease	Excluded	3
Severe Winter Storm	1	1
Thunderstorm, Lightning, and Hail	2	2
Tornado and Windstorm	2	1
Hazardous Materials Incident	2	2
Infrastructure Failure	2	1
Levee and Dam Failure	3	3
Radiological Incident	Excluded	Excluded
Transportation Incident	1	1
Terrorism	2	1

Baxter Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 38.

Table 38: Baxter Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	3
Drought	2	3
Extreme Heat	2	3
Flash Flood	3	3
River Flood	Excluded	Excluded
Human Disease	Excluded	Excluded
Severe Winter Storm	1	2
Thunderstorm, Lightning, and Hail	2	1
Tornado and Windstorm	1	2
Hazardous Materials Incident	Excluded	Excluded
Infrastructure Failure	Excluded	Excluded
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	Excluded
Terrorism	Excluded	Excluded

Colfax Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 39.

Table 39: Colfax Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	3
Drought	2	3
Extreme Heat	2	3
Flash Flood	2	2
River Flood	2	1
Human Disease	Excluded	Excluded
Severe Winter Storm	1	1
Thunderstorm, Lightning, and Hail	2	2
Tornado and Windstorm	2	2
Hazardous Materials Incident	Excluded	Excluded
Infrastructure Failure	Excluded	Excluded
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	Excluded
Terrorism	Excluded	Excluded

Kellogg Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 40.

Table 40: Kellogg Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	3
Drought	2	3
Extreme Heat	2	3
Flash Flood	3	1
River Flood	3	1
Human Disease	Excluded	Excluded
Severe Winter Storm	1	1
Thunderstorm, Lightning, and Hail	2	2
Tornado and Windstorm	1	1
Hazardous Materials Incident	Excluded	Excluded
Infrastructure Failure	Excluded	Excluded
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	Excluded
Terrorism	Excluded	Excluded

Lambs Gove Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 41.

Table 41: Lambs Grove Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	3
Drought	2	2
Extreme Heat	2	2
Flash Flood	3	1
River Flood	Excluded	Excluded
Human Disease	Excluded	3
Severe Winter Storm	1	1
Thunderstorm, Lightning, and Hail	2	2
Tornado and Windstorm	1	2
Hazardous Materials Incident	Excluded	Excluded
Infrastructure Failure	Excluded	3
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	Excluded
Terrorism	Excluded	Excluded

Lynnville Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 42.

Table 42: Lynnville Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	3
Drought	2	2
Extreme Heat	2	2
Flash Flood	3	1
River Flood	3	2
Human Disease	Excluded	Excluded
Severe Winter Storm	1	1
Thunderstorm, Lightning, and Hail	2	2
Tornado and Windstorm	1	1
Hazardous Materials Incident	Excluded	3
Infrastructure Failure	Excluded	Excluded
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	Excluded
Terrorism	Excluded	Excluded

Mingo Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 43.

Table 43: Mingo Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	3
Drought	2	2
Extreme Heat	2	2
Flash Flood	2	1
River Flood	1	1
Human Disease	Excluded	Excluded
Severe Winter Storm	1	1
Thunderstorm, Lightning, and Hail	2	2
Tornado and Windstorm	1	1
Hazardous Materials Incident	Excluded	Excluded
Infrastructure Failure	Excluded	Excluded
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	Excluded
Terrorism	Excluded	Excluded

Monroe Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 44.

Table 44: Monroe Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	3
Drought	2	3
Extreme Heat	2	3
Flash Flood	3	1
River Flood	2	3
Human Disease	Excluded	Excluded
Severe Winter Storm	1	1
Thunderstorm, Lightning, and Hail	2	1
Tornado and Windstorm	2	1
Hazardous Materials Incident	Excluded	Excluded
Infrastructure Failure	Excluded	Excluded
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	Excluded
Terrorism	Excluded	Excluded

Newton Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 45.

Table 45: Newton Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	3
Drought	2	2
Extreme Heat	2	2
Flash Flood	3	2
River Flood	3	3
Human Disease	Excluded	Excluded
Severe Winter Storm	1	1
Thunderstorm, Lightning, and Hail	2	2
Tornado and Windstorm	2	1
Hazardous Materials Incident	Excluded	Excluded
Infrastructure Failure	Excluded	Excluded
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	3
Terrorism	Excluded	Excluded

Oakland Acres Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 46.

Table 46: Oakland Acres Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	3
Drought	2	3
Extreme Heat	2	3
Flash Flood	3	3
River Flood	Excluded	Excluded
Human Disease	Excluded	Excluded
Severe Winter Storm	1	1
Thunderstorm, Lightning, and Hail	2	1
Tornado and Windstorm	1	1
Hazardous Materials Incident	Excluded	Excluded
Infrastructure Failure	Excluded	Excluded
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	Excluded
Terrorism	Excluded	Excluded

Prairie City Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 47.

Table 47: Prairie City Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	3
Drought	2	2
Extreme Heat	2	2
Flash Flood	2	1
River Flood	3	1
Human Disease	Excluded	Excluded
Severe Winter Storm	1	1
Thunderstorm, Lightning, and Hail	2	1
Tornado and Windstorm	2	1
Hazardous Materials Incident	Excluded	3
Infrastructure Failure	Excluded	Excluded
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	3
Terrorism	Excluded	Excluded

Reasnor Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 48.

Table 48: Reasnor Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	3
Drought	2	3
Extreme Heat	2	3
Flash Flood	2	1
River Flood	2	1
Human Disease	Excluded	3
Severe Winter Storm	1	1
Thunderstorm, Lightning, and Hail	2	2
Tornado and Windstorm	1	2
Hazardous Materials Incident	Excluded	2
Infrastructure Failure	Excluded	3
Levee and Dam Failure	Excluded	3
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	3
Terrorism	Excluded	Excluded

Sully Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 49.

Table 49: Sully Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	3
Drought	2	3
Extreme Heat	2	3
Flash Flood	3	3
River Flood	Excluded	Excluded
Human Disease	Excluded	Excluded
Severe Winter Storm	1	3
Thunderstorm, Lightning, and Hail	2	2
Tornado and Windstorm	1	2
Hazardous Materials Incident	Excluded	Excluded
Infrastructure Failure	Excluded	Excluded
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	Excluded
Terrorism	Excluded	Excluded

Valeria Hazard Prioritization

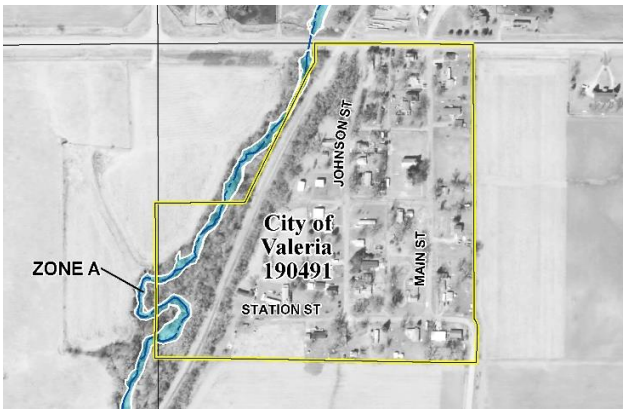
The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 50.

Table 50: Valeria Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	3
Drought	2	3
Extreme Heat	2	3
Flash Flood	2	3
River Flood	3	3
Human Disease	Excluded	Excluded
Severe Winter Storm	1	2
Thunderstorm, Lightning, and Hail	2	2
Tornado and Windstorm	1	1
Hazardous Materials Incident	Excluded	Excluded
Infrastructure Failure	Excluded	Excluded
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	Excluded
Terrorism	Excluded	Excluded

Although a small portion of Valeria contains special flood hazard areas, the City does not participate in the National Flood Insurance Program. The designated special flood hazard areas located within the city boundary include undeveloped agricultural land with no structures. The primary commercial and residential areas of the city are not located within a special flood hazard area.

City of Valeria Special Flood Hazard Area



Data Source: FEMA Flood Hazard Layer, 2023

Colfax – Mingo Community School District Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 51.

Table 51: Colfax – Mingo Community School District Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	Excluded
Drought	2	3
Extreme Heat	2	2
Flash Flood	2	1
River Flood	2	2
Human Disease	Excluded	2
Severe Winter Storm	1	1
Thunderstorm, Lightning, and Hail	1	1
Tornado and Windstorm	1	1
Hazardous Materials Incident	2	3
Infrastructure Failure	2	2
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	1	2
Terrorism	2	2

Lynnville – Sully Community School District Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 52.

Table 52: Lynnville – Sully Community School District Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	Excluded
Drought	2	3
Extreme Heat	2	2
Flash Flood	3	3
River Flood	Excluded	Excluded
Human Disease	Excluded	2
Severe Winter Storm	1	1
Thunderstorm, Lightning, and Hail	2	1
Tornado and Windstorm	2	1
Hazardous Materials Incident	1	3
Infrastructure Failure	Excluded	3
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	3
Terrorism	Excluded	2

Newton Community School District Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 53.

Table 53: Newton Community School District Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	3
Drought	2	2
Extreme Heat	2	2
Flash Flood	3	2
River Flood	3	3
Human Disease	Excluded	Excluded
Severe Winter Storm	1	1
Thunderstorm, Lightning, and Hail	2	2
Tornado and Windstorm	2	1
Hazardous Materials Incident	Excluded	Excluded
Infrastructure Failure	Excluded	Excluded
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	3
Terrorism	Excluded	Excluded

Prairie City Monroe (PCM) Community School District Hazard Prioritization

The jurisdiction's planning committee used the countywide risk assessment and priority level equivalents from the 2017 – 2021 plan as a base for discussing the hazards that may affect the area and determining the appropriate priority level. Ultimately, the planning committee based the priority levels on local conditions and priorities. Refer to Table 54.

Table 54: Prairie City Monroe Community School District Hazard Prioritization

Hazard	2017 – 2021 Priority Level	2022 – 2027 Priority Level
Animal, Plant, and Crop Disease	3	3
Drought	2	3
Extreme Heat	2	3
Flash Flood	3	3
River Flood	Excluded	Excluded
Human Disease	Excluded	3
Severe Winter Storm	1	2
Thunderstorm, Lightning, and Hail	2	2
Tornado and Windstorm	2	1
Hazardous Materials Incident	Excluded	Excluded
Infrastructure Failure	Excluded	Excluded
Levee and Dam Failure	Excluded	Excluded
Radiological Incident	Excluded	Excluded
Transportation Incident	Excluded	Excluded
Terrorism	Excluded	2

Community Attributes

Photo Credit

Baxter Water Treatment Plant
City of Baxter

Introduction

In a multi-jurisdictional plan, it is important to identify local conditions and priorities that differ among participating jurisdictions. These differences are important to consider before identifying a jurisdiction's final mitigation strategy. Despite a relatively small planning area based on county boundaries, variation in topography, hydrology, population, etc. result in different risks for each jurisdiction. These variations and other attributes such as critical facilities, vulnerable populations, community resources, and overall hazard mitigation progress factor into how a jurisdiction should approach each hazard. This chapter will document these attributes in Jasper County.

Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to the residents and businesses in a community. In each jurisdiction, the planning committee identified the primary critical facilities in their community. Generally, all jurisdiction property and infrastructure are considered critical facilities, but additional facilities may be specifically identified by a planning committee. This section displays the critical facilities specifically identified for each jurisdiction. Schools were considered critical facilities in many cities; however, all school districts in the county participated in the plan, so their facilities are included in the school district sections. The critical facilities maps include the flood zone for potential flood hazard reference.

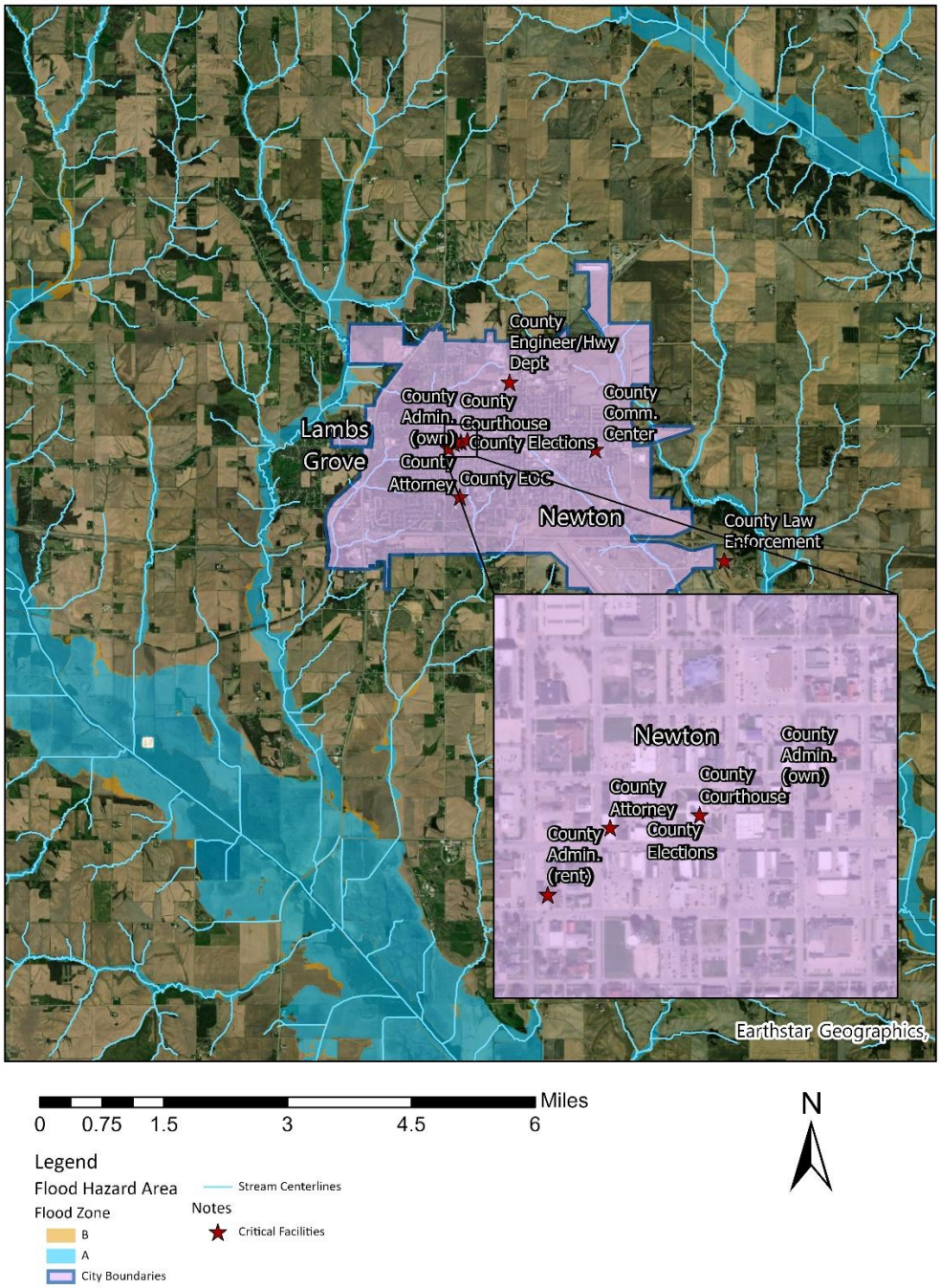
COMMON CRITICAL FACILITIES

- City Hall or Courthouse
- Fire Station
- Emergency operations facilities
- Community buildings
- School buildings
- Maintenance and storage facilities
- Water treatment facilities and infrastructure
- Wastewater treatment facilities and infrastructure
- Stormwater management infrastructure
- Recreation shelters
- Levee and dam structures

Jasper County Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to the residents and businesses in the community. In Jasper County, all county property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 30. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

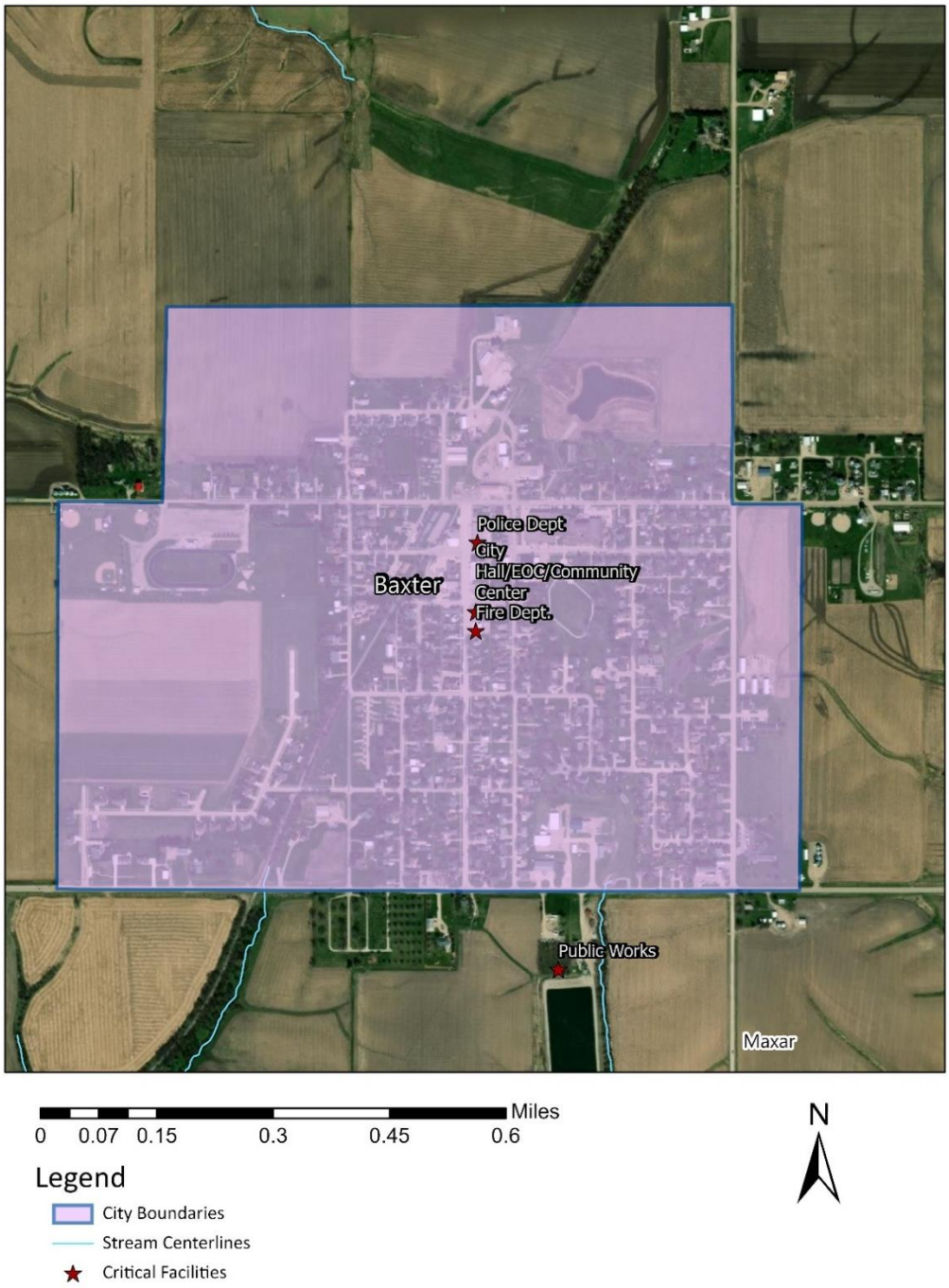
Map 30: Jasper County Critical Facilities



Baxter Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to the residents and businesses in the community. In Baxter, all city property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 31. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

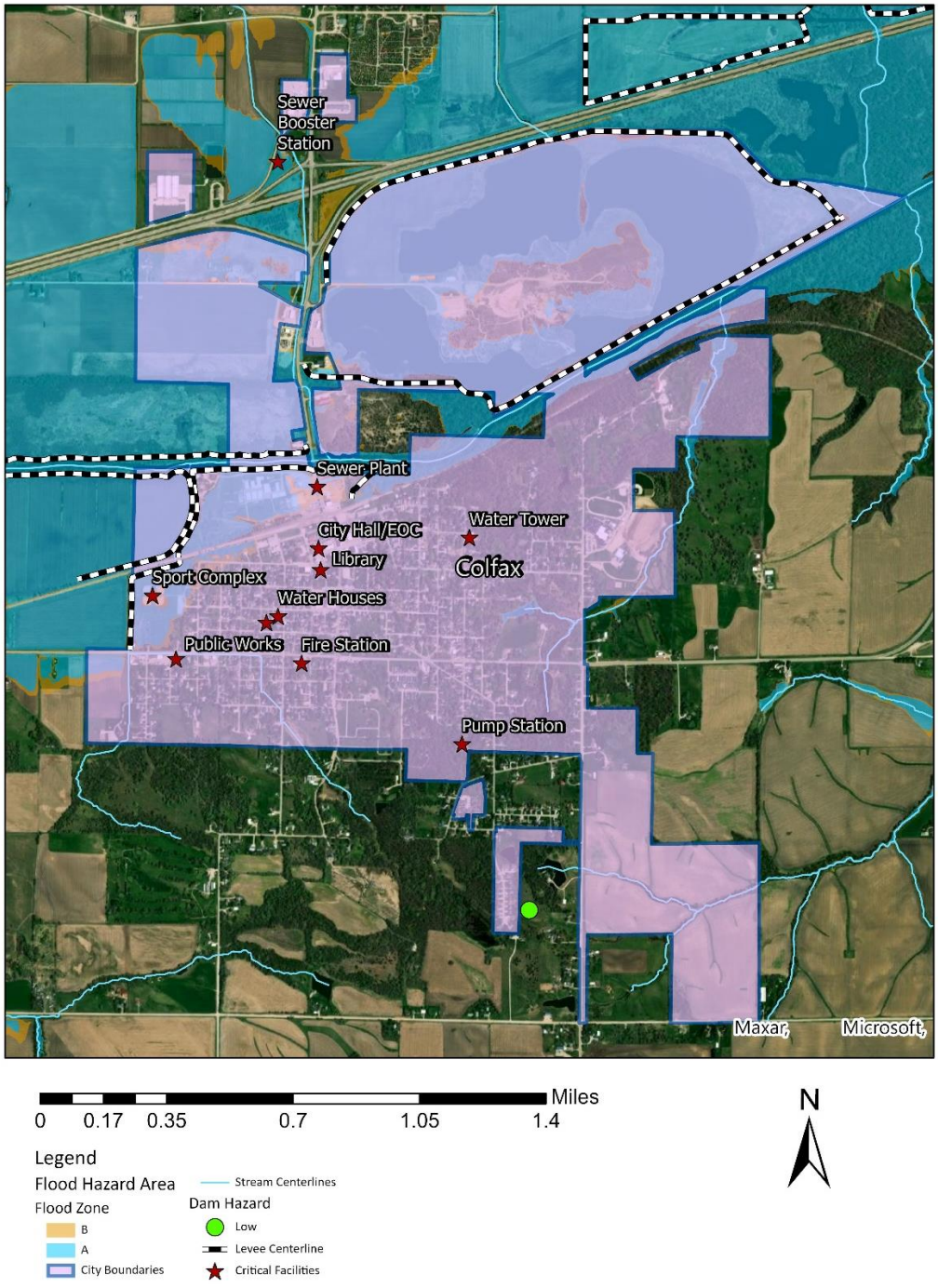
Map 31: Baxter Critical Facilities



Colfax Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to the residents and businesses in the community. In Colfax, all city property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 32. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

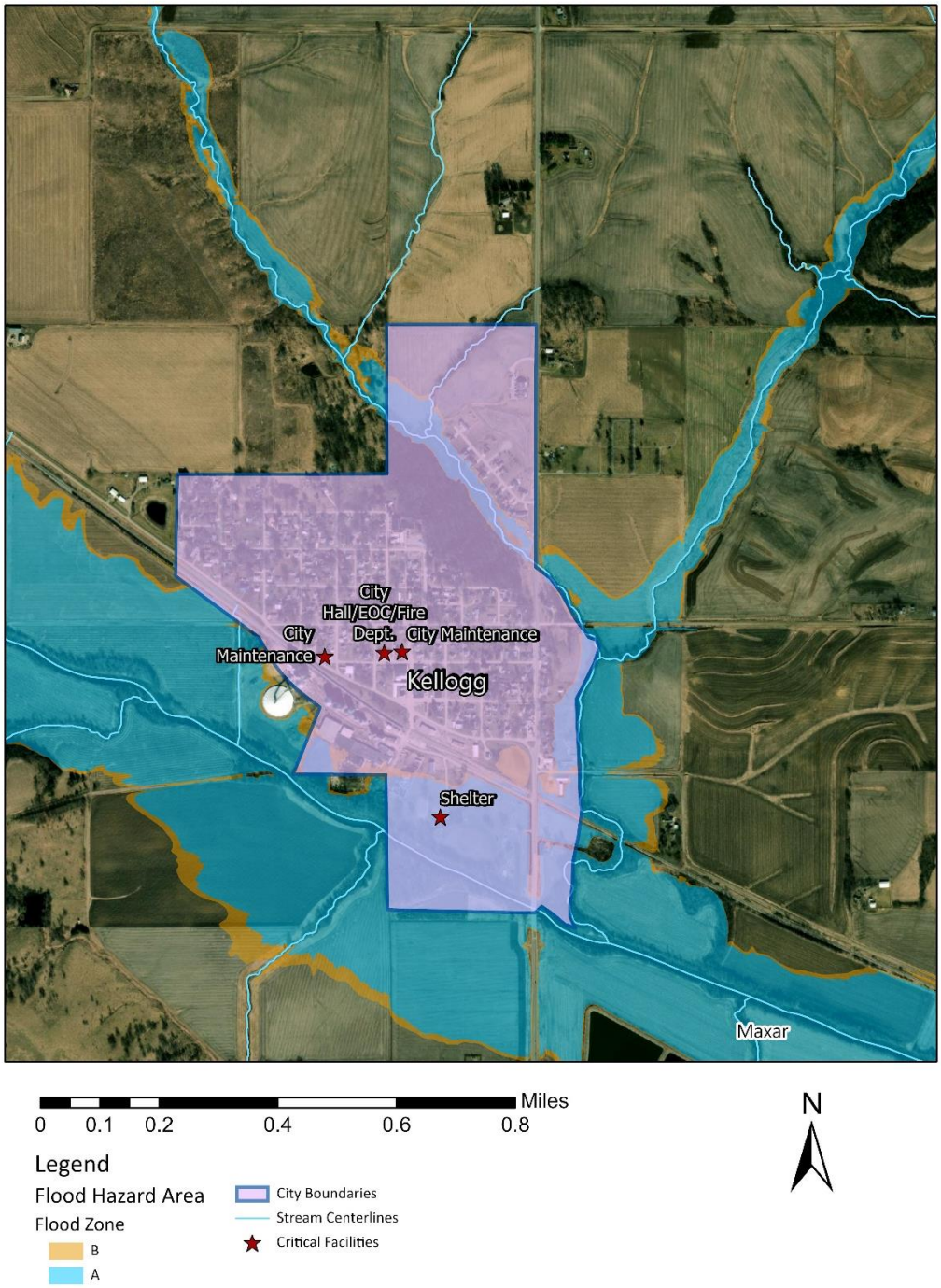
Map 32: Colfax Critical Facilities



Kellogg Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to the residents and businesses in the community. In Kellogg, all city property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 33. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

Map 33: Kellogg Critical Facilities



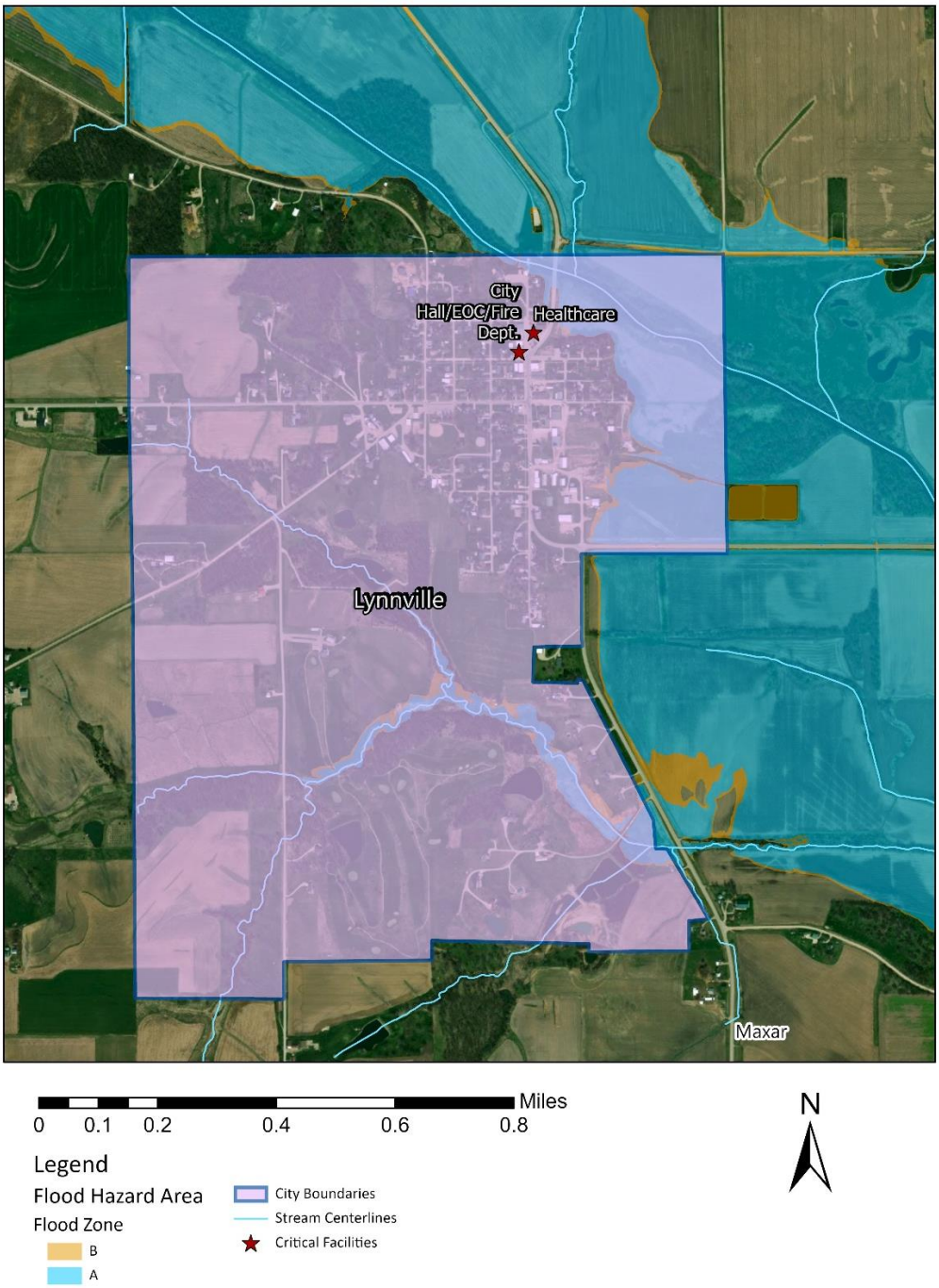
Lambs Grove Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to the residents and businesses in the community. In Lambs Grove, all city property and infrastructure are considered critical facilities. The planning committee did not identify specific critical facilities.

Lynnville Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to the residents and businesses in the community. In Lynnville, all city property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 34. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

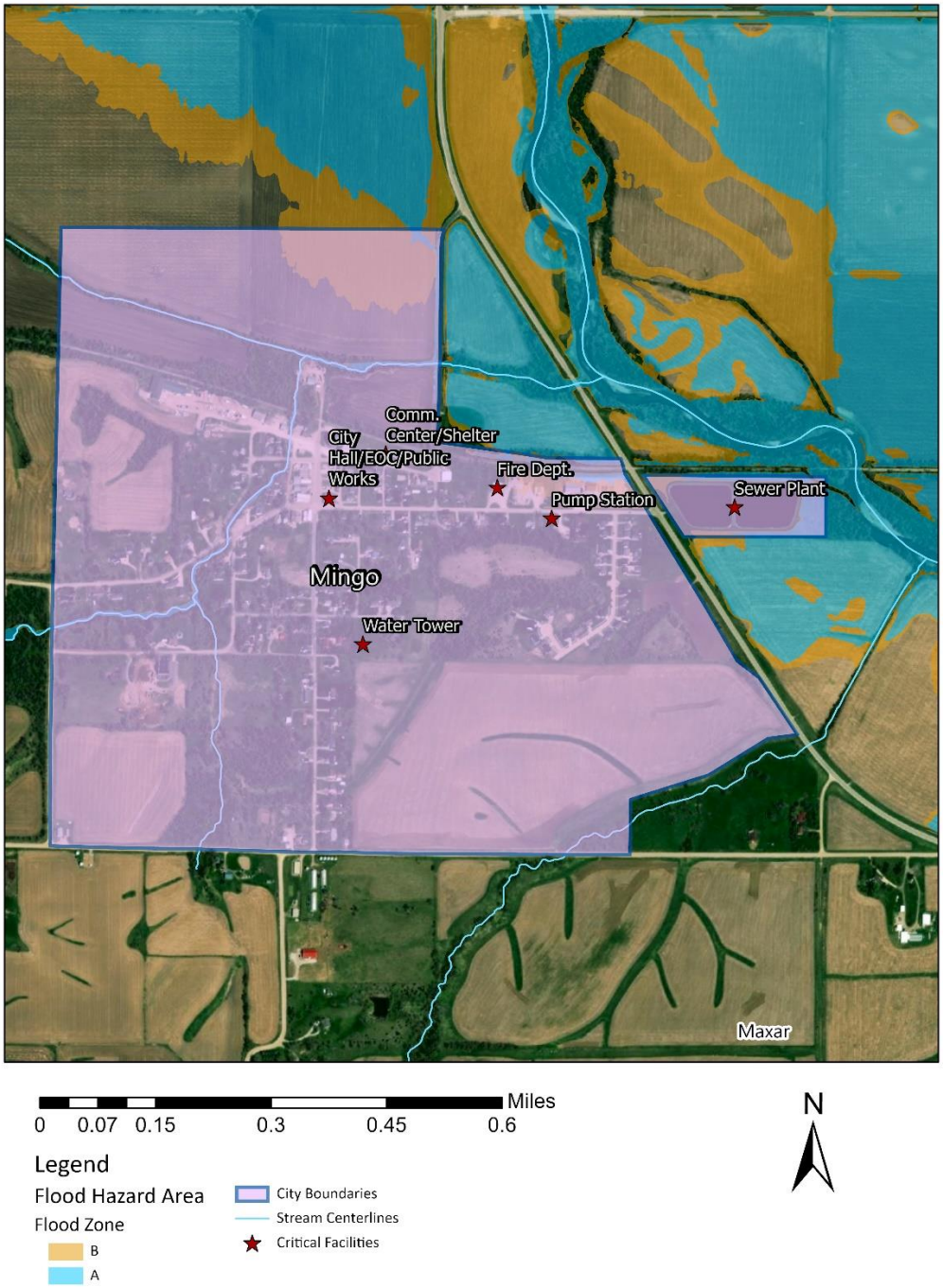
Map 34: Lynnville Critical Facilities



Mingo Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to the residents and businesses in the community. In Mingo, all city property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 35. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

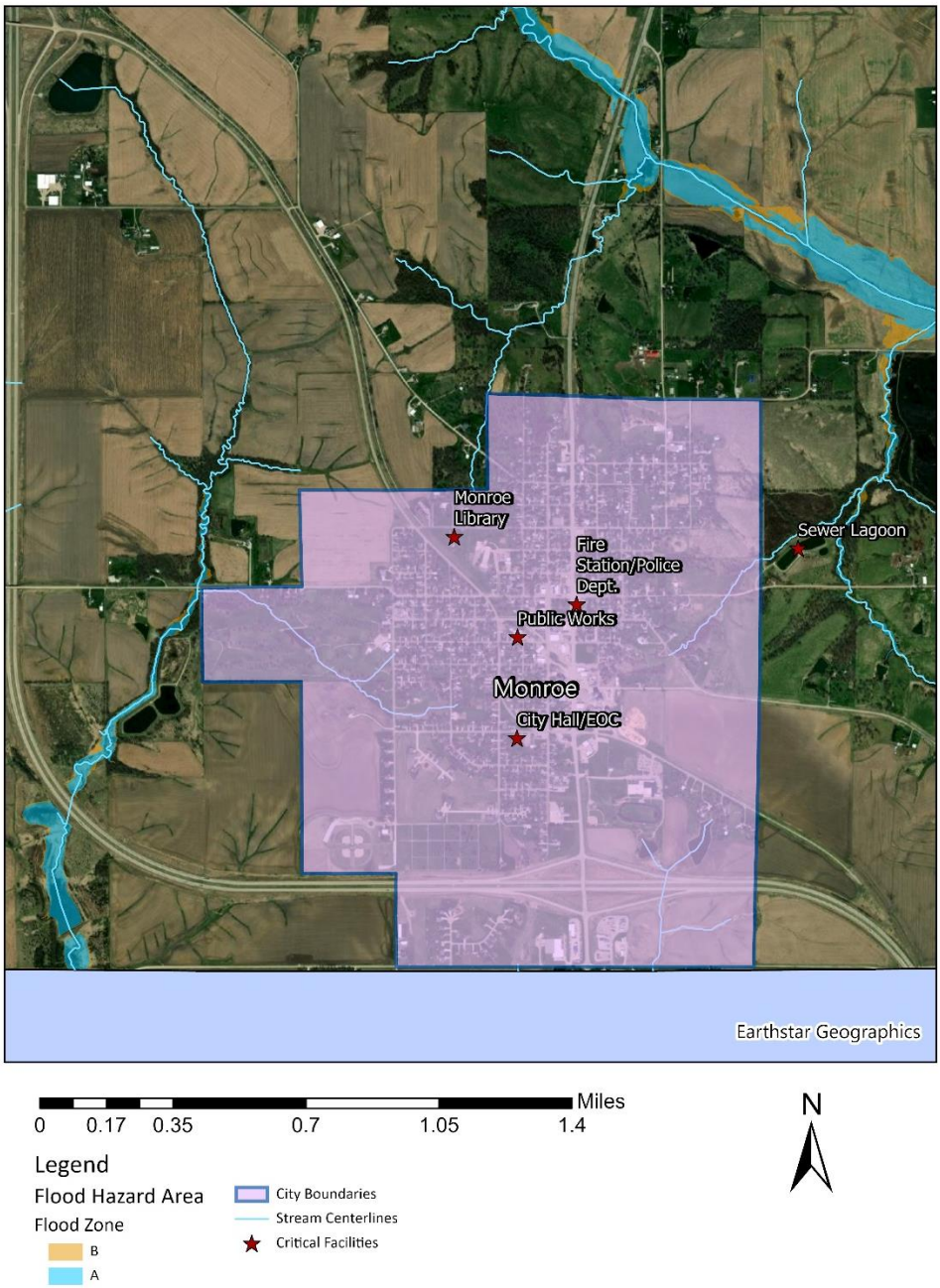
Map 35: Mingo Critical Facilities



Monroe Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to the residents and businesses in the community. In Monroe, all city property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 36. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

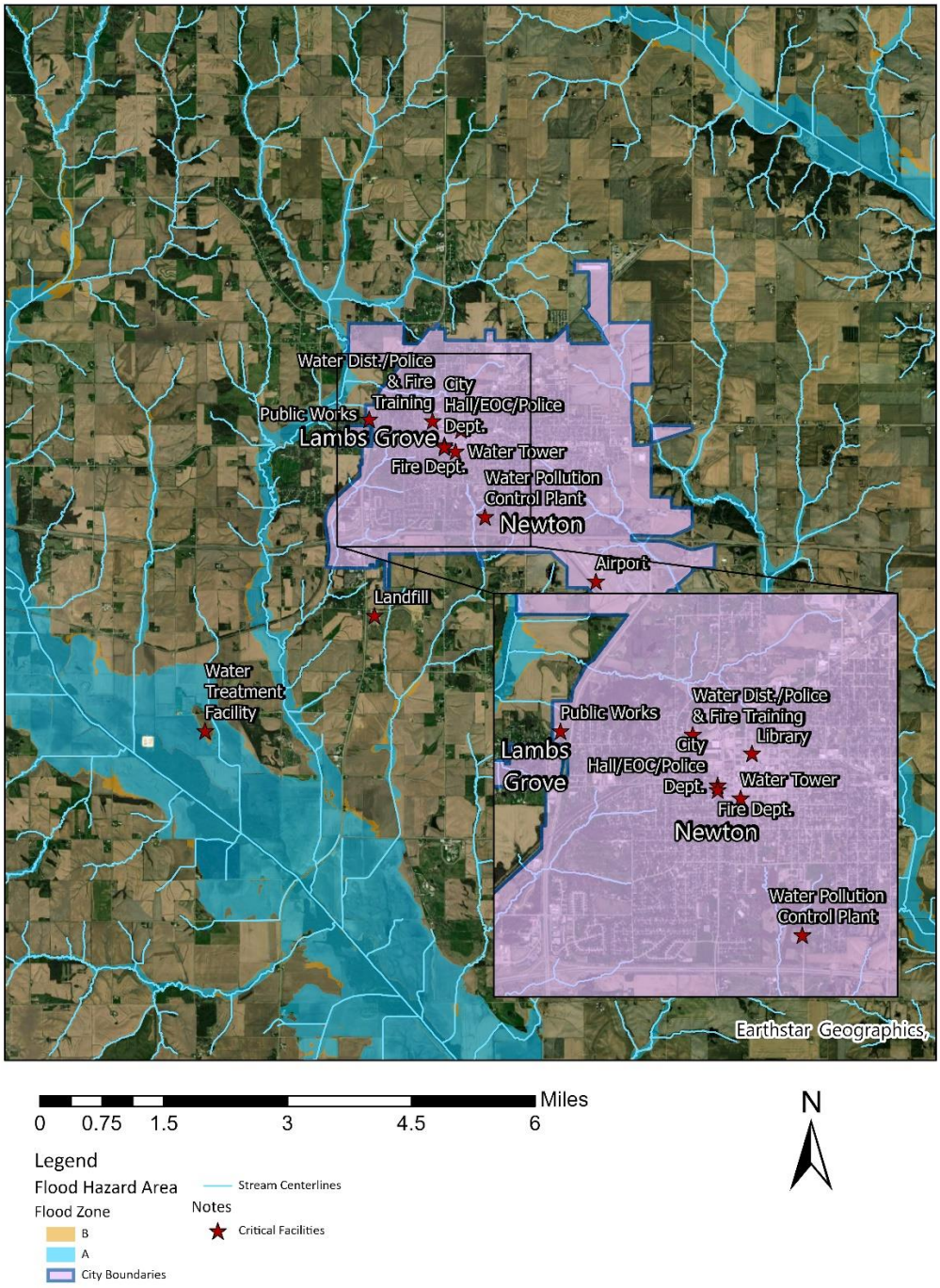
Map 36: Monroe Critical Facilities



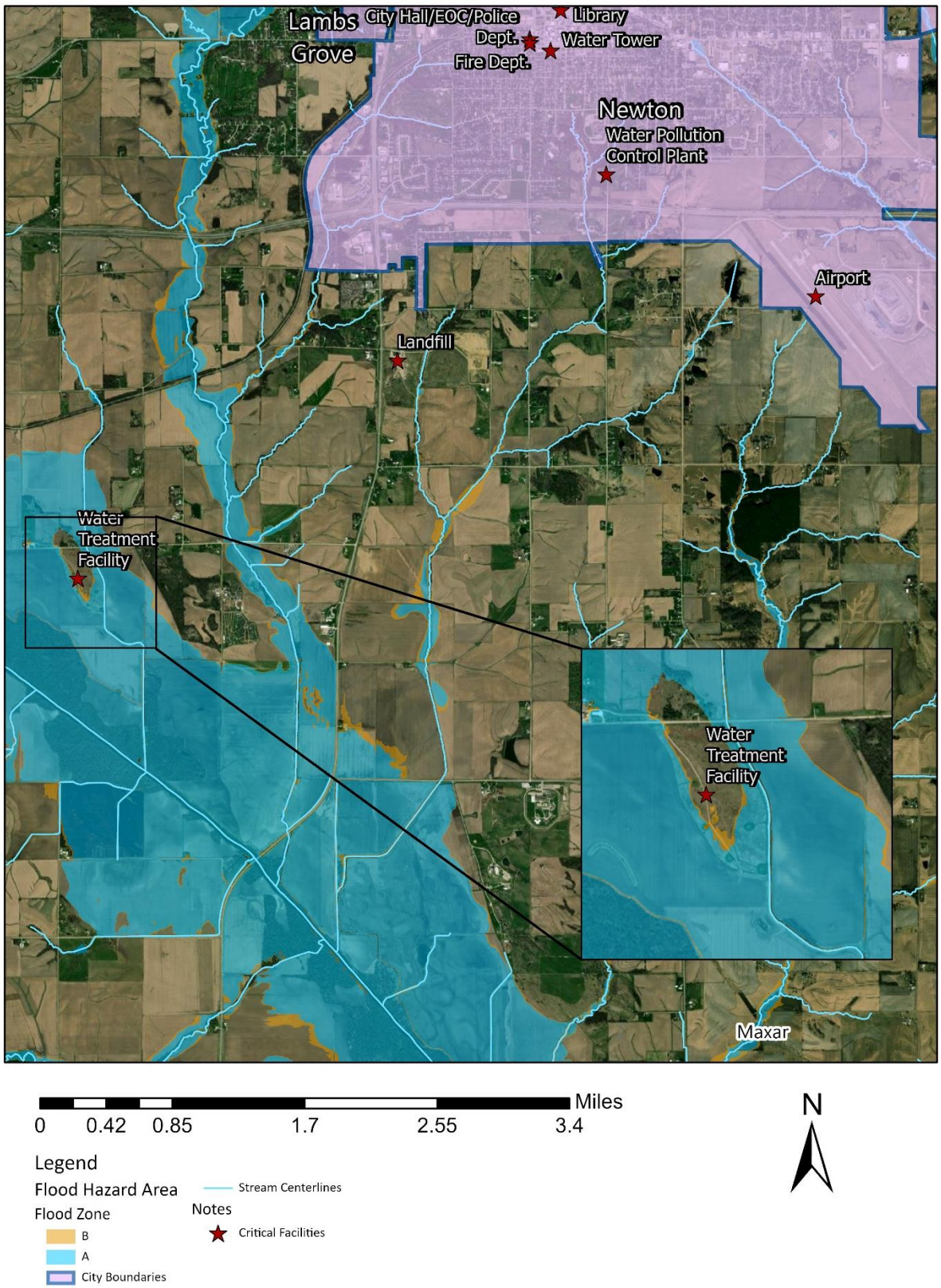
Newton Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to the residents and businesses in the community. In Newton, all city property and infrastructure are considered critical facilities. For specific critical facilities, refer to Maps 37 – 39. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

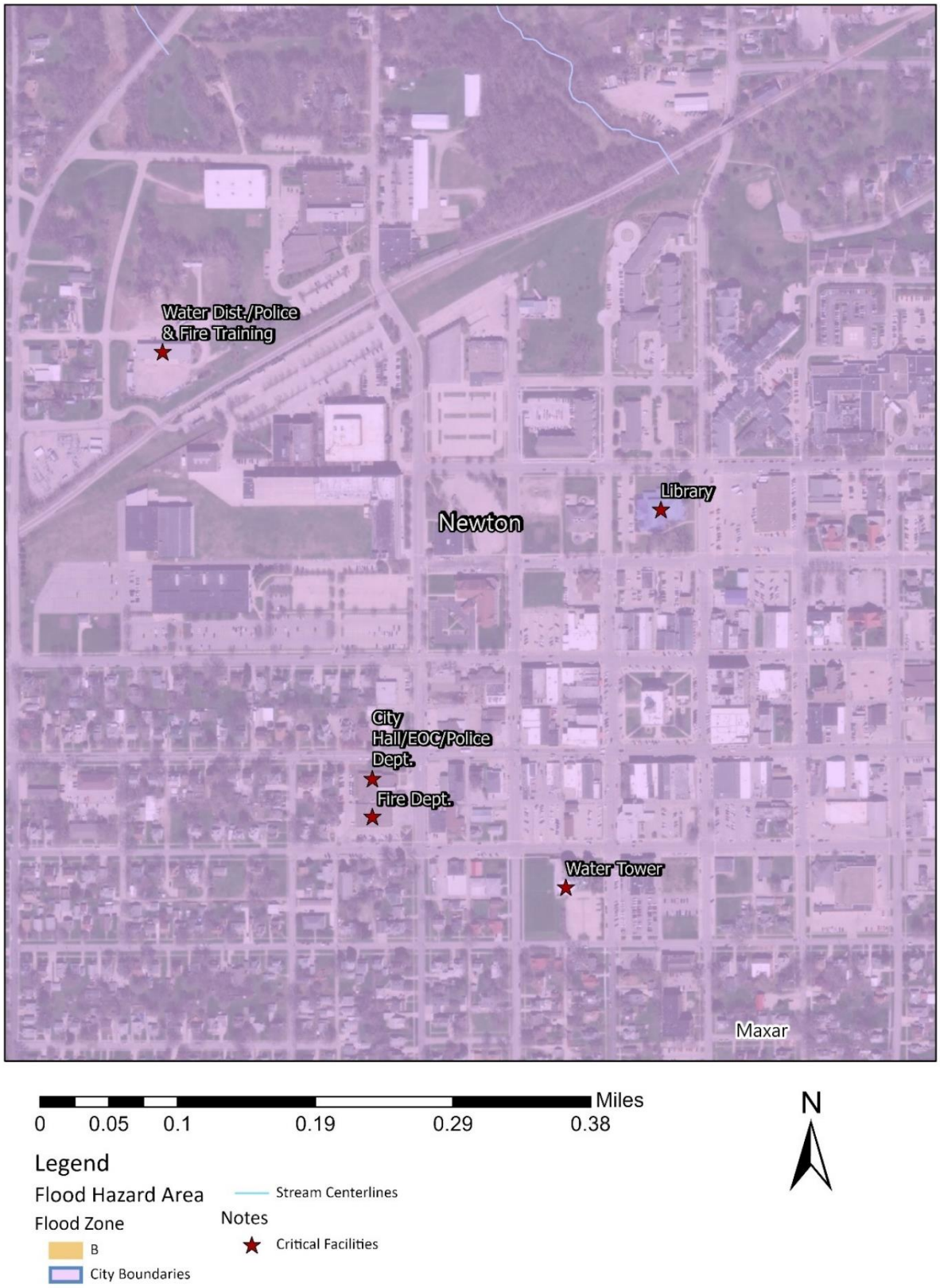
Map 37: Newton Critical Facilities



Map 38: Newton Critical Facilities



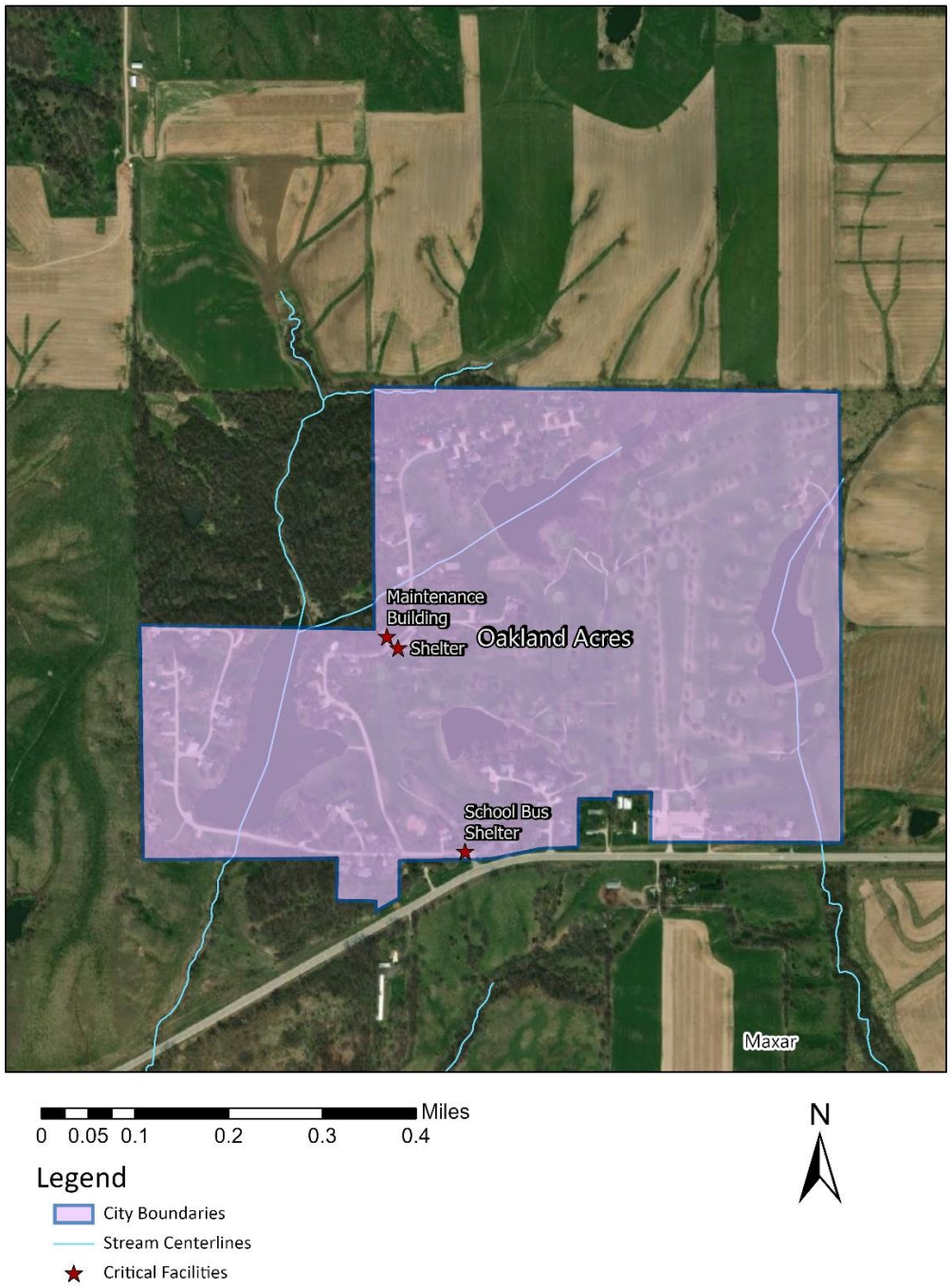
Map 39: Newton Critical Facilities



Oakland Acres Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to the residents and businesses in the community. In Oakland Acres, all city property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 40. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

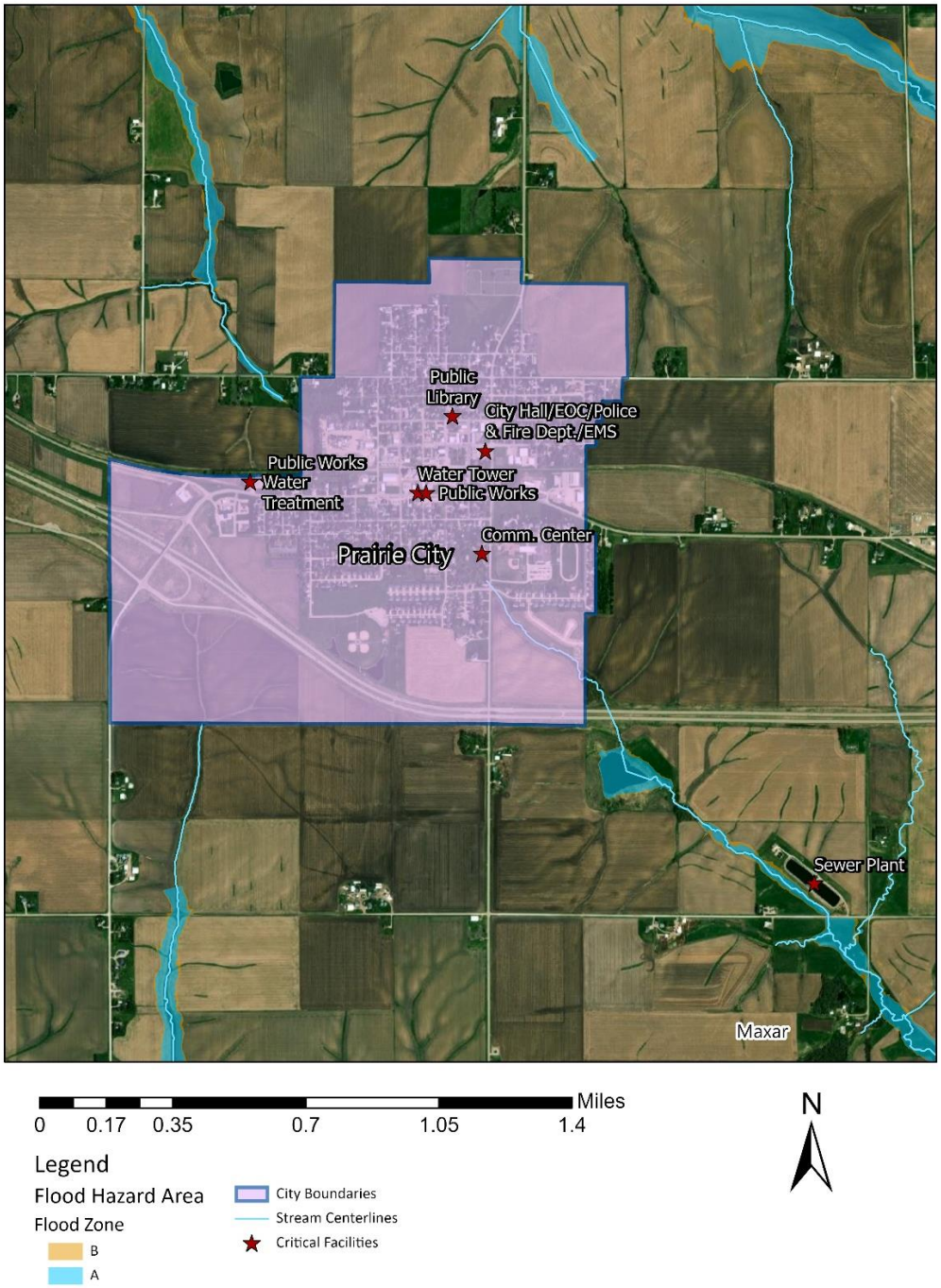
Map 40: Oakland Acres Critical Facilities



Prairie City Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to the residents and businesses in the community. In Prairie City, all city property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 41. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

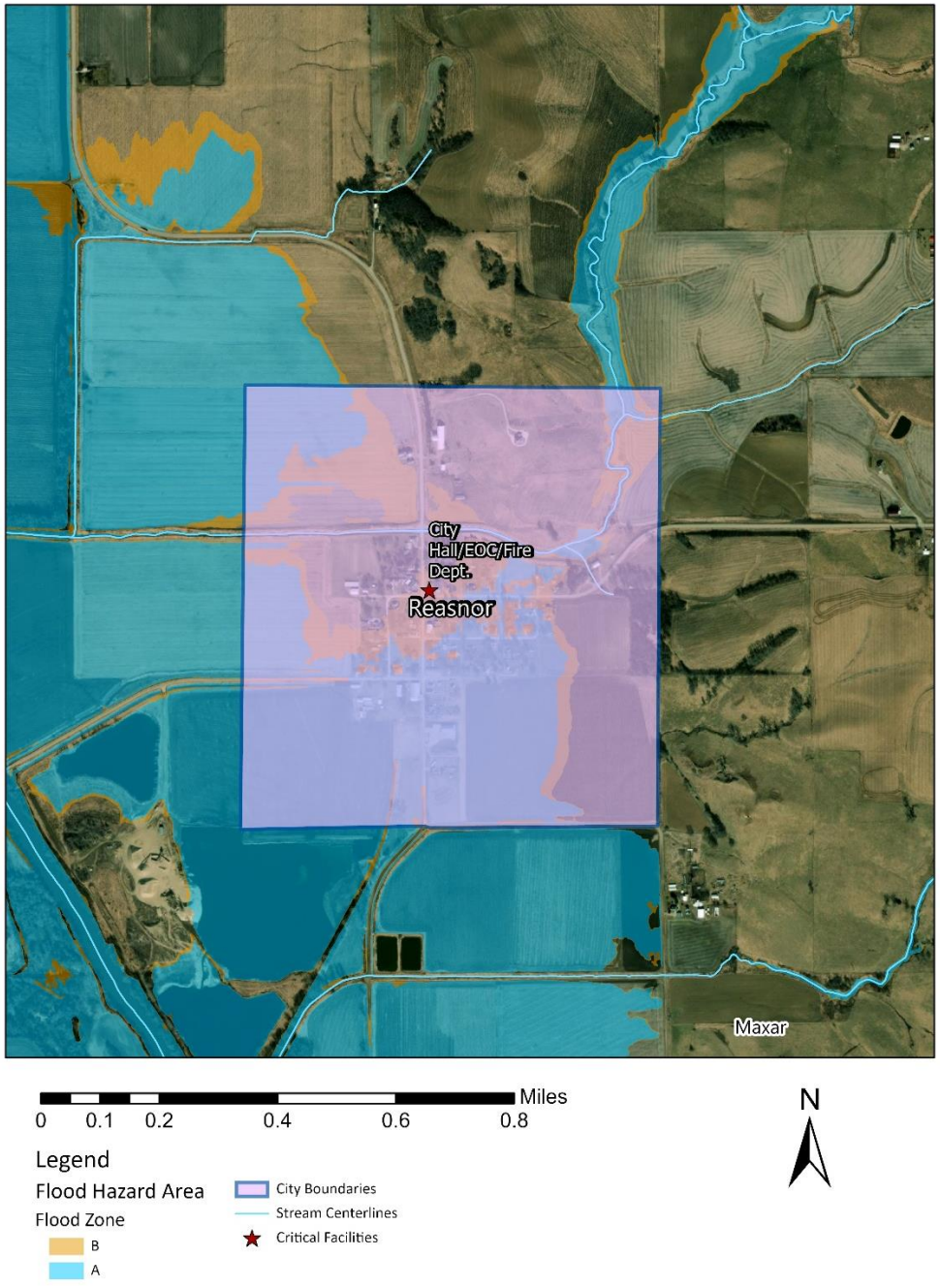
Map 41: Prairie City Critical Facilities



Reasnor Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to the residents and businesses in the community. In Reasnor, all city property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 42. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

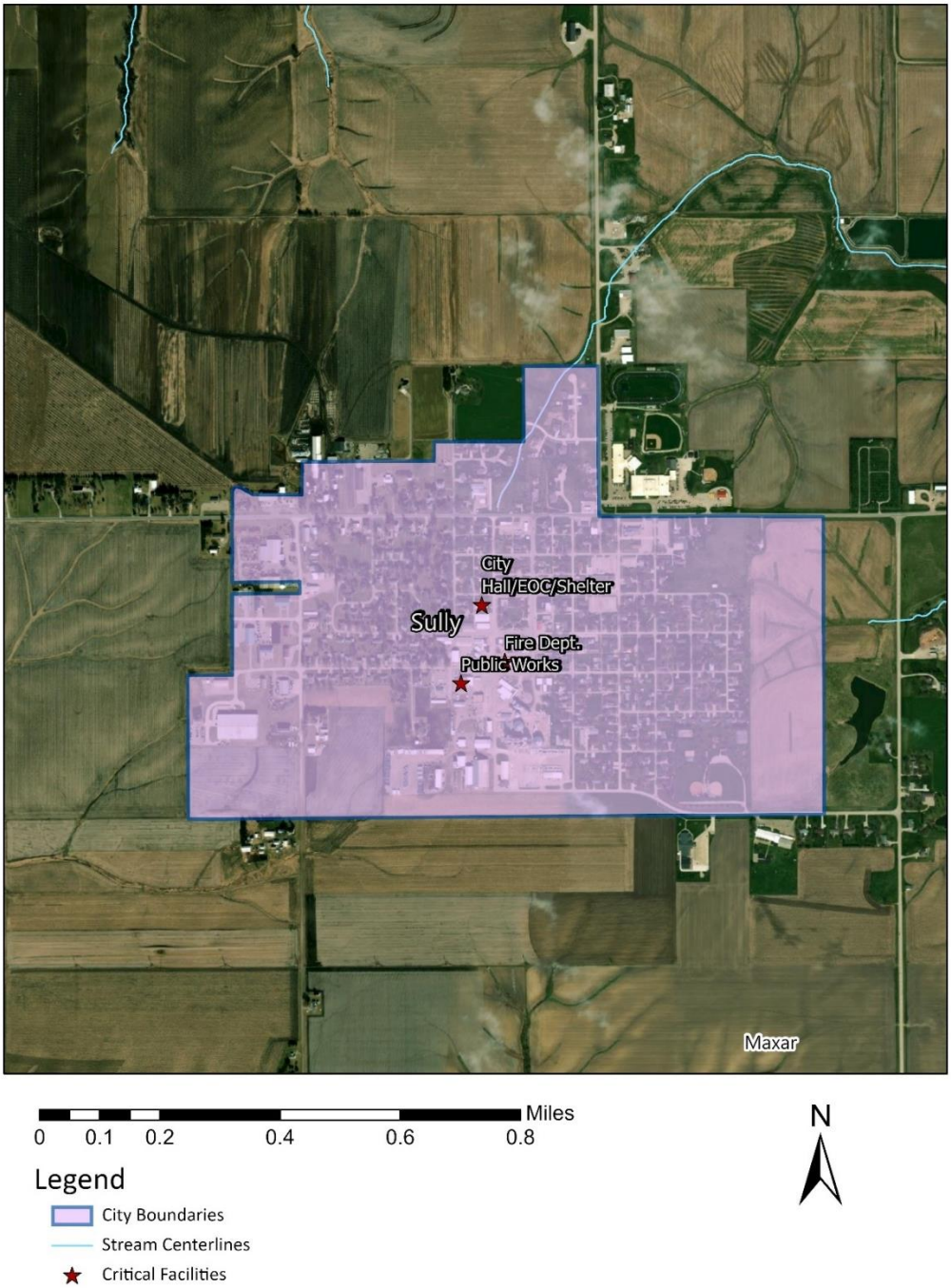
Map 42: Reasnor Critical Facilities



Sully Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to the residents and businesses in the community. In Sully, all city property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 43. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

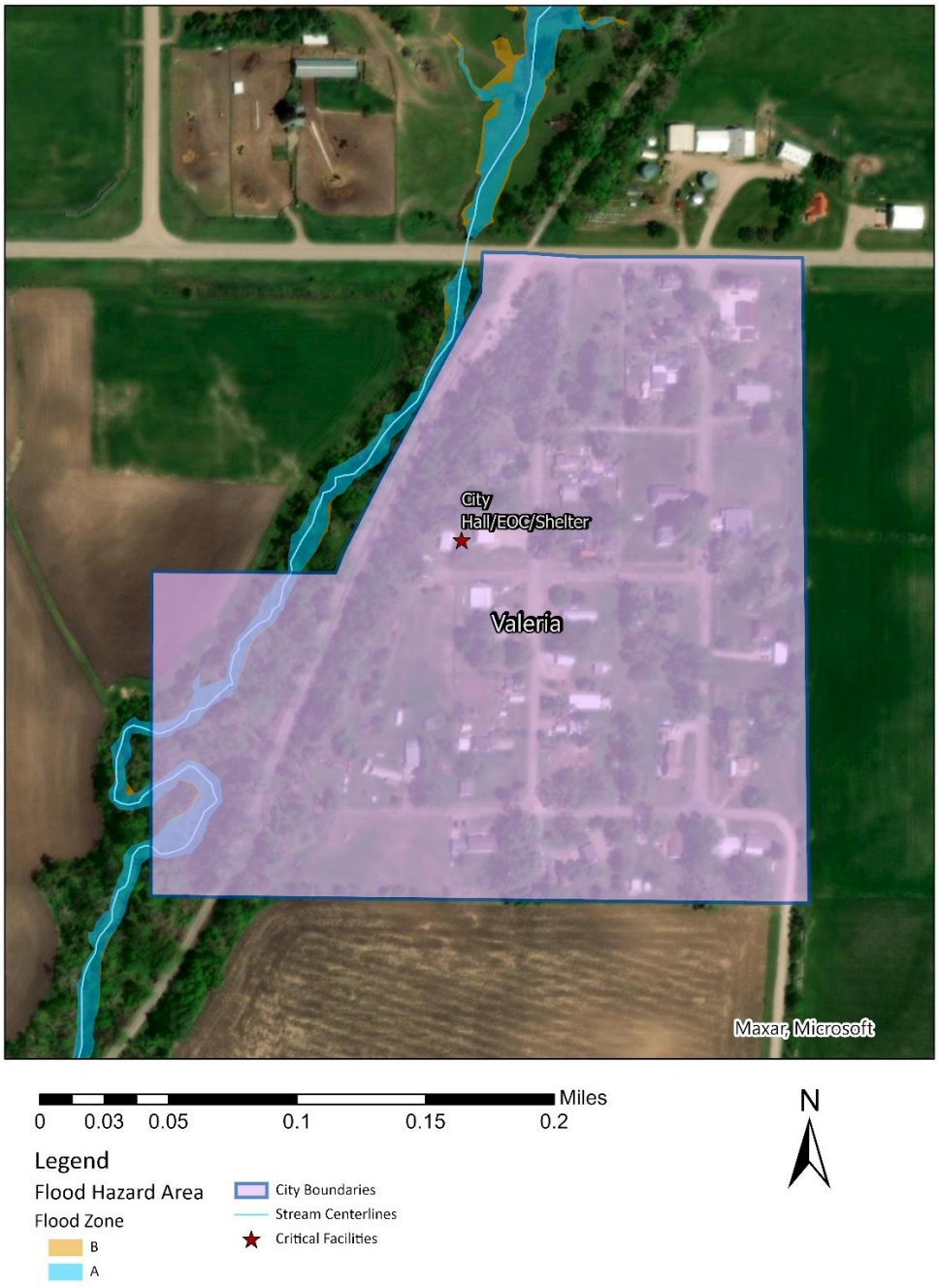
Map 43: Sully Critical Facilities



Valeria Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to the residents and businesses in the community. In Valeria, all city property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 44. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

Map 44: Valeria Critical Facilities



Baxter Community School District Critical Facilities

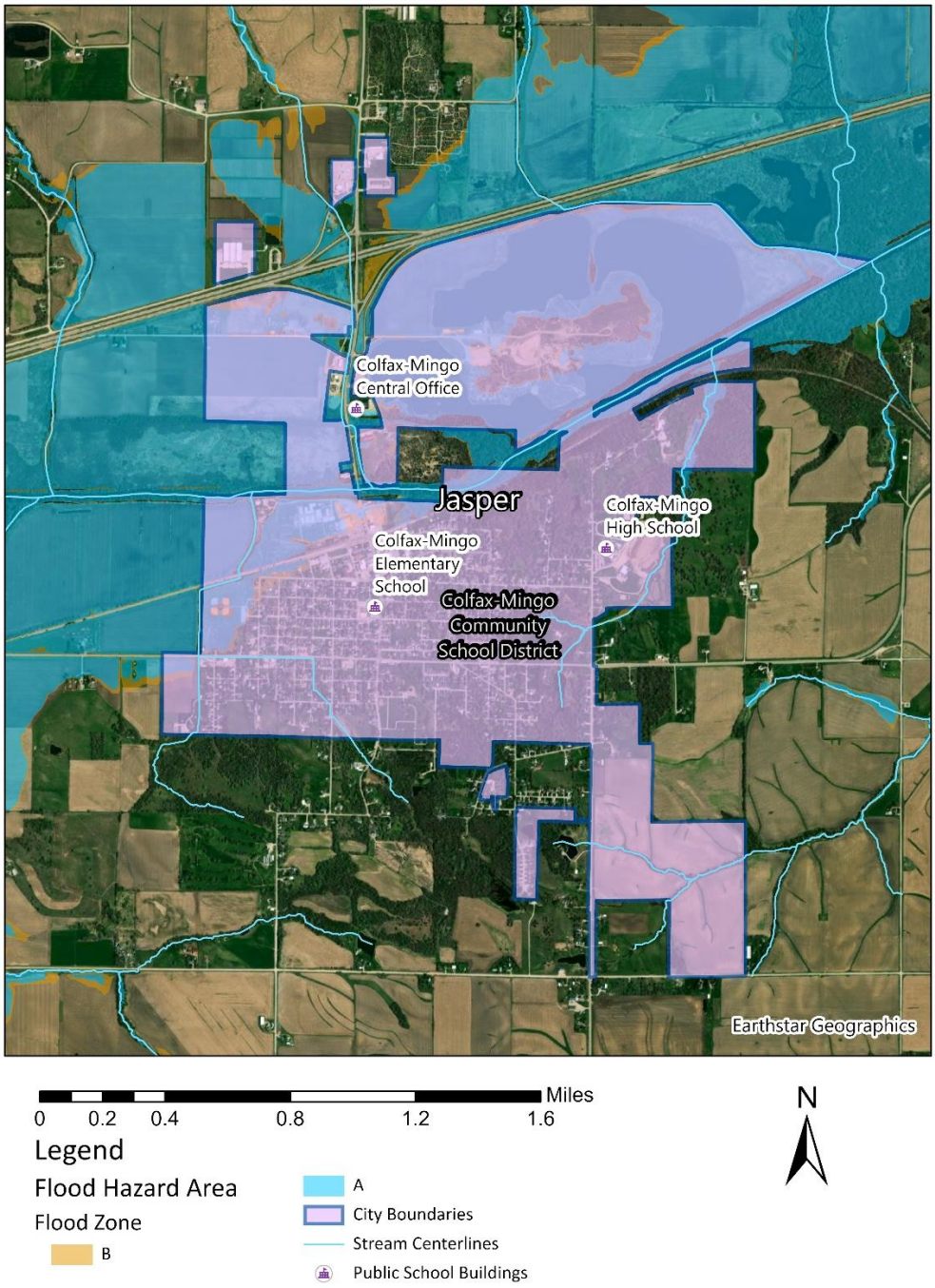
Critical facilities are the buildings, facilities, and infrastructure that provide essential services to students, staff, visitors, and the community. In a school district, all district property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 45. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

Map 45: Baxter Community School District Critical Facilities

Colfax – Mingo Community School District Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to students, staff, visitors, and the community. In a school district, all district property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 46. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

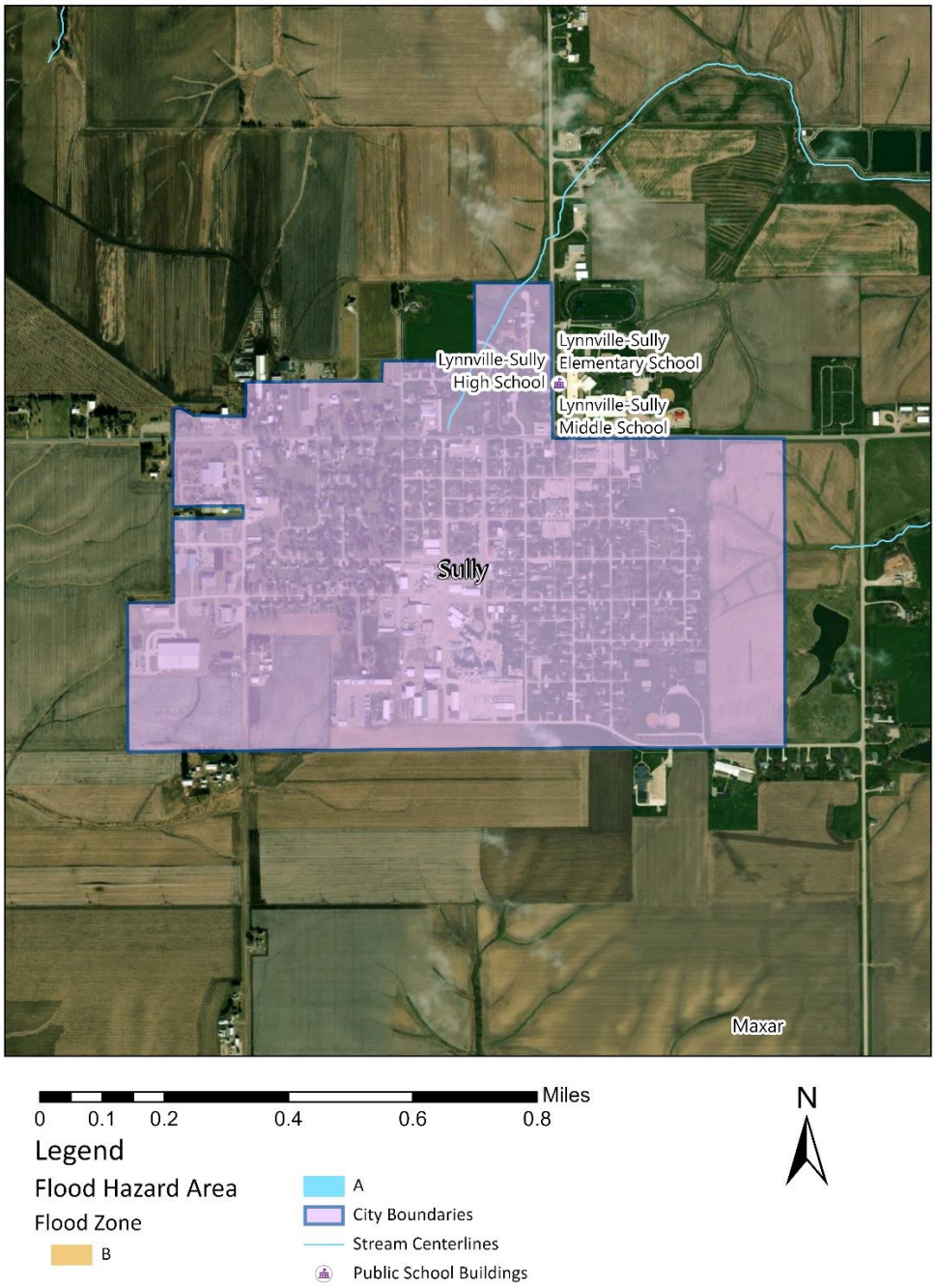
Map 46: Colfax – Mingo Community School District Critical Facilities



Lynnville – Sully Community School District Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to students, staff, visitors, and the community. In a school district, all district property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 47. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

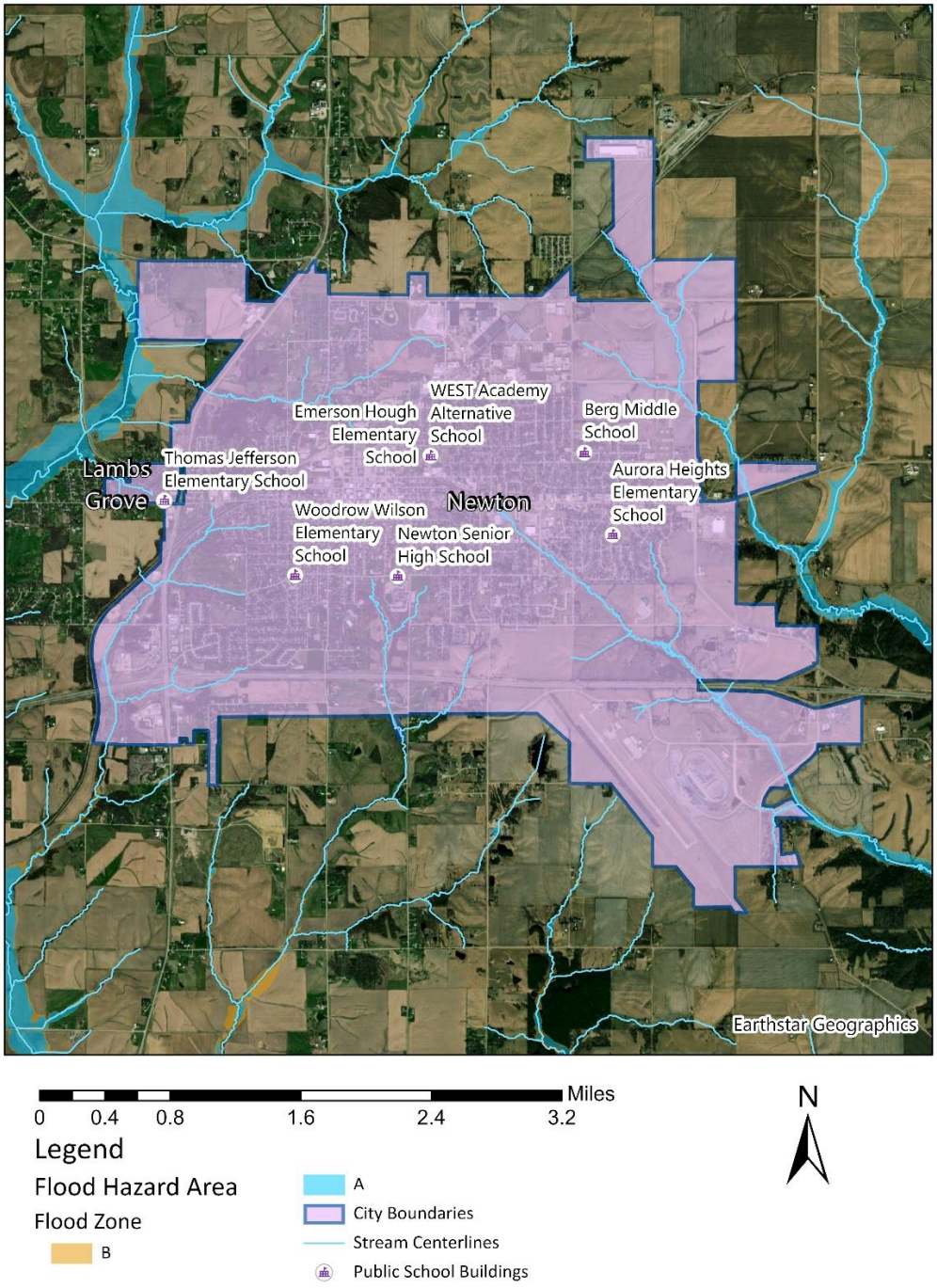
Map 47: Lynnville – Sully Community School District Critical Facilities



Newton Community School District Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to students, staff, visitors, and the community. In a school district, all district property and infrastructure are considered critical facilities. For specific critical facilities, refer to Map 48. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

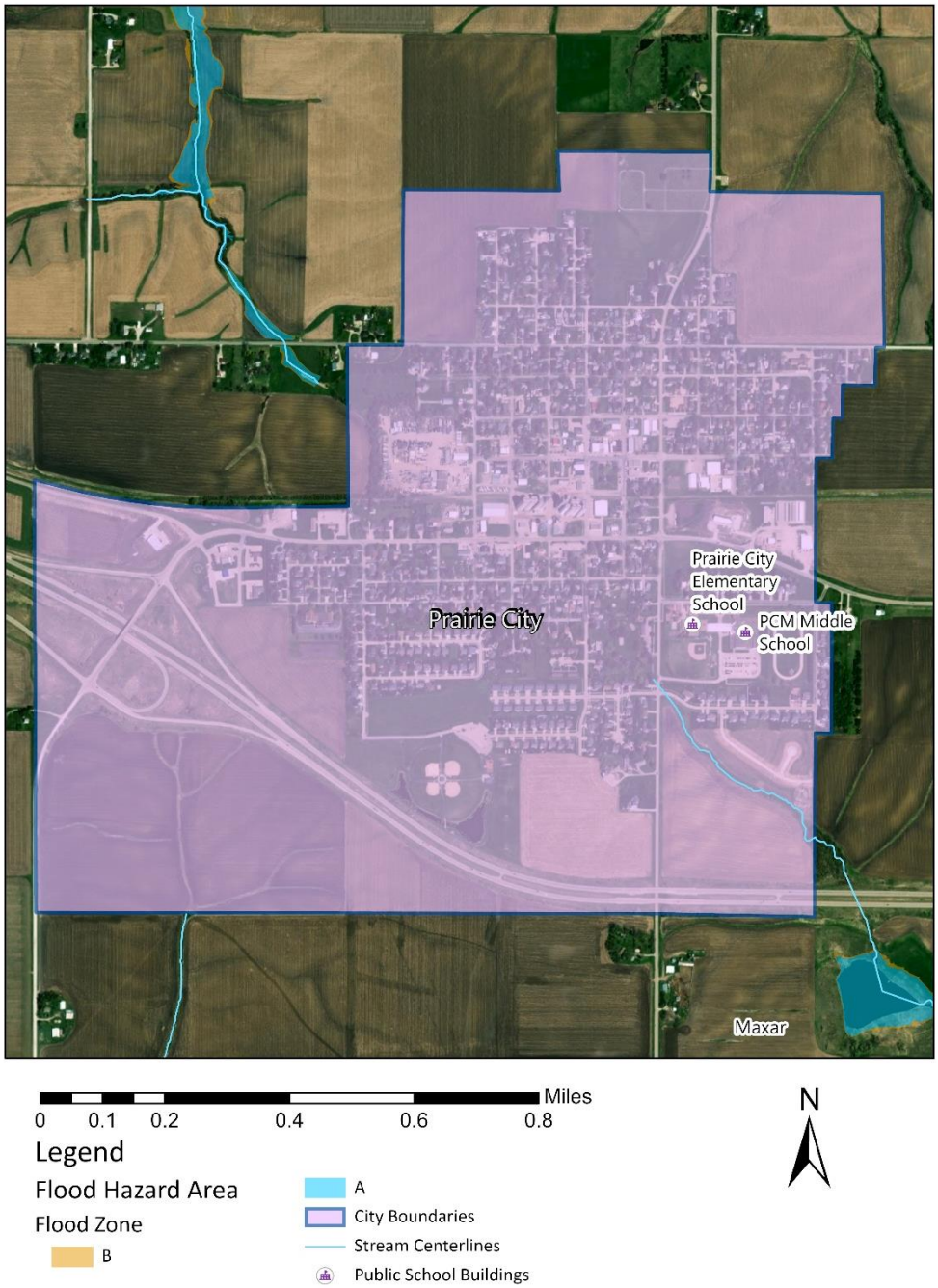
Map 48: Newton Community School District Critical Facilities



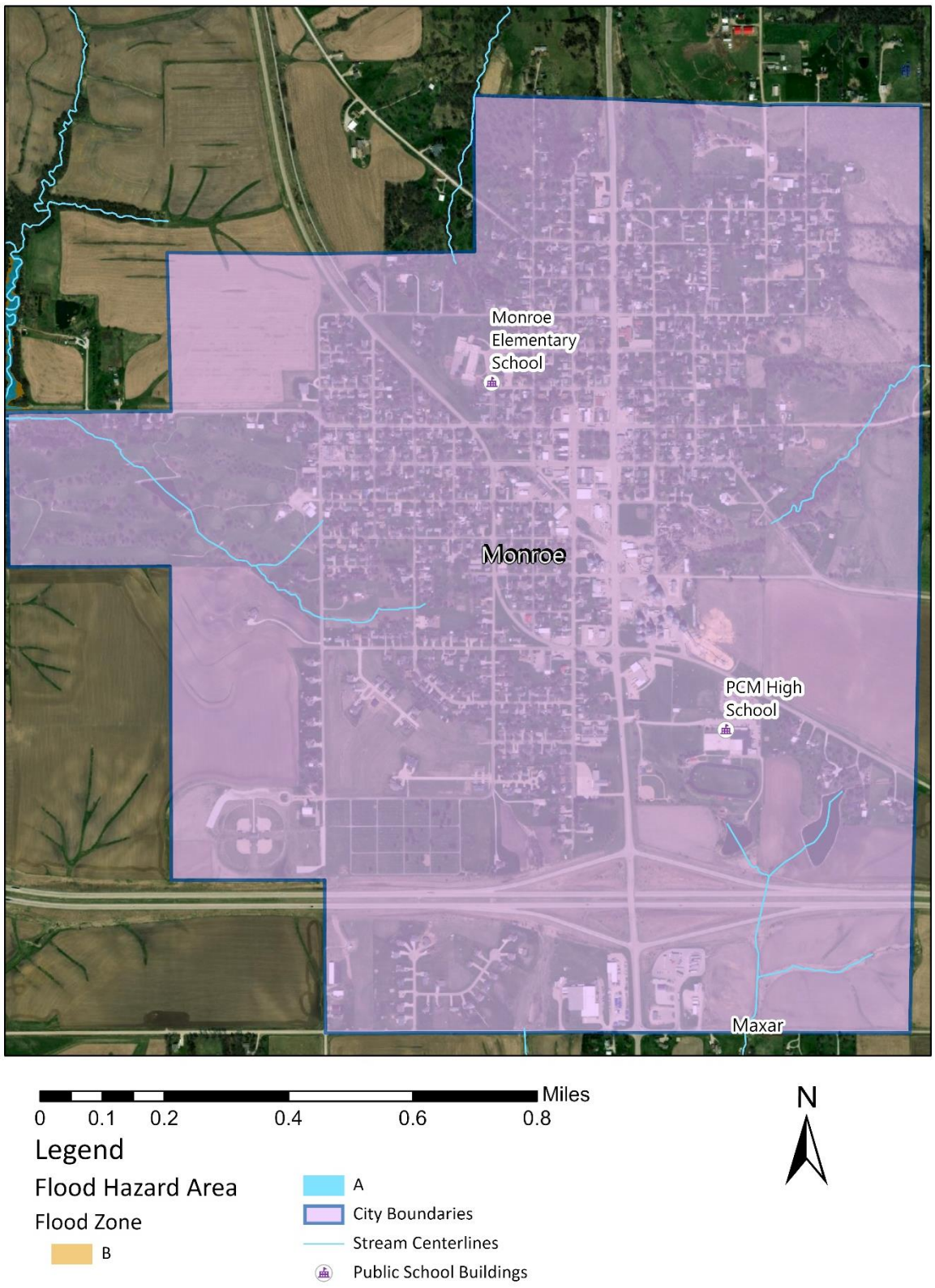
Prairie City Monroe (PCM) Community School District Critical Facilities

Critical facilities are the buildings, facilities, and infrastructure that provide essential services to students, staff, visitors, and the community. In a school district, all district property and infrastructure are considered critical facilities. For specific critical facilities, refer to Maps 49 – 50. Critical facilities are displayed relative to flood hazard zones due to the localized nature of this hazard.

Map 49: Prairie City Monroe (PCM) Community School District Critical Facilities



Map 50: Prairie City Monroe (PCM) Community School District Critical Facilities



Vulnerable Populations

Vulnerable populations are groups of people who may be especially at risk during a hazard event due to lack of mobility or extended exposure. In all communities, elderly, ill, or disabled living in their home, retirement facilities, or long-term care facilities may be vulnerable due to mobility issues or dependence on medical devices. Daycare and school facilities may also be vulnerable due to a high ratio of children to adults.

Regarding exposure, people who work outdoors or use outdoor recreation facilities are vulnerable during severe weather events. There are recreation areas, large and small, throughout Jasper County and trails that stretch for miles. Shelters are provided in most areas, but the existing shelters may not be sufficient for severe weather events.

People living in mobile homes with no nearby shelter or a home with no basement are especially at risk during severe a weather event with high winds. People living in or near flood hazards areas are also at greater risk than the general population during a flash or river flood event.

In school districts, the students, staff, and visitors who are in school facilities during school or extracurricular activities are generally considered a vulnerable population. Aside from providing an education, each district's mission is to actively prevent illness, injury, or death.

Operations and Resources

Local governments in Iowa are subject to Iowa Code, which gives the authority to protect the health, safety, and welfare of its residents and levy taxes to provide services. Participating jurisdictions have similar authority, but each jurisdiction varies in terms of size and governmental priorities. When developing a mitigation strategy in a multi-jurisdictional planning area, it is important to distinguish the variation in operations and resources among jurisdictions to ensure the mitigation strategy is feasible. In the following pages, the operations and resources are included for each participating jurisdiction in this plan.

TYPES OF OPERATIONS AND RESOURCES

- Officials, commissions, and committees
- Staff and departments
- Services provided by jurisdiction
- Contracted or agreement services
- Policies, programs, and plans
- Financial and other resources

Jasper County Operations and Resources

Jasper County has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All County operations and resources were considered throughout the plan development process to ensure the County's final mitigation strategy is feasible. See Table 55.

Table 55: Jasper County Operations and Resources

Officials, Commissions, and Committees	• Board of Supervisors* • Emergency Management Commission* • Conservation Board • Board of Health • Commission of Veterans Affairs • Animal Review Board
Staff and Departments	• Assessor* • Attorney* • Auditor • Community Development • Community Services • Conservation* • Economic Development • Elderly Nutrition* • Emergency Management* • Engineering* • GIS and Mapping Services* • Health Department* • Human Resources* • Information Technology • Maintenance • Recorder • Sheriff's Office* (includes 911 and dispatch service) • Treasurer • Veterans Affairs
County Services	• Road and bridge maintenance • Stormwater system maintenance • Snow removal • Vegetation management in public areas • Law enforcement and emergency response • Well and septic system permits • Treasurer services • Recorder services • Health and safety inspections • Website • Jasper County Alert Center

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the County's mitigation strategy.

Table 55: Jasper County Operations and Resources Continued

Contracted or Agreement Services	• Law enforcement mutual aid agreements • Fire response and rescue mutual aid agreements • Emergency medical response services • Newton Fire Department HAZMAT • Newton Sanitary Landfill • Jasper County Soil and Water Conservation District

Policies, Programs, and Plans	• Jasper County Code of Ordinances*
	• Jasper County Comprehensive Plan
	• National Flood Insurance Program*
	  ○ Floodplain Ordinance and Management Program
	  ○ Current Effective Map: 10/5/2018
	• Capital Improvement Program*
	• Jasper County Government Continuity of Operations Plan*
	• Jasper County Comprehensive Emergency Response Plan*
	• NIMS Compliant
	• Storm Spotter Program
	• Burn ban and enforcement
	• Jasper County Hazard Mitigation Plan 2022 – 2027
	• Coordinate with Iowa Department of Natural Resources
	• Coordinate with Iowa Department of Public Health

Financial and Other Resources	• County budget* • Bonds* • Grants* • Donations*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the County's mitigation strategy.

Baxter Operations and Resources

Baxter has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All City operations and resources were considered throughout the plan development process to ensure the City's final mitigation strategy is feasible. See Table 56.

Table 56: Baxter Operations and Resources

Officials, Commissions, and Committees	• Mayor* • City Council • Planning and Zoning Commission • Zoning Board of Adjustments • Library Board
Staff and Departments	• City Clerk* • Police* • Fire Department* • Emergency Services* • Public Works* • Cemetery/Parks • Library • Maintenance • Planning and Zoning
City Services	• Law enforcement and emergency response • Fire response and rescue • Emergency medical services • Street maintenance and improvements • Vegetation and tree management in public areas • Wastewater management and treatment • Stormwater management • Snow removal • Website
Contracted or Agreement Services	• Jasper County Emergency Management Commission* • Jasper County 911 and Dispatch Services • Newton Fire Department HAZMAT • Newton Sanitary Landfill • Waste and recycling hauling • Electric and natural gas service • Iowa Regional Utilities Association • Baxter Economic Development Corporation • Fire response and rescue mutual aid agreements • Emergency medical services mutual aid agreements

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Table 56: Baxter Operations and Resources Continued

Policies, Programs, and Plans	• Code of Ordinances* • Emergency Operations Plan* • Jasper County Emergency Management Plan* • Jasper County Hazard Mitigation Plan 2022 – 2027 • Coordinate with Jasper County Public Health Department • Coordinate with Iowa Department of Natural Resources
Financial and Other Resources	• City budget* • Bonds* • Grants* • Donations*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Colfax Operations and Resources

Colfax has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All City operations and resources were considered throughout the plan development process to ensure the City's final mitigation strategy is feasible. See Table 57.

Table 57: Colfax Operations and Resources

Officials, Commissions, and Committees	• Mayor* • City Council • Planning and Zoning Commission • Board of Adjustment • Library Board • Heritage Preservation Commission
Staff and Departments	• City Administrator* • City Clerk • Utility Billing Clerk • Public Works* • Fire Department • Police Department* • Code Enforcement • Parks and Recreation • Library
City Services	• Law enforcement and emergency response • Fire response and rescue • Street maintenance and improvements • Vegetation and tree management in public areas • Water service • Wastewater management and treatment • Stormwater management • Snow removal • Website
Contracted or Agreement Services	• Jasper County Emergency Management Commission* • Jasper County 911 and Dispatch Services • Newton Fire Department HAZMAT • Newton Sanitary Landfill • Waste and recycling hauling • Colfax Main Street • Electric and natural gas service • Jasper County Economic Development Corporation • Emergency medical services • Fire response and rescue mutual aid agreements

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Table 57: Colfax Operations and Resources Continued

Policies, Programs, and Plans	• Code of Ordinances*
	• National Flood Insurance Program*
	  ○ Floodplain Ordinance and Management Program
	  ○ Current Effective Map: 10/5/2018
	• Emergency Operations Plan*
	• Jasper County Comprehensive Emergency Response Plan*
	• Jasper County Hazard Mitigation Plan 2022 – 2027
	• Coordinate with Iowa Department of Natural Resources
	• Coordinate with Jasper County Health Department

Financial and Other Resources	• City budget* • Bonds* • Grants* • Donations*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Kellogg Operations and Resources

Kellogg has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All City operations and resources were considered throughout the plan development process to ensure the City's final mitigation strategy is feasible. See Table 58.

Table 58: Kellogg Operations and Resources

Officials, Commissions, and Committees	• Mayor* • City Council*
Staff and Departments	• City Clerk • Public Works* • Fire and Ambulance*
City Services	• Street maintenance and improvements • Vegetation and tree management in public areas • Wastewater management and treatment • Stormwater management • Water service • Fire response and rescue • Emergency medical services • Snow removal
Contracted or Agreement Services	• Jasper County Emergency Management Commission* • Newton Fire Department HAZMAT • Newton Sanitary Landfill • Waste and recycling hauling • Jasper County Sheriff • Jasper County provides building code enforcement services • Jasper County Animal Control • Electric and natural gas service • Fire response and rescue mutual aid agreements • Emergency medical services mutual aid agreements

Policies, Programs, and Plans	• Code of Ordinances*
	• National Flood Insurance Program*
	  ○ Floodplain Ordinance and Management Program
	  ○ Current Effective Map: 10/5/2018
	• Jasper County Comprehensive Emergency Response Plan*
	• Jasper County Hazard Mitigation Plan 2022 – 2027
	• Coordinate with Iowa Department of Natural Resources
	• Coordinate with Jasper County Health Department

Financial and Other Resources	• City budget* • Bonds* • Grants* • Donations*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Lambs Grove Operations and Resources

Lambs Grove has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All City operations and resources were considered throughout the plan development process to ensure the City's final mitigation strategy is feasible. See Table 59.

Table 59: Lambs Grove Operations and Resources

Officials, Commissions, and Committees	• Mayor* • City Council*
Staff and Departments	• City Clerk
City Services	• Street maintenance and improvements • Stormwater management • Website
Contracted or Agreement Services	• Jasper County Emergency Management Agency* • Jasper County Sheriff • Newton Fire Department and Ambulance Service • Newton Fire Department HAZMAT • Newton water and wastewater • Newton Sanitary Landfill • Waste and recycling hauling • Electric and natural gas service • Fire response and rescue mutual aid agreements
Policies, Programs, and Plans	• City Ordinances* • Jasper County Comprehensive Emergency Response Plan* • Jasper County Hazard Mitigation Plan 2022 – 2027 • Coordinate with Iowa Department of Natural Resources • Coordinate with Jasper County Health Department
Financial and Other Resources	• City budget* • Bonds* • Grants* • Donations*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Lynnville Operations and Resources

Lynnville has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All City operations and resources were considered throughout the plan development process to ensure the City's final mitigation strategy is feasible. See Table 60.

Table 60: Lynnville Operations and Resources

Officials, Commissions, and Committees	• Mayor • City Council* • Chamber of Commerce
Staff and Departments	• City Clerk* • Public Works • Fire Department • Library
City Services	• Fire response and rescue • Street maintenance and improvements • Vegetation and tree management in public areas • Water service (purchased from IRUA) • Wastewater management and treatment • Stormwater management • Website
Contracted or Agreement Services	• Jasper County Emergency Management Commission* • Jasper County Sheriff • Newton Fire Department HAZMAT • Iowa Rural Utilities Association (IRUA) • Newton Sanitary Landfill • Waste and recycling hauling • Electric and natural gas service • Emergency medical services • Fire response and rescue mutual aid agreements

Policies, Programs, and Plans	• Code of Ordinances*
	• National Flood Insurance Program*
	  ○ Floodplain Ordinance and Management Program
	  ○ Current Effective Map: 10/5/2018
	• Jasper County Comprehensive Emergency Response Plan*
	• Jasper County Hazard Mitigation Plan 2022 – 2027
	• Coordinate with Iowa Department of Natural Resources
	• Coordinate with Jasper County Health Department

Financial and Other Resources	• City budget* • Bonds* • Grants* • Donations*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Mingo Operations and Resources

Baxter has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All City operations and resources were considered throughout the plan development process to ensure the City's final mitigation strategy is feasible. See Table 61.

Table 61: Mingo Operations and Resources

Officials, Commissions, and Committees	• Mayor* • City Council
Staff and Departments	• City Clerk* • Public Works • Parks and Recreation • Fire Department* • Library
City Services	• Fire response and rescue • Street maintenance and improvements • Vegetation and tree management in public areas • Water service (purchased from IRUA) • Wastewater management and treatment • Stormwater management • Snow removal • Community Center • Website
Contracted or Agreement Services	• Jasper County Emergency Management Commission* • Jasper County Sheriff • Newton Fire Department HAZMAT • Newton Sanitary Landfill • Waste and recycling hauling • Iowa Rural Utilities Association • Mingo Economic Development Corporation (MEDCO) • Jasper County assists with development review • Electric and natural gas service • Emergency medical services • Fire response and rescue mutual aid agreements

Policies, Programs, and Plans	• Code of Ordinances*
	• National Flood Insurance Program*
	  ○ Floodplain Ordinance and Management Program
	  ○ Current Effective Map: 10/5/2018
	• Operations Plan*
	• Jasper County Comprehensive Emergency Response Plan*
	• Jasper County Hazard Mitigation Plan 2022 – 2027
	• Coordinate with Iowa Department of Natural Resources
	• Coordinate with Jasper County Health Department

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Table 61: Mingo Operations and Resources Continued

Financial and Other Resources	• City budget* • Bonds* • Grants* • Donations*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Monroe Operations and Resources

Monroe has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All City operations and resources were considered throughout the plan development process to ensure the City's final mitigation strategy is feasible. See Table 62.

Table 62: Monroe Operations and Resources

Officials, Commissions, and Committees	• Mayor • City Council • Planning and Zoning Commission • Board of Adjustment
Staff and Departments	• City Clerk/Administrator* • Utility Billing Clerk • Public Works • Fire Department • Police Department • Library • Cemetery
City Services	• Law enforcement and emergency response • Fire response and rescue • Street maintenance and improvements • Vegetation and tree management in public areas • Water service (purchased from IRUA) • Wastewater management and treatment • Stormwater management • Snow removal • Website
Contracted or Agreement Services	• Jasper County Emergency Management Commission* • Newton Fire Department HAZMAT • Newton Sanitary Landfill • Waste and recycling hauling • Iowa Regional Utilities Association • Electrical and natural gas service • Emergency medical services • Fire response and rescue mutual aid agreements • Law enforcement and emergency response mutual aid agreements

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Table 62: Monroe Operations and Resources

Policies, Programs, and Plans	• Code of Ordinances*
	• National Flood Insurance Program*
	  ○ Floodplain Ordinance
	  ○ Current Effective Map: 10/5/2018

	• Jasper County Comprehensive Emergency Response Plan* • Jasper County Hazard Mitigation Plan 2022 – 2027 • Coordinate with Iowa Department of Natural Resources • Coordinate with Jasper County Health Department
Financial and Other Resources	• City budget* • Bonds* • Grants* • Donations*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Newton Operations and Resources

Newton has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All City operations and resources were considered throughout the plan development process to ensure the City's final mitigation strategy is feasible. See Table 63.

Table 63: Newton Operations and Resources

Officials, Commissions, and Committees	• Mayor* • City Council* • Animal Review Committee • Building Trades Board • Civil Service Commission • Downtown Grant Review Board • Downtown Newton Self-Supported Municipal Improvement District Board • Historic Preservation Commission • Library Board of Trustees • Park Board • Planning and Zoning Commission • Zoning Board of Adjustment • Water Board
Staff and Departments	• Administration* • Community Development • Community Services • Fire Department* • Library • Parks and Recreation • Police Department* • Public Works* • WaterWorks • Newton Sanitary Landfill • Airport
City Services	• Fire response and rescue • Law enforcement and emergency response • Emergency medical services • Street maintenance and improvements • Vegetation and tree management in public areas • Water service • Wastewater management and treatment • Stormwater management • Snow removal • Website

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Table 63: Newton Operations and Resources Continued

Contracted or Agreement Services	• Jasper County Emergency Management Commission* • Waste and recycling hauling • Electric and natural gas service • Fire response mutual aid agreements • Law enforcement and emergency response mutual aid agreements • Emergency medical service mutual aid agreements

Policies, Programs, and Plans	• Code of Ordinances*
	• Newton's Future: A Comprehensive Plan 2018*
	• National Flood Insurance Program*
	  ○ Floodplain Ordinance and Management Program
	  ○ Current Effective Map: 10/5/2018
	• Jasper County Comprehensive Emergency Response Plan*
	• Jasper County Hazard Mitigation Plan 2022 – 2027
	• Coordinate with Iowa Department of Natural Resources
	• Coordinate with Jasper County Health Department

Financial and Other Resources	• City budget* • Bonds* • Grants* • Donations*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Oakland Acres Operations and Resources

Oakland Acres has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All City operations and resources were considered throughout the plan development process to ensure the City's final mitigation strategy is feasible. See Table 64.

Table 64: Oakland Acres Operations and Resources

Officials, Commissions, and Committees	• Mayor* • City Council* • Planning and Zoning Commission
Staff and Departments	• City Clerk • Maintenance
City Services	• Street maintenance and improvements • Vegetation and tree management in public areas • Stormwater management • Website
Contracted or Agreement Services	• Jasper County Emergency Management Commission* • Jasper County Sheriff • Grinnell Fire Department • Newton Sanitary Landfill • Waste and recycling hauling • Iowa Rural Utilities Association • Electric and natural gas service • Emergency medical services • Snow removal
Policies, Programs, and Plans	• Code of Ordinances* • Jasper County Comprehensive Emergency Response Plan* • Jasper County Hazard Mitigation Plan 2022 – 2027 • Coordinate with Iowa Department of Natural Resources • Coordinate with Jasper County Health Department
Financial and Other Resources	• City budget* • Bonds* • Grants* • Donations*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Prairie City Operations and Resources

Prairie City has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All City operations and resources were considered throughout the plan development process to ensure the City's final mitigation strategy is feasible. See Table 65.

Table 65: Prairie City Operations and Resources

Officials, Commissions, and Committees	• Mayor* • City Council* • Planning and Zoning Commission • Board of Adjustment • Economic Development Commission • Library Board • Park Board • Community Celebration Commission
Staff and Departments	• City Clerk and Financial Officer* • Fire Department* • Police Department* • Emergency Medical Services • Public Works • Parks and Recreation • Library • Cemetery
City Services	• Law enforcement and emergency response • Fire response • Emergency medical services • Street maintenance and improvements • Vegetation and tree management in public areas • Water service • Wastewater management and treatment • Stormwater management • Snow removal • Website
Contracted or Agreement Services	• Jasper County Emergency Management Commission* • Newton Sanitary Landfill • Newton Fire Department HAZMAT • Waste and recycling hauling • Jasper County Animal Control • Law enforcement and emergency response mutual aid agreements • Fire response mutual aid agreements • Emergency medical service mutual aid agreements • Electric and natural gas service

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Table 65: Prairie City Operations and Resources Continued

Policies, Programs, and Plans	• Code of Ordinances*
	• Prairie City Five Year Strategic Plan 2019 – 2024*
	• Prairie City Comprehensive Plan
	• National Flood Insurance Program*
	  ○ Floodplain Ordinance and Management Plan
	  ○ Current Effective Map: 10/5/2018
	• Well Head Resource Protection Plan*
	• Jasper County Comprehensive Emergency Response Plan*
	• Jasper County Hazard Mitigation Plan 2022 – 2027
	• Coordinate with Iowa Department of Natural Resources
	• Coordinate with Jasper County Health Department

Financial and Other Resources	• City budget* • Bonds* • Grants* • Donations*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Reasnor Operations and Resources

Reasnor has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All City operations and resources were considered throughout the plan development process to ensure the City's final mitigation strategy is feasible. See Table 66.

Table 66: Reasnor Operations and Resources

Officials, Commissions, and Committees	• Mayor* • City Council*
Staff and Departments	• City Clerk • Public Works • Fire Department*
City Services	• Street maintenance and improvements • Vegetation and tree management in public areas • Wastewater management and treatment • Stormwater management • Snow removal
Contracted or Agreement Services	• Jasper County Emergency Management Commission* • Newton Sanitary Landfill • Jasper County Sheriff • Iowa Regional Utilities Association (IRUA) • Electric and natural gas service • Emergency medical services • Fire response and rescue mutual aid agreements

Policies, Programs, and Plans	• Code of Ordinances*
	• National Flood Insurance Program*
	  ○ Floodplain Ordinance and Management Program
	  ○ Current Effective Map: 10/5/2018
	• Jasper County Comprehensive Emergency Response Plan*
	• Jasper County Hazard Mitigation Plan 2022 – 2027
	• Coordinate with Iowa Department of Natural Resources
	• Coordinate with Jasper County Health Department

Financial and Other Resources	• City budget* • Bonds* • Grants* • Donations*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Sully Operations and Resources

Sully has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All City operations and resources were considered throughout the plan development process to ensure the City's final mitigation strategy is feasible. See Table 67.

Table 67: Sully Operations and Resources

Officials, Commissions, and Committees	• Mayor* • City Council* • Zoning Board of Adjustment
Staff and Departments	• City Clerk • Public Works • Fire and Ambulance Department • Airport
City Services	• Street maintenance and improvements • Vegetation and tree management in public areas • Wastewater management and treatment • Stormwater management • Snow removal • Newton Sanitary Landfill • Electric and natural gas service • Website
Contracted or Agreement Services	• Jasper County Emergency Management Commission* • Jasper County Sheriff • Iowa Rural Water Association • Newton Sanitary Landfill • Waste and recycling hauling • Electric and natural gas service • Fire response and rescue mutual aid agreements • Emergency medical services mutual aid agreements
Policies, Programs, and Plans	• Code of Ordinances* • Jasper County Comprehensive Emergency Response Plan* • Jasper County Hazard Mitigation Plan 2022 – 2027 • Coordinate with Iowa Department of Natural Resources • Coordinate with Jasper County Health Department
Financial and Other Resources	• City budget* • Bonds* • Grants* • Donations*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Valeria Operations and Resources

Valeria has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All City operations and resources were considered throughout the plan development process to ensure the City's final mitigation strategy is feasible. See Table 68.

Table 68: Valeria Operations and Resources

Officials, Commissions, and Committees	• Mayor* • City Council
Staff and Departments	• City Clerk
City Services	• Wastewater management and treatment • Social media page
Contracted or Agreement Services	• Jasper County Emergency Management Commission* • Jasper County Sheriff • Mingo Fire Department • Emergency medical services • Newton Sanitary Landfill • Waste and recycling hauling services • Electric and natural gas service • Iowa Regional Utilities Association (IRUA) • Street maintenance and improvements • Snow removal
Policies, Programs, and Plans	• Code of Ordinances • Jasper County Comprehensive Emergency Response Plan* • Valeria Emergency Plan* • Jasper County Hazard Mitigation Plan 2022 – 2027 • Coordinate with Iowa Department of Natural Resources • Coordinate with Jasper County Health Department
Financial and Other Resources	• City Budget* • Bonds* • Grants* • Donations*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the City's mitigation strategy.

Baxter Community School District Operations and Resources

The Baxter Community School District has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All District operations and resources were considered throughout the plan development process to ensure the District's final mitigation strategy is feasible. See Table 69.

Table 69: Baxter Community School District Operations and Resources

Officials, Commissions, and Committees	• School Board
Staff and Departments	• Superintendent* • Elementary Principal • Secondary School Principal • Academics • Maintenance • Food Service • Special Education • Technology • Transportation • Nurse • Counseling • Athletics
District Services	• Education • Sports and activities • Building maintenance and improvements • Grounds maintenance • Transportation • Health and counseling service • Food service • Mass notification system • Website
Contracted, Agreement, or Local Municipal Services	• Law enforcement and emergency response • Fire response and rescue • Emergency medical services • Water • Wastewater • District wide street maintenance, improvements, and snow removal
Policies, Programs, and Plans	• School Board Policy • Emergency plans and drills* • CPR and blood borne pathogen training • Coordinate with Jasper County Public Health Department • Coordinate with Jasper County Emergency Management • Jasper County Hazard Mitigation Plan 2022 – 2027*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the District's mitigation strategy.

Table 69: Baxter Community School District Operations and Resources Continued

Financial and Other Resources	• District budget* • Bonds* • Grants* • Donations* • Fundraisers*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the District's mitigation strategy.

Colfax – Mingo Community School District Operations and Resources

The Colfax – Mingo Community School District has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All District operations and resources were considered throughout the plan development process to ensure the District's final mitigation strategy is feasible. See Table 70.

Table 70: Colfax – Mingo Community School District Operations and Resources

Officials, Commissions, and Committees	• School Board
Staff and Departments	• Superintendent* • Elementary Principal • Junior/Senior High School Principal • Academics • Athletics • Business Services • Counseling • Health Services • Nutrition • Operations and Maintenance • Social Media and Website Development • Special Education • Technology • Transportation
District Services	• Education • Sports and activities • Building maintenance and improvements • Grounds maintenance • Health and counseling service • Food service • Mass notification system • Website
Contracted, Agreement, or Local Municipal Services	• Transportation • Law enforcement and emergency response • Fire response and rescue • Emergency medical services • Water • Wastewater • District wide street maintenance, improvements, and snow removal

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the District's mitigation strategy.

Table 70: Colfax – Mingo Community School District Operations and Resources Continued

Policies, Programs, and Plans	• School Board Policy • Emergency plans and drills* • CPR and blood borne pathogen training • Coordinate with Jasper County Public Health Department • Coordinate with Jasper County Emergency Management • Jasper County Hazard Mitigation Plan 2022 – 2027*
Financial and Other Resources	• District budget* • Bonds* • Grants* • Donations* • Fundraisers*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the District's mitigation strategy.

Lynnville – Sully Community School District Operations and Resources

The Lynnville – Sully Community School District has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All District operations and resources were considered throughout the plan development process to ensure the District's final mitigation strategy is feasible. See Table 71.

Table 71: Lynnville – Sully Community School District Operations and Resources

Officials, Commissions, and Committees	• School Board
Staff and Departments	• Superintendent* • Elementary Principal • Middle School Principal • High School Principal • Education • Transportation • Maintenance • Food Service
District Services	• Education • Sports and activities • Building maintenance and improvements • Grounds maintenance • Transportation • Health and counseling service • Food service • Mass notification system • Website
Contracted, Agreement, or Local Municipal Services	• Law enforcement and emergency response • Fire response and rescue • Emergency medical services • Water • Wastewater • District wide street maintenance, improvements, and snow removal
Policies, Programs, and Plans	• School Board Policy • Emergency plans and drills* • CPR and blood borne pathogen training • Coordinate with Jasper County Public Health Department • Coordinate with Jasper County Emergency Management • Jasper County Hazard Mitigation Plan 2022 – 2027*
Financial and Other Resources	• District budget* • Bonds* • Grants* • Donations* • Fundraisers*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the District's mitigation strategy.

Newton Community School District Operations and Resources

The Newton Community School District has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All District operations and resources were considered throughout the plan development process to ensure the District's final mitigation strategy is feasible. See Table 72.

Table 72: Newton Community School District Operations and Resources

Officials, Commissions, and Committees	• School Board
Staff and Departments	• Superintendent* • Elementary Principals • High School Principal • Middle School Principal • Administration • Business Office • Educational Services • Food Service • Human Resources • Maintenance • Technology • Transportation
District Services	• Education • Sports and activities • Building maintenance and improvements • Grounds maintenance • Transportation • Health and counseling service • Food service • Mass notification system • Website
Contracted, Agreement, or Local Municipal Services	• Law enforcement and emergency response • Fire response and rescue • Emergency medical services • Water • Wastewater • District wide street maintenance, improvements, and snow removal
Policies, Programs, and Plans	• School Board Policy • Emergency plans and drills* • CPR and blood borne pathogen training • Coordinate with Jasper County Public Health Department • Coordinate with Jasper County Emergency Management • Jasper County Hazard Mitigation Plan 2022 – 2027*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the District's mitigation strategy.

Table 72: Newton Community School District Operations and Resources Continued

Financial and Other Resources	• District Budget* • Bonds* • Grants* • Donations* • Fundraisers*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the District's mitigation strategy.

Prairie City Monroe (PCM) Community School District Operations and Resources

The Prairie City Monroe (PCM) Community School District has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All District operations and resources were considered throughout the plan development process to ensure the District's final mitigation strategy is feasible. See Table 73.

Table 73: PCM Community School District Operations and Resources

Officials, Commissions, and Committees	• School Board • Facilities Committee
Staff and Departments	• Superintendent • High School Principal • Middle School Principal • Elementary School Principals • Business Office • Curriculum, Instruction, Assessment • Health Services • Nutrition • Student Services • Superintendent's Office • Technology • Transportation
District Services	• Education • Sports and activities • Building maintenance and improvements • Grounds maintenance • Transportation • Health and counseling service • Food service • Mass notification system • Website
Contracted, Agreement, or Local Municipal Services	• Law enforcement and emergency response • Fire response and rescue • Emergency medical services • Water • Wastewater • District wide street maintenance, improvements, and snow removal

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the District's mitigation strategy.

Table 73: PCM Community School District Operations and Resources Continued

Policies, Programs, and Plans	• School Board Policy • Emergency plans and drills* • CPR and blood borne pathogen training • Coordinate with Jasper County Public Health Department • Coordinate with Jasper County Emergency Management • Jasper County Hazard Mitigation Plan 2022 – 2027*
Financial and Other Resources	• District Budget* • Bonds* • Grants* • Donations* • Fundraisers*

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the District's mitigation strategy.

Progress Update

For jurisdictions with existing hazard mitigation plans, it is important to document the mitigation actions that have been completed since the plan was adopted. The jurisdictions that participated in the previously approved plan completed mitigation actions that significantly reduce the risk of high priority hazards in the community.

The following section provides an update on the completed mitigation actions. A table is included that displays information about the action, hazard(s) addressed, goal(s) addressed, whether the action was included in the previous plan, and notes on the work completed. Actions that were included in the previous plan are indicated with an "X" in the corresponding column. The absence of "X" indicates a mitigation action that was undertaken but not specifically referenced in the previous hazard mitigation plan. Generally, in a jurisdiction's progress update, the mitigation actions that were included in the previous hazard mitigation plan show a commitment to and documented progress toward completing mitigation actions.

It should be noted that although a mitigation action may be included in a jurisdiction's progress update as a completed mitigation action, the mitigation action may not necessarily be excluded from the jurisdiction's updated mitigation strategy in this plan. The majority of hazard mitigation actions are ongoing in nature, as risk and vulnerability change throughout a jurisdiction. In addition, the majority of mitigation actions require multiple projects over a span of time that extends beyond the five-year life of a hazard mitigation plan, which is often due to the cost of completing large or multi-stage mitigation actions.

Jasper County Progress Update

Jasper County has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate Jasper County's general commitment and progress toward mitigating or reducing the risk of hazards in the county. Refer to Table 74.

Table 74: Jasper County Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Educate the public about hazards that can impact Jasper County	All hazards	1, 2, 4	X	This mitigation action summarizes multiple mitigation actions in the 2016 – 2021 plan that involve public education about hazards. Jasper County Conservation has developed youth education programming for severe weather, flooding, water quality, and prairie habitat. Jasper County Emergency Management promotes the Alert Iowa notification system, pushes necessary notifications through the system, and posts weather and hazard-related information on social media.
Implement floodplain management program	Flood	1, 2, 3	X	The County's floodplain ordinance was updated in 2020. The 2016 – 2017 plan included additional mitigation actions related to continuing participation in the National Flood Insurance Program (NFIP). NFIP participation is ongoing. This mitigation action will be included in the County's operations and resources.

Table 74: Jasper County Mitigation Actions Update Continued

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Conduct studies of streams related to bridge construction	Flood	1, 2, 3	X	The County is strategically closing bridges to study and/or replace due to general safety and flood hazard risks. The County developed and continues to follow a Scour Action Plan to inspect bridges following a flood event.
Incorporate flood mitigation measures into bridge and road construction	Flood	1, 2, 3	X	Seven bridges are replaced each year, and new bridges are built to withstand a 50 – 100-year storm. The County has 116 bridges to maintain.
Establish redundancy in communications systems	Tornado and Windstorm, Thunderstorm, Lightning, and Hail, Severe Winter Storm, Infrastructure Failure	1, 2, 3, 4	X	Standby generators were installed at communication tower sites, and maintenance and fueling agreements were updated. Infrastructure at sites was replaced or hardened to withstand severe weather. Dispatch consoles were upgraded to allow redundant access to the dispatch and radio system. A generator was added to the courthouse to provide backup power to servers.
Construct tornado shelter in county facilities	Tornado and Windstorm, Thunderstorm, Lightning, and Hail	1, 2, 3	X	No mitigation action progress to report. This mitigation action summarizes multiple mitigation actions in the 2016 – 2021 plan. The local planning committee decided to remove the mitigation actions because a construction project of this type and magnitude was not considered necessary or feasible. County facilities have designated areas for staff during severe weather.
Continue snow removal program	Severe Winter Storm	1, 2, 3	X	Snow removal is ongoing This mitigation action will be included in operations and resources.

Baxter Progress Update

Baxter has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate Baxter's general commitment and progress toward mitigating or reducing the risk of hazards in the city. Refer to Table 75.

Table 75: Baxter Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Establish hazard mitigation section in library	All hazards	1, 2, 4	X	The City provides hazard-related information to the public via social media and coordinates communication and public education with Jasper County Emergency Management. This mitigation action will be updated in this plan to a broad public education mitigation action for all hazards.
Establish 28E Agreement for building development permitting and inspection	All hazards	1, 2, 3, 4	X	A 28E Agreement with Jasper County has been established, and they provide permitting and inspection services.
Identify property vulnerable to hazard damage	Tornado/Windstorm	1,2,3	X	Identified properties in mobile home park
Purchase/remove vulnerable properties	Tornado/Windstorm	1,2,3	X	Purchased properties
Identify potential public assistance 406 mitigation opportunities	Flood, Tornado/Windstorm, Thunderstorm, Lightning, and Hail	1, 2, 3	X	As Public Assistance funds are available after a disaster declaration is declared in Jasper County, the City considers how these may be used for mitigation efforts.

Colfax Progress Update

Colfax has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate Colfax's general commitment and progress toward mitigating or reducing the risk of hazards in the city. Refer to Table 76.

Table 76: Colfax Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Establish hazard mitigation section in library	All hazards	1, 2, 4	X	The City provides hazard-related information to residents, as needed, via the city website, police department social media page, and local media sources. This mitigation action will be updated in this plan to a broad public education mitigation action for all hazards.
Install impervious manhole covers	Flood	1, 2, 3	X	City has a manhole replacement program that is currently in progress. This mitigation action will be included in a general water, wastewater, and stormwater mitigation action to reduce flood risk.
Install flood gates	Flood	1, 2, 3	X	Mitigation action is complete.
Acquire flood-prone properties	Flood	1, 2, 3	X	The City acquired flood prone properties in the Cory Springs and western areas of the city.
Identify improvements to protect water plant	Flood	2, 3	X	The City's water source is two wells with chlorination. They are not located in the floodplain. The most recent record level flood in the city was in 2010, and the water was a full two blocks away from the wells. The planning committee decided to remove this mitigation action from this plan.

Table 76: Colfax Mitigation Actions Update Continued

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Implement floodplain management program	Flood	1, 2, 3, 4	X	The 2016 – 2017 plan included additional mitigation actions related to continuing participation in the National Flood Insurance Program (NFIP). NFIP participation is ongoing. This mitigation action will be included in the County's operations and resources.
Identify potential public assistance 406 mitigation opportunities	Flood, Tornado/Windstorm, Thunderstorm, Lightning, and Hail	1, 2, 3	X	As Public Assistance funds are available after a disaster declaration is declared in Jasper County, the City considers how these may be used for mitigation efforts.

Kellogg Progress Update

Kellogg has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate Kellogg's general commitment and progress toward mitigating or reducing the risk of hazards in the city. Refer to Table 77.

Table 77: Kellogg Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Establish hazard mitigation section in library	All hazards	1, 2, 4	X	Kellogg does not have a public library. The fire and ambulance service posts hazard related information via social media page. This mitigation action will be updated in this plan to a broad public education mitigation action for all hazards.
Implement floodplain management program	Flood	1, 2, 3, 4	X	The 2016 – 2017 plan included mitigation actions related to continuing participation in the National Flood Insurance Program (NFIP). NFIP participation is ongoing. This mitigation action will be included in the City's operations and resources.
Establish 28E Agreement for building development permitting and inspection	All hazards	1, 2, 3, 4	X	An agreement with Jasper County has been established, and they provide permitting and inspection services.
Establish 28E Agreement for floodplain development and permitting	Flood	1, 2, 3, 4	X	An agreement with Jasper County has been established, and they provide permitting and inspection services.

Lambs Grove Progress Update

Lambs Grove has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate Lambs Grove's general commitment and progress toward mitigating or reducing the risk of hazards in the city. Refer to Table 78.

Table 78: Lambs Grove Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Establish 28E Agreement for building code permitting/inspection	All hazards	1, 2, 3	X	Newton Community Development provides assistance to the City with building code permitting and inspection.
Establish hazard mitigation section in library	All hazards	1, 2, 4	X	Lambs Grove does not have a public library. This mitigation action will be updated in this plan to a broad public education mitigation action for all hazards.
Identify measures to reduce runoff	Flood	2, 3	X	The City consulted with IDALS, and developed retention pond projects. Three major projects are finished, and the City is completing the last project.
Purchase and install backup power generators in critical facilities	Infrastructure Failure, Severe Winter Storm, Thunderstorm, Lightning, and Hail, Tornado and Windstorm	1, 2, 3	X	The local planning committee decided to remove this mitigation action. The City relies on Newton for water and emergency services, so there are no critical facilities within the city that are worth the cost to purchase and install backup power generators.

Lynnville Progress Update

Lynnville has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate Lynnville's general commitment and progress toward mitigating or reducing the risk of hazards in the city. Refer to Table 79.

Table 79: Lynnville Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Establish hazard mitigation section in library	All hazards	1, 2, 4	X	This mitigation action will be updated in this plan to a broad public education mitigation action for all hazards.
Establish 28E agreement for floodplain development permitting and inspection	All hazards	1, 2, 3	X	The City established a floodplain ordinance and management program. To implement the program, Jasper County Community Development provides assistance to the City.
Join the National Flood Insurance Program	All hazards	1, 2, 3	X	The City joined the National Flood Insurance Program (NFIP) in 2018.
Clean sewage lagoons and install rip-rap	Flood	1, 2, 3	X	Sewer main line was replaced. This mitigation action will be updated to identify and/or complete water, wastewater, and stormwater infrastructure improvements
Reline existing clay sewer pipes	Flood	2,3	X	Relining project was completed in 2019 – 2020.

Mingo Progress Update

Mingo has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate Mingo's general commitment and progress toward mitigating or reducing the risk of hazards in the city. Refer to Table 80.

Table 80: Mingo Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Establish hazard mitigation section in library	All hazards	1, 2, 4	X	This mitigation action will be updated in this plan to a broad public education mitigation action for all hazards.
Establish 28E agreement for floodplain development permitting and inspection	All hazards	1, 2, 3	X	The City established an agreement for assistance with Jasper County Community Development.
Purchase backup power generator	Infrastructure Failure, Severe Winter Storm, Thunderstorm, Lightning, and Hail, Tornado and Windstorm	1, 2, 3	X	Jasper County Emergency Management has a backup power generator located in Mingo. The City need to add connections to the Fire Station and the Community Building.

Monroe Progress Update

Monroe has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate Monroe's general commitment and progress toward mitigating or reducing the risk of hazards in the city. Refer to Table 81.

Table 81: Monroe Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Establish hazard mitigation section in library	All hazards	1, 2, 4	X	This mitigation action will be updated in this plan to a broad public education mitigation action for all hazards.
Implement floodplain management program	Flood	1, 2, 3, 4	X	The 2016 – 2017 plan included mitigation actions related to continuing participation in the National Flood Insurance Program (NFIP). NFIP participation is ongoing. This mitigation action will be included in the City's operations and resources.

Newton Progress Update

Newton has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate Newton's general commitment and progress toward mitigating or reducing the risk of hazards in the city. Refer to Table 82.

Table 82: Newton Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Establish hazard mitigation section in library	All hazards	1, 2, 4	X	A section in the library with hazard-related books has been established. This mitigation action will be updated in this plan to a broad public education mitigation action for all hazards.
Implement detention pond project	Flood	2, 3	X	Cardinal Pond at Arbor Estates is complete.
Construct berm at water treatment facility	Flood	2, 3	X	Project is complete.
Reline existing clay sewer pipes	Flood	2, 3	X	The City has an ongoing, phased plan for replacing and lining sewer mains that is in progress.
Implement floodplain management program	Flood	1, 2, 3, 4	X	The 2016 – 2017 plan included mitigation actions related to continuing participation in the National Flood Insurance Program (NFIP). NFIP participation is ongoing. This mitigation action will be included in the City's operations and resources.

Oakland Acres Progress Update

Oakland Acres has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate Oakland Acres' general commitment and progress toward mitigating or reducing the risk of hazards in the city. Refer to Table 83.

Table 83: Oakland Acres Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Establish 28E Agreement for building code permitting and inspection	All hazards	1, 2	X	The City established an agreement with Jasper County Community Development to provide this service.
Identify potential public assistance 406 mitigation opportunities	Flood, Tornado/Windstorm, Thunderstorm, Lightning, and Hail	1, 2, 3	X	As Public Assistance funds are available after a disaster declaration is declared in Jasper County, the City considers how these may be used for mitigation efforts.
Elevate lake berm	Flood	2, 3	X	The planning committee decided to remove this mitigation action from the plan.
Construct tornado shelter	Tornado/Windstorm, Thunderstorm, Lightning, and Hail	1	X	The planning committee decided to remove this mitigation action from the plan.

Prairie City Progress Update

Prairie City has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate Prairie City's general commitment and progress toward mitigating or reducing the risk of hazards in the city. Refer to Table 84.

Table 84: Prairie City Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Establish hazard mitigation section in library	All hazards	1, 2, 4	X	The City installed an electronic sign to provide emergency information to residents. The City posts hazard-related information via the city website, including information about Alert Iowa, and social media page. This mitigation action will be updated in this plan to a broad public education mitigation action for all hazards.
Reline existing clay sewer pipes	Flood	2, 3	X	A third of sewer lines have been relined.
Identify priority stormwater projects	Flood	2, 3	X	The City is currently completing phase 1 of 4 to storm sewer update projects.
Protect water wells	Flood	3	X	Backup power generator installed at wells.
Install impervious manhole covers	Flood	1, 2, 3	X	City has a manhole replacement program that is currently in progress. This mitigation action will be included in a general water, wastewater, and stormwater mitigation action to reduce flood risk.

Table 84: Prairie City Mitigation Actions Continued

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Implement floodplain management program	Flood	1, 2, 3, 4	X	The 2016 – 2017 plan included mitigation actions related to continuing participation in the National Flood Insurance Program (NFIP). NFIP participation is ongoing. This mitigation action will be included in the City's operations and resources.

Reasnor Progress Update

Reasnor has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate Reasnor's general commitment and progress toward mitigating or reducing the risk of hazards in the city. Refer to Table 85.

Table 85: Reasnor Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Establish hazard mitigation section in library	All hazards	1, 2, 4	X	There is no progress to report. This mitigation action will be updated in this plan to a broad public education mitigation action for all hazards.
Establish 28E agreement for building development permitting and inspection	All Hazards	1, 2, 3	X	The City issues permits and conductions building inspections.
Implement floodplain management program	Flood	1, 2, 3, 4	X	The 2016 – 2017 plan included additional mitigation actions related to continuing participation in the National Flood Insurance Program (NFIP). NFIP participation is ongoing. This mitigation action will be included in the City's operations and resources.
Reline existing clay sewer pipes	Flood	2, 3	X	The City completed a clay sewer line relining project.
Acquire flood-prone properties	Flood	1, 2, 3	X	Three flood-prone properties were acquired and demolished.
Purchase standby pumps	Flood, Infrastructure Failure	2, 3	X	This mitigation action was not completed. Projects related to water, wastewater, and stormwater infrastructure will be included in a mitigation action for system improvements in this plan.

Sully Progress Update

Sully has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate Sully's general commitment and progress toward mitigating or reducing the risk of hazards in the city. Refer to Table 86.

Table 86: Sully Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Establish hazard mitigation section in library	All hazards	1, 2, 4	X	There is no progress to report. This mitigation action will be updated in this plan to a broad public education mitigation action for all hazards.
Reline existing clay sewer pipes	Flood, Infrastructure Failure	2, 3	X	The City is completing the relining project in phases. Projects related to water, wastewater, and stormwater infrastructure will be included in a mitigation action for system improvements in this plan.
Purchase standby pumps	Flood, Infrastructure Failure	2, 3	X	The City purchased standby pumps.
Clean wastewater lagoons and install riprap	Flood	2, 3	X	The City cleaned the lagoon and completed improvements in 2020.
Implement floodplain management program	Flood	1, 2, 3, 4	X	The 2016 – 2017 plan included mitigation actions related to continuing participation in the National Flood Insurance Program (NFIP). The City does have flood prone areas within its boundary, and the City does not participate in the NFIP. This mitigation will be removed from the City's mitigation strategy in this plan.

Valeria Progress Update

Valeria has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate Valeria's general commitment and progress toward mitigating or reducing the risk of hazards in the city. Refer to Table 87.

Table 87: Valeria Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Replace storm sirens	Tornado and Windstorm, Thunderstorm, Lightning, Hail	1, 4	X	There is no progress to report. The planning committee decided to remove this mitigation action. The City does not plan to replace the outdoor warning siren.
Join the National Flood Insurance Program (NFIP)	Flood	1, 2, 3	X	There is progress to report. The 2018 flood study for Jasper County did not designate flood prone areas in the City. The planning committee decided to remove this mitigation action.
Implement floodplain management program	Flood	1, 2, 3, 4	X	The 2016 – 2017 plan included mitigation actions related to joining the National Flood Insurance Program (NFIP). The City does have flood prone areas within its boundary. The City does not participate in the NFIP. This mitigation will be removed from the City's mitigation strategy in this plan.
Update emergency plan	All hazards	1, 3		The City updated its emergency plan.

Baxter Community School District Progress Update

The Baxter Community School District has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate the District's general commitment and progress toward mitigating or reducing the risk of hazards in the district. Refer to Table 88.

Table 88: Baxter Community School District Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Construct school tornado shelter	Tornado and Windstorm, Thunderstorm, Lightning, and Hail	1, 2, 3	X	No progress to report.
Identify and implement infectious disease mitigation measures	Human Disease	1, 3		Due to the COVID-19 pandemic, the District coordinated with the Jasper County Public Health Department to identify and implement measures to prevent the spread of COVID-19 among students, staff, and visitors.

Colfax – Mingo Community School District Progress Update

The Colfax – Mingo Community School District has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate the District's general commitment and progress toward mitigating or reducing the risk of hazards in the district. Refer to Table 89.

Table 89: Colfax – Mingo Community School District Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Construct school tornado shelter	Tornado and Windstorm, Thunderstorm, Lightning, and Hail	1, 2, 3	X	No progress to report.
Identify and implement flood mitigation measure for district facilities	Flood	2, 3		A flood protection system was constructed to protect the District Office building. Additional flood protection may be needed to protect district buildings.
Install secure entrances	Terrorism	1, 2, 3		Secure entrance systems were installed in school buildings. Security cameras were updated.
Identify and implement infectious disease mitigation measures	Human Disease	1, 3		Due to the COVID-19 pandemic, the District coordinated with the Jasper County Public Health Department to identify and implement measures to prevent the spread of COVID-19 among students, staff, and visitors.

Lynnville – Sully Community School District Progress Update

The Lynnville – Sully Community School District has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate the District's general commitment and progress toward mitigating or reducing the risk of hazards in the district. Refer to Table 90.

Table 90: Lynnville – Sully Community School District Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Construct school tornado shelter	Tornado and Windstorm, Thunderstorm, Lightning, and Hail	1, 2, 3	X	No progress to report.
Identify and implement infectious disease mitigation measures	Human Disease	1, 3		Due to the COVID-19 pandemic, the District coordinated with the Jasper County Public Health Department to identify and implement measures to prevent the spread of COVID-19 among students, staff, and visitors.

Newton Community School District Progress Update

The Newton Community School District has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate the District's general commitment and progress toward mitigating or reducing the risk of hazards in the district. Refer to Table 91.

Table 91: Newton Community School District Mitigation Actions Update

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Construct school tornado shelter	Tornado and Windstorm, Thunderstorm, Lightning, and Hail	1, 2, 3	X	No progress to report.
Identify and implement infectious disease mitigation measures	Human Disease	1, 3		Due to the COVID-19 pandemic, the District coordinated with the Jasper County Public Health Department to identify and implement measures to prevent the spread of COVID-19 among students, staff, and visitors.
Join and participate in Jasper County Emergency Team	All hazards	1, 2, 3, 4		Continued participation will be considered ongoing and part of operations and resources in the future.

Prairie City Monroe (PCM) Community School District Progress Update

The Prairie City – Monroe (PCM) Community School District has an existing hazard mitigation strategy, so it is important to document mitigation actions that have been completed since the plan was adopted. Completed mitigation actions demonstrate the District's general commitment and progress toward mitigating or reducing the risk of hazards in the district. Refer to Table 92.

Table 92: Prairie City Monroe Community School District Completed Mitigation Actions

Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Inclusion in 2016 – 2021 Plan	Progress Update
Construct school tornado shelter	Tornado and Windstorm, Thunderstorm, Lightning, and Hail	1, 2, 3	X	No progress to report.
Identify and implement infectious disease mitigation measures	Human Disease	1, 3		Due to the COVID-19 pandemic, the District coordinated with the Jasper County Public Health Department to identify and implement measures to prevent the spread of COVID-19 among students, staff, and visitors.

Mitigation Strategy

Photo Credit

Levee structure protecting the Colfax – Mingo Community School District Office
Colfax – Mingo Community School District
May 2022

Introduction

A mitigation strategy is a set of mitigation actions meant to prevent or reduce the potential impacts of hazards. There are several types of mitigation actions with a different method of reducing vulnerability. Types of mitigation actions include prevention, property protection, public education and awareness, natural resource protection, emergency services, and structural projects.

The planning committee in each participating jurisdiction identified proposed mitigation actions, which are actions beyond current operations and resources, for each hazard that may affect the jurisdiction. The planning committee in each jurisdiction considered each type of mitigation action before identifying final mitigation actions. To be included in the final mitigation strategy, a mitigation action must be within the jurisdiction's authority, technically feasible, and fulfill at least one goal.

TYPES OF MITIGATION ACTIONS

- Prevention
- Property protection
- Public education and awareness
- Natural resource protection
- Emergency services
- Structural projects

Jasper County Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in Jasper County's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal County operations are included in the Operation and Resources table for the County. See Table 93 for the County's mitigation strategy.

Table 93: Jasper County Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate the public about hazards that can impact Jasper County	All hazards	1, 2, 4	Includes in-person programming and distributing information via printed materials, website, social media, and local media sources
Promote public notification systems	All hazards	1, 2, 4	Jasper County uses the Notify Me system to distribute Jasper County Alert Center notifications about public safety and natural hazards. Residents can subscribe to receive messages by phone text message or email. Jasper County Emergency Management uses the Alert Iowa system to distribute community and weather notifications by phone, via voice and text message, or email.
Participate in the healthcare coalition for vulnerable populations and healthcare facilities	All hazards	1, 3, 4	
Coordinate process to develop and implement African Swine Fever mitigation action plan	Animal, Plant, Crop Disease	1, 2, 3	Coordinate meeting with USDA and other relevant agencies to develop an action plan to respond and recover to an African Swine Flu outbreak.

Table 93: Jasper County Mitigation Strategy Continued

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Complete studies and incorporate recommendations into bridge and road construction to mitigate flood damage	Flood	1, 2, 3	Seven bridges are replaced each year, and new bridges are built to withstand a 50 – 100-year storm. The County has 116 bridges to maintain.
Identify and/or complete stormwater infrastructure improvements	Flood	1, 2, 3	
Enhance communication systems and develop redundancy, when necessary	Tornado and Windstorm, Thunderstorm, Lightning, and Hail, Severe Winter Storm, Infrastructure Failure	1, 2, 3, 4	
Purchase and install backup generator for the County administration building	Tornado and Windstorm, Thunderstorm, Lightning, and Hail, Severe Winter Storm, Infrastructure Failure	3	
Develop and implement inventory management system	Human Disease, Infrastructure Failure	3	Current storage and management of medical and technology supplies is inefficient.
Identify and acquire/install redundant technology for County departments	Infrastructure Failure	3	Video conferencing, laptops, and other technology required for County staff to work remotely with other organizations or off-site, if needed, to ensure County operations continuity during and after a disaster.
Identify and complete cyber security mitigation actions	Terrorism	3	Test, patch, and update County information systems. Research backup alternatives. Complete employee training for cyber security awareness and best practices.
Reinforce storage building where county voting machines are stored	Terrorism	3	Replace the building entrance and develop access protocols.

Baxter Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in Baxter's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal City operations are included in the Operation and Resources table for the City. See Table 94 for the City's mitigation strategy.

Table 94: Baxter Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate the public about hazards that can impact Baxter	All hazards	1, 2, 4	
Purchase message board to provide hazard-related information to the public	All hazards	1, 2, 4	
Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Flood	1, 2, 3	
Develop roster of people in community who require medical devices	Flood, Tornado/Windstorm, Thunderstorm, Lightning, and Hail, Severe Winter Storm, Infrastructure Failure	1, 4	When developed, the City will develop a plan for communicating with people on the roster and potentially provided resources. The roster will need to be updated regularly.
Purchase and install backup generators for lift stations	Tornado/Windstorm, Thunderstorm, Lightning, and Hail, Severe Winter Storm, Infrastructure Failure	2, 3	
Purchase and install additional storm siren	Tornado/Windstorm, Thunderstorm, Lightning, and Hail	1, 4	

Colfax Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in Colfax's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal City operations are included in the Operation and Resources table for the City. See Table 95 for the City's mitigation strategy.

Table 95: Colfax Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate the public about hazards that can impact Colfax	All hazards	1, 2, 4	
Acquire and demolish flood prone properties	Flood	1, 2, 3	
Join I-Warn	All hazards	1, 2, 4	
Purchase backup generator for fire station	Tornado/Windstorm, Thunderstorm, Lightning, and Hail, Severe Winter Storm, Infrastructure Failure	1, 2, 3	
Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Flood	2, 3	Stormwater infrastructure improvements are needed along Highway 117.
Purchase and install warning siren on north side of city	Tornado/Windstorm, Thunderstorm, Lightning, and Hail	1, 4	Expanded warning siren coverage is needed as the city is developed.
Build list of contractors willing to assist public works during and after disasters	Tornado/Windstorm, Thunderstorm, Lightning, and Hail, Severe Winter Storm, Infrastructure Failure	3	

Kellogg Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in Kellogg's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal City operations are included in the Operation and Resources table for the City. See Table 96 for the City's mitigation strategy.

Table 96: Kellogg Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate the public about hazards that can impact Kellogg	All hazards	1, 2, 4	
Create vulnerable populations registry	All hazards	1, 4	
Purchase backup generators for water plant and main lift station	Tornado/Windstorm, Thunderstorm, Lightning, and Hail, Severe Winter Storm, Infrastructure Failure	2, 3	
Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Flood	2, 3	Increase flood protection for the City's well

Lambs Grove Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in Lambs Grove's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal City operations are included in the Operation and Resources table for the City. See Table 97 for the City's mitigation strategy.

Table 97: Lambs Grove Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate the public about hazards that can impact Lambs Grove	All hazards	1, 2, 4	
Update the local emergency operations plan and establish a review and update schedule	All hazards	1, 2, 3	
Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Flood	2, 3	Replace collapsed storm sewer and identify and complete projects to recue waste runoff

Lynnville Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in Lynnville's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal City operations are included in the Operation and Resources table for the City. See Table 98 for the City's mitigation strategy.

Table 98: Lynnville Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate the public about hazards that can impact Lynnville	All hazards	1, 2, 4	
Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Flood	2, 3	
Construct safe room	Tornado/Windstorm, Thunderstorm, Lightning, and Hail	1	
Purchase backup generators for critical facilities	Tornado/Windstorm, Thunderstorm, Lightning, and Hail, Severe Winter Storm, Infrastructure Failure	2, 3	
Purchase warning siren	Tornado/Windstorm, Thunderstorm, Lightning, and Hail	1, 4	

Mingo Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in Mingo's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal City operations are included in the Operation and Resources table for the City. See Table 99 for the City's mitigation strategy.

Table 99: Mingo Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate the public about hazards that can impact Mingo	All hazards	1, 2, 4	
Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Flood	2, 3	
Acquire and demolish properties in flood prone areas	Flood	1, 2	
Complete electrical connections for backup power generator in Fire Station and Community Building	Tornado/Windstorm, Thunderstorm, Lightning, and Hail, Severe Winter Storm, Infrastructure Failure	3	Backup power generator from Jasper County Emergency Management is located in Mingo.
Construct safe room	Tornado/Windstorm, Thunderstorm, Lightning, and Hail	1	

Monroe Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in Monroe's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal City operations are included in the Operation and Resources table for the City. See Table 100 for the City's mitigation strategy.

Table 100: Monroe Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate the public about hazards that can impact Monroe	All hazards	1, 2, 4	
Promote Alert Iowa System used by Jasper County Emergency Management	All hazards	1, 2, 4	
Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Flood	2, 3	

Newton Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in Newton's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal City operations are included in the Operation and Resources table for the City. See Table 101 for the City's mitigation strategy.

Table 101: Newton Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate the public about hazards that can impact Newton	All hazards	1, 2, 4	
Update roster of vulnerable populations	All hazards	1, 4	
Update Stormwater Master Plan	Flood	2, 3	
Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Flood	2, 3	
Purchase backup power generators for critical facilities	Tornado/Windstorm, Thunderstorm, Lightning, and Hail, Severe Winter Storm, Infrastructure Failure	2, 3	Purchase backup power generators for the Community Center and Water Pollution Control Plant
Purchase new motor grater	Tornado/Windstorm, Thunderstorm, Lighting, and Hail, Severe Winter Storm	1, 3	
Purchase commercial snow blower	Severe Winter Storm	1, 3	

Oakland Acres Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in Oakland Acres' final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal City operations are included in the Operation and Resources table for the City. See Table 102 for the City's mitigation strategy.

Table 102: Oakland Acres Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate the public about hazards that can impact Oakland Acres	All hazards	1, 2, 4	
Update and expand outdoor warning siren coverage	Tornado/Windstorm, Thunderstorm, Lighting, and Hail	1, 4	The City plan to replace the current outdoor warning siren and add another to expand coverage.

Prairie City Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in Prairie City's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal City operations are included in the Operation and Resources table for the City. See Table 103 for the City's mitigation strategy.

Table 103: Prairie City Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate the public about hazards that can impact Prairie City	All hazards	1, 2, 4	
Update fire hydrants	Infrastructure Failure	1, 2, 3	
Update Community Building	Extreme Heat, Tornado/Windstorm, Thunderstorm, Lightning, and Hail, Severe Winter Storm	1, 3	Update building to potentially provide shelter for City operations and residents and withstand severe weather events
Update and/or expand outdoor warning siren coverage	Tornado/Windstorm, Thunderstorm, Lightning, and Hail	1, 4	
Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Flood, Infrastructure Failure	2, 3	
Purchase and install backup generator at critical facilities	Tornado/Windstorm, Thunderstorm, Lightning, and Hail, Severe Winter Storm, Infrastructure Failure	3	A priority critical facility for backup power generators is City Hall.

Reasnor Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in Reasnor's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal City operations are included in the Operation and Resources table for the City. See Table 104 for the City's mitigation strategy.

Table 104: Reasnor Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate the public about hazards that can impact Reasnor	All hazards	1, 2, 4	
Acquire flood-prone properties	Flood	1, 2, 3	
Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Flood, Infrastructure Failure	2, 3	
Construct a tornado safe room	Tornado/Windstorm, Thunderstorm, Lightning, and Hail	1, 3	

Sully Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in Sully's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal City operations are included in the Operation and Resources table for the City. See Table 105 for the City's mitigation strategy.

Table 105: Sully Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate the public about hazards that can impact Sully	All hazards	1, 2, 4	Includes adding hazard-related information to the City website and posting via social media page
Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Flood, Infrastructure Failure	2, 3	Includes relining sewer infrastructure

Valeria Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in Valeria's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal City operations are included in the Operation and Resources table for the City. See Table 106 for the City's mitigation strategy.

Table 106: Valeria Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate the public about hazards that can impact Valeria	All hazards	1, 2, 4	
Promote Alert Iowa System used by Jasper County Emergency Management	All hazards	1, 2, 4	

Baxter Community School District Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in the District's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal District operations are included in the Operation and Resources table for the District. See Table 107 for the District's mitigation strategy.

Table 107: Baxter Community School District Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate students, staff, and visitors about hazards that can impact the district	All hazards	1, 2, 4	
Purchase new radios for emergency communication and hazard notification	Tornado and Windstorm, Thunderstorm, Lightning, and Hail, Sever Winter Storm, Infrastructure Failure, Terrorism	1, 2, 3	Radios available through Jasper County EMA
Purchase backup power generator for critical facilities	Tornado and Windstorm, Thunderstorm, Lightning, and Hail, Sever Winter Storm, Infrastructure Failure	2, 3	
Construct a Morton building to provide shelter at the sports complex	Thunderstorm, Lightning, and Hail	1	

Colfax-Mingo Community School District Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in the District's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal District operations are included in the Operation and Resources table for the District. See Table 108 for the District's mitigation strategy.

Table 108: Colfax-Mingo Community School District Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate students, staff, and visitors about hazards that can impact the district	All hazards	1, 2, 4	
Identify and implement flood and mitigation and stormwater management measures for district facilities	Flood	2, 3	
Purchase backup power generator for critical facilities	Tornado and Windstorm, Thunderstorm, Lightning, and Hail, Sever Winter Storm, Infrastructure Failure	2, 3	
Construct tornado safe room	Tornado and Windstorm, Thunderstorm, Lightning, and Hail	1, 2	

Lynnville – Sully Community School District Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in the District's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal District operations are included in the Operation and Resources table for the District. See Table 109 for the District's mitigation strategy.

Table 109: Lynnville - Sully Community School District Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate students, staff, and visitors about hazards that can impact the district	All hazards	1, 2, 4	
Complete HVAC system upgrades	Extreme Heat	3	
Construct tornado safe room	Tornado and Windstorm, Thunderstorm, Lightning, and Hail	1, 2	
Purchase and install backup power generator for critical facilities	Tornado and Windstorm, Thunderstorm, Lightning, and Hail, Sever Winter Storm, Infrastructure Failure	1, 3	

Newton Community School District Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in the District's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal District operations are included in the Operation and Resources table for the District. See Table 110 for the District's mitigation strategy.

Table 110: Newton Community School District Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate students, staff, and visitors about hazards that can impact the district	All hazards	1, 2, 4	
Purchase new radios for emergency communication and hazard notification	Tornado and Windstorm, Thunderstorm, Lightning, and Hail, Sever Winter Storm, Infrastructure Failure, Terrorism	1, 2, 3	Radios available through Jasper County EMA
Construct tornado safe room	Tornado and Windstorm, Thunderstorm, Lightning, and Hail	1, 2	The middle school building is a potential building for a tornado safe room.
Purchase and install backup power generator for critical facilities	Tornado and Windstorm, Thunderstorm, Lightning, and Hail, Sever Winter Storm, Infrastructure Failure	1, 3	The district is considering a large backup power generator so a school building could be a community shelter.
Purchase supplies and/or equipment to implement programs to reduce the transmission of infections among students, staff, and visitors	Human Disease	1, 3	

Prairie City Monroe (PCM) Community School District Mitigation Strategy

All identified hazards are addressed by at least one mitigation action in the District's final mitigation strategy. Certain mitigation actions address multiple hazards due to the similar impacts. Mitigations actions for flood or severe weather hazards are often similar. Mitigation actions that are ongoing and part of normal District operations are included in the Operation and Resources table for the District. See Table 111 for the District's mitigation strategy.

Table 111: Prairie City Monroe (PCM) Community School District Mitigation Strategy

Proposed Mitigation Action	Hazard(s) Addressed	Goal(s) Addressed	Notes
Educate students, staff, and visitors about hazards that can impact the district	All hazards	1, 2, 4	
Install shades in outdoor areas	Extreme Heat	1, 3	
Purchase and install backup power generator for critical facilities	Tornado and Windstorm, Thunderstorm, Lightning, and Hail, Sever Winter Storm, Infrastructure Failure	1, 3	The District is considering a generator for each campus.
Construct tornado safe room	Tornado and Windstorm, Thunderstorm, Lightning, and Hail	1, 2	The District is considering a tornado safe room for each campus.

Action Plan

Photo Credit

Snow removal in Baxter
City of Baxter

To determine how a mitigation strategy should be completed, an action plan and timeline for mitigation actions was determined through a prioritization process that considered local priorities and capabilities identified in the Operations and Resources section, potential benefit, and estimated cost. Ultimately, mitigation actions were assigned a priority level by the planning committee, which determines the potential timeline for completion. Refer to Table 112 – 113.

Table 112: Benefit vs. Cost Criteria

Type	Benefit	Cost
High	Results are likely immediate and/or widespread reduction of risk from hazard(s) addressed; generally supported by the community; lead agency has capabilities	Existing funding is not adequate to complete the project; funding may only be available through grants/assistance; anticipated to cost greater than $100,000
Medium	Results are likely a long-term reduction of risk from hazard(s) addressed and/or results are not widespread; potential community opposition; lead agency has capabilities	Requires amending the budget and/or requires a bond to complete the project; anticipated to cost between $10,000 and $100,000
Low	Results are difficult to determine and/or may not result in long-term reduction of risk from hazard(s) addressed; definite community opposition; lead agency may encounter capability issues	Existing funding is adequate, or the project can be completed through volunteer and/or staff time; anticipated to cost less than $10,000

Table 113: Mitigation Action Priority Level

Type	Potential Timeline
1	1 – 5 years
2	5 – 10 years
3	10 – 15 years

For most jurisdictions, not all mitigation actions considered in the prioritization process met exact criteria. The planning team in each jurisdiction developed the final action plan to ensure priority levels reflect local priorities and capabilities. It should be noted, not all jurisdictions identified all three priority levels for mitigation actions. Some jurisdictions have adopted a shorter-term focus for completing mitigation actions.

In addition to the potential benefit, cost, and priority level of a mitigation action, the action plan also identifies the individual position in the jurisdiction that is the lead, potential partners, and funding sources. In the action plan for each jurisdiction, some of the identified potential partners and funding sources are abbreviated.

Jasper County Action Plan

Jasper County's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 114 for the County's action plan.

Table 114: Jasper County Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Promote public notification systems	Emergency Management Coordinator	County, cities, and school districts	High	Low	County, cities, and school districts, and others to be identified
1	Participate in the healthcare coalition for vulnerable populations and healthcare facilities	Health Department Administrator	EMA, Sheriff, police departments fire departments, ambulance services, healthcare facilities	High	Low	County, others to be identified
1	Identify and complete cyber security mitigation actions	Information Technology Director	All County departments	High	Low - Medium	County, others to be identified
1	Enhance communication systems and develop redundancy, when necessary	Emergency Management Coordinator	Sheriff, police departments, fire departments, cities	High	Medium	County, cities, others to be identified
1	Purchase and install backup generator for the County administration building	Chair of Board of Supervisors	Maintenance, contractor(s)	High	Medium	County, HMA, others to be identified
1	Identify and/or complete stormwater infrastructure improvements	County Engineer	Contractors	High	High	County, HMA, others to be identified
1	Complete studies and incorporate recommendations into bridge and road construction to mitigate flood damage	County Engineer	Iowa DOT, consulting engineer	High	High	County, others to be identified
1	Educate the public about hazards that can impact Jasper County	Emergency Management Coordinator and Conservation Naturalist	County, HSEMD	Medium	Low	County, others to be identified

Table 114: Jasper County Action Plan Continued

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Develop and implement inventory management system	County Recorder	Health Department, Human Resources, Information Technology	Medium	Low	County, others to be identified
1	Identify and acquire/install redundant technology for County departments	County Recorder	Human Resources, Information Technology	Medium	Low - Medium	County, others to be identified
1	Coordinate process to develop and implement African Swine Fever mitigation action plan	Chair of Board of Supervisors	EMA, Health Department, IDALS, USDA, local farmers	Medium	High	Local farmers, others to be identified
2	Reinforce storage building where county voting machines are stored	Maintenance Director	Engineer	Medium	Low - Medium	County, others to be identified

Baxter Action Plan

Baxter's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 115 for the City's action plan.

Table 115: Baxter Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Develop roster of people in community who require medical devices	EMS Director	Jasper County EMA	High	Low	Low or no cost
1	Purchase and install backup generators for lift stations	Public Works Director	Contractor(s)	High	Medium	City, HMA, others to be identified
1	Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Public Works Director	Contractor(s)	High	High	City, HMA, CDBG, USDA, others to be identified
1	Educate the public about hazards that can impact Baxter	City Clerk	Jasper County EMA	Medium	Low	City, others to be identified
2	Purchase and install additional storm siren	Public Works Director	Jasper County EMA, contractor(s)	High	Medium	City, HMA, others to be identified
2	Purchase message board to provide hazard-related information to the public	City Clerk	Jasper County EMA	Medium	Low - Medium	City, others to be identified

Colfax Action Plan

Colfax's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 116 for the City's action plan.

Table 116: Colfax Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Educate the public about hazards that can impact Colfax	City Administrator	Jasper County EMA	Medium	Low	City, others to be identified
1	Acquire and demolish flood prone properties	City Administrator	HSEMD, property owners	High	High	City, HMA, others to be identified
1	Join I-Warn	City Administrator	Jasper County EMA	Medium	Low	City, others to be identified
1	Purchase and install warning siren on north side of city	Fire Chief	Public Works, Contractor(s)	High	Medium	City, HMA, others to be identified
1	Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Public Works Director	Contractor(s)	High	High	City, HMA, CDBG, USDA, others to be identified
1	Purchase and install warning siren on north side of town to expand coverage	Public Works Director	Jasper County EMA, contractor(s)	High	Medium	City, HMA, others to be identified
1	Build list of contractors willing to assist public works during and after disasters	Public Works Director	Jasper County EMA	High	Low	No or low cost

Kellogg Action Plan

Kellogg's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 117 for the City's action plan.

Table 117: Kellogg Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Create vulnerable populations registry	Fire Chief	Jasper County EMA	High	Low	Low or no cost
1	Educate the public about hazards that can impact Kellogg	Mayor	Jasper County EMA	Medium	Low	City, others to be identified
2	Purchase backup generators for water plant and main lift station	Mayor	Public Works, contractor(s)	High	Medium	City, HMA, others to be identified
2	Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Mayor	Public Works, contractor(s)	High	High	City, HMA, CDBG, USDA, others to be identified

Lambs Grove Action Plan

Lambs Grove's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 118 for the City's action plan.

Table 118: Lambs Grove Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Educate the public about hazards that can impact Lambs Grove	Mayor	Jasper County EMA, Newton	Medium	Low	City, others to be identified
1	Update the local emergency operations plan and establish a review and update schedule	Mayor	Jasper County EMA	High	Low	No or low cost
1	Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Mayor	Contractor(s), IDALS	High	Low - High	City, HMA, CDBG, USDA, others to be identified

Lynnville Action Plan

Lynnville's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 119 for the City's action plan.

Table 119: Lynnville Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Educate the public about hazards that can impact Lynnville	City Clerk	Jasper County EMA	Medium	Low	City, others to be identified
1	Purchase warning siren	City Clerk	Jasper County EMA	High	Medium	City, HMA, others to be identified
1	Identify and/or complete water, wastewater, and stormwater infrastructure improvements	City Clerk	Public Works, Iowa DNR, Contractor(s)	High	High	City, HMA, CDBG,USDA, others to be identified
2	Construct safe room	City Clerk	Fire Department, Jasper County EMA, architect, contractor(s)	High	High	City, HMA, others to be identified
2	Purchase backup generators for critical facilities	City Clerk	Public Works, contractor(s)	High	Medium	City, HMA, others to be identified

Mingo Action Plan

Mingo's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 120 for the City's action plan.

Table 120: Mingo Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Educate the public about hazards that can impact Mingo	City Clerk	Jasper County EMA	Medium	Low	City, others to be identified
1	Complete electrical connections for backup power generator in Fire Station and Community Building	Public Works	Contractor(s)	High	Low – Medium	City, others to be identified
1	Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Public Works	Public Works, Iowa DNR, Contractor(s)	High	High	City, HMA, CDBG, USDA, others to be identified
2	Construct safe room	City Clerk	Jasper County EMA, architect, contractor(s)	High	High	City, HMA, others to be identified
2	Acquire and demolish flood prone properties	City Clerk	HSEMD, property owners	High	High	City, HMA, others to be identified

Monroe Action Plan

Monroe's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 121 for the City's action plan.

Table 121: Monroe Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Educate the public about hazards that can impact Monroe	City Clerk	Jasper County EMA	Medium	Low	City, others to be identified
1	Promote Alert Iowa System used by Jasper County Emergency Management	City Clerk	Jasper County EMA	High	Low	Low or no cost
1	Identify and/or complete water, wastewater, and stormwater infrastructure improvements	City Clerk	Public Works, Iowa DNR, contractor(s)	High	High	City, HMA, CDBG, USDA, others to be identified

Newton Action Plan

Newton's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 122 for the City's action plan.

Table 122: Newton Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Educate the public about hazards that can impact Newton	City Administrator	Jasper County EMA	Medium	Low	City, others to be identified
1	Update roster of vulnerable populations	Fire Chief	Contractor(s)	High	Low – Medium	City, others to be identified
1	Update Stormwater Master Plan	City Administrator	Engineering, Public Works, Iowa DNR, Contractor(s)	High	High	City, others to be identified
1	Identify and/or complete water, wastewater, and stormwater infrastructure improvements	City Administrator	Engineering, Public Works, Iowa DNR, contractor(s)	High	High	City, HMA, CDBG, USDA, others to be identified
1	Purchase backup power generators for critical facilities	Public Works Director	Public Works, contractor(s)	High	Medium	City, HMA, others to be identified
2	Purchase new motor grater	Public Works Director	Implement vendor(s)	Medium	High	City, others to be identified
2	Purchase commercial snow blower	Public Works Director	Implement vendor(s)	Medium	High	City, others to be identified

Oakland Acres Action Plan

Oakland Acres' planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 123 for the City's action plan.

Table 123: Oakland Acres Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Update and expand outdoor warning siren coverage	Mayor	Contractor(s)	High	Low – Medium	City, others to be identified
1	Educate the public about hazards that can impact Oakland Acres	City Administrator	Jasper County EMA	Medium	Low	City, others to be identified

Prairie City Action Plan

Prairie City's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 124 for the City's action plan.

Table 124: Prairie City Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Educate the public about hazards that can impact Prairie City	City Clerk	Jasper County EMA	Medium	Low	City, others to be identified
1	Update and expand outdoor warning siren coverage	City Administrator	Contractor(s)	High	Low – Medium	City, others to be identified
1	Identify and/or complete water, wastewater, and stormwater infrastructure improvements	City Administrator	Public Works, Iowa DNR, Contractor(s)	High	High	City, HMA, CDBG, USDA, others to be identified
2	Update fire hydrants	Fire Chief	Public Works, Contractor(s)	High	Medium - High	City, others to be identified
2	Update Community Building	City Administrator	Public Works, Contractor(s)	Medium	Medium - High	City, others to be identified
2	Purchase and install backup generator at critical facilities	City Administrator	Public Works, Contractor(s)	Medium	Medium	City, HMA, others to be identified

Reasnor Action Plan

Reasnor's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 125 for the City's action plan.

Table 125: Reasnor Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Educate the public about hazards that can impact Reasnor	City Clerk	Jasper County EMA	Medium	Low	City, others to be identified
1	Acquire flood-prone properties	Mayor	HSEMD, property owners	High	High	City, HMA, others to be identified
1	Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Mayor	Public Works, contractor(s)	High	High	City, HMA, CDBG, USDA, others to be identified
2	Construct a tornado safe room	Mayor	Jasper County EMA, contractor(s)	Medium	High	City, HMA, others to be identified

Sully Action Plan

Sully's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 126 for the City's action plan.

Table 126: Sully Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Educate the public about hazards that can impact Sully	City Clerk	Jasper County EMA	Medium	Low	City, others to be identified
1	Identify and/or complete water, wastewater, and stormwater infrastructure improvements	Chairperson of Sewer/Water Committee	Public Works, contractor(s)	High	High	City, HMA, CDBG, USDA, others to be identified

Valeria Action Plan

Valeria's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 127 for the City's action plan.

Table 127: Valeria Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Educate the public about hazards that can impact Valeria	Mayor	Jasper County EMA	Medium	Low	City, others to be identified
1	Promote Alert Iowa System used by Jasper County Emergency Management	Mayor	Jasper County EMA	Medium	Low	Low or no cost

Baxter Community School District Action Plan

The Baxter Community School District's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 128 for the District's action plan.

Table 128: Baxter Community School District Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Educate students, staff, and visitors about hazards that can impact the district	Superintendent	Staff, local law enforcement, local fire department, local emergency medical services, Jasper County EMA	Medium	Low	District, others to be identified
1	Purchase new radios for emergency communication and hazard notification	Maintenance Director, Transportation Director	Jasper County EMA	Medium	Low	District, others to be identified
1	Purchase backup power generator for critical facilities	Superintendent	Maintenance, contractor(s)	High	Medium	District, HMA, others to be identified
1	Construct a Morton building to provide shelter at the sports complex	Superintendent	Contractor(s)	High	Medium - High	District, others to be identified

Colfax – Mingo Community School District Action Plan

The Colfax – Mingo Community School District's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 129 for the District's action plan.

Table 129: Colfax – Mingo Community School District Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Educate students, staff, and visitors about hazards that can impact the district	Superintendent	Staff, local law enforcement, local fire department, local emergency medical services, Jasper County EMA	Medium	Low	District, others to be identified
1	Identify and implement flood mitigation and stormwater management measures for district facilities	Superintendent	Maintenance, contractor(s)	High	Medium – High	District, HMA, others to be identified
1	Purchase backup power generator for critical facilities	Superintendent	Maintenance, contractor(s)	High	Medium	District, HMA, others to be identified
1	Construct tornado safe room	Superintendent	Contractor(s)	High	High	District, HMA, others to be identified

Lynnville – Sully Community School District Action Plan

The Lynnville – Sully Community School District's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 130 for the District's action plan.

Table 130: Lynnville – Sully Community School District Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Educate students, staff, and visitors about hazards that can impact the district	Superintendent	Staff, local law enforcement, local fire department, local emergency medical services, Jasper County EMA	Medium	Low	District, others to be identified
1	Purchase and install backup power generator for critical facilities	Superintendent	Maintenance, contractor(s)	High	Medium – High	District, HMA, others to be identified
1	Complete HVAC system upgrades	Superintendent	Maintenance, contractor(s)	High	Medium - High	District, HMA, others to be identified
1	Construct tornado safe room	Superintendent	Contractor(s)	High	High	District, HMA, others to be identified

Newton Community School District Action Plan

The Newton Community School District's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 131 for the District's action plan.

Table 131: Newton Community School District Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Educate students, staff, and visitors about hazards that can impact the district	Superintendent	Staff, local law enforcement, local fire department, local emergency medical services, Jasper County EMA	Medium	Low	District, others to be identified
1	Purchase new radios for emergency communication and hazard notification	Superintendent	Jasper County EMA	High	Low	District, others to be identified
1	Purchase supplies and/or equipment to implement programs to reduce the transmission of infections among students, staff, and visitors	Superintendent	Contractor(s)	High	Low - Medium	District, HMA, others to be identified
1	Purchase and install backup power generator for critical facilities	Superintendent	Maintenance, contractor(s)	High	Medium – High	District, HMA, others to be identified
1	Construct tornado safe room	Superintendent	Maintenance, contractor(s)	High	High	District, HMA, others to be identified

Prairie City Monroe (PCM) Community School District Action Plan

The Prairie City Monroe (PCM) Community School District's planning committee prioritized the mitigation actions in the jurisdiction's mitigation strategy to determine the potential benefit, cost, and priority level. Mitigation actions with a high priority level are expected to be addressed by the jurisdiction during the life of this plan. Refer to Table 132 for the District's action plan.

Table 132: Prairie City Monroe (PCM) Community School District Action Plan

Priority Level	Proposed Mitigation Action	Lead	Potential Partner(s)	Benefit	Cost	Potential Funding Source(s)
1	Educate students, staff, and visitors about hazards that can impact the district	Superintendent	Staff, local law enforcement, local fire department, local emergency medical services, Jasper County EMA	Medium	Low	District, others to be identified
1	Construct tornado safe room	Superintendent	Contractor(s)	High	High	District, HMA, others to be identified
2	Install shades in outdoor areas	Superintendent	Maintenance, contractor(s)	High	Low-Medium	District, others to be identified
2	Purchase and install backup power generator for critical facilities	Superintendent	Maintenance, contractor(s)	High	Medium - High	District, HMA, others to be identified

Plan Incorporation and Maintenance

Photo Credit

Quarry Springs Park in Colfax
City of Colfax

Introduction

For a multi-jurisdictional hazard mitigation plan to be effective and ultimately a worthwhile use of resources in each participating jurisdiction, there must be an established procedure to incorporate it into other plans, as well as to monitor, evaluate, and update. As indicated throughout this plan, jurisdictions in Jasper County vary in type and seize, so plan incorporation and maintenance procedures will also vary. For example, larger jurisdictions may establish formal requirements while others may complete a period, informal plan review. Overall, local preferences determine plan incorporation and maintenance.

Plan Incorporation

Local jurisdictions may incorporate the plan or plan components into other local plans or planning mechanisms. For example, many jurisdictions, like Jasper County, reference their participation in a hazard mitigation plan in their local comprehensive plan. Plans and planning mechanisms that may benefit from incorporations or referencing hazard mitigation planning include, but are not limited to the following:

- Updates of the zoning code that may include additional regulations on buildings near identified hazard areas, which may include steep slopes, unstable soils, special flood hazard areas, proximity of residential areas to transportation routes, hazardous materials, and other hazards
- Updates to comprehensive plans that include mitigation related goals
- Updates to watershed plans that address flood risk reduction
- Updates to the subdivision ordinance related to set back on properties that pose a risk from infrastructure failure or hazardous material incidents
- Updates to the building code that may include adoption of a full set of building codes or adoption and of more stringent building codes
- Updates to the floodplain maps or floodplain regulations
- Updates to the capital improvement plan, which may include mitigation of infrastructure, flood, or other hazards
- Any new additions to the city slash county code or administrative policies that may include but are not limited to solid waste regulations, landscape codes, evacuation plans, response plans, fire mitigation programs, and construction of retrofit programs
- An overview of how the information contained in the hazard analysis and risk assessment was used in any other planning documents

Plan Maintenance

Maintaining a hazard mitigation plan involves periodic review, amendment, if needed, and a full update within five years of the plan approval date. Staff and officials in each participating jurisdictions are responsible for the maintenance of the plan. The planning consultant is available to provide assistance, if needed.

Plan Monitoring and Review

In each jurisdiction, a particular staff member official is responsible for remaining aware of the jurisdiction's mitigation strategy and encouraging the completion of mitigation actions. In addition, this person will also be responsible for completing a periodic review, formal or informal. Refer to Table 133.

Table 133: Plan Incorporation, Monitoring, and Review by Jurisdiction

Jurisdiction	Staff Member	Plan Incorporation	Monitor and Review	Evaluation and Update
Jasper County	Emergency Management Coordinator	Formal adoption and the monitor and review process.	December	To begin approximately three years after approval.
Baxter	City Clerk		December	
Colfax	City Administrator		March	
Kellogg	Mayor		November	
Lambs Grove	Mayor		September	
Lynnville	City Clerk		November	
Mingo	City Clerk		October	
Monroe	City Clerk		November	
Newton	Fire Chief		December	
Oakland Acres	Mayor		April	
Prairie City	City Clerk		November	
Reasnor	City Clerk		December	
Sully	Mayor		February	
Valeria	City Clerk		April	
Baxter Community School District	Superintendent		December	
Colfax-Mingo Community School District	Superintendent		June	
Lynnville-Sully Community School District	Superintendent		June	
Newton Community School District	Superintendent		July	
PCM Community School District	Superintendent		July	

Through plan monitoring and review, jurisdictions will continue to seek public input. Each jurisdiction will make the plan available to the public for review at any time. Grant applications or reallocation of funding to complete mitigation actions must be approved by local officials, which will occur at public meetings where public input is allowed. In addition, a complete plan will involve one, or more, hazard mitigation planning meeting that is open to the public.

Plan Amendment

During the plan's effective period, there may be changes in local conditions or priorities that result in the need to amend a mitigation strategy. The planning consultant will provide a jurisdiction assistance with the plan amendment process, which includes the following steps:

1. The jurisdiction will work with the planning consultant to review the existing plan/mitigation strategy and develop the proposed mitigation action(s) that will supersede the current strategy.

2. The jurisdiction's governing body will allow public comment on the proposed amendment by either addressing the issue in a regular meeting or reconvening the hazard mitigation planning committee. The amendment will be approved by a motion or resolution by the jurisdiction's governing body.

3. The planning consultant will submit the amendment to the mitigation strategy and action plan to Iowa Homeland Security and Emergency Management Department (HSEMD). Once the amendment is approved by HSEMD, the planning consultant will distribute the plan amendment information to all jurisdictions included in the plan.

The planning consultant will communicate changes and plan amendments with Jasper County Emergency Management during all the steps in the amendment process.

Plan Evaluation

Evaluation of the plan will occur during the plan update process. Whether or not mitigation actions are completed will determine the overall effectiveness of the plan. The impacts of hazard events during the life of the plan and results of mitigation actions will determine whether an effective mitigation strategy was established for each jurisdiction. This is documented in the progress update for each jurisdiction.