HARDIN COUNTY
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Multi-Jurisdiction All Hazard Mitigation Plan

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Hardin County, Iowa
Multi-Jurisdiction All Hazard Mitigation Plan

UPDATE

December 2017

Prepared for:

Hardin County Emergency Management
1031 Edgington Avenue
Eldora, IA 50627

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Hardin County Multi-Jurisdiction All Hazard Mitigation Plan 2011

The Hardin County Multi-Jurisdiction All Hazard Mitigation Plan was developed in 2011. It contains information relative to the hazards and vulnerabilities facing Hardin County, Iowa. The jurisdictions participating in this Plan include those incorporated jurisdictions and school districts within Hardin County.

As a requirement of the Disaster Mitigation Act of 2000, this plan is updated every five years.

Hardin County Multi-Jurisdictional All Hazard Mitigation Plan 2017

The Hardin County Multi-Jurisdictional All Hazard Mitigation was updated in 2017, and represents the most current version of the plan. The updated plan was prepared for the following jurisdictions and special districts:

- Hardin County
- City of Ackley
- City of Alden
- City of Buckeye
- City of Eldora
- City of Hubbard
- City of Iowa Falls
- City of New Providence
- City of Radcliffe
- City of Steamboat Rock
- City of Union
- City of Whitten
- Hardin County (Unincorporated)
- AGWSR Community School District
- Alden Community School District
- BCLUW Community School District
- Eldora New Providence Community School District
- Hubbard Radcliffe Community School District
- Iowa Falls Community School District

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Special Thanks & Acknowledgements

A special thank you goes out to all those involved in the creation and subsequent update of the Hardin County Multi- Jurisdictional Hazard Mitigation Plan. These participants include:

- Roxane Warnell, Hardin County Emergency Management Coordinator
- BJ Hoffman, Hardin County Board of Supervisors
- Jeff Fiscus, City of Alden Mayor
- Erik Graham, City of Ackley Mayor
- Dustin Ingram, Ackley Development Commission
- Gordon Kolterman, City of Buckeye Mayor
- Bill Hittle, City of Buckeye
- Robert John, City of Eldora City Council
- Jim Johnson, Resident (former Hardin County Board of Supervisors)
- Randy Smuck,City of Hubbard City Council
- Ron Kuhfus, City of Iowa Falls Police Chief
- Jody Anderson, City of Iowa Falls Administrator
- Gene Newgaard, City of Iowa Falls Mayor
- Rick Gustin, City of Iowa Falls Fire Chief
- Cindy Litwiller, Iowa Falls Area Development Corporation
- Louis Schafer, City of New Providence Mayor
- Terry R. Beare, City of New Providence
- Debra Jeske, City of New Providence
- Mark Jeske, City of New Providence Fire Chief
- Taylor Roll, City of Radcliffe Mayor
- Chuck Raska, City of Radcliffe Fire Chief
- Brad Fjelland, City of Radcliffe City Council
- James Nehring, City of Owasa Mayor
- Marvin Veld, City Steamboat Rock Mayor
- Tom Pieper, City of Union Mayor
- Erin Cross, City of Whitten Mayor
- Marty Jimmerson, School Superintendent AGWSR School District
- Dr. John Robbins, School Superintendent, Iowa Falls School District/ Alden School District
- Jay Mathis, School Superintendent, Eldora New Providence School District
- Patricia Heinz, School Superintendent, Hubbard Radcliffe School District
- Ben Petty, School Superintendent, BCLUW School District
- Mike Hayes, BCLUW School District

Without the hard work and dedication of these people's time and effort, this plan would not be a reality. It now serves as documentation of the will of the people of Hardin County to protect the lives and physical assets in their area.

Executive Summary

This 2017 Multi-Jurisdictional Hazard Mitigation Plan was submitted to the State of Iowa and FEMA by Hardin County on January 22, 2018.

For the purposes of this plan, a hazard is defined as “any source of danger that threatens humans, property, and the environment” (FEMA 385-2/August 2001, Page iii) and hazard mitigation planning as a proactive approach to prepare Hardin County and participating jurisdictions for potential hazards. The plan outlines the entire mitigation process, which includes the following steps:

- Organizing Community Resources
- Risk Assessment and Mitigation Strategy
- Writing the Plan
- Community Comment Period
- Plan Submittal
- Plan Approval and Adoption, and
- Plan Implementation.

One of the most important steps in the hazard mitigation planning process is the development of the risk assessment and mitigation strategy. To determine the needs of each jurisdiction, countywide meetings were held, during which meeting participants mapped assets, identified critical facilities and vulnerable populations, and established goals and prioritized mitigation actions.

The plan includes a detailed profile of Hardin County, which covers location, demographics, housing, transportation, and economic information to provide a statistically detailed depiction of the planning area. Similar data is presented for each jurisdiction participating in the multi-jurisdictional hazard mitigation plan, including information on the local government, services provided by the jurisdiction, resources employed, and previous mitigation efforts taken at the jurisdictional level. The plan also includes enrollment and school building locations for the six school districts in the planning area.

The risk assessment identified and profiled hazards that may affect Hardin County. The profile included a general description, historical occurrences, probability, vulnerability of the county, the maximum extent of its possible destruction, severity, and speed of onset.

Each jurisdiction’s assets and vulnerable populations are displayed in the plan in order to gauge priorities after a hazard event. The most frequently identified vulnerable populations are the elderly and disabled, and the most frequently identified critical facilities are city facilities and grocery stores.

Vulnerability to hazards was calculated for each jurisdiction based on the hazard's impact to identified assets and vulnerable populations and the severity of the hazard. Based on this data, the highest rated hazard was Severe Winter Storm.

Each jurisdiction considered their risk assessment and identified assets and vulnerabilities as they determined potential mitigation goals and projects. The goals included protecting the health and safety of residents, minimizing losses to structures, educating citizens of the dangers of hazards, and continuity of operations of the jurisdictions and county. Projects identified to help achieve those goals included the installation of safe rooms, purchase of generators, elevation of roads, and the creation of emergency contact sheets and procedures. Projects were evaluated and ranked to set their priority for each community using the STAPLEE evaluation method.

It is of the utmost importance that the maintenance and update of this plan continues in order to carry on proactive all-hazard mitigation efforts in all jurisdictions of the planning area. Incorporating the plan and its ideals into legislation, decisions, and planning will ensure that hazards are considered in the future development and operations of cities. Annual meetings to monitor and evaluate the plan, and publication of success stories of projects, will keep the public involved and informed of what hazard mitigation is doing for their jurisdiction.

The report closes with recommendations for the smooth implementation and continuation of the goals set forth by each jurisdiction.

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Plan Adoption

44 CFR 201.6(c)(5): "{The local hazard mitigation plan shall include} documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g. City Council, County Commissioner, Tribal Council)."

Hardin County and participating jurisdictions will adopt this Multi-Jurisdictional All Hazard Mitigation Plan by passing the resolution set forth below.

Plan Adoption

Hardin County, Iowa
Multi-Jurisdictional All Hazard Mitigation Plan

Plan Update:

- Year: 2017

Prepared for:

Hardin County Emergency Management
P.O. Box 557
1031 Edgington Ave
Eldora, IA 50627

[INSERT PLAN ADOPTION & APPROVAL LETTER]

Chapter 1: Introduction

Hazards

A hazard is any source of danger that threatens humans, property, and the environment (FEMA 385-2/August 2001, Page iii). In the context of hazard mitigation planning, there are two types of hazards. The first type of hazard is a natural hazard, which is one that occurs in nature, often due to climate and geographic location. The other hazard type is a technological or human caused hazard, which is caused by some sort of human activity. Table 1 lists both natural and man-made hazards.

Table 1: All Hazards (2017)

Natural Hazards	Technological Hazards
Animal/Crop/Plant Disease*	**Dam Failure***
Drought*	**Communications Failure**
Earthquake*	**Energy Failure**
Expansive Soils*	**HAZMAT (Hazardous Materials) Incident***
Extreme Heat*	**Highway Transportation Incident**
Flash Flood*	Infrastructure Incident*
Grass or Wildland Fire*	Levee Failure*
Hailstorm*	**Pipeline Transportation Incident**
Ice Storm	Radiological Incident*
Landslide*	**Railway Transportation Incident**
Riverine Flood*	**Structural Failure**
Sinkholes*	**Structural Fire**
Severe Winter Storm*	Transportation Incident*
Thunderstorms and Lightning*	**Human Caused Hazards**
Tornado*	**Terrorism (Armed Assault)**
Windstorm*	**Cyber Attack**

The hazards with an asterisk were included in the 2013 Iowa Hazard Mitigation Plan and **bolded hazards** were included in the 2017 Hardin County Multi-Jurisdictional Hazard Mitigation Plan. Hazard classification (natural, technological, and human caused) follows the 2013 Iowa Hazard Mitigation Plan.

It was determined by the steering committee and planning team that Expansive Soils, Landslide, Levee Failure, and Radiological Incident did not apply to Hardin County or pose a significant risk although these hazards are identified in the Iowa Hazard Mitigation Plan. Also, Transportation Incident was covered in the 2017 Hardin County Multi-Jurisdictional Hazard Mitigation Plan under Highway Transportation Incident and Railway Transportation Incident. Similarly, Infrastructure Incident was addressed under Structural Failure in the 2017 Hardin County Multi-Jurisdictional Hazard Mitigation Plan.

Hazard Mitigation Planning

To better structure the way in which communities in the United States respond to disasters, the "four phases of emergency management" were introduced in the early 1980s after the similarities between natural disasters and civil defense became clear. This approach can be applied to all disasters. The "four phases of emergency management" are described below.

1. **Mitigation** is defined as any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event. Mitigation, also known as prevention, encourages long-term reduction of hazard vulnerability. The goal of mitigation is to save lives and reduce property damage. Mitigation can accomplish this, and should be cost-effective and environmentally sound. This, in turn, can reduce the enormous cost of disasters to property owners and all levels of government. In addition, mitigation can protect critical community facilities, reduce exposure to liability, and minimize community disruption. Examples include land use planning, adoption of building codes, elevation, acquisition, or relocation of homes away from floodplains.
2. **Preparedness** includes plans and preparations made to save lives and property and to facilitate response operations.
3. **Response** includes actions taken to provide emergency assistance, save lives, minimize property damage, and speed recovery immediately following a disaster.
4. **Recovery** includes actions taken to return to normal or improved operating condition following a disaster. (FEMA 386-1/September 2002, Page v)

Hazard mitigation planning involves both phases one and two of emergency management, mitigation and preparedness. A proactive rather than reactive approach to emergency management is used for hazard mitigation planning.

As defined by FEMA, planning is the act or process of making or carrying out plans, specifically the establishment of goals, policies, and procedures for a social or economic unit (FEMA 386-1/September 2002, Page i). **In essence, planning, coupled with hazard mitigation, results in a process that involves determining what actions a community can take to reduce or eliminate the long-term risks to human life and property from natural and man-made hazards.**

Hazard Mitigation Planning Enabling Legislation

In the past, federal legislation has provided funding for disaster relief, recovery, and some hazard mitigation planning. The Disaster Mitigation Act of 2000 (DMA 2000) is the latest legislation to improve this planning process and was put into motion on October 20, 2000, when President George W. Bush signed the Act (Public Law 106-390). The legislation reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur. As such, this Act establishes a pre-disaster hazard mitigation program and requirements for the national post-disaster Hazard Mitigation Grant Program (HMGP).

Section 322 of the Act specifically addresses mitigation planning at the state and local levels. It identifies requirements that allow HMGP funds to be used for planning activities, and increases the amount of HMGP funds available to states that have developed a comprehensive, enhanced mitigation plan prior to disaster. States and communities must have an approved mitigation plan

in place prior to receiving post-disaster HMGP funds. Local and tribal mitigation plans must demonstrate that their proposed mitigation measures are based on a sound planning process that accounts for the risk to and the capabilities of the individual communities.

State governments have certain responsibilities for implementing Section 322, including:

- Preparing and submitting a standard or enhanced state mitigation plan;
- Reviewing and updating the state mitigation plan every three years;
- Providing technical assistance and training to local governments to assist them in applying for HMGP grants and in developing local mitigation plans; and
- Reviewing and approving local plans if the state is designated a managing state and has an approved enhanced plan.

DMA 2000 is intended to facilitate cooperation between state and local authorities, prompting them to work together. It encourages and rewards local and state pre-disaster planning and promotes sustainability as a strategy for disaster resistance. This enhanced planning network will better enable local and state governments to articulate accurate needs for mitigation, resulting in faster allocation of funding and more effective risk reduction projects.

To implement the DMA 2000 requirements, FEMA prepared an Interim Final Rule, published in the Code of Federal Registration (CFR) on February 26, 2002, at 44 CFR Parts 201 and 206, which establishes planning and funding criteria for states and local communities. (FEMA 386-1/September 2002, Page i)

Multi-Jurisdictional Hazard Mitigation Plan

The agreement for this plan indicates that it is a multi-jurisdictional hazard mitigation plan, which is a plan that is jointly prepared by more than one jurisdiction. The term “jurisdiction” in this context means “local government.” Title 44 Part 201 Mitigation Planning in the CFR defines a “local government” as “any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.”

Jurisdictions can benefit in several ways when they choose to participate in a multi-jurisdictional planning process, including:

- Enabling comprehensive approaches to mitigation of hazards that affect multiple jurisdictions;
- Allowing economies of scale by leveraging individual capabilities and sharing costs and resources;
- Avoiding duplication of efforts; and,
- Imposing an external discipline on the process.

A multi-jurisdictional planning approach may also have certain complications. Some potential challenges include:

- Less individual control over the process;
- Needing strong, centralized leadership and organizational skills;
- Conflict that may arise among participants; and
- Requiring consistent participation by each jurisdiction throughout the planning process so that the plan stays on schedule.

(FEMA 386-8/August 2006, Page 1)

Each jurisdiction considered whether the advantages in participating in a joint planning effort outweighed the disadvantages for its particular situation. Jurisdictions understood that when opting to participate in a multi-jurisdictional plan, they must still meet all planning requirements, including formal adoption of the plan. It was noted that failure to meet requirements would disqualify the non-compliant jurisdictions from adopting the plan, getting plan approved by FEMA, and consequently being eligible for project grants.

Purpose and Need

Each year, natural disasters in the United States take the lives of hundreds of people and injure thousands more. Nationwide, taxpayers pay billions of dollars annually to help communities, organizations, businesses and individuals recover from disasters. These monies only partially reflect the true cost of disasters because additional expenses paid by insurance companies and non-government organizations are not reimbursed by tax dollars.

Additionally, many natural disasters are predictable. Many more are repetitive, often with the same results. Many of the damages caused by these events can be alleviated or even eliminated through hazard mitigation activities.

The Federal Emergency Management Agency (FEMA), now a part of the Department of Homeland Security (DHS), has made reducing losses from natural disasters one of its primary goals. Hazard Mitigation Planning, and the subsequent implementation of the objectives, measures, and policies developed, is the primary mechanism in achieving this goal. Mitigation projects, resulting from effective hazard mitigation planning, have been successful in reducing disaster damages.

This plan was developed pursuant to the Disaster Mitigation Act of 2000 (DMA) and the regulations published in the Federal Register Volume 67, Number 38, Tuesday, February 26, 2002. Section 104 of DMA revises the Robert T. Stafford Disaster Relief and Emergency Assistance Act by adding Section 322, which provides new and revitalized emphasis on hazard mitigation, including adding a new requirement for local mitigation plans. These new local mitigation planning regulations are implemented through 44 CFR Part 201.6.

Proactive hazard mitigation planning at the local level can help reduce the cost of disaster response and recovery to property owners and government by protecting critical community facilities, reducing liability exposure, and minimizing overall community impacts and disruption.

Prerequisites

44 CFR Requirement §201.6(c)(5): [The local hazard mitigation plan shall include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commission, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

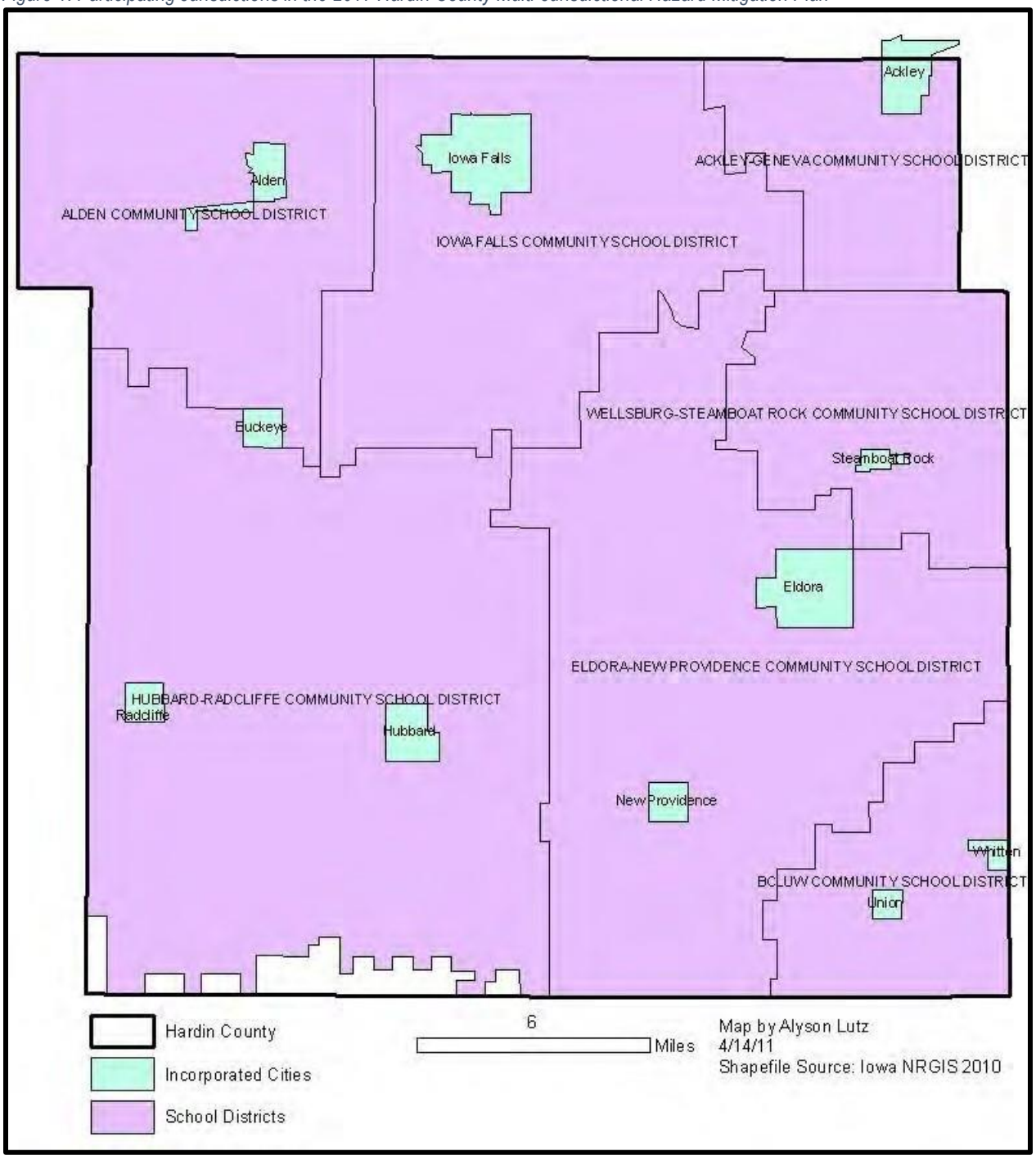
Note to reviewers: Signed adoption resolutions are available in Appendix A (available following approval by FEMA Region VII).

The following 19 jurisdictions participated in the creation of this plan. Refer to **Figure 1** for a map of the jurisdictions included in this plan.

- City of Ackley
- City of Alden
- City of Buckeye
- City of Eldora
- City of Hubbard
- City of Iowa Falls
- City of New Providence
- City of Radcliffe
- City of Steamboat Rock
- City of Union
- City of Whitten
- Hardin County (Unincorporated)
- AGWSR Community School District
- Alden Community School District
- BCLUW Community School District
- Eldora New Providence Community School District
- Hubbard Radcliffe Community School District
- Iowa Falls Community School District

The planning boundary for this multi-jurisdictional hazard mitigation plan includes all of the incorporated and unincorporated areas of Hardin County, Iowa. All of the school districts and associated buildings that are located in Hardin County are included in the planning boundary (Figure 1).

Figure 1: Participating Jurisdictions in the 2017 Hardin County Multi-Jurisdictional Hazard Mitigation Plan



*Please note that the Ackley-Geneva and Wellsburg-Steamboat Rock Community School Districts consolidated in 2001 to become the AGWSR Community School District, which is presented as such in this plan.

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Chapter 2: Hazard Mitigation Plan Development & Planning Process

44 CFR Requirement §201.6(c)(1): *[The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

Hazard mitigation planning is the process of determining how to reduce or eliminate the loss of life and property damage resulting from natural and human-made hazards. According to FEMA, four basic phases comprise the basic hazard mitigation planning process.

1. **Organize resources:** involves organizing resources, mobilizing the community, and getting started with the planning process.
    1. Assess community support
    2. Build the planning team
    3. Engage the public
2. **Assess risks:** identifies hazards and estimates the losses associated with these hazards.
    1. Identify hazards
    2. Profile hazard events
    3. Inventory assets
    4. Estimate losses
3. **Develop mitigation plan:** describes how to identify, plan, and initiate cost-effective actions.
    1. Develop mitigation goals and objectives
    2. Identify and prioritize mitigation actions
    3. Prepare an implementation strategy
    4. Document the mitigation planning process
4. **Implementation and monitoring progress:** leads communities and states through the formal adoption of the plan and discusses how to implement, monitor, and evaluate the results of the mitigation actions to keep the mitigation plan relevant over time.
    1. Adopt the mitigation plan
    2. Implement the plan recommendations
    3. Evaluate planning results
    4. Revise the plan (FEMA 386-1/September 2002)

This is a general outline of the planning process that was used to update the 2017 Hardin County Multi-Jurisdictional Hazard Mitigation Plan. Since this plan is multi-jurisdictional, modifications had to be made throughout the planning process to better reflect each participating community's values and capabilities. The detailed process used for creating this plan is outlined and narrated in the following pages.

Hardin County Hazard Mitigation Planning Update Process

1. **Organize Community Resources**
    1. Steering Committee meets with Hardin County Emergency Management Coordinator
    2. Complete/Update community inventory in each jurisdiction
    3. Complete/Update county and community profiles, determine local capabilities, research existing regulations
    4. Hazard mitigation planning kick-off meeting
    5. Hardin County Emergency Management forms county-wide strategic planning team
2. **Risk Assessment and Mitigation Strategy**
    1. Hardin County Steering Committee/Strategic Planning Team Meeting #1 and Make-up Webinar
        1. Identify/Update hazards for Hardin County
        2. Profile all possible hazards
        3. Rank hazards
        4. Identify hazard boundaries
        5. Inventory assets through concept mapping
        6. Identify potential mitigation actions based on assets and hazard boundaries
    2. Hardin County Steering Committee/Strategic Planning Team Meeting #2
        1. Vulnerability assessment
        2. Determine overall goals
        3. Determine potential mitigation actions
        4. Evaluate mitigation actions
    3. Planning team follows-up with the county and each jurisdiction
        1. Finish determining goals, mitigation actions, and evaluations
        2. Create work plans for mitigation actions
        3. Prioritize mitigation actions based on evaluations and work plans
        4. Create implementation plan
3. **Write Plan**
4. **Community Comment Period** with plan posted 15 days
5. **Submit Plan** for comment and approval
6. **Plan Approval and Adoption** by resolution in each jurisdiction and the county
7. **Plan Implementation by Jurisdictions and County**

The Previous Plan

2011 Hazard Mitigation Plan

The Hardin County Hazard Mitigation Plan was approved in 2011. It contains information relative to the hazards and vulnerabilities facing Hardin County, Iowa. The jurisdictions participating in this previous Plan included those incorporated jurisdictions within the County.

As a requirement of the Disaster Mitigation Act of 2000, this plan is updated every five years.

Ongoing Planning Efforts

Hardin County Emergency Management has completed and regularly updates the Hardin County Hazard Analysis and Risk Assessment. This Hazard Analysis identifies all likely natural and technological hazards that might or have occurred within the County. The County is also actively tracking and implementing mitigation actions.

The most recent planning efforts include updating the 2017 Hazard Mitigation Plan.

Why Update?

Title 44 of the Code of Federal Regulations (44 CFR) stipulates that hazard mitigation plans must present a schedule for monitoring, evaluating, and updating the plan. This provides an opportunity to reevaluate recommendations, monitor the impacts of actions that have been accomplished, and determine if there is a need to change the focus of mitigation strategies. A jurisdiction covered by a plan that has expired is not able to pursue elements of federal funding under the Robert T. Stafford Act for which a current hazard mitigation plan is a prerequisite.

The Updated Plan and the Key Differences

One of the key enhancements to the plan was to include Ice Storms, Terrorism: Armed Assault, and Cyber Attack as new hazards. A new risk ranking methodology was also utilized to demonstrate social, physical and broader community impacts from these threats. Finally, a 5-year action plan was implemented to help maintain and achieve implementation of the identified mitigation actions.

The update also resulted in the identification of new mitigation initiatives, updates to ongoing actions, and some actions were completed since 2011.

- **49** New Mitigation Actions were identified
- **147** Updated Mitigation Actions are either in-progress or are ongoing
- **25** Mitigation Actions were completed.

Plan Update Revision Table

Table 2: Plan Update Revision Table

Plan Section	Update Review and Analysis
Special Thanks	Updated to reflect 2017 participants
Plan Update Revision Table	Entire page added
Executive Summary	Updated to reflect 2017 plan & process
Prerequisites	
Chapter 1: Introduction	Hazard list updated
Chapter 2: Hazard Mitigation Planning Process	In addition to holding meetings, webinars and county-wide survey (over 100 responses) was utilized.
Chapter 3: Planning Area	
Chapter 3.1: Planning Area Profile	Updated demographic information was added to the 2017 update. Additional categories, such as elderly population data was added.
Chapter 3.2: Jurisdiction Descriptions and Capabilities	Information was updated for each jurisdiction
Chapter 4: Risk Assessment	
Chapter 4.1: Hazard Identification	Ice Storms, Terrorism: Armed Assault, and Cyber Attack were added to the 2017 Update
Chapter 4.2: Hazard Profiles	Ice Storms, Terrorism: Armed Assault, and Cyber Attack were added to the 2017 Update
Chapter 4.3: Hazard Ranking	A new risk ranking methodology was utilized to demonstrate social, physical and broader community impacts.
Chapter 4.4: Vulnerability Assessment	
Chapter 5: Mitigation Strategy	
Chapter 5.1: Goals, Mitigation Actions, and Evaluation	Goals were updated. Previous mitigation actions were updated, and new actions were identified.
Chapter 6: Plan Maintenance Process	A commitment to convene the Steering Committee 45 days after a major disaster was added.
Chapter 6.1: Monitoring, Evaluation, and Updating the Plan	A 5-year action plan was implemented
Chapter 6.2: Incorporation into Existing Planning Mechanisms	No change
Chapter 6.3: Continued Public Involvement	No change
Chapter 7: Recommendations	

Plan Organization

This plan includes all federally required elements of a disaster mitigation plan:

- A description of the planning process
- The public involvement strategy
- A list of goals and objectives
- A countywide hazard risk assessment
- Countywide mitigation initiatives
- A plan maintenance strategy

The following appendices include information or explanations to support the main content of the plan:

- Appendix A: Notice of Endorsement & Adoption
- Appendix B: Public Outreach & Participation
- Appendix C: Staplee
- Appendix D: Acronyms and Definitions
- Appendix E: Benefit-Cost Analysis Guidance
- Appendix F: Federal Funding Sources and Programs
- Appendix G: Mitigation Project Examples
- Appendix H: FEMA Crosswalk

All planning partners will adopt the plan in its entirety.

Plan Use

The Plan should be used to help County and participating City officials plan, design, and implement programs and projects that will help reduce the jurisdictions vulnerability to natural, technological, and man-made hazards. The Plan should also be used to facilitate inter-jurisdiction coordination and collaboration related to all hazard mitigation planning and implementation within the County and at the Regional level. Lastly, the Plan should be used to develop or provide guidance for local emergency response planning. If adopted, this Plan will achieve compliance with the Disaster Mitigation Act of 2000 (DMA 2000).

Plan Purpose

The primary focus of the Plan is to evaluate the County's potential exposure to natural and manmade disasters and identify appropriate mitigation strategies.

The purposes of this Plan are to:

- Fulfill Federal and local mitigation planning responsibilities

- Promote pre- and post-disaster mitigation measures with short/long range strategies to minimize suffering, loss of life, impact on traditional culture, and damage to property and the environment
- Eliminate or minimize conditions that would have an undesirable impact on the people, culture, economy, environment, and well-being of the County at large.
- Enhance elected officials', departments', and the public's awareness of the threats to the community's way of life, and of what can be done to prevent or reduce the vulnerability and risk.

Scope

Although DMA 2000 only requires local governments to address natural hazards, the County decided it was imperative to address all hazards, including technological/manmade hazards.

Legal Authority

Federal legislation has historically provided funding for disaster relief, recovery, and some hazard mitigation planning. The Disaster Mitigation Act of 2000 (DMA 2000) is the latest legislation to improve this planning process (Public Law 106-390). The new legislation reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur. As such, DMA 2000 establishes a pre-disaster hazard mitigation program and new requirements for the national post-disaster Hazard Mitigation Grant Program (HMGP).

Section 322 of DMA 2000 specifically addresses mitigation planning at the state and local levels. It identifies new requirements that allow HMGP funds to be used for planning activities, and increases the amount of HMGP funds available to states that have developed a comprehensive, enhanced mitigation plan prior to a disaster. States and communities must have an approved mitigation plan in place prior to receiving post-disaster HMGP funds. Local and tribal mitigation plans must demonstrate that their proposed mitigation measures are based on a sound planning process that accounts for the risk to and the capabilities of the individual communities.

FEMA prepared an Interim Final Rule, published in the Federal Register on February 26, 2002 (44 CFR Parts 201 and 206), which establishes planning and funding criteria for states and local communities. For disasters declared after November 1, 2004 a local government must have a Local Hazard Mitigation Plan (LHMP) approved per section 201.6, in order to receive Federal HMGP project grants.

The Planning Area: Participating Jurisdictions and Organizations

44 CFR §201.6(a) (4): *Multi-jurisdictional plan may be accepted, as appropriate, as long as each jurisdiction has participated in the process.*

In order to be included in the plan and eligible for Hazard Mitigation Grant Program funding, each jurisdiction had to fulfill certain planning participation requirements. In order to be considered a full participant eligible for inclusion and funding, each jurisdiction must do the following:

1. Update/review community profile
2. Distribute questionnaire
3. Participate in the hazard mitigation kick-off meeting
4. Appoint jurisdiction representative(s)
5. Representative(s) of the jurisdiction attend hazard mitigation meetings; participate in Webinars, and utilize the online planning system.
6. Collaborate with the Hazard Mitigation Planning Team to complete all required plan-related tasks and research (information is incorporated throughout plan)
7. Host/facilitate a public comment period for plan revisions
8. Adopt the Hardin County Multi-Jurisdictional Hazard Mitigation Plan

Refer to the table below for meeting attendance and representatives for each jurisdiction. Some jurisdictions had multiple representatives in order to ensure that someone was always available for plan development meetings and information gathering.

All jurisdictions included in this plan participated in the planning process. Each jurisdiction was represented by an official, staff member, or resident.

*Note: The City of Owasa (population 43) is a small rural community, and did not participate in the plan process. Their specific mitigation needs are addressed via the County's ongoing and new actions.

Table 3: Hardin County Strategic Planning Team Members and Meeting Attendance

Jurisdiction	Representative	Title	Kick Off Meeting Feb. 16, 2017	County Meeting #2 June 20, 2017	Webinar July 18, 2017	County Meeting #3 July 18, 2017	Webinar Sept. 13, 2017	County Meeting #4 Nov. 15, 2017	In-person Meeting	Phone Calls	E-mail Correspondence	Participation through the Online Planning System	Updated Existing Mitigation Actions	Submitted New Mitigation Action
Hardin County	BJ Hoffman	Hardin County Board of Supervisors	Yes	Yes		Yes					Yes	Yes	Yes	Yes
	Roxane Warnell	Hardin County Emergency Management Coordinator	Yes	Yes		Yes		Yes			Yes	Yes	Yes	Yes
Ackley	Erik Graham	City of Ackley Mayor						Yes	Yes (Nov 2017)		Yes	Yes	Yes	Yes
	Jefferson Fosbender/ Dustin Ingram	Ackley Development Commission						Yes		Yes (multiple conference calls)	Yes	Yes	Yes	Yes
Alden	Jeff Fiscus	City of Alden Mayor	Yes							11/1/2017 conference call	Yes	Yes	Yes	Yes
Buckeye	Gordon Kolterman	City of Buckeye Mayor	Yes			Yes		Yes			Yes		Yes	Yes
	Bill Hittle	Mayor Elect						Yes			Yes			
Eldora	Robert John	City of Eldora City Council	Yes						Yes, meeting with City Council (8/11/2017)		Yes		Yes	Yes
	Jim Johnson	Resident (former Hardin County Board of Supervisors)				Yes					Yes			

Jurisdiction	Representative	Title	Kick Off Meeting Feb. 16, 2017	County Meeting #2 June 20, 2017	Webinar July 18, 2017	County Meeting #3 July 18, 2017	Webinar Sept. 13, 2017	County Meeting #4 Nov. 15, 2017	In-person Meeting	Phone Calls	E-mail Correspondence	Participation through the Online Planning System	Updated Existing Mitigation Actions	Submitted New Mitigation Action
Hubbard	Randy Smuck	City of Hubbard City Council	Yes	Yes		Yes		Yes			Yes		Yes	Yes
Iowa Falls	Ron Kuhfus	City of Iowa Falls, Police Chief	Yes			Yes					Yes	Yes	Yes	Yes
	Jody Anderson	City of Iowa Falls		Yes		Yes					Yes		Yes	Yes
	Gene Newgaard	City of Iowa Falls, Mayor		Yes		Yes					Yes	Yes	Yes	Yes
	Rick Gustin	City of Iowa Falls Fire Chief				Yes					Yes		Yes	Yes
	Cindy Litwiller	Iowa Falls Area Development Corporation				Yes		Yes			Yes	Yes	Yes	Yes
New Providence	Terry R. Beare	City of New Providence				Yes		Yes			Yes		Yes	Yes
	Debra Jeske	City of New Providence				Yes					Yes		Yes	Yes
	Mark Jeske	City of New Providence Fire Chief				Yes					Yes		Yes	Yes
	Ron Reece	City of New Providence						Yes			Yes		Yes	Yes
	Louis Schafer	City of New Providence Mayor						Yes			Yes		Yes	Yes
Radcliffe	Taylor Roll	City of Radcliffe Mayor						Yes			Yes		Yes	Yes

Jurisdiction	Representative	Title	Kick Off Meeting Feb. 16, 2017	County Meeting #2 June 20, 2017	Webinar July 18, 2017	County Meeting #3 July 18, 2017	Webinar Sept. 13, 2017	County Meeting #4 Nov. 15, 2017	In-person Meeting	Phone Calls	E-mail Correspondence	Participation through the Online Planning System	Updated Existing Mitigation Actions	Submitted New Mitigation Action
	Chuck Raska	City of Radcliffe, Fire Chief	Yes					Yes			Yes		Yes	Yes
	Brad Fjelland	City of Radcliffe				Yes					Yes		Yes	Yes
Steamboat Rock	Marvin Veld	City of Steamboat Rock Mayor							Yes	1-hour phone call with the Mayor on September 1, 2017	Yes		Yes	Yes
Union	Tom Pieper	City of Union Mayor	Yes	Yes	Yes	Yes					Yes	Yes	Yes	Yes
Whitten	Erin Cross	Mayor									Yes		Yes	

*Note: The City of Owasa (population 43) is a small rural community, and did not participate in the plan process. Their specific mitigation needs are addressed via the County's ongoing and new actions.

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The Steering Committee

Stakeholders are the individuals, agencies and jurisdictions that have a vested interest in the recommendations of the hazard mitigation plan, including planning partners. The effort to include stakeholders in this process included stakeholder participation on the Steering Committee. Stakeholders were encouraged to attend and participate in all committee meetings.

The Steering Committee agreed to meet four (4) times or as needed throughout the course of the plan's development. Meetings were facilitated at each Steering Committee meeting, which addressed a set of objectives based on the work plan established for the plan.

The Steering Committee met in February, June, July, and November 2017. Meeting agendas, notes and attendance logs can be found in Appendix B of this document. All Steering Committee meeting times and locations were sent via e-mail, letter, and with follow-up phone calls, as needed. In addition, follow-up/make-up Webinars were held following meetings 2 and 3. Steering Committee members had an opportunity to participate throughout the plan update via the online planning system. Members were encouraged to provide comments.

The core planning team made a presentation at a Steering Committee meeting on February 16, 2017 to introduce the mitigation planning process. The Steering Committee, planning partners and public all were encouraged to participate in the plan update process. Key meeting objectives were as follows:

- Provide an overview of the Disaster Mitigation Act.
- Describe the reasons for a plan.
- Outline the work plan.
- Outline planning partner expectations.
- Seek commitment to the planning partnership.
- Affirm expectations for the Steering Committee

Table 4: Hardin County Steering Committee

Name	Title	Jurisdiction	Agency/Organization
Roxane Warnell	Hardin County Emergency Management Coordinator	Hardin County	Hardin County Emergency Management
David McDaniel	Sheriff	Hardin County	Sheriff
BJ Hoffman	Board of Supervisors	Hardin County	Hardin County Board of Supervisors
Erik Graham	Mayor	City of Ackley	City of Ackley
Jeff Fiscus	Mayor	City of Alden	City of Alden
Gordon Kolterman	Mayor	City of Buckeye	City of Buckeye
Bob Jeske	Mayor	City of Eldora	City of Eldora City Council
Marshall Simmerman	Mayor	City of Hubbard	City of Hubbard
Gene Newgaard	Mayor	City of Iowa Falls	City of Iowa Falls

Louis Schafer	Mayor	City of New Providence	City of New Providence
James Nehring	Mayor	City of Owasa	City of Owasa
Taylor Roll	Mayor	City of Radcliffe	City of Radcliffe
Marvin Veld	Mayor	City Steamboat Rock	City Steamboat Rock
Tom Pieper	Mayor	City of Union	City of Union
Erin Cross	Mayor	City of Whitten	City of Whitten

Organization/Agency Coordination and Participation

Agencies and organizations throughout the County were invited to participate in the plan development process from the beginning and were kept apprised of plan development milestones.

The following agencies/organizations were informed of key planning meetings and were invited to participate in the hazard mitigation questionnaire. Private citizens and businesses were also encouraged to participate in the hazard mitigation questionnaire (100 completed questionnaires), but because the questionnaire promised confidentiality, a complete list of participating businesses and organizations is not available. Agency/organization representatives were also invited to participate via the online planning system and were given the opportunity to review, comment and suggest revisions to the plan.

Table 5: Hardin County Planning and Stakeholder Participants

Name	Title	Jurisdiction	Agency/Organization
Roxane Warnell	Hardin County Emergency Management Coordinator	Hardin County	Hardin County Emergency Management
BJ Hoffman	Board of Supervisors	Hardin County	Hardin County Board of Supervisors
Jeff Fiscus	Mayor	City of Alden	
Erik Graham	Mayor	City of Ackley	
Dustin Ingram	Ackley Development Commission	City of Ackley	Ackley Development Commission
Gordon Kolterman	Mayor	City of Buckeye	
Bill Hittle	Mayor Elect	City of Buckeye	
Robert John		City of Eldora	City of Eldora City Council
Jim Johnson			Former Hardin County Board of Supervisors
Randy Smuck		City of Hubbard	City of Hubbard City Council
Ron Kuhfus	Police Chief	City of Iowa Falls	City of Iowa Falls Police
Jody Anderson	Administrator	City of Iowa Falls	
Gene Newgaard	Mayor	City of Iowa Falls	
Rick Gustin	Fire Chief	City of Iowa Falls	City of Iowa Falls Fire
Cindy Litwiller		City of Iowa Falls	Iowa Falls Area Development Corporation

Terry R. Beare		City of New Providence	
Debra Jeske		City of New Providence	
Mark Jeske	Fire Chief	City of New Providence	City of New Providence Fire
Ron Reece		City of New Providence	
Louis Schafer	Mayor	City of New Providence	
Taylor Roll	Mayor		
Chuck Raska	Fire Chief	City of Radcliffe	City of Radcliffe Fire
Brad Fjelland	City Council	City of Radcliffe	
James Nehring	Mayor	City of Owasa	
Marvin Veld	Mayor	City Steamboat Rock	
Tom Pieper	Mayor	City of Union	
Erin Cross	Mayor	City of Whitten	
Marty Jimmerson	School Superintendent		AGWSR School District
Dr. John Robbins	School Superintendent		Iowa Falls School District/ Alden School District
Jay Mathis	School Superintendent		Eldora New Providence School District
Patricia Heinz	School Superintendent		Hubbard Radcliffe School District
Ben Petty	School Superintendent		BCLUW School District
Mike Hayes	Facility Director		BCLUW School District

Table 6: Organizations and Agency Participation

Agency/Organization
Hardin County Emergency Management
Hardin County Board of Supervisors
Hardin County GIS
Ackley Development Commission
City of Eldora City Council
City of Hubbard City Council
City of Iowa Falls Police
City of Iowa Falls Fire
Iowa Falls Area Development Corporation
City of New Providence Fire
City of Radcliffe Fire
AGWSR School District
Iowa Falls School District/ Alden School District
Eldora New Providence School District
Hubbard Radcliffe School District
BCLUW School District
BCLUW School District

Input from Neighboring Jurisdictions -- Emergency managers from surrounding counties were granted access to the online planning system, and were invited to review and provide any additional feedback to the plan. A digital copy of the plan was provided to the Emergency

Managers. The following is a list of neighboring jurisdictions invited to review the plan: Franklin County, Butler County, Grundy County, Marshall County, Story County, and Hamilton County.

Public and Community Participation

Broad public participation in the planning process helps ensure that diverse points of view about the planning area's needs are considered and addressed. The public must have opportunities to comment on disaster mitigation plans during the drafting stages and prior to plan approval (44 CFR, Section 201.6(b)(1)). The strategy for involving the public in this plan emphasized the following elements:

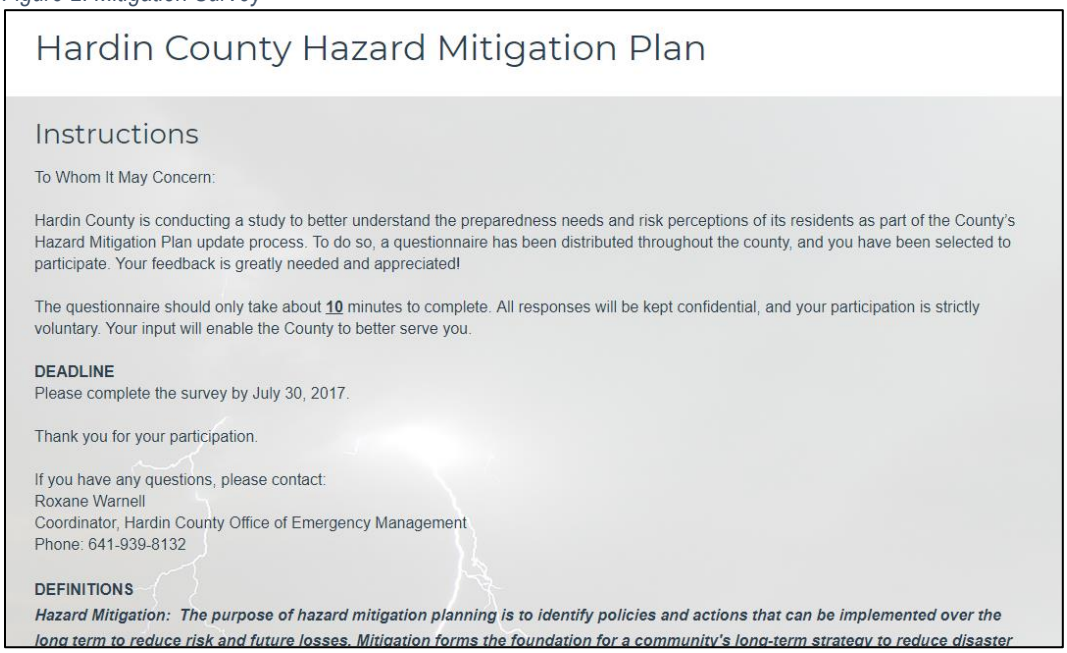
- Use a questionnaire to determine the public's perception of risk and support of hazard mitigation
- Attempt to reach as many planning area citizens as possible using multiple media
- Identify and involve planning area stakeholders via meetings and technology

Questionnaire and Key Findings

A hazard mitigation and preparedness questionnaire was developed to gauge household preparedness for all hazards and the level of knowledge of tools and techniques that assist in reducing risk and loss. This questionnaire was designed to help identify areas vulnerable to one or more hazards. The answers to its questions helped guide the Steering Committee in prioritizing hazards of impact and in selecting goals, objectives and mitigation strategies.

134 people participated in the questionnaires. 100 questionnaires were completed during the course of this planning process. The average completion time for the questionnaire was 14 minutes. All 12 municipalities had someone from their municipality participate in the questionnaire. The complete questionnaire and a summary of its findings can be found in Appendix B.

Figure 2: Mitigation Survey



Hardin County Hazard Mitigation Plan

Instructions

To Whom It May Concern:

Hardin County is conducting a study to better understand the preparedness needs and risk perceptions of its residents as part of the County's Hazard Mitigation Plan update process. To do so, a questionnaire has been distributed throughout the county, and you have been selected to participate. Your feedback is greatly needed and appreciated!

The questionnaire should only take about **10** minutes to complete. All responses will be kept confidential, and your participation is strictly voluntary. Your input will enable the County to better serve you.

DEADLINE
Please complete the survey by July 30, 2017.

Thank you for your participation.

If you have any questions, please contact:
Roxane Warnell
Coordinator, Hardin County Office of Emergency Management
Phone: 641-939-8132

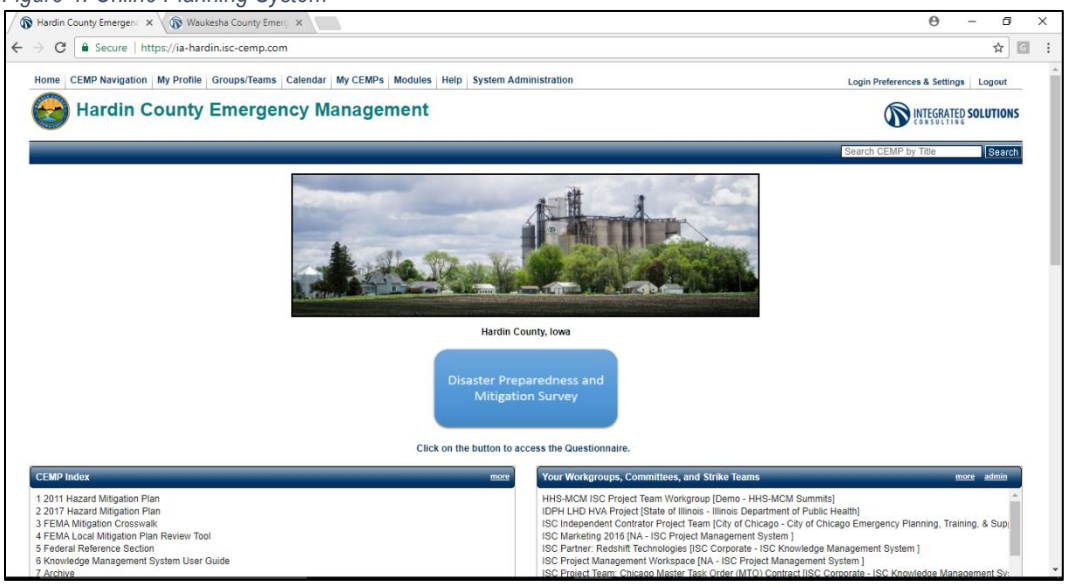
DEFINITIONS
***Hazard Mitigation:** The purpose of hazard mitigation planning is to identify policies and actions that can be implemented over the long term to reduce risk and future losses. Mitigation forms the foundation for a community's long-term strategy to reduce disaster*

Figure 3: Mitigation Survey Participation

Ackley	8.3%	10
Alden	0.8%	1
Buckeye	2.5%	3
Eldora	19.8%	24
Hubbard	7.4%	9
Iowa Falls	44.6%	54
New Providence	3.3%	4
Owasa	0.8%	1
Radcliffe	1.7%	2
Steamboat Rock	1.7%	2
Union	0.8%	1
Whitten	1.7%	2
Other location inside Hardin County (click to view)	1.7%	2
Outside of Hardin County (click to view)	5.0%	6

Online Planning System

Figure 4: Online Planning System



One of the key features of the Online Planning System was the ability to provide real-time access to the plan and to allow stakeholders to comment on key sections. Comments can be used to encourage collaboration for plan maintenance. The **Comments** tool allowed the user to make comments on any page within the manual and mark the comment as an observation or feedback. Comments for pages were visible to all administrators and users who had editing privileges for the specific page.

To make a comment, users were instructed to click on the **Comment** link on the bottom of the content page and a pop-up box would appear. The person used the drop-down box to designate whether the comment was a **Feedback** or an **Observation.** After entering the comment, they clicked the **Send Comments** button to submit.

The comment would appear after the page refreshes (if user is allowed to view comments). An email notification was sent to users who were designated to receive comment notification.

See Appendix B for a sample of comments made via the online planning system.

Meetings

The Steering Committee agreed to meet four (4) times or as needed throughout the course of the plan's development. Meetings were facilitated at each Steering Committee meeting, which addressed a set of objectives based on the work plan established for the plan.

The Steering Committee met in February, June, July, and November, 2017. Meeting agendas, notes and attendance logs can be found in Appendix B of this document. All Steering Committee meeting times and locations were sent via e-mail, letter, and with follow-up phone calls, as needed. In addition, follow-up/make-up Webinars were held following meetings 2 and

3. Steering Committee members had an opportunity to participate throughout the plan update via the online planning system. Members were encouraged to provide comments.

The general public was invited to attend the meeting in July.

See Appendix B for a copy of Agendas, meeting materials, and photos of the meetings.

Press Releases and Meeting Notices

Multiple press releases and meeting notices were issued to encourage greater participation and input into the Hazard Mitigation Plan.

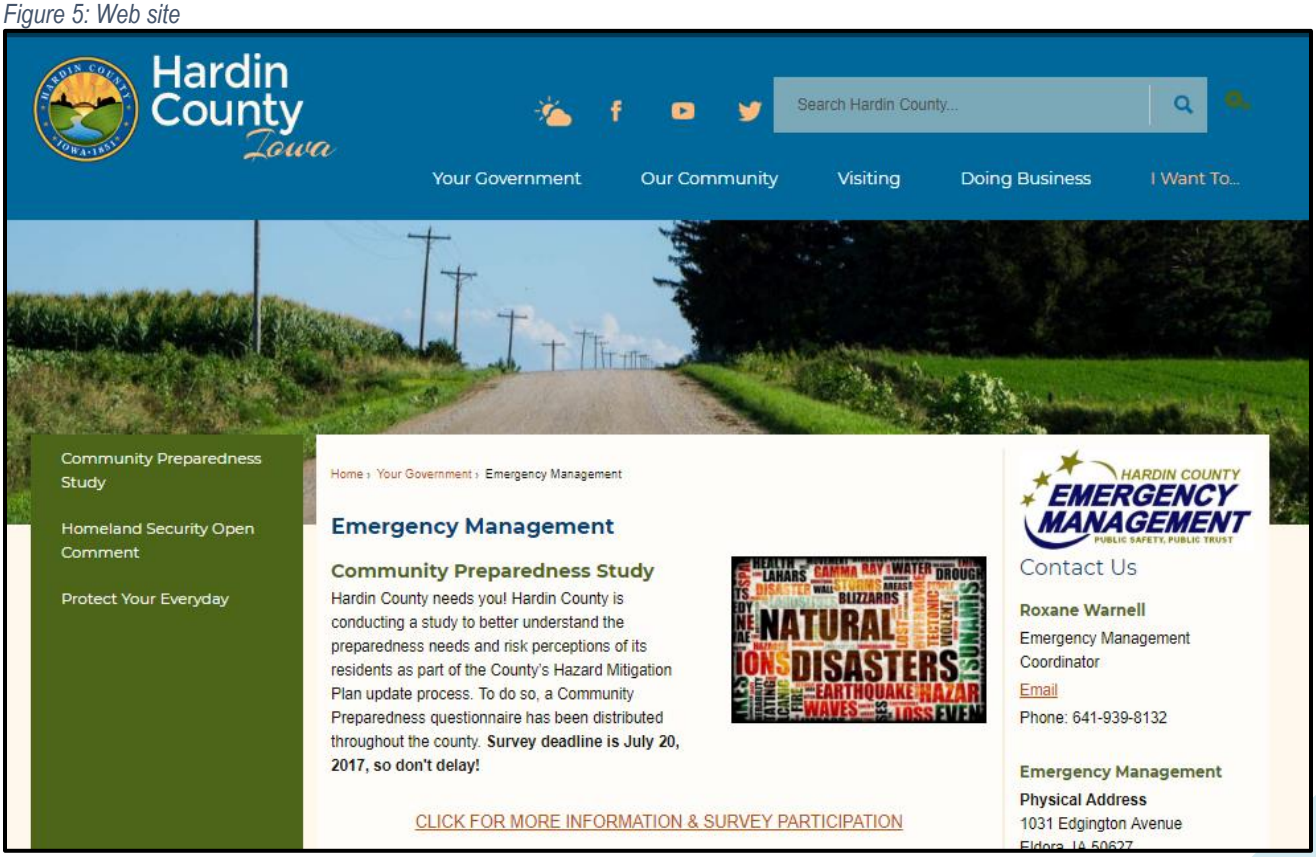
See Appendix B for a copy of press releases and published advertisements.

Website

The Hardin County Web site was utilized to make the Hazard Mitigation Plan available to the general public and key stakeholders during the final review process.

The Web site was also used to promote the questionnaire.

Figure 5: Web site



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Chapter 3: Community Profile and Planning Area

This section describes the planning area and the participating jurisdictions. The 2017 Hardin County Hazard Mitigation Plan is a multi-jurisdictional plan. The planning area refers to the geographic area covered by the plan. Generally, the planning area follows local government jurisdictional boundaries, such as cities, towns, counties, or planning districts.

Planning Area Profile

Location and Size

Hardin County is a fourth-tier county located in central Iowa. The county is bordered on by Franklin County to the north, Grundy County to the east, Story and Marshall Counties to the south, and Hamilton County to the west. In Figure 6, Hardin County is in bold to show its location in relation to all Iowa counties.

Figure 6: Hardin County Base Map

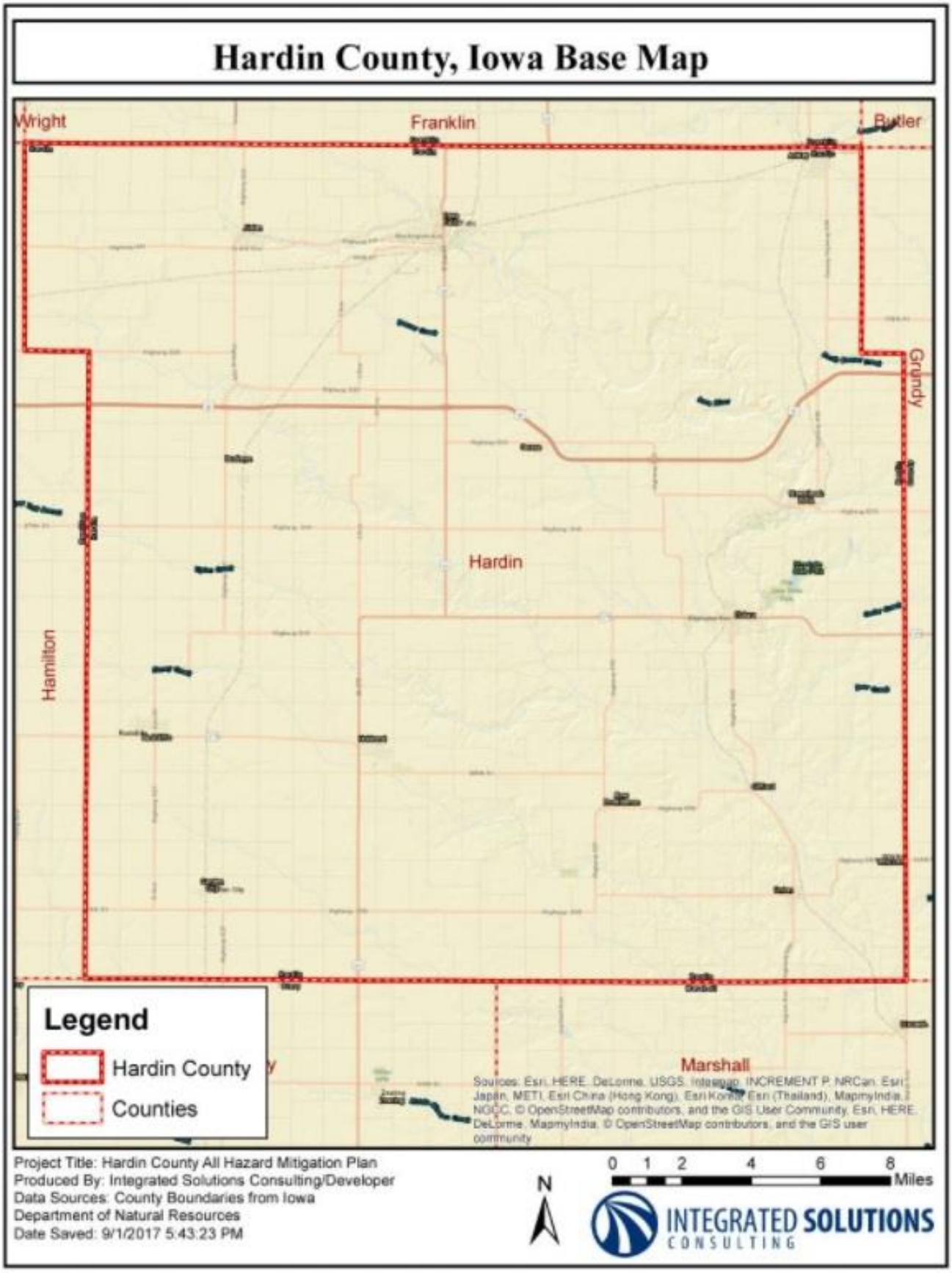


Figure 7: Iowa Counties

Geography, Topography, and Hydrology

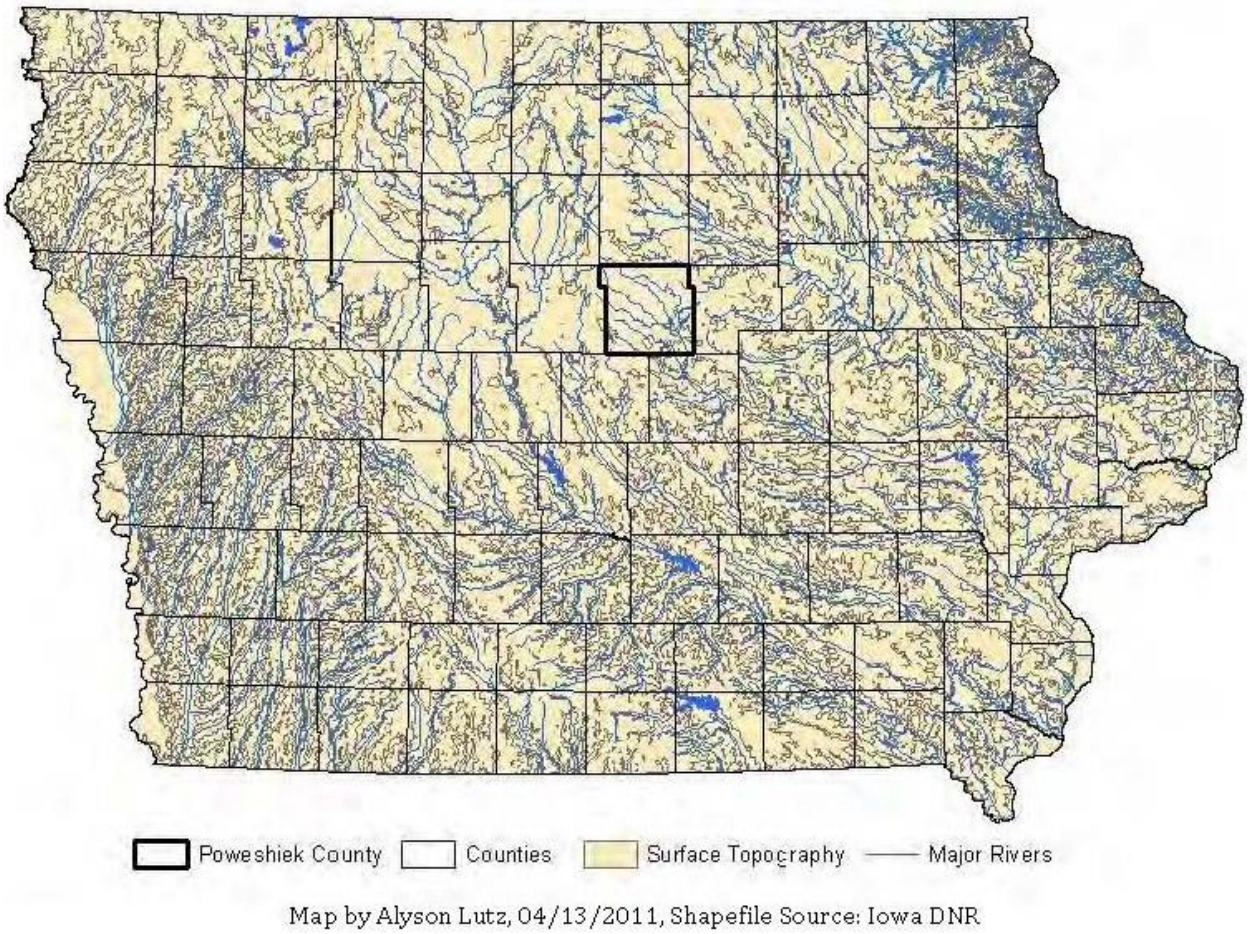
Hardin County has an area of 367,168 acres, or about 576 square miles. Most of the soils in the county are nearly level to gently or moderately sloping. Moderately slopping soils are mostly in the southeastern portion of the county.

The highest elevation in the county is 1226 feet in the southeast quarter of Sherman Township, Section 32, south of Radcliffe. The lowest elevation is 858 feet at the Gehrke Quarries between the unincorporated area of Gifford and the City of Union. This is at the corner of Co Hwy S62 and 290th St, in Union Township, Section 4.

The Iowa River and its immediate tributaries provide natural drainage for 90% of the county, according to the 1981 Hardin County Soil Survey. Ten square miles in the southwest corner of the county are drained by a tributary of the Skunk River, and 30 square miles in northeast Hardin County are drained by Cedar River tributaries. Though 32% of the soils in the county are poorly to very poorly drained, they are drained enough for crop production. In other areas with insufficient underground and surface drainage, crops may be ruined by the pooling of still water.

About 260,000 acres (71%) of Hardin County land is prime cropland, perfect for growing, mainly corn and soybeans. Some of this land, which would be ideally left for farming, has been converted into industrial and urban uses. The 819 farms in Hardin County cover 332,266 acres, according to the 2012 USDA Census of Agriculture.

Figure 8: Topography and Waterways of Iowa



All of Iowa is shown in the map in Figure 8 in order to provide a reference for comparison. Hardin County is one of the flatter central to north central counties in Iowa.

Hardin has eight soil associations. Most of the county (54%) is comprised of Clarion-Nicollet-Webster soil, which is “nearly level to strongly sloping, well drained, somewhat poorly drained, and poorly drained soils that formed in glacial drift; on uplands” (Hardin County Soil Survey, 1981).

The farming products that come from Clarion-Nicollet-Webster soil are cultivated crops. Much of the land is suited for row crops like corn and beans, but only if drained. The soil is naturally wet. There are many ways to alter the land to help drain the soil, such as ditches and tiling. All of these products and manipulations are used extensively in a heavy farming output state.

For more extensive information on the soils in Hardin County, refer to the Soil Survey of Hardin County, Iowa. This survey was completed in 1982 by the USDA and several Iowa government departments and institutions.

Figure 9: Topography

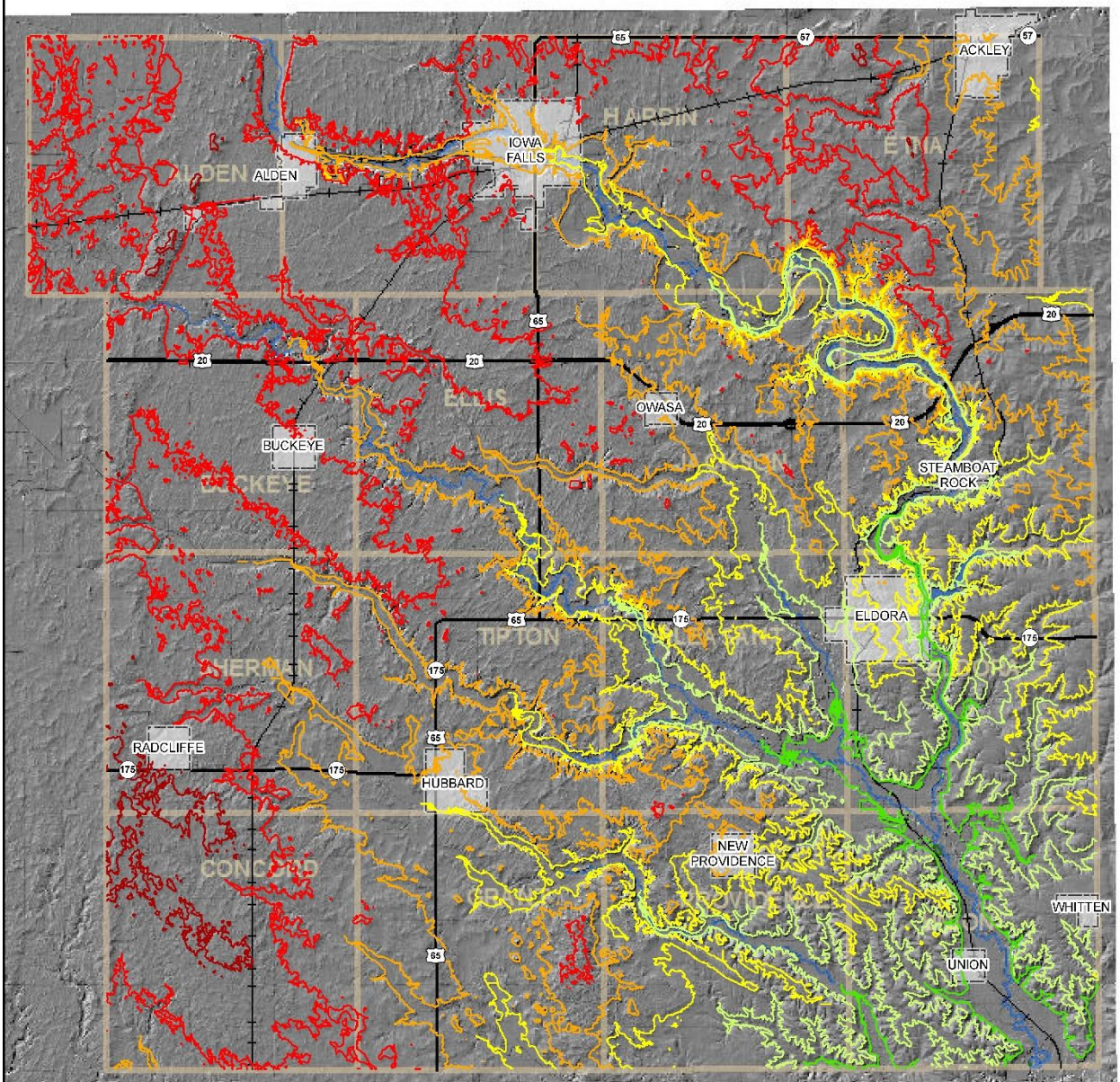
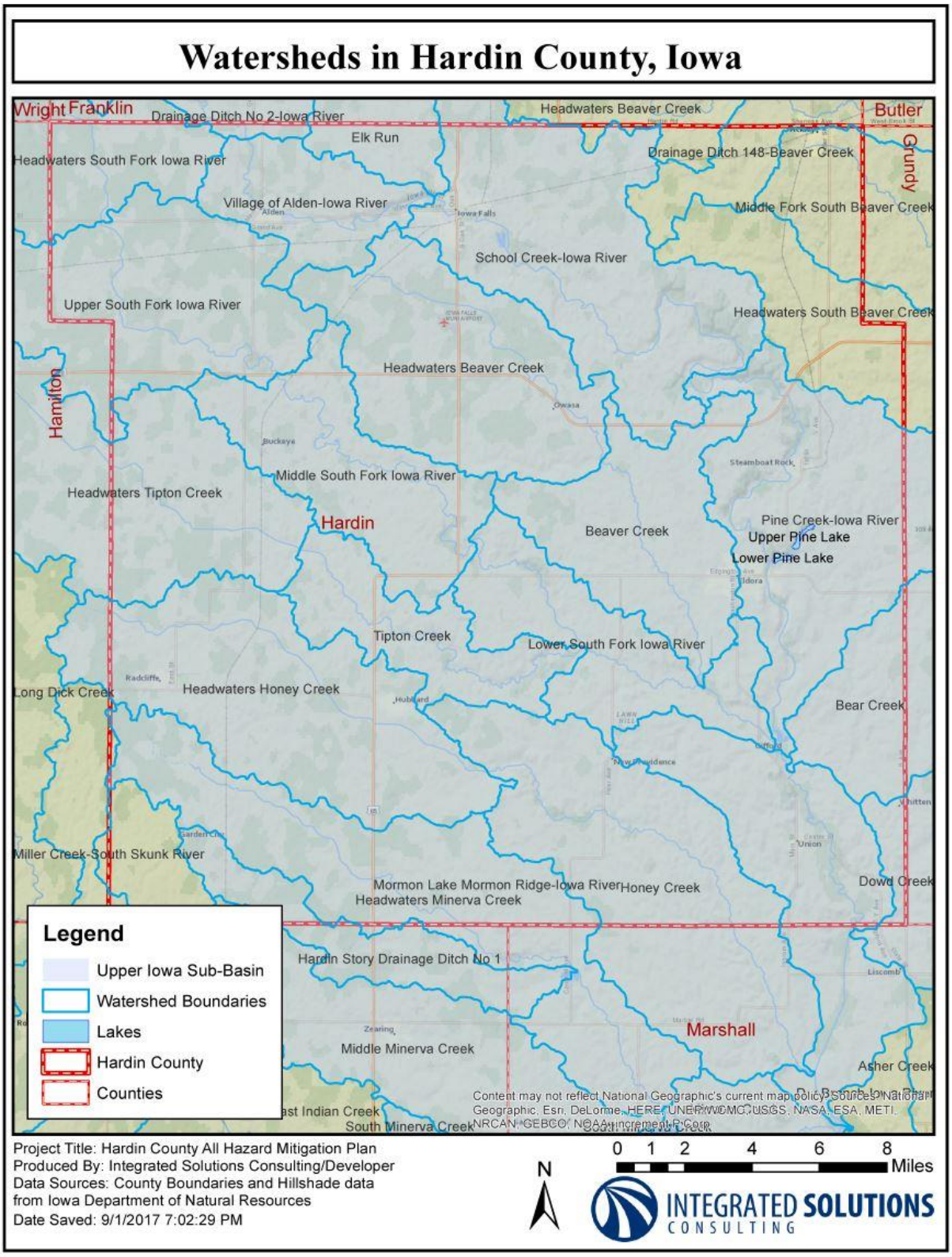


Figure 10: Watersheds



Land Use Regulation and Development

Development Patterns

Hardin County is settled primarily as a rural county with about 71% (12,464 people) of its population living in rural areas. In 2010, 28% of the county's total population lived in urban clusters (5,070 people).

Table 7: Urban Vs. Rural Population in 2010

		Urban		Rural	
Area	**Total Population**	**Total**	**Inside Urbanized Areas**	**Inside Urban Clusters**	**Total**
State of Iowa	3,046,355	1,950,256	1,268,964	681,292	1,096,099
Hardin County	17,534	5,070	0	5,070	12,464
Ackley	1,589	0	0	0	1,589
Alden	787	0	0	0	787
Buckeye	108	0	0	0	108
Eldora	2,732	0	0	0	2,732
Hubbard	845	0	0	0	845
Iowa Falls	5,238	5,061	0	5,061	177
New Providence	228	0	0	0	228
Radcliffe	545	0	0	0	545
Steamboat Rock	310	0	0	0	310
Union	397	0	0	0	397
Whitten	149	0	0	0	149

Source: 2010 Census, P2 Urban and Rural Total Population

The only urban city in Hardin County is Iowa Falls (5,061 people). This city is located in the north central part of the county. Iowa Falls is home to Ellsworth Community College and Iowa Falls Community School District. The Iowa Falls Community School District is comprised of 135 square miles located primarily in northern Hardin County and, to a smaller extent, southern Franklin County. The district serves the community of Iowa Falls, sections of the Bradford and Owasa communities, and all country residents in between.

The Iowa Falls Community School District participates in a whole grade sharing agreement with the Alden Community School District. Iowa Falls sends its 6th grade students to Alden, and Alden sends its 7th through 12th grade students to Iowa Falls. The Alden School District is located primarily in northern Hardin County and, to a smaller extent, southern Franklin County. The district and serves the community of Alden, Buckeye and Popejoy communities, and all country residents in between.

Combined, Ellsworth Community College and the Iowa Falls and Alden Community School Districts comprise 13% of the county population with a total of 2,295 students.

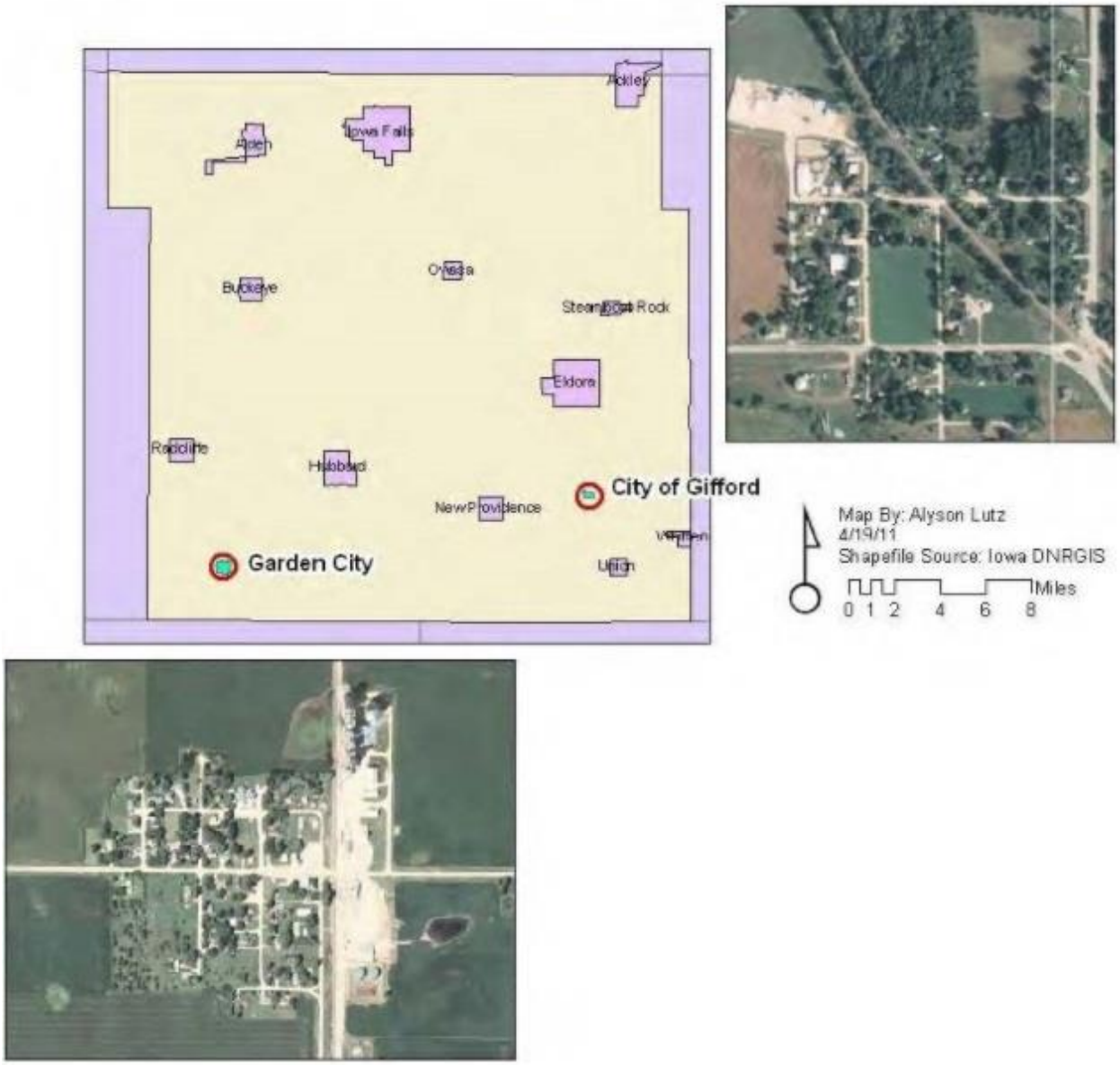
Table 8: School Enrollment

School	Enrollment
Ellsworth Community College (average enrollment)	835
Iowa Falls Community School District	
- Pineview (Pk - 2)	264
- Rock Run (3 - 5)	256
- Alden (6)	85
- Riverbend (7 - 8)	188
- IFAHS (9 - 12)	418
- Greenbelt (11-12)	12
Alden Community School District	
- Alden (PK - 6)	237
- Riverbend (7 - 8)	188
- IFAHS (9 - 12)	418
- Greenbelt (11 - 12)	12
Total Enrollment	2,295

Source: Ellsworth Community College Website, Iowa Falls and Alden Community School Districts Website

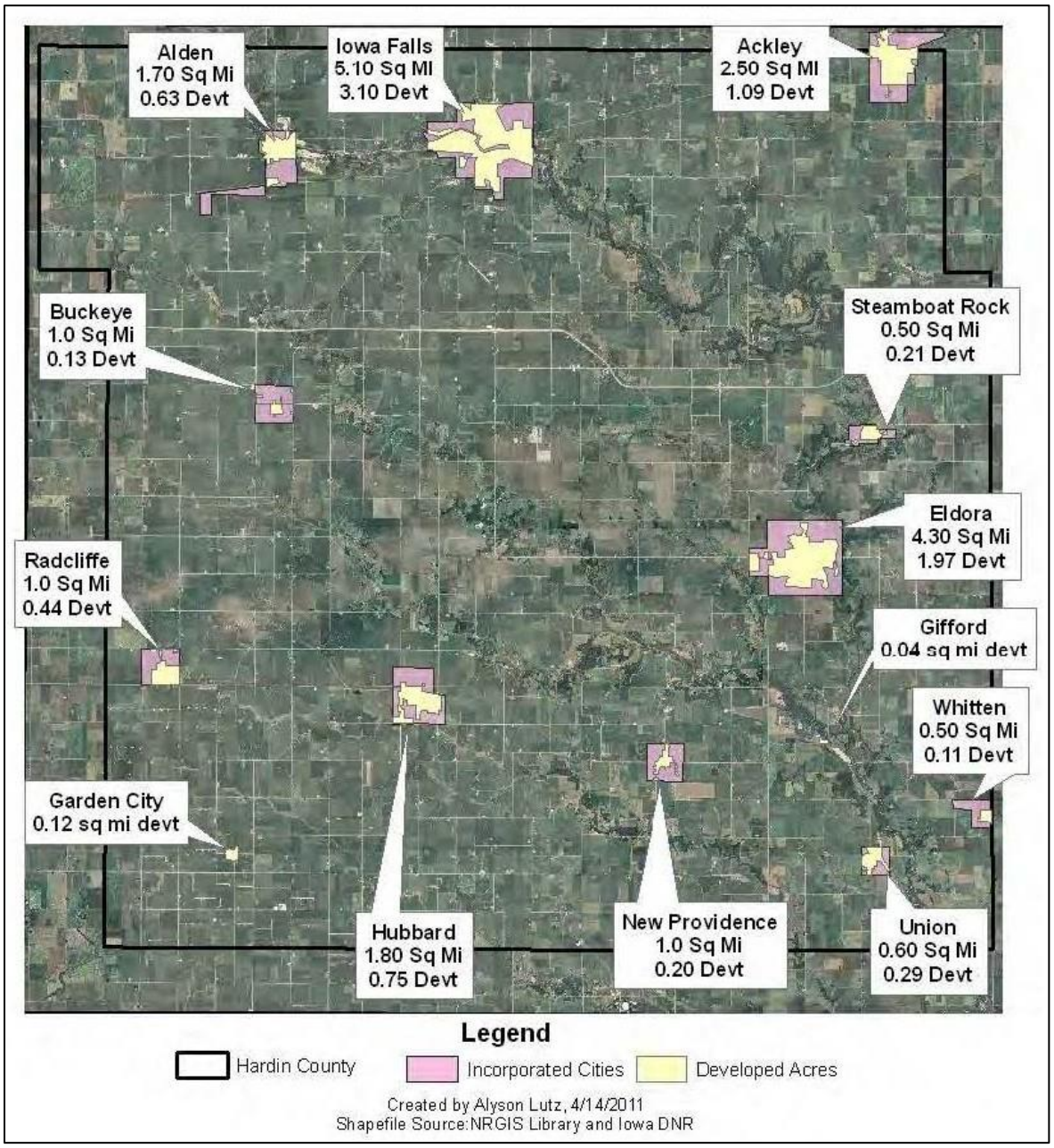
In the rural areas of the county, there are two unincorporated cities, Garden City and Gifford. Together, their area totals less than one square mile.

Figure 11: Garden City and Gifford



Overall, 1.6 percent (9.08 square miles) of Hardin County is developed land. The majority of the development, as seen in Figure 12, is located in the center of each incorporated city. Most of the cities have developed less than half of their total land. The cities are scattered around the county. The two unincorporated areas of Gifford and Garden City are located in the southeast and southwest portions of the county, respectively, and are somewhat near incorporated cities, creating a getaway or alternate rural Iowa lifestyle for residents. The biggest cities in Hardin County, Eldora and Iowa Falls, are situated in the east and north central parts of the county near or on the routes of major Iowa and US highways.

Figure 12: Current Hardin County Land Development



Note: This map provides a rough estimate of the development acres in the county because exact calculations are currently unavailable.

Population and Demographics

Current and Past Trends

The 2015 population estimate in Hardin County is 17,393, a decrease of 141 from the 2010 census data. Iowa Falls is the largest city in Hardin County, with a 2015 population estimate of 5,198, followed by Eldora (2,717) and Ackley (1,706). The smallest city in Hardin County is Buckeye with a population of 88 people.

Some areas in Hardin County are growing; Union has the largest estimated increase with 120 people (30.23% increase). Some areas in Hardin County are also shrinking; Iowa Falls lost the largest number of people between 2010 & 2015 (40, or a 0.76% decrease) and Buckeye experienced the highest percentage decrease, 18.52% (20 people).

Table 9: Population Trend 2010 to 2015

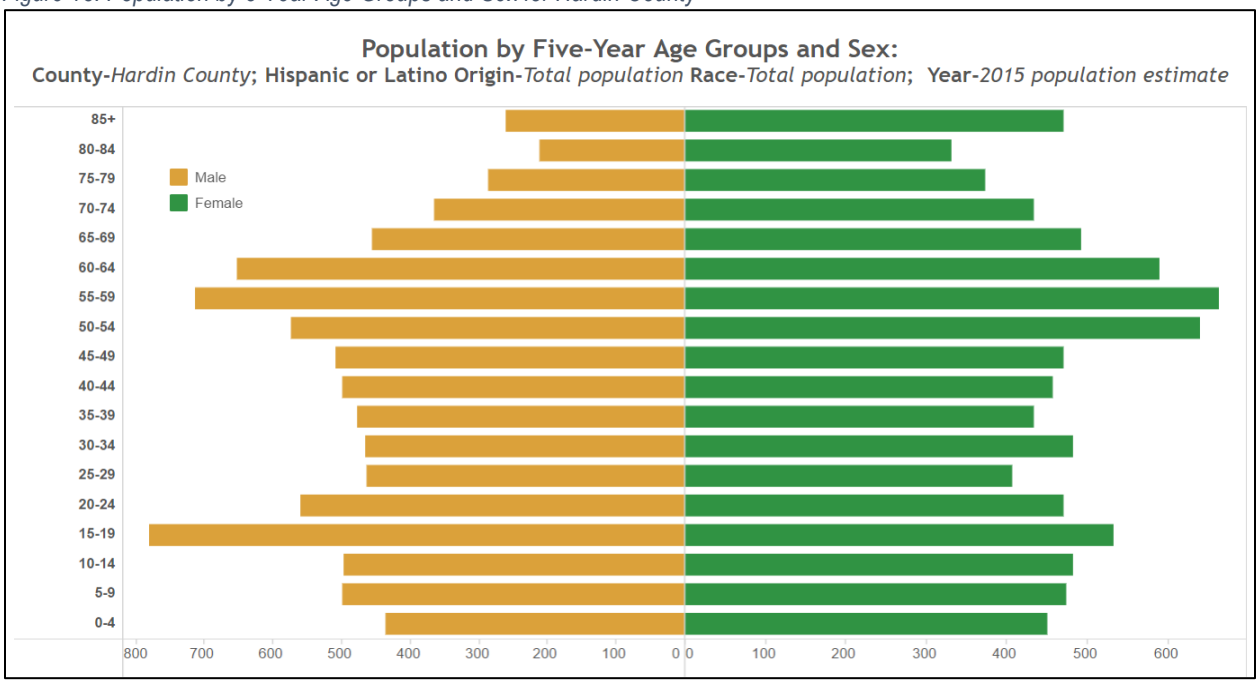
			2010 to 2015	
Area	**2010 Population**	**2015 Estimate**	**Numeric Change**	**Percent Change**
State of Iowa	3,046,355	3,093,526	47,171	1.55%
Hardin County	17,534	17,393	-141	-0.80%
Ackley	1,589	1,706	117	7.36%
Alden	787	803	16	2.03%
Buckeye	108	88	-20	-18.52%
Eldora	2,732	2,717	-15	-0.55%
Hubbard	845	961	116	13.73%
Iowa Falls	5,238	5,198	-40	-0.76%
New Providence	228	226	-2	-0.88%
Radcliffe	545	560	15	2.75%
Steamboat Rock	310	292	-18	-5.81%
Union	397	517	120	30.23%
Whitten	149	153	4	2.68%

Source: 2010 US Census and 2015 American Community Survey, S0101 Age and Sex 5 Year Estimates

Age

Like most counties in Iowa that are primarily rural, Hardin County's population distribution does not resemble the ideal pyramid shape as seen in the Figure 13 below. The main issue is retaining the young adult population. The population between the ages of 25 and 34 is small compared to the rest of the population. After graduating from high school, young adults often move away to attend college or find work elsewhere. Providing the lifestyle demanded by this segment of the population is often difficult and may need to be addressed in order to retain and attract the young adult population in Hardin County. Refer to Figure 13 below.

Figure 13: Population by 5 Year Age Groups and Sex for Hardin County



Overall, Hardin County's population is aging. The median age increased from 40.6 in 2010 to 43.5 in 2010 and 44.7 in 2015. The average age for men in Hardin County in 2015 was 42.1 and the average age for women was 46.9. With the exception of the 30-34-Year-Old range, all age groups younger than 55 Years Old decreased between 2010 & 2015. With the exception of the 80-84-Year-Old range, all age groups older than 55 Years Old increased between 2010 & 2015.

Table 10: Population in Hardin County by Age Group from 2010-2015

	2010 Population		2015 Population		2010 - 2015
	Percent	Number	Percent	Number	Percent Change
Total Population	100%	17,685	100%	17,393	0%
Under 5 Years	5.6%	990	5.3%	922	-0.3%
5 - 9 Years	6.4%	1,132	5.6%	974	-0.8%
10 - 14 Years	6.6%	1,167	6.5%	1,131	-0.1%
15 - 19 Years	8.0%	1,415	7.4%	1,287	-0.6%
20 - 24 Years	5.1%	902	5.0%	870	-0.1%
25 - 29 Years	4.9%	867	4.8%	835	-0.1%
30 - 34 Years	4.4%	778	6.2%	1,078	1.8%
35 - 39 Years	4.8%	849	4.2%	731	-0.6%
40 - 44 Years	6.2%	1,096	5.7%	991	-0.5%
45 - 49 Years	7.2%	1,273	6.1%	1,061	-1.1%
50 - 54 Years	8.0%	1,415	7.5%	1,304	-0.5%
55 - 59 Years	7.1%	1,256	7.8%	1,357	0.7%
60 - 64 Years	4.8%	849	6.9%	1,200	2.1%
65 - 69 Years	5.3%	937	5.5%	957	0.2%
70 - 74 Years	4.0%	707	4.5%	783	0.5%
75 - 79 Years	4.0%	707	4.4%	765	0.4%
80 - 84 Years	3.6%	637	2.9%	504	-0.7%
85 Years and Over	4.0%	707	4.0%	696	0%

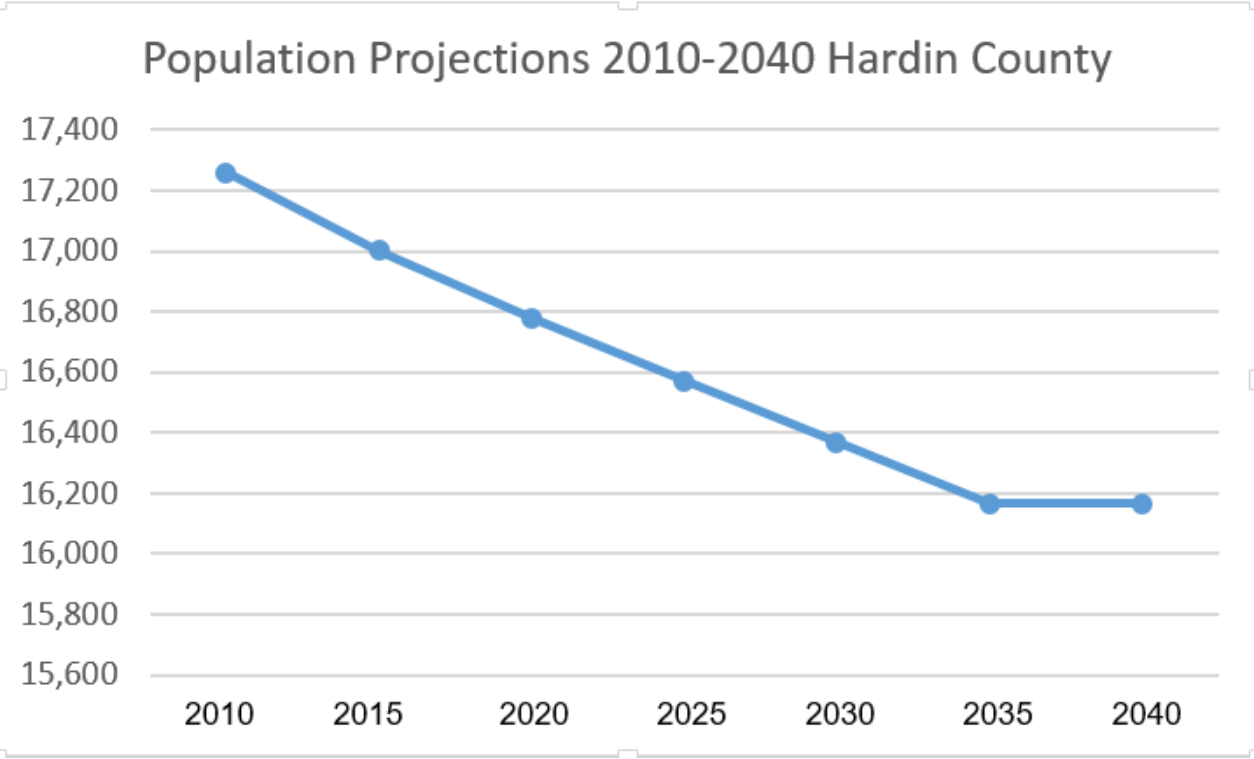
Source: 2015 American Community Survey, S0101 Age and Sex 5-Year Estimates

As the county's population becomes older, more adult and senior services will be needed. Past planning efforts have mentioned providing more adult and senior services such as congregate meal sites and facilities for long-term care; these efforts continue to be on target.

Population Projection

According to a population projection completed by Woods and Poole in 2009, Hardin County's population is expected to steadily decrease as the year 2040 approaches. By 2040, Hardin County's population is predicted to be 15,972, which is a decrease of 2,844 people or 15%. While Hardin County's population is decreasing, it is not decreasing at the rate projected by this project. The 2010 population was 17,685 while the projection estimated it to be just over 17,200. The 2015 population was 17,393, almost 400 more than the 2015 projection of 17,000.

Figure 14: Hardin County Population Projection 2010-2040



A 15% population decrease is a rather alarming population loss that may have a lasting effect throughout the County. An increase in population can increase the amount of federal and state funding the county will receive, which can support services and infrastructure investments, while a decrease may do the exact opposite. This predicted population decrease is most likely due to more young adults leaving the county for higher education and employment opportunities.

Housing Characteristics

Amount and Occupancy

According to the American Community Survey 2015 estimate, Hardin County had 5,267 owner-occupied housing units and approximately 1,706 rental housing units.

Table 11: Number of Housing Units in Hardin County in 2015

Jurisdiction	Number of Housing Units 2000	Number of Housing Units 2015	Change
Hardin County	8,318	8,180	-138
Ackley	817	806	-11
Alden	372	344	-28
Buckeye	50	41	-9
Eldora	1,314	1,249	-65
Hubbard	409	474	65
Iowa Falls	2,412	2,436	24
New Providence	107	107	0
Radcliffe	273	279	6
Steamboat Rock	158	165	7
Union	209	236	27
Whitten	63	59	-4

Source: American Community Survey 2015 Estimates

Iowa Falls has the largest population and the largest share of Hardin County's housing stock while Buckeye has the smallest population and smallest share of Hardin County's housing stock. Five out of the eleven cities in Hardin County had an increase in the number of housing units, while the remainder of jurisdictions and the County as a whole decreased in housing units from 2000 to 2015.

Out of all housing units in Hardin County, 11.3% were vacant in 2010. This is about the same as the state, which had 91.4% of its housing occupied. The homeowner vacancy rate, though, is higher in Hardin County than the entire State of Iowa so a higher share of Hardin County's housing units is vacant or for sale.

Table 12: Housing Occupancy in 2015

	Hardin County	State of Iowa
Percent Occupied Housing	85.2%	91.3%
Vacant Housing Units	14.8%	8.7%
Homeowner Vacancy Rate	3.3	1.6
Rental Vacancy Rate	10.1	6.2

Source: 2015 American Community Survey 5 Year Estimates, DP04 Selected Housing Characteristics

Type of Housing Available

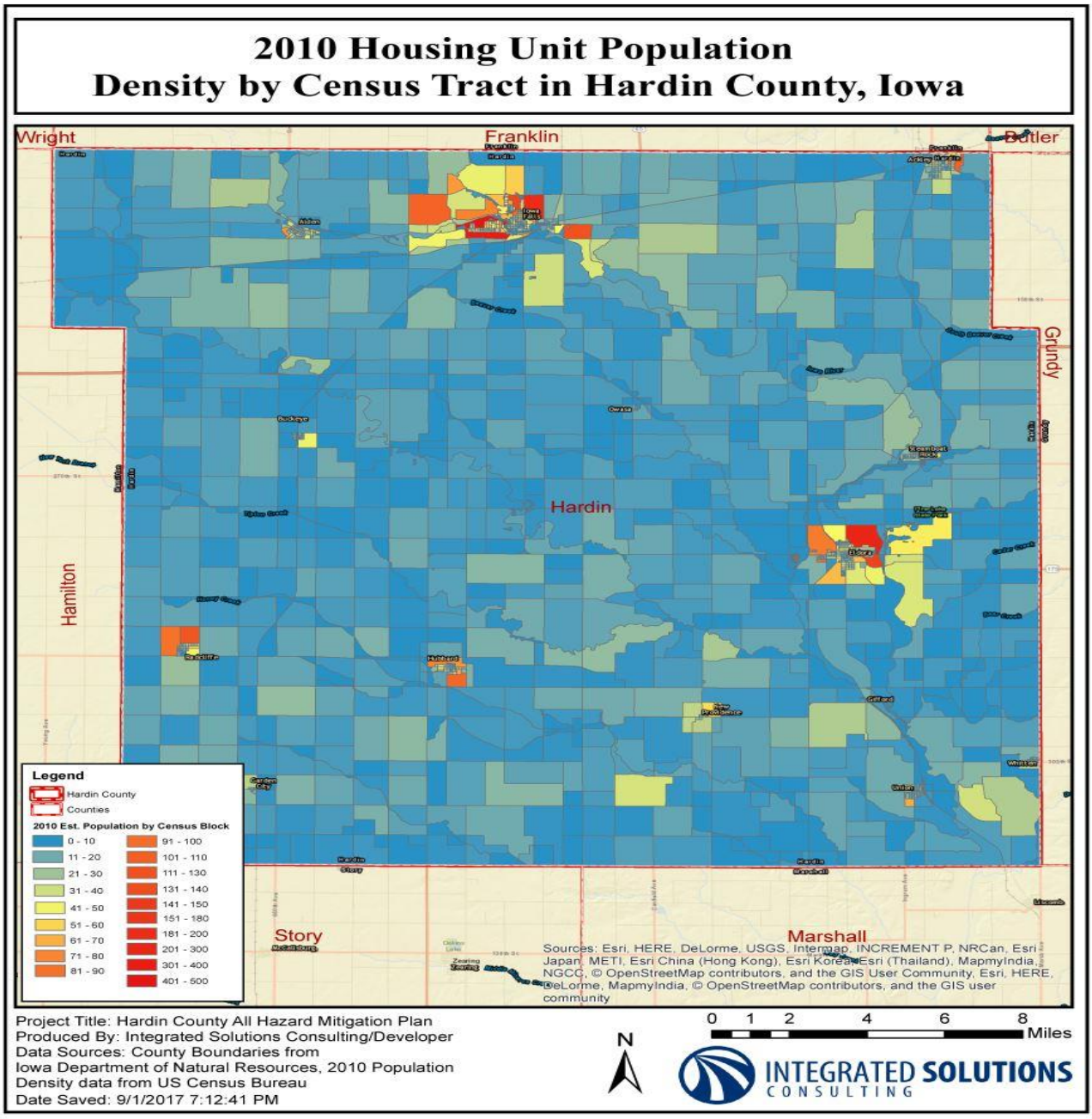
The dominant type of housing in Hardin County is 1-unit detached homes (homes that do not share common walls) while 1-unit attached homes (homes that share common walls) make up the smallest share of the county's housing.

Table 13: Housing by Type in 2015

	Hardin County	Iowa
Total Housing Units	8,180	1,354,264
1-Unit, Detached	82.6%	73.7%
1-Unit, Attached	1.0%	3.8%
2 Units	3.1%	2.4%
3 or 4 Units	6.0%	3.4%
5 to 9 Units	2.7%	3.7%
10 to 19 Units	0.8%	3.9%
20 or More Units	1.2%	5.3%
Mobile Home	2.7%	3.8%

Source: 2015 American Community Survey 5 Year Estimates, DP04 Selected Housing Characteristics

Figure 15: Hardin County Population Density



Hardin County has a larger share of 1-unit detached housing units than the State of Iowa, but 7% fewer multiple-unit housing structures than the state.

Age and Condition

The age and state of housing can provide valuable insight into possible areas for mitigation measures. The year housing stock was built can identify general structural concerns as well as structures that were built before key building codes were implemented. As a whole, Iowa has a larger percentage of newer housing stock than Hardin County (14% of Iowa's housing stock was

built after 2000, compared to 3% of Hardin County's housing stock). Iowa also has fewer older housing structures; just over a quarter of Iowa's total housing stock was built before 1939 (27%), while nearly 40% of Hardin County's housing stock was built before 1939 (38%).

Table 14: Year Housing Structures in Hardin County and Iowa Were Built

Year Built	Iowa		Hardin County	
	Estimate	Percent	Estimate	Percent
Total	1,354,264	100%	8,180	100%
Built 2014 or later	1,788	0%	0	0%
Built 2010 to 2013	22,947	2%	47	1%
Built 2000 to 2009	160,230	12%	195	2%
Built 1990 to 1999	147,144	11%	435	5%
Built 1980 to 1989	97,335	7%	345	4%
Built 1970 to 1979	200,245	15%	1,254	15%
Built 1960 to 1969	143,766	11%	1,027	13%
Built 1950 to 1959	143,578	11%	996	12%
Built 1940 to 1949	77,810	6%	745	9%
Built 1939 or earlier	359,421	27%	3,136	38%

Source: 2015 American Community Survey, 5-Year Estimates, B25034 Year Structure Built

Many jurisdictions within Hardin County have a significant percentage of housing stock that was built in or before 1939. The county average is 38%, but individual jurisdictions range from a low of 31% in Hubbard to a high of 63% in Buckeye.

Table 15: Hardin County Housing Units Built 1939 or Earlier

Jurisdiction	Total	Built 1939 or Earlier	
		Estimate	Percentage
Hardin County	8,180	3,136	38%
Ackley	806	324	43%
Alden	344	134	39%
Buckeye	41	26	63%
Eldora	1,249	540	43%
Hubbard	474	147	31%
Iowa Falls	2,436	770	32%
New Providence	107	50	47%
Radcliffe	279	128	46%
Steamboat Rock	165	83	50%
Union	236	82	35%
Whitten	59	36	61%

Source: 2015 American Community Survey, 5-Year Estimates, B25034 Year Structure Built

The condition of housing throughout Hardin County varies tremendously. The recently built housing is expected to be in excellent condition and there are older homes in good condition, especially considering their age. The county also has abandoned or extremely dilapidated housing. The majority of housing in Hardin County falls between these extremes. Hardin County's housing is generally older but well maintained.

Housing Values

Of the 5,267 owner occupied housing units in Hardin County, 2,062 (39%) are valued between $50,000 to $99,999. Another 1,005 (19%) are valued at less than $50,000. Therefore, almost 60% of all housing in Hardin County is valued at less than $100,000. Iowa has a larger percentage of higher valued homes than Hardin County, with only 35% of the total housing stock valued at less than $100,000 and a quarter of the state's housing stock valued at more than $200,000.

Table 16: Owner-Occupied Housing Values in 2015

Value	Iowa		Hardin County	
	Estimate	Percent	Estimate	Percent
Total	883,808	100%	5,267	100%
Less than $50,000	99,287	11%	1,005	19%
$50,000 - $99,999	216,328	24%	2,062	39%
$100,000 - $149,999	201,698	23%	1,076	20%
$150,000 - $199,999	151,787	17%	586	11%
$200,000 - $299,999	135,180	15%	344	7%
$300,000 - $499,999	59,446	7%	134	3%
$500,000 - $999,999	15,485	2%	32	1%
$1,000,000 or More	4,597	1%	28	1%

Source: 2015 American Community Survey, 5-Year Estimates, B25075 Value & B25077 Median Value

The median value of owner-occupied housing in Hardin County is lower than Iowa. The lowest median housing value in Hardin County is in Buckeye and the highest median housing value is in Iowa Falls. The median gross rent is also lower in Hardin County than in Iowa. The lowest available gross rent in Hardin County is in Radcliffe and the highest gross rent is in Buckeye.

Table 17: Median Owner-occupied Housing Values and Gross Rent for Renter-occupied Housing in 2015

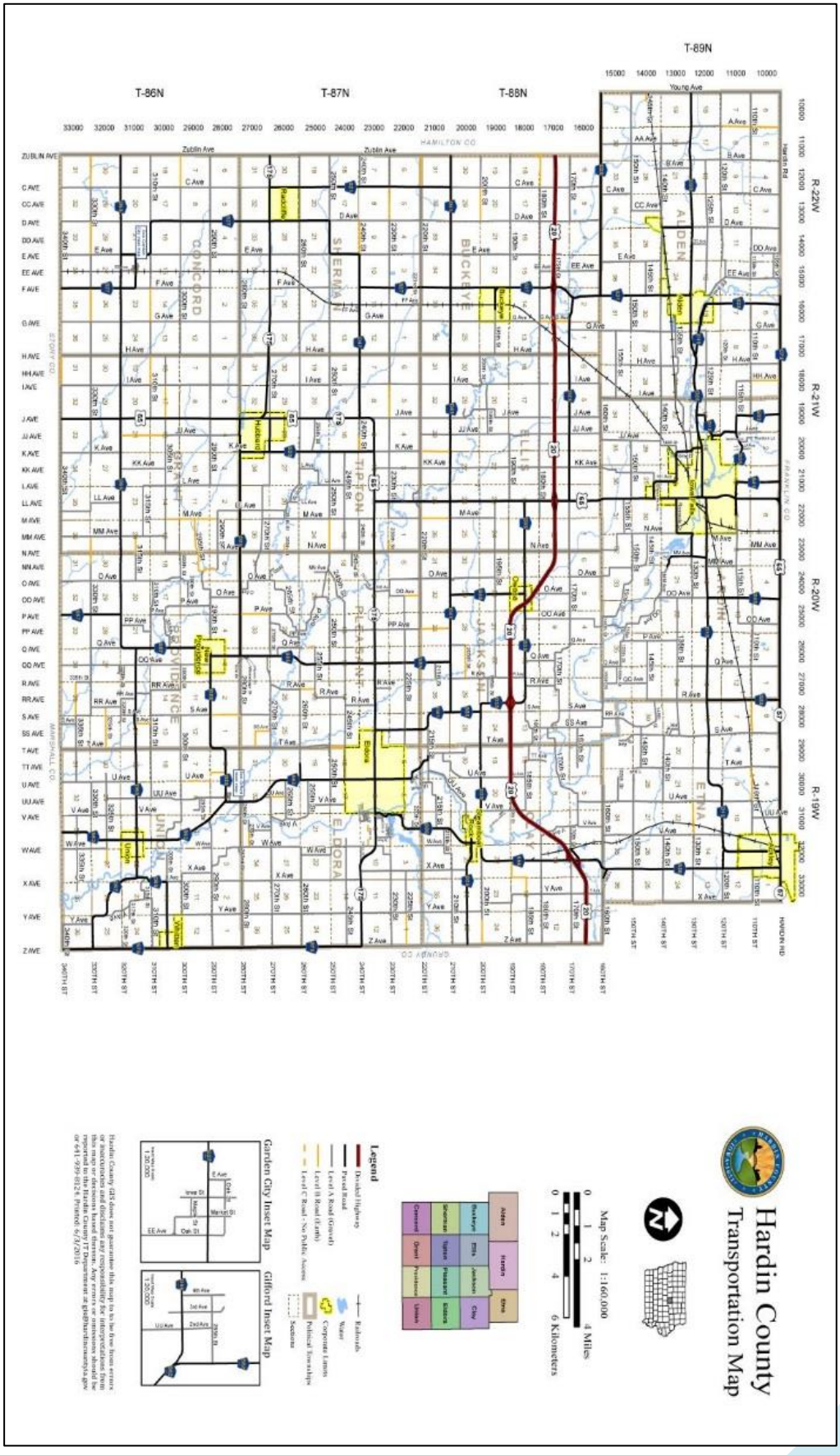
Location	Median Value	Median Gross Rent
Iowa	$129,200	$697
Hardin County	$88,700	$567
Ackley	$73,600	$460
Alden	$78,700	$469
Buckeye	$28,800	$775
Eldora	$71,800	$541
Hubbard	$78,400	$585
Iowa Falls	$92,500	$547
New Providence	$67,100	$432
Radcliffe	$85,000	$393
Steamboat Rock	$66,200	$656
Union	$63,100	$600
Whitten	$45,000	N/A

Source: 2015 American Community Survey, 5-Year Estimates, B25077 Median Value & B25064 Median Gross Rent

Transportation

The automobile is the main mode of transportation in Hardin County. U.S. Highway 20, which runs east and west, and U.S. Highway 65, which runs north and south, intersect five miles south of Iowa Falls. Iowa 175 runs east and west through the county and joins with U.S. Highway 65 to make an elbow just north of Hubbard and west of Eldora. These routes are connected to all parts of the county by paved or crushed rock roads.

Figure 16: Hardin County Highways and Roads



Several Hardin County cities are located along main Union Pacific Railroad, Canadian National and Iowa River Railroad lines. Scheduled airline transportation is available at Cedar Rapids, Des Moines, and Waterloo, all of which are within 55 to 100 miles of the county seat of Eldora. Ackley, Eldora, and Iowa Falls each have small municipal airports. Charter and Coach Bus transportation is available on Interstate 35, running through Story and Hamilton Counties, which neighbor Hardin County. Bus connections for east-west routes are available in Des Moines.

Peoplerides, a transit service operated by the Region 6 Planning Commission, serves all of Hardin and three other Region 6-member counties with both regular routes and scheduled trips. Motor freight lines serve trading centers in the county. There are nine trucking companies that operate in Hardin County.

Another mode of transportation provided in some sections of the county is a trail system that goes from Eldora to Steamboat Rock and Hubbard, for walking, jogging, and bike riding. Hardin County Recreational Trails is working on the development and construction of the trails in the city limits of Iowa Falls. Although these sections of trail are mainly used for recreational purposes, a well-connected network of trails could serve both recreation and alternative transit needs in the county especially where cities are located within a reasonable biking distance.

A regional trail plan was completed by Region 6 Planning for Hardin, Marshall, Tama, and Hardin Counties. This plan includes a major extension of the recreation trails in Marshalltown that will run from the northeast corner of Marshalltown to the southeast corner of Tama County. At the local level, the Hardin County Recreational Trails Committee (HCRTC) was formed in 2006 to raise funds and develop trails in Hardin County, specifically. There have been numerous grants and fundraising activities which can be seen on the Hardin County Recreational Trails website.

According to the Region 6 Long Range Transportation Plan for 2014-2034, Region 6 provides regional transportation services as the Regional Transit Authority for the four-county area. Approximately 40,000 rides per year are provided to primarily elderly and disabled patrons. Region 6 also plans and programs Federal Highway Administration Surface Transportation Program (STP) funds for the Region 6 federal aid system and FHWA transportation alternative program funds. Region 6 includes the central Iowa counties of Hardin, Marshall, Poweshiek, and Tama. The region also includes the Meskwaki Settlement, in Tama County. The four counties also include 45 cities. Overall, these counties, cities, and settlement form Iowa's Region 6, which is served by the Region 6 Planning Commission.

The 2014-2034 Region 6 Long Range Transportation Plan also indicated that a large project that was recently completed in Hardin County is the replacement of the bridge in Iowa Falls on U.S. Highway 65/Oak Street, which spans the Iowa River. Since this bridge is along a state route, the Iowa Department of Transportation financed and completed the replacement of this bridge. Keeping the historic and natural character of the area, the bridge was designed with architectural elements in the spirit of the original bridge design.

Other transportation planning in the county includes the Passenger Transportation Plan for 2016-2020, which is written and updated by the Region 6 Planning Commission. This plan covers the current public transportation services available in the region (Tama, Hardin, Marshall, and Hardin counties) along with the transportation needs that are not being fulfilled.

The needs identified for the region include:

- Need affordable public transportation options
- Need transportation options for rural and long-distance commuters
- Need attractive transportation options to reduce energy dependence and get fragile drivers off the road
- Need affordable transportation options for evening and weekend services

The planning process consisted of gathering information from personal and telephone interviews, through public meetings, and an on-line survey. From this effort, needs and gaps in service were identified, goals and objectives were prioritized, and actions were identified to meet them.

Economic Conditions

Individual Economic Indicators

Some evidence of Hardin County's economic stability can be seen in its income, poverty status, crime rates, and education. All of these factors can have a positive or negative effect on the county's economy. The mean income for households in Hardin County in 2015 was $51,019. This is $2,164 lower than the State's $53,183.

Table 18: Income in the Past 12 Months

Location	Total Households	Median Household Income
Iowa	1,236,409	$53,183
Hardin County	6,973	$51,019
Ackley	750	$44,063
Alden	321	$48,173
Buckeye	34	$41,786
Eldora	997	$46,776
Hubbard	376	$48,864
Iowa Falls	2,044	$48,118
New Providence	90	$49,500
Radcliffe	240	$53,333
Steamboat Rock	139	$39,250
Union	193	$41,705
Whitten	54	$39,375

Source: 2015 American Community Survey, 5-Year Estimates, S1901 Income in the Past 12 Months (in 2015 Inflation-Adjusted Dollars)

In 2015, 15.5% of residents in the United States were estimated to live in poverty. Iowa's poverty level is 3% below the national level, and Hardin County's poverty level is 6.7% below the national level. However, some areas in Hardin County have significantly higher poverty rates, such as Whitten, Buckeye, and New Providence.

Table 19: Poverty Status in the Past 12 Months

Location	Population for Whom Poverty Status is Determined	People Below Poverty Level	Percent Below Poverty Level
Iowa	2,992,774	373,883	12.5%
Hardin County	16,508	1,454	8.8%
Ackley	1,648	228	13.8%
Alden	803	62	7.7%
Buckeye	88	28	31.8%
Eldora	2,418	218	9.0%
Hubbard	875	37	4.2%
Iowa Falls	4,765	392	8.2%
New Providence	226	46	20.4%
Radcliffe	560	39	7.0%
Steamboat Rock	292	17	5.8%
Union	517	39	7.5%
Whitten	153	60	39.2%

Source: 2015 American Community Survey, 5-Year Estimates, S1701 Poverty Status in the Past 12 Months

Crime rates impact the quality of life and safety of a community. Hardin County has a lower overall crime rate than the state (3,718.29 per 100,000 vs. 4,949.29) and lower crime rates than the state in all four crimes classified as violent crime (murder and nonnegligent manslaughter, forcible rape, robbery, and aggravated assault).

Table 20: Crime in Hardin County in 2015

Offense	County Number	County Rate Per 100,000	State Rate Per 100,000	Offense	County Number	County Rate Per 100,000	State Rate Per 100,000
Murder and Nonnegligent Manslaughter*	0	0.00	2.40	Theft from Motor Vehicle	27	156.38	257.63
Negligent Manslaughter	0	0.00	0.10	Theft of Motor Vehicle Parts or Accessories	2	11.58	46.31
Justifiable Homicide	0	0.00	0.16	All Other Larceny	110	637.09	545.94
Kidnapping	0	0.00	6.14	Motor Vehicle Theft	19	110.04	147.46
Forcible Rape*	4	23.17	28.91	Counterfeiting/Forgery	7	40.54	106.50
Forcible Sodomy	0	0.00	6.53	False Pretenses/ Swindle/ Confidence Game	46	266.42	94.39
Sexual Assault with An Object	2	11.58	3.94	Credit Card/Automatic Teller Machine Fraud	5	28.96	88.18
Forcible Fondling	2	11.58	24.58	Impersonation	0	0.00	72.66
Incest	0	0.00	1.08	Welfare Fraud	0	0.00	1.48
Statutory Rape	1	5.79	3.97	Wire Fraud	2	11.58	12.50
Aggravated Assault*	19	110.04	199.44	Embezzlement	0	0.00	9.81
Simple Assault	57	330.13	577.32	Stolen Property Offenses	5	28.96	14.93
Intimidation	14	81.08	121.40	Destruction/Damage/Vandalism of Property	95	550.21	656.28
Robbery*	0	0.00	34.26	Drug/Narcotic Violations	66	382.25	407.81
Arson	1	5.79	14.28	Drug Equipment Violations	54	312.75	276.66
Extortion/Blackmail	0	0.00	1.58	Pornography/Obscene Material	2	11.58	9.88
Bribery	0	0.00	0.26	Betting/Wagering	0	0.00	0.16
Burglary/Breaking & Entering	42	243.25	467.08	Operating/Promoting/Assisting Gambling	0	0.00	0.07
Pocket-Picking	0	0.00	28.39	Gambling Equipment Violations	0	0.00	0.10
Purse-Snatching	0	0.00	2.59	Sports Tampering	0	0.00	0.00
Shoplifting	13	75.29	382.64	Prostitution	0	0.00	4.66
Theft from Building	36	208.50	225.63	Assisting or Promoting Prostitution	0	0.00	0.53
Theft from Coin-Operated Machine or Device	3	17.38	3.97	Weapon Law Violations	8	46.33	58.71
Total	**642**	**3,718.29**	**4,949.29**				

Source: Iowa Department of Public Safety, Uniform Crime Reporting 2015
**Crimes with an asterisk are considered violent crimes*

Hardin County is home to one private Catholic school, 13 public schools, Iowa Valley Community College, and Ellsworth Community College. The 13 public schools are part of 6 different school districts. The universities are all located two hours or less from Eldora, the county seat of Hardin County. During the 2015-2016 school year, there were 556 students enrolled in the AGWSR School District, 227 students enrolled in the Alden School District, 601 students enrolled in the BCLUW School District, 560 students enrolled in the Eldora-New Providence School District, 380 students enrolled in the Hubbard-Radcliffe School District, and 1,154 students enrolled in the Iowa Falls Community School District, for a total of 3,478 students (Iowa Department of Education, 2016). The table below outlines the number of students aged 3 and above who are attending school (including public schools, private schools, and college). The majority of children enrolled in school in Hardin County are attending public schools (90.3%), and only 9.7% are in private schools. Over 90% of all adults 25 years and over in Hardin County have graduated from high school and almost 20% have a bachelor's degree or higher.

Table 21: School Enrollment & Educational Attainment in Hardin County

Enrollment	**Estimate**
Population 3 years and over enrolled in school	4,195
Nursery school, preschool	6.7%
Kindergarten	3.7%
Elementary school (grades 1-8)	42.3%
High school (grades 9-12)	23.3%
College or graduate school	24.0%
Educational Attainment	**Estimate**
Population 25 years and over	12,140
Less than 9th grade	4.4%
9th to 12th grade, no diploma	4.8%
High school graduate (includes equivalency)	34.9%
Some college, no degree	23.0%
Associate's degree	14.6%
Bachelor's degree	13.1%
Graduate or professional degree	5.1%
Percent high school graduate or higher	90.8%
Percent bachelor's degree or higher	18.2%

Source: 2015 American Community Survey, 5-Year Estimates, S1701 Poverty Status in the Past 12 Months

Economy

According to the Mid Iowa Growth Partnership, the ten largest employers in Hardin County are Hansen Family Hospital, Ellsworth Community College, Iowa Falls/Alden Schools, State Training School, Hardin County Government, Scenic Living, United Suppliers, Eldora/New Providence Schools, Presbyterian Village and Iowa Ag Supply.

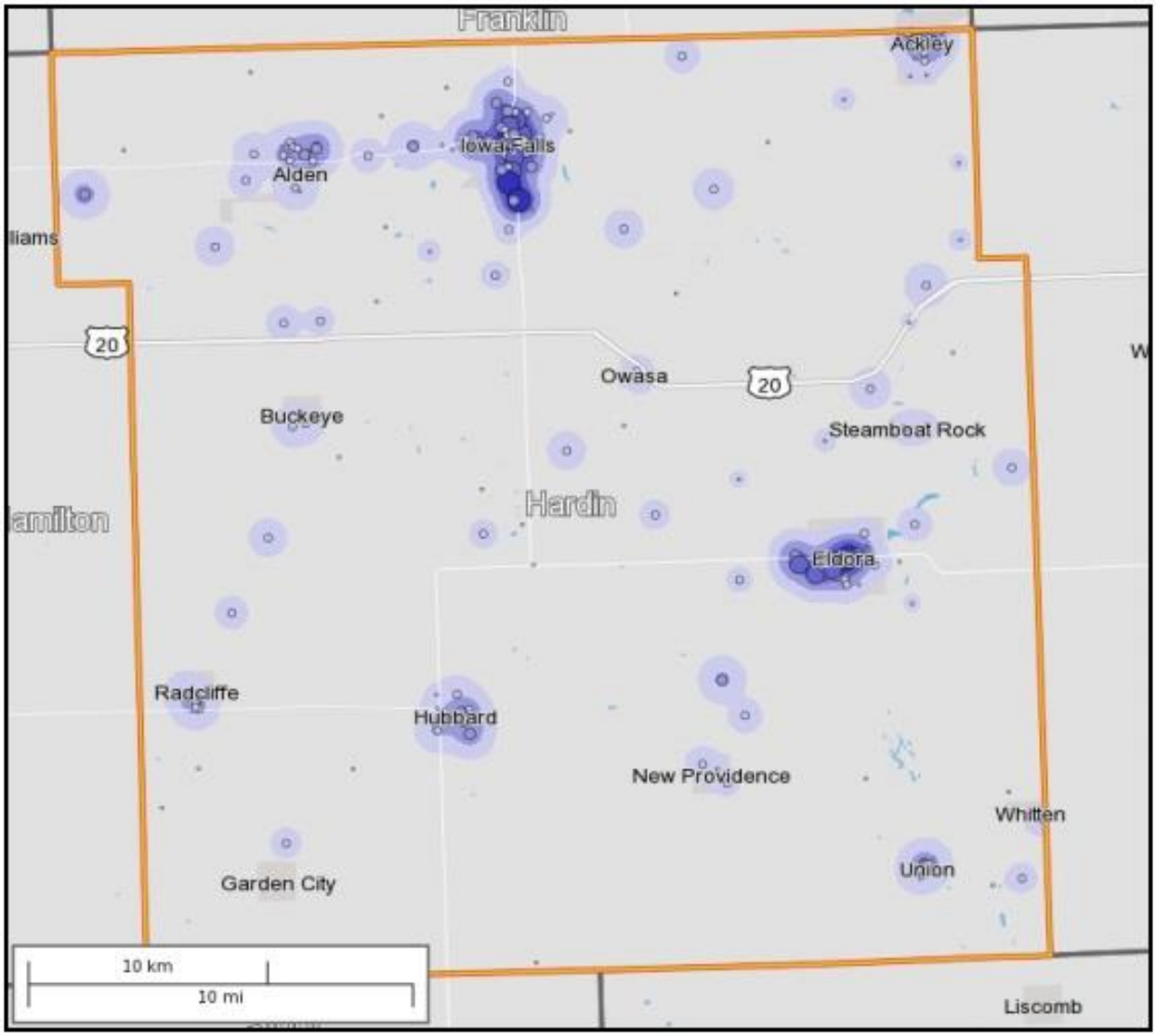
Table 22: Industry in Hardin County

Industry	Estimate	Percent
Total	8,293	100%
Agriculture, forestry, fishing and hunting, and mining	871	11%
Construction	710	9%
Manufacturing	1,110	13%
Wholesale trade	376	5%
Retail trade	975	12%
Transportation and warehousing, and utilities	435	5%
Information	79	1%
Finance and insurance, and real estate and rental and leasing	371	4%
Professional, scientific, and management, and administrative and waste management services	334	4%
Educational services, and health care and social assistance	1,931	23%
Arts, entertainment, and recreation, and accommodation and food services	462	6%
Other services, except public administration	345	4%
Public administration	294	4%

Source: 2015 American Community Survey, 5-Year Estimates, C24050 Industry by Occupation for the Civilian Employed Population 16 Years and Over

According to the Mid Iowa Growth Partnership's Business Growth status for Hardin County, there have been 5 businesses which have located or expanded their businesses within Hardin County in the last 12 years. The businesses which have expanded are Cargill, Inc., CMC Joist, Hawkeye Renewables of Iowa Falls, and Plastic Recycling of Iowa Falls. These businesses have a total of 355 employees. Additionally, Pine Lake Corn Processors was established in Hardin County in 2004 and has 36 employees.

Figure 17: Job Distribution in Hardin County



Source: U.S. Census Bureau, On the Map tool, 2016

The job distribution map confirms that the larger cities in Hardin County are also the major employment centers of the county. Eldora, Iowa Falls and Ackley have the highest concentrations of employment.

Economic Development

Hardin County is fortunate to have an organization devoted strictly to the county's economic development success, the Hardin County Development Alliance. This organization is made up of the 3 Hardin County Supervisors and the Economic Development Directors of Ackley, Eldora, and Iowa Falls. The Hardin County Development Alliance meets quarterly to exchange information of local economic development issues and projects and provides support for the overall county economic development efforts. As the Hardin County economic development group, they partner with the Mid-Iowa Growth Partnership which is a nine-county regional collaborative. Their mission is "to consolidate assets and facilitate a collaborative effort for economic growth and vitality in the nine-county region" (MIGP, 2011).

Another economic development effort in Hardin County is spearheaded by the Region 6 Planning Commission. The Comprehensive Economic Development Strategy (CEDS Plan), which includes Tama, Hardin, Marshall, and Hardin counties, is written and maintained by Region 6 along with several programs for assisting economic development in the county. The CEDS cites five major economic goals:

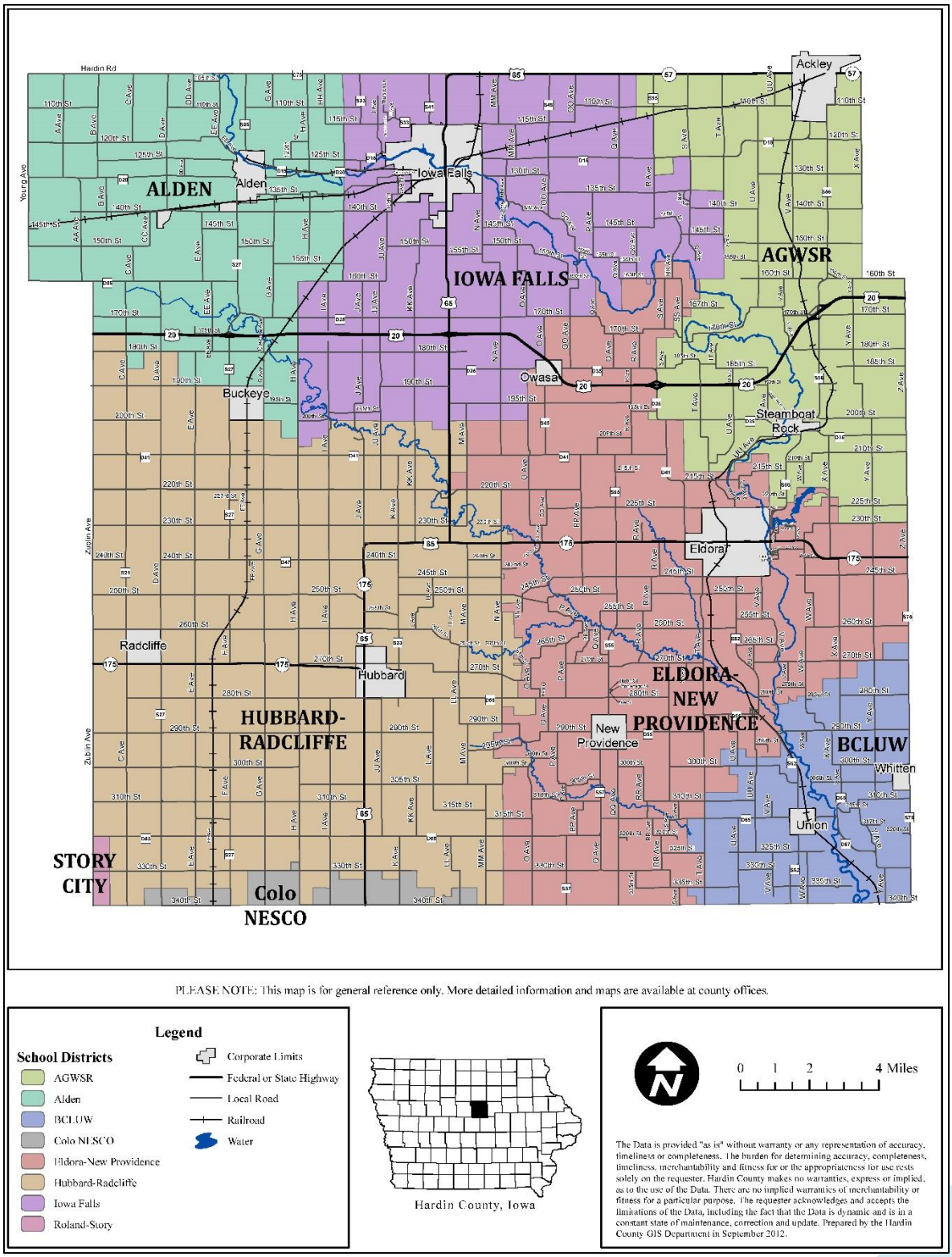
1. Retain and increase quality jobs in the region by strengthening existing industries; promoting targeted industries; and strengthening and supporting small businesses, locally-owned businesses, and creative entrepreneurs in the region.
2. Promote and support healthy lifestyles in the region.
3. Enhance housing quality and affordability while reducing blight in the region.
4. Consider environmental quality, natural disaster resiliency, and overall sustainability in economic development projects in the region.
5. Support and promote the diversity in culture, community, and attractions in the region. Also promote and support cooperation among organizations, cities, and counties in the region to leverage existing knowledge, experience, and resources.

Many of these goals can be tied to hazard mitigation like preservation and restoration of the natural environment, reducing blight, and supporting existing and new businesses. This plan should be considered when looking at integrating mitigation actions into other community plans.

Educational Opportunities

There are six public school districts in Hardin County: AGWSR, Alden, BCLUW, Eldora-New Providence, Hubbard-Radcliffe, and Iowa Falls Community School District.

Figure 18: Hardin County School Districts



Along with general education, college level and continuing education courses can be taken through Ellsworth Community College and Iowa Valley Community College. Iowa's major universities are all 2 hours or less from Hardin County.

Cultural Resources

Outdoor Recreation

Many parks have been established throughout the county. Besides numerous parks and recreational facilities, Hardin County has 13 wildlife areas, 7 water access points, and 3 wetland/preserve/prairie areas. Rivers and creeks in rural areas of the county provide opportunities for outdoor recreational activities, such as hunting, fishing, and primitive camping.

The mission of Hardin County Conservation is to provide safe and healthful recreational opportunities, to protect and enhance county natural resources and to offer opportunities for residents to participate in conservation education. Since their establishment in 1958, "the Hardin County Conservation Board has acquired 63 areas and manages over 2,798 acres of timber, prairie, wetlands, parks, campgrounds and the Calkins Nature Area.

Hardin County has a rich history in many aspects. The Iowa River Greenbelt has been an attraction for people since prehistoric times. One reason for this is the three geological surfaces found in Hardin County, consisting of the Iowan Erosion Surface east of the Iowa River, the Des Moines Lobe west of the Iowa River and the Southern Iowa Drift Plain in the southern part of the county." (Hardin County Conservation, 2011)

All of these outdoor recreation areas are considered in this plan regardless of what institution maintains the area, because they are located within the boundaries of Hardin County and emergency response from the County may be needed should a disaster occur. The two major issues in outdoor recreation areas is the park's ability to provide shelter during hazard events and how to prevent damage to property within the park and also the park's natural assets.

The most important issue in outdoor recreation areas throughout Hardin County is shelter for park visitors during hazard events like windstorms, hail, and tornadoes. In most parks, the only refuges provided are open picnic shelters or none at all. This is not sufficient during severe weather.

Shelters engineered for high winds and flying debris need to be included in park facilities to ensure the safety of park visitors.

Table 23: Outdoor Recreation Areas in Hardin County

LEGEND
HARDIN COUNTY CONSERVATION BOARD

REST ROOM: F - Flush, V - Vault
CAMPING: E - Electric, P - Primitive
FISHING: L - Lake, S - Stream

	MAP LOCATION	ACRES	SHELTER	PICNIC	WATER	SHOWER	RESTROOM	PLAYGROUND	CAMPING	DUMP STATION	PRIMITIVE AREA	HIKING	RIVER ACCESS	FISHING	RIFLE RANGE	HUNTING	TIMBER	WETLAND	PRAIRIE	STATE PRESERVE	NATURE CENTER	MUSEUM	WILDLIFE EXHIBIT	HISTORICAL SITE
1 Alden River Access	G-3	1											●	S										
2 Anders Wildlife Area	P-6	229									●			S		●	●		●					
3 Beau Addition to Hardin City Woodland	T-8	3										●				●	●							●
4 Bessman-Kemp Park	F-2	64		●	●		V						●	S			●							
5 Bigelow Park	F-1	10												S		●	●							
6 Bob & Eleanor Welden Wildlife	M-4	6									●			S		●	●							
7 Bob & Joell deNeui Wilderness	T-6	80																						
8 Boddy-Hunt Wildlife Area	M-12	50														●	●	●						
9 Brekke Memorial Park	Y-23	7	●	●			V										●							
10 Brewster Area	O-5	10									●					●	●							
11 Calkins Nature Area	I-4	76		●	●		F					●		S			●	●	●		●	●	●	
12 Charles F. Long Memorial Woods	W-20	20									●					●	●							
13 Charles F. Long Wildlife Woods	X-21	4									●					●	●							
14 Cross' Ford River Area	P-6	4											●	S										
15 Daisy Long Memorial Park / Batee Addition	X-22	34	●	●	●	●	F	●	EP	●			●	S										●
16 Daryl deNeui Memorial	T-6	80																						
17 David Bates Memorial Park	X-21	34		●	●		V		P				●	S		●	●							
18 Eagle City Addition	S-5	101									●					●	●							
19 Eagle City Park	R-6	172	●	●	●		V		P			●	●	S		●	●							
20 Fallen Rock State Preserve	V-11	122									●			S		●	●			●				
21 Fallen Rock Wildlife Area	U-12	82									●			S		●	●		●					
22 Flowing Well Park	G-8	6		●	●							●		S		●	●							
23 Gehrke Wildlife Area	J-11	6									●			S		●	●							
24 Girl Scout Area	K-3	10																						
25 Hansen Wetland	K-4	12									●							●						
26 Hardin City River Access	T-8	0.5											●											
27 Hardin City Woodland	U-8	25									●			S		●	●			●				
28 Headquarters Segment	T-6	245									●	●		S		●	●		●					
29 Hilker Farm	M-24	152																						
30 Hubbard Prairie	I-18	43									●	●				●			●					
31 Iowa Falls River Access	N-4	7											●	S										
32 Ira Nichols Outdoor Classroom	L-3	16									●						●							
33 John Gruis Park	X-6	3		●																				
34 Lepley Park	W-20	9		●			V										●							
35 Leverton Timber	V-8	205									●			S		●	●		●					
36 Logadon Park	M-12	14	●	●			V							S					●					●
37 Mann Wilderness Area	V-7	107									●			S		●	●			●				
38 McCoy School House	G-18	1																						●
39 Meier Wildlife Refuge	I-18	23												L					●					
40 Nichols Timber	U-6	35									●					●	●							
41 Ox-Bow Lake Area	U-8	20									●			S		●	●							
42 Parlina Pierce Wildlife Area	S-7	131									●			S		●	●		●					
43 Pine Ridge Addition	W-10	152																						
44 Pine Ridge Park	W-10	131	●	●	●	●	F	●	EP			●	●	LS	●	●	●		●					
45 Reece Memorial Park	Q-21	70	●	●	●		V	●	P			●		S		●	●							
46 Ruby Wildlife Area	X-11	60																						
47 Ruby Woodland	V-8	22									●			S										
48 Ruempers Trail	D-17	0.5										●												
49 Sac & Fox Overlook	X-10	132	●				V				●	●		S		●	●	●	●					
50 Sand Springs Wildlife Area	W-9	131									●			S		●	●							
51 Satchell Area	W-8	40									●					●	●							
52 Steamboat Rock River Access	W-11	1											●	S										
53 Sylvan Hill	U-8	34									●			S		●	●							
54 Tower Rock	W-11	19		●			V		P			●		S		●	●							
55 Twin Elms	H-8	4									●					●	●							
56 Walter Max Long Addition	X-22	10																						
57 Welden Wildlife Area	N-5	83									●			S		●	●							
58 Wildcat Trail	V-13	46									●	●		S		●	●		●					
59 Wilkinson Wildlife Area	T-6	40									●					●	●							
60 Ziesman Wildlife Area	N-13	10									●					●	●							

Source: Hardin County Conservation, 2011

A regional trail plan was completed by Region 6 Planning for Poweshiek, Marshall, Tama, and Hardin Counties. This plan includes a major extension of the recreation trails that will run from the northwest portion of Hardin County to the southeast corner of Tama County. This trail extension is planned for after the year 2012.

The Hardin County Recreational Trails Committee (HCRTC) was formed in 2006 to raise funds and develop trails in Hardin County, specifically. In just 2 years, they have secured $700,000 of an estimated $3.5million for the Iowa Falls city-wide trail system. A map depicting the layout for this trail system can be seen in Figure 19.

Figure 19: Iowa Falls Trail Development Map

Source: Hardin County GIS Department

Trails will be a combination of hard surface, off-street trails and shared roadways with painted bike lanes.

A featured park in Hardin County is the Calkins Nature Area, a 76-area parcel of land, named after Homer and Ruth Calkins. Homer was the Hardin County Conservation director for 18 years. The nature area has three native habitats including woodlands, prairies, wetlands, and is bordered by the Iowa River. There are over 30 different species of wildlife in the live animal display. This is accompanied by a natural history museum.

There is some opportunity for recreation in the form of two miles of trail system along the Iowa River Green Belt. Other special features of this nature area are the Shirley Welden Butterfly House, and a new Amphitheater that seats over 120 people, surrounded by native prairie plants.

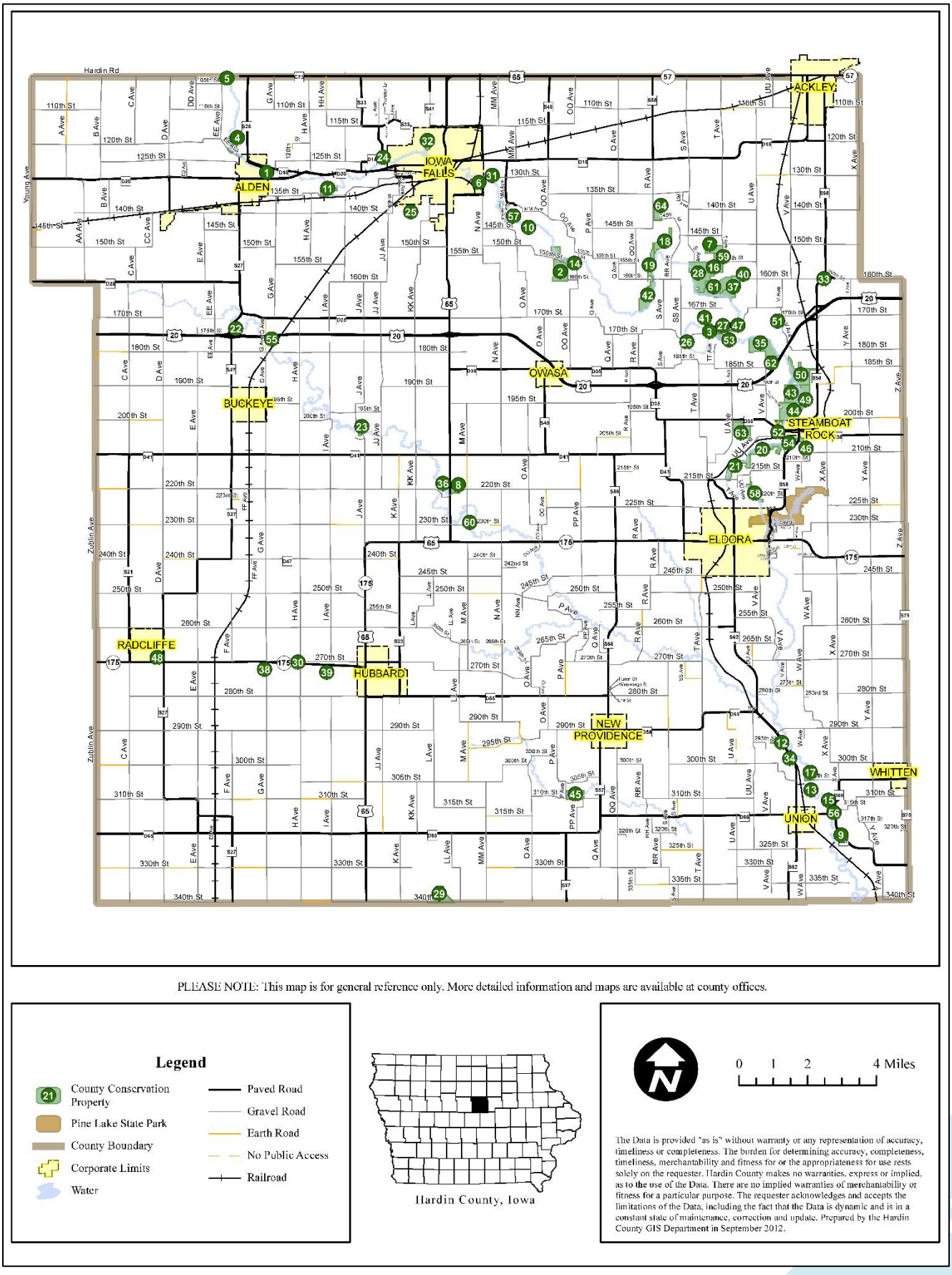
Source: Hardin County Conservation (Calkins Nature Area (Left), Homer Calkins (Right)

The Calkins Nature Area provides so much more than displays and beautiful wildlife. Two full time naturalists offer Environment Education Programs to a wide array of people and ages groups throughout the county. There are also opportunities for field trips at Calkins Nature Area and Interpretive Center, Visiting classrooms and schools, Mobile Nature Trunks, and Scenic City Empress tours. Calkins Nature Area believes that education is the “key to ensuring a sustainable environment” and encourage this through their programs.

Besides the bounty of county parks in Hardin County, one state park resides near Eldora and Steamboat Rock. The Pine Lake State Park is comprised of 585 acres and two lakes. Combined to be 119 acres of water, the 50-acre Lower Pine Lake and 69-acre Upper Pine Lake are open to the public for water activities such as beach fun, boating, and fishing. Other amenities at the State park include; 5 picnic areas, camping, cabin rentals and trails.

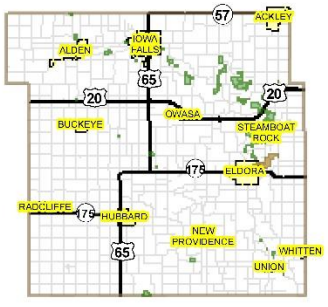
Source: Iowa DNR (Stone and Timber Cabins (Left), Upper and Lower Pine Lakes (Right)

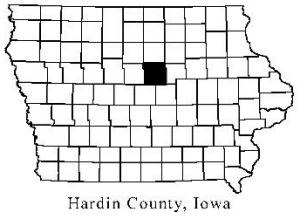
Figure 20: Conservation Properties



21 Properties in this atlas are listed in alphabetical order. The numbers to left of each property correspond with the Conservation ID numbers in the Conservation Areas map.

1 Alden River Access
2 Anders Wildlife Area
3 Beau Addition to Hardin City Woodland
4 Bessman-Kemp Park
5 Bigelow Park
6 Bob & Eleanor Welden Wildlife
7 Bob & Joell deNeui Wilderness
8 Boddy-Hunt Wildlife Area
9 Brekke Memorial Park
10 Brewster Area
11 Calkins Nature Area
12 Charles F. Long Memorial Woods
13 Charles F. Long Wildlife Woods
14 Cross' Ford River Area
15 Daisy Long Memorial Park / Bates Addition
16 Daryl deNeui Memorial Wilderness
17 David Bates Memorial Park
18 Eagle City Addition
19 Eagle City Park
20 Fallen Rock State Preserve
21 Fall Rock Wildlife Area
22 Flowing Well Park
23 Gehrke Wildlife Area
24 Girl Scout Area
25 Hansen Wetland
26 Hardin City River Access
27 Hardin City Woodland
28 Headquarters Segment
29 Hilker Farm
30 Hubbard Prairie
31 Iowa Falls River Access
32 Ira Nichols Outdoor Classroom
33 John Gruis Park
34 Lepley Park
35 Leverton Timber
36 Logsdon Park
37 Mann Wilderness Area
38 McCoy School House
39 Meier Wildlife Refuge
40 Nichols Timber
41 Ox-Bow Lake Area
42 Parlina Pierce Wildlife Area
43 Pine Ridge Addition
44 Pine Ridge Park
45 Reece Memorial Park
46 Ruby Wildlife Area
47 Ruby Woodland
48 Ruempers Trail
49 Sac & Fox Overlook
50 Sand Springs Wildlife Area
51 Setchell Area
52 Steamboat Rock River Access
53 Sylvan Hill
54 Tower Rock
55 Twin Elms
56 Walter Max Long Addition
57 Welden Wildlife Area
58 Wildcat Trail
59 Wilkinson Wildlife Area
60 Ziesman Wildlife Area
61 Noble & Jeanette deNeui Memorial Wilderness
62 Rainsbarger Wildlife Area




Hardin County, Iowa

The Data is provided "as is" without warranty or any representation of accuracy, timeliness or completeness. The burden for determining accuracy, completeness, timeliness, merchantability and fitness for or the appropriateness for use rests solely on the requester. Hardin County makes no warranties, express or implied, as to the use of the Data. There are no implied warranties of merchantability or fitness for a particular purpose. The requester acknowledges and accepts the limitations of the Data, including the fact that the Data is dynamic and is in a constant state of maintenance, correction and update. Prepared by the Hardin County GIS Department in September 2012.

Historic Sites

Hardin County is a Certified Local Government with a Historic Preservation Commission appointed by the County Board of Supervisors and certified by the State Historic Preservation Office. It is the mission of the county and its historic preservation commission to preserve historic structures in Hardin County and allow them to apply for grants.

Besides outdoor recreation, Hardin County Iowa has many more cultural offerings in the form of historic sites. A few sites in the Hardin County jurisdiction have been listed on the National Register of Historic Places. These include:

Table 24: National Register of Historic Places in Hardin County

City	Name	Address	Date Registered	Notes
Ackley	Illinois Central Combination Depot--Ackley	N. of Railroad St., between State and Mitchell Sts.	September 06, 1990	This architecturally significant Prairie School/Tudor Revival style building was important from 1925 to 1949 as a railroad depot. It is not in use today.
Alden	Alden Public Library	1012 Water St.	March 17, 1981	This was a significant social history building between 1900 and 1924, it is still functioning as an educational library.
Alden	Alden Bridge	Main St. over Iowa R.	May 15, 1998	This was a significant transportation architecture/engineering structure between 1925 and 1949. It is still in use today.
Eldora	Eldora Public Library	1219 14th Ave.	May 23, 1983	This renaissance building was significant in the period of 1900-1924 for its architecture and use as an educational library. It is still in use today.
Eldora	Hardin County Courthouse	Edgington Ave.	July 02, 1981	This Romanesque style building was significant between 1875 and 1899. Today, it continues in its original function as the county courthouse.
Eldora	First Congregational Church	1209 12th St.	December 04, 1996	Also known as the United Church of Christ, this Romanesque style building was significant in the period of 1875-1899 as a church, which it continues to function as today.
Eldora	Eldora Downtown Historic District	Approximately ten blocks in downtown Eldora around the courthouse square	May 12, 2009	

Eldora	Hardin County Home Historic District	28483 Cty. Rd.D41	May 24, 2010	
Eldora	Civilian Conservation Corps--Prisoner of War Recreation Hall	301 11th Ave.	January 27, 2012	
Iowa Falls	Carnegie-Ellsworth Public Library	520 Rocksylvania Ave.	May 23, 1983	This was a significant architectural building between 1900 and 1924 and is still functioning as an educational library.
Iowa Falls	Edgewood School of Domestic Arts	719 River St.	April 19, 1979	Also known as the Edgewood Community Center, this building was designed for Eva Harrington Simplot as an education facility (school) for domestic arts between 1990-1924. Today it functions as a community center with a multiple dwelling sub-function.
Iowa Falls	Metropolitan Opera House	515 Washington St.	February 20, 1975	Also known as the MET Theater, this Renaissance style building was significant as a Theater in the time periods of 1875-1899, and 1900- 1924. It continues as a theater today.
Iowa Falls	Iowa Falls Union Depot	E. Rocksylvania Ave. and Depot St.	September 06, 1990	Also known as Iowa Falls Depot; Illinois Central Passenger Depot, this late 19th and 20th century Revivals/Renaissance style building was significant from 1900 to 1924 as a passenger depot. It is presently vacant.
Iowa Falls	Mills Tower Historic District	E. Rocksylvania Ave. 1/3 mi. E of Freight House	September 06, 1990	This architecturally significant district was noteworthy between 1900 and 1924 as a rail-related transportation district.
Iowa Falls	McClanahan Block	613 Washington Ave.	October 01, 1993	This Late 19th And Early 20th Century American Movements building was significant between 1900 and 1924 as a commerce/trade specialty store which it continues as today.
Iowa Falls	Princess--Sweet Shop	607 Washington Ave.	October 01, 1993	This Art Deco style building was significant between 1925 and 1949 as a restaurant which it continues as today.
Iowa Falls	First National Bank	601 Washington Ave.	October 01, 1993	Also known as Iowa Falls State Bank, this Classic Revival style building was significant, architecturally, from 1900 to 1924 as a bank and specialty store. Today it is used as a bank.

Iowa Falls	Ellsworth-Jones Building	511 Washington Ave.	October 01, 1993	This Classic Revival style building was a significant architectural structure in 1902 as a commerce/trade financial institution run by Eugene S. Ellsworth. Today it is still a private business.
Iowa Falls	St. Matthew's by the Bridge Episcopal Church	Jct. of Oak and Railroad Sts.	October 01, 1993	This Tudor Revival style building was architecturally significant between 1900 and 1924, and still functions as a church.
Iowa Falls	Sentinel Block	702 Washington Ave.	October 01, 1993	This was a significant architecture/Engineering building (Late 19th And 20th Century Revival style) between 1900 and 1924 functioning as a commerce/trade business and continuing that use today.
Iowa Falls	W. R. C. Hall	710 Washington Ave.	October 01, 1993	Also known as American Legion Hall, this Late Victorian style building was a significant architectural structure in the periods of 1875-1899, 1900-1924 as a social meeting hall, which it continues to function as today.
Iowa Falls	US Post Office--Iowa Falls	401 Main St.	January 05, 1994	Also known as the Federal Building, this building was significant as post office between 1990-1924, and continues as such today.
Iowa Falls	Estes Park Band Shell	Estes Park	October 01, 1993	This Mission/Spanish Revival style building was significant from 1925 to 1949 as a recreation and culture music facility; it is still used as such today.
Iowa Falls	River Street Bridge	River St. over Iowa R.	May 15, 1998	This building was architecturally significant from 1900 to 1924 as a road related transportation bridge; it is still used as such.
Iowa Falls	Washington Avenue Bridge	US 20 over Iowa R.	May 15, 1998	This significant engineering structure was noteworthy from 1925 to 1949 with a road related transportation use; it is still used as such today.
Iowa Falls	Iowa Falls Bridge	US 65 over Iowa R.	May 15, 1998	This structure was significant between 1925 and 1949 as a road related transportation bridge which it continues as today.
Iowa Falls	Slayton Farms--Round Barn	20478 135th St.	July 07, 1999	This was an agriculturally significant building between 1900 and 1924, as an outbuilding. It is vacant today.
Iowa Falls	Union Cemetery Gardener's Cottage	Union Cemetery	January 24, 2002	

Iowa Falls	Washington Avenue Commercial Historic District	401-714 Washington Ave., 300 blk. Stephens, & 200 & 300 blks. Oak Sts.	October 31, 2012	
Iowa Falls	Kurtz, Glenn and Nell, Lustron Home and Garage	2017 Washington Ave.	December 02, 2014	
New Providence	Honey Creek Friends' Meetinghouse	SW of New Providence	February 08, 1980	This architecturally significant bungalow/craftsman style building was important from 1900 to 1924 as a religious structure and continues in that function today.
New Providence	New Providence School Gymnasium	106 N. Main St.	October 22, 1996	Also known as the New Providence Roadhouse in New Providence, this was a significant modern style gymnasium between 1925 and 1949. Today the building is used as a Recreation and Culture Sport Facility.
Steamboat Rock	Steamboat Rock Consolidated Schools Building	306 W. Market St.	March 31, 2004	Also known as Steamboat Rock Community School, this Modern Movement style building was significant in the periods of 1925-1949, and 1950-1974 when it functioned as a school. Today it has many uses.
Steamboat Rock	Folkert Mound Group	Address Restricted	March 17, 2009	

Source: National Register of Historic Places

Climate

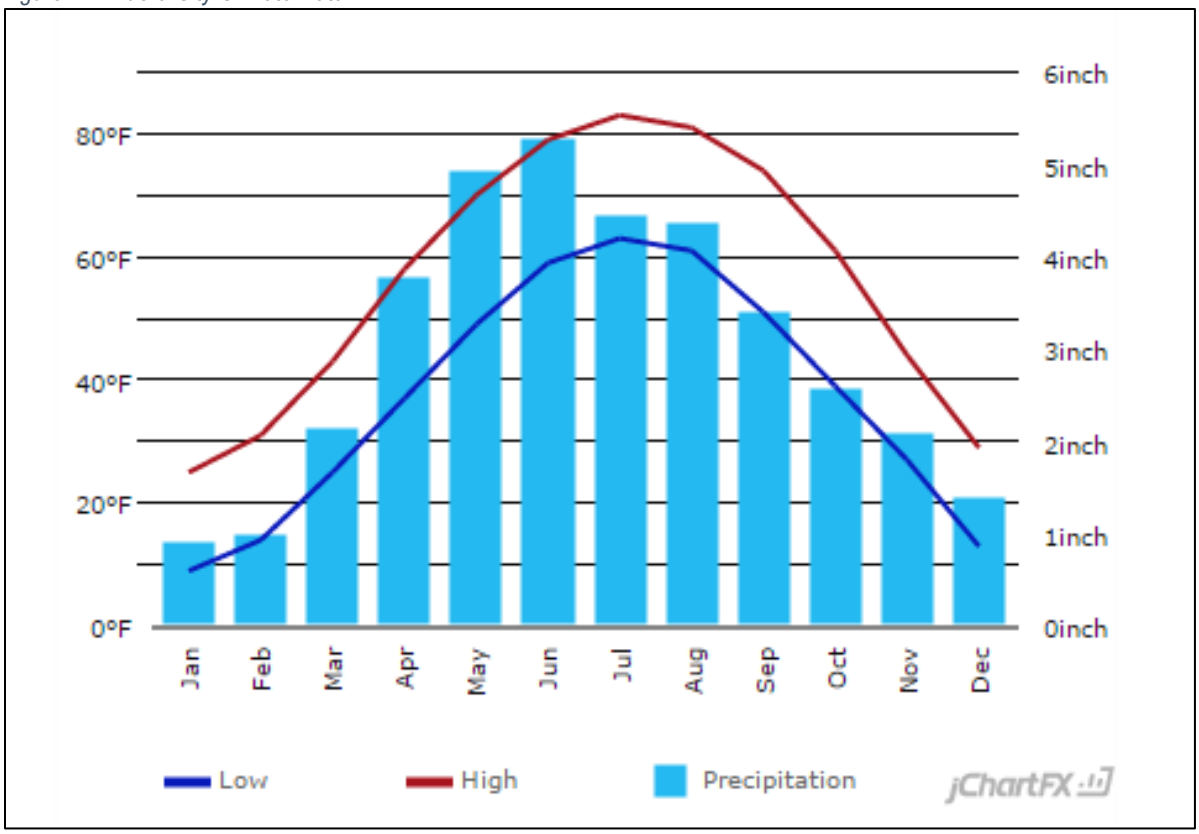
Hardin County frequently experiences severe weather events throughout all seasons. In the winter, the county experiences severe winter storms while weather events like severe thunderstorms, hail, and lightning typically affect the county in the spring. In the summer season, tornadoes and extremely high temperatures prove to be dangerous, while more storms and early snow can affect the county in the fall.

Hardin County experiences cold winters with an average temperature of 19 degrees and average lows of 10 degrees. Snowstorms provide the majority of precipitation during the winter; the highest average monthly snowfall occurs in December with an average of 8.85 inches.

During the summer it is moderately hot with occasional cool spells. The county experiences an average of 71 degrees and average highs of 82 degrees. The highest average temperatures occur during July and August. During the summer months, warm, moist air moves in from the south and causes often heavy rain showers. The county receives an annual average of 32.8 inches, which is normally adequate for corn, soybeans, and small grain. The highest monthly average occurs in June, with typically just over 5 inches of rain.

Figure 21 graphically depicts monthly maximum and minimum temperatures and precipitation in Eldora City.

Figure 21: Eldora City Climate Data



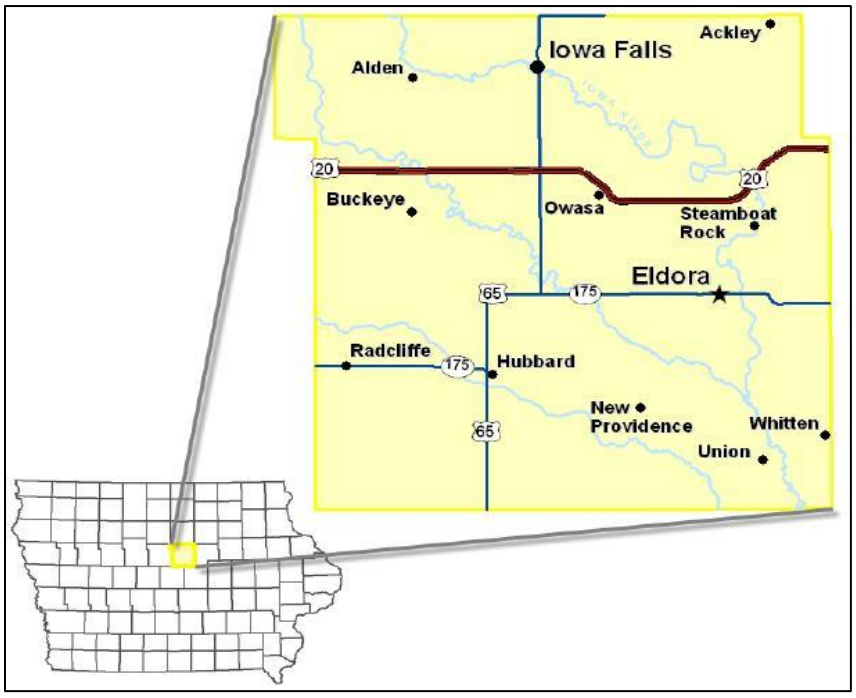
Data Source: US Climate Data

Agriculture

The National Agricultural Statistics Service conducts “The Census of Agriculture” every five years. This survey covers practically every aspect of U.S. agriculture and includes the production and supplies of food and fiber, prices paid and received by farmers, farm labor and wages, farm finances, chemical use, and changes in the demographics of U.S. producers.

In 2012, the Census of Agriculture counted 2,109,363 farms in the United States. This was down 4.3 percent from the 2007 Census of Agriculture. Hardin County had 819 farms which cover 332,266 acres of land, down from 943 farms and 339,001 acres during the 2007 census. This accounts for 92.2 percent of the surface land in the county. On average, farms are larger in Hardin County (406 acres) than the statewide average of 345 acres. For the most part, hogs and pigs are the largest number of any animal sold on Hardin County farms with 720,009 hogs and pigs, ranking them 5th statewide. Corn for grain is the biggest crop seller in the county with 194,447 acres. In 2012 the average agricultural product sales per farm in Hardin County was $652,620.

Jurisdiction Descriptions and Capabilities



This section includes a description of the participating jurisdictions and districts in the planning area. It also addresses each jurisdiction's capabilities. The following jurisdictions and districts are included:

- Hardin County (Unincorporated)
- City of Ackley
- City of Alden
- City of Buckeye
- City of Eldora
- City of Hubbard
- City of Iowa Falls
- City of New Providence
- City of Radcliffe
- City of Steamboat Rock
- City of Union
- City of Whitten
- Hardin County School Districts
    - AGWSR Community School District
    - Alden Community School District
    - BCLUW Community School District
    - Eldora New Providence Community School District
    - Hubbard Radcliffe Community School District
    - Iowa Falls Community School District

Unincorporated Hardin County

Government

The county seat for Hardin County is the City of Eldora, which is located in the east central portion of the county. The Hardin County Board of Supervisors has three positions: one chairman and two members, all of whom serve the county at large. The county is not divided up into specific districts based on location. Regular Board of Supervisors meetings are held every Wednesday morning in the Hardin County Courthouse.

The county government comprises several individual positions, departments, and organizations. These include both elected and appointed positions. Some of the elected positions in the county include: The Board of Supervisors, Auditor, Attorney and Recorder. Other department directors and staff are by appointment including Animal Control Officer, Board of Health Members, Building and Grounds Director, Community Services Director/CPC, Condemnation Commission Members, Compensation Board Members, Conservation Director, Conservation Board Members, County Engineer, IT Director (Information Technology), GIS Coordinator (Geographic Information Systems), Hardin County Emergency Management Commission, Medical Examiner, Planning and Zoning Director and Commission Members, Veterans Affairs Director and Commission Members, Weed Commissioner, Zoning Board of Adjustment Members, Judicial Magistrate Commission Member, and Civil Service Commission Member. The Hardin County website— www.hardincountyia.gov —lists the current individuals filling positions as well as important notifications, events, and meeting minutes.

Hardin County Courthouse in Eldora

Image Source: Hardin County, 2010

Land Use and Planning

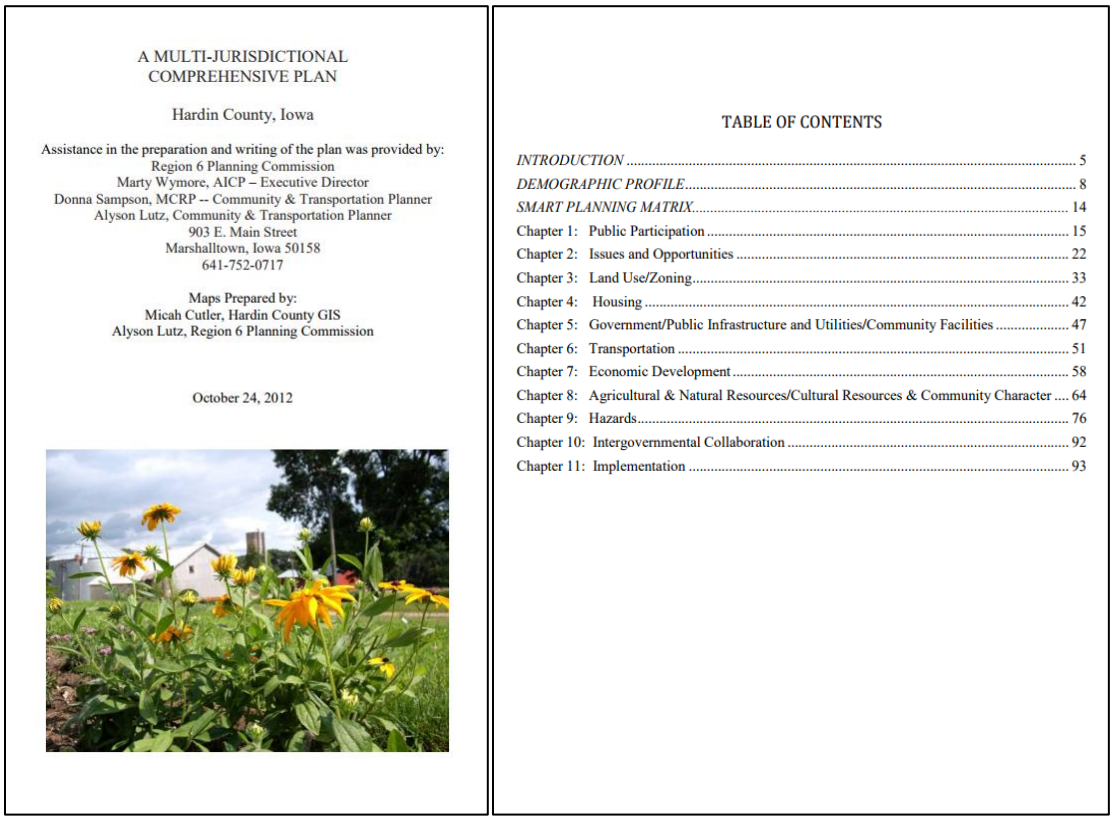
A comprehensive land use plan was written and adopted by the Planning and Zoning Commission and Board of Adjustments of Hardin County in 2012. The Comprehensive Plan for Hardin County contains Economic Base and Population Data, General land Use Plans, Zoning Regulations, Parks and Recreation Information, Major Transportation Corridors, Subdivision Regulations and Capital Improvement Programs. The basic objective of the plan is the attainment of the best possible social, physical, and economic environment for the citizens of Hardin County.

The goal of the Plan is to identify a vision for the future that is shared by citizens and leaders of Hardin County. It is intended to be a guide for city decisions and investments concerning a wide variety of issues including land use, transportation, economic development, health and nutrition, and social/recreational opportunities.

According to the October 2012 Hardin County Comprehensive Plan, most of rural Hardin County land is used for agricultural production. Prime farm land, conservation areas, timber, wilderness, the Iowa Falls Airport, and the Iowa River Greenbelt should be protected through smart land use planning. There are opportunities for developments in the rural areas that provide economic benefits, protect the area, and preserve key resources.

Plan Integration

The Comprehensive Plan for the County integrates elements of the Hazard Mitigation Plan, specifically a description of the relevant hazards.



A MULTI-JURISDICTIONAL
COMPREHENSIVE PLAN

Hardin County, Iowa

Assistance in the preparation and writing of the plan was provided by:
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Maps Prepared by:
Micah Cutler, Hardin County GIS
Alyson Lutz, Region 6 Planning Commission

October 24, 2012

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Zoning

Iowa Code, 335.2 states that agricultural uses are not subject to zoning unless located in the floodplain. Consequently, state agricultural interests are protected but special considerations must be taken if the agricultural use is located in the floodplain. Special requirements may need to be enforced in order to prevent crop and livestock loss, erosion, increased chemical run-off, or other events that may result due to being located in the floodplain.

Flood prone areas in the unincorporated portions of the county may present an issue. Areas not identified as a floodplain but are prone to flooding events are not subject to zoning so little control can be exercised in regulating the use of this land.

It is also important to note that county zoning only applies to the unincorporated areas of Hardin County, which excludes incorporated cities and school districts. This is stated in Iowa Code 335.3.

Furthermore, Iowa Code Chapter 335 states that the objective of zoning regulation should encompass not just protecting the health and general welfare of the public, but also "securing safety from fire, flood, panic, and other dangers" (Iowa Code 335.5). This section of the Iowa Code is important, because it requires the county to take hazards both natural and man-made into consideration when creating and enforcing zoning regulations.

Hardin County has zoning ordinance maps for all 15 townships in the county as well as ones for specific unincorporated areas such as Cleves, Gifford, Lawn Hill and Robertson.

Subdivision Regulation

Another land use regulation tool in Hardin County is the Land Subdivision Ordinance, which is an ordinance that provides rules, regulations, and standards to guide land subdivision in the County's unincorporated areas. Considerations for hazard mitigation in this ordinance relate to street geometrics, easements, and erosion control. An example of this can be found in the following statement from Hardin County's subdivision ordinance:

When water courses cross the lines of any proposed street, provisions shall be made to provide for natural drainage with culverts or bridges of adequate size and design fifty (50) year flood standards required, with a minimum size of twenty-four inches (24"). (Hardin County Planning and Zoning, 1980)

Building Codes

Currently the county does not enforce any county specific building codes. Only the standard State of Iowa buildings codes are enforced. The State's building code can be found on the Iowa Department of Public Safety website (http://www.dps.state.ia.us/). Certain jurisdictions do have their own building codes, while other communities choose not to enforce building codes. These will be discussed in each jurisdiction's section to follow.

With the relatively recent (March 1, 2009) state requirement of electrical permits, there will be more oversight in building quality in Hardin County. A permit is required in unincorporated areas

for new electrical installations in residential, commercial, and industrial properties. This requirement is a major step in enforcing and maintaining building quality in Hardin County.

Floodplain Management

There are very few floodplains in Hardin County. Of 11 jurisdictions in the planning boundary, 4 are completely mapped, 3 are half mapped, and 4 are not mapped, including Buckeye, New Providence, Radcliffe, and Whitten. The portions of jurisdictions located in a flood hazard area are very small.

The Iowa DNR began creating new, comprehensive, accurate floodplain maps for the entire state, starting in 2011. The maps can't be used for flood insurance purposes, but they will show the boundaries of flooded areas for the 1% annual chance and 0.2% annual chance floods. According to the Iowa DNR Floodplain Mapping Status for November 2015, Hardin County's status was "Effective Flood Insurance Rate Map (FIRM) LiDAR Based."

Five out of eleven jurisdictions, including Alden, Hubbard, Iowa Falls, Steamboat Rock and Union, are participating in NFIP. A floodplain management ordinance is required to participate in the NFIP. The floodplain management ordinance applies to the areas identified in city's floodplain map as having a 1% chance of flooding each year. Amongst them, there are 24 policies with a total of $3,336,500 worth of insurance in force, as of 07/31/2017. There have been 5 total paid losses worth $1,613, total.

Other Mitigation Activities

Another hazard mitigation activity completed in 2010 by the Northeast Iowa Response Group for Hardin County was a ground transportation commodity flow study. This report helped to determine the types of hazardous materials being transported through the county and its major intersections. The persons gathering the information were located at the intersections for 72 hours in 12-hour shifts. The number of trucks was captured by class from 1 to 9.

Utilities and Services in Unincorporated Hardin County

All essential and basic services are available to those who live in unincorporated Hardin County. A wide variety of public but mostly private organizations provide these services. Below, all of the services and providers are listed.

- **Electricity:** Alliant Energy, MidAmerican Energy, Midland Power Cooperative
- **Natural Gas:** Alliant Energy, Black Hills Energy, individual LP's
- **Water:** Hardin Rural Water, Ackley Water, Alden Water, Eldora Water, Hubbard Water, Iowa Falls Water, New Providence Water, Radcliffe Water, Steamboat Rock Water, Union Water, and Central Iowa Water Association
- **Wastewater**: City of Iowa Falls
- **Phone Service:** Qwest, Windstream, Iowa Telecom, Heart of Iowa, Radcliffe Telephone, Century Link, and Cooperative Telephone (Hubbard)
- **Cable/Internet Provider:** Iowa Telecom/Woolstock Mutual Telephone Co, Century Link, Windstream, Mediacom, Heart of Iowa, Hubbard Cooperative Telephone, and Radcliffe Telephone
- **Emergency Medical Service:** Depending on where the medical emergency occurs, a predetermined emergency medical response department will respond to the emergency.

Ackley Ambulance Service, City of Alden, AMR from Iowa Falls, Local First Responders, Eldora Ambulance, Hubbard Ambulance, Radcliffe Volunteer Ambulance Service and Union Ambulance

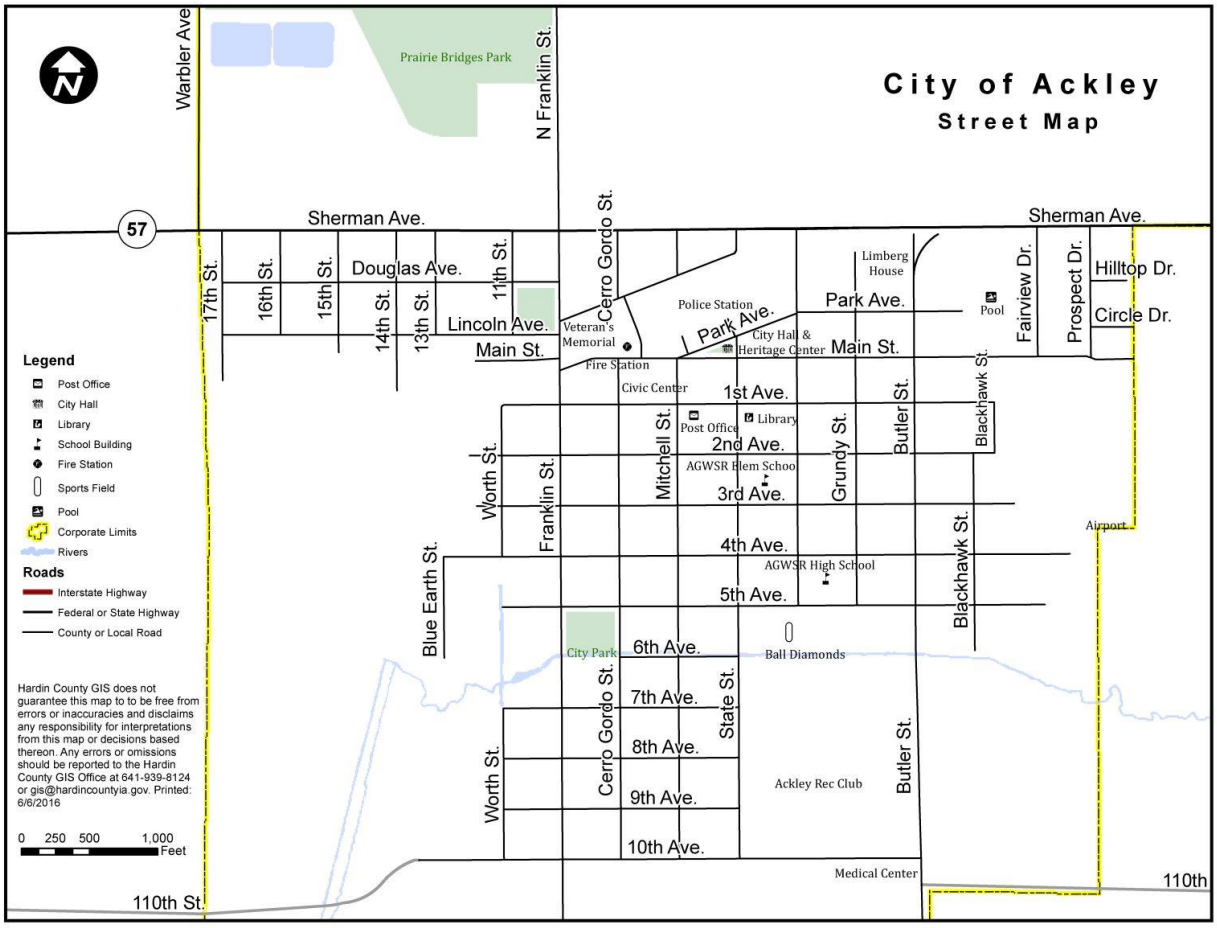
- **Law Enforcement:** Hardin County Sheriff's Office, Ackley/Eldora Police/Iowa Falls Police
- **Fire Protection:** Ackley Fire Department, Alden Fire Department, Buckeye Fire Department, Eldora Fire Department, Hubbard Fire Department, Iowa Falls Fire Department, New Providence Fire Department, Radcliffe Fire Department, and Steamboat Rock Fire Department, Union Fire Department, Whitten Fire Department
- **Hazardous Materials Assistance:** Northeast Iowa Response Group in Waterloo
- **Fuel:** Casey's/Kum & Go/Prairie Land in Ackley, Co-op and FS in Alden, Card Pumps in Buckeye, FS/ Kum and Go/ Casey's in Eldora, Casey's and Prairie Land Co-op in Hubbard, 3 Casey's/ Kum & Go/HandiStop/Rock C in Iowa Falls, Comart in Radcliffe, Rock Stop in Steamboat Rock, and Ginger Snap/Co-op in Union
- **Grocery Store:** Ackley Super Food, Hy-Vee/ Fareway in Alden, Eldora, and Iowa Falls, Hometown Grocery in Hubbard, Comart in Radcliffe, Rock Stop in Steamboat Rock, and Ginger Snap/Co-op in Union
- **Solid Waste Removal:** McDowell's, Knight Sanitation, Stone Sanitation, Moler Sanitation, Hardin County Solid Waste, City of Iowa Falls, and City of Steamboat Rock
- **Landfill:** Hardin County Landfill and Solid Waste, Rural Iowa Waste, Knight Sanitation
- **Recycling:** Moler Sanitation, and Hardin County Solid Waste
- **Public Transit:** Peoplerides (this can only be used by para-transit approved individuals)
- **Airport**: General Service Airport, Iowa Falls (Fixed Base Operator/Four Winds Aviation, LLC, Flight Instruction/Prestege Aviation, Midwest Airspray/Agricultural Spraying Services for Iowa Falls)"

As indicated in the service list above, some services are provided to unincorporated areas by nearby cities. This is true for mainly fire protection and emergency medical services.

City of Ackley

Overview

The City of Ackley is located in the northwestern corner of Hardin County, and partially in Franklin County. Iowa 57 and County Highway S56 merge at the county line between Hardin and Franklin, going east/west. Ackley is also located 7.5 miles from US Highway 65.



In 1852 immigrants began purchasing farms and settling in the north Hardin County area, the first being L.H. Artedge. According to the Ackley Heritage Center, Ackley, Iowa was settled by Germans from Ostfriesland, Germany. They were attracted to the lush lands in North Central Iowa. Later in the 1850s the Dubuque and Pacific Railroad Company received a charter from the State of Iowa to build a railroad. William Ackley purchased the land for the railroad and wanted to establish a town.

Ackley and three other land developers purchased the land, which is now the town, for $25.00 an acre. They then sold sites for developing the town. In 1857 the town of Ackley was staked out. The plan was signed December 12, 1857. Ackley never lived here but he gave the town his name.

Starting in October 1865 when the railroad reached Ackley, the town began to boom with several services like elevators for grain storage and shipment, lumber yards, grocery stores, hardware stores, restaurants and saloons being established. Other personal services like doctors and lawyer's offices came to the town, and finally a post office.

In the mid-1860s the town of Ackley was incorporated, and William A. Francis became the first mayor.

Utilities and Services in Ackley

All basic services are available in Ackley. Water, law enforcement, fire protection and a library are provided by the City while all others are contracted to private companies or the County. Services and providers are listed below in Table 25.

Table 25: Ackley Utilities and Services

Service	Provider
Electricity	Mid-American Energy
Gas	Black Hills Energy
Water	City of Ackley
Phone Services	Centurylink
Cable/Internet Provider	Mediacom, Centurylink, CNS Internet
Emergency Medical Service	Ackley Ambulance
Law Enforcement	City of Ackley
Fire Protection	City of Ackley
Warning System	Siren without backup, set off by Sherriff's Office
HazMat Assistance	Northeast Iowa Response Group - Waterloo
Fuel Station	Casey's, Kum & Go, Prairie Land
Grocery/Convenience Store	Ackley Super Food
Solid Waste Removal	McDowell's
Landfill	Hardin County Landfill
Library	Ackley Public Library
Recycling	Hardin County Solid Waste
Public Transit	Peoplerides, COG Regional Ride System
Medical Clinic	Ackley Community (Ellsworth)

There are no fire departments in Hardin County with the capability of dealing with major hazardous materials incidents. This service is provided by the Northeast Iowa Response Group (NIRG), in Waterloo, because that fire department has the needed training and equipment. The local fire department must decide whether or not to contact Waterloo's Fire Department for assistance.

City Government and Regulation

The city is governed by a mayor and 5-member city council that maintains and enforces the city's code of ordinances.

The city does not enforce building codes beyond the standard Iowa building codes in order to attract development. By not enforcing the strict building codes, new development in the community is more affordable than in other communities. The city does, however, have a formal zoning ordinance to enforce land use aside from floodplain management.

Currently, Ackley is not a member of the NFIP.

Technical and Fiscal Resources

The City of Ackley operates like many small cities in Iowa. The city manager, mayor, council, city clerk, and part-time maintenance staff handle the city's daily and long-term operations. Short-term and long-term planning needs like grant writing and management and plan preparation are handled by the local council of governments, the Region 6 Planning Commission. The City of Ackley is a member of the Commission and uses their services and expertise regularly.

There are multiple ways the City of Ackley could finance a hazard mitigation project. This city in particular maintains its own water system so fees for this service are available to finance projects. Other resources available to the City of Ackley are below.

- Grants
- General obligation bonds (up to 5% of City's valuation)
- Revenue bonds through publicly secured sources (paid back using road use tax, local option sales tax in accordance with approved referendum, revenue from certain enterprises, and tax increment financing)
- Capital improvements fund
- Special assessment taxes

Finance tools like impact fees cannot be used to fund projects because they are considered unconstitutional in the State of Iowa. For most projects in Ackley, grants would need to be the main funding source in order for the project to be feasible.

Plan Integration

The Comprehensive Plan for the City integrates elements of the Hazard Mitigation Plan, specifically a description of the relevant hazards.

Other Mitigation Activities

In the past several years, Ackley has been granted money from the USDA through CDGB for sewer improvements. A wetlands project was also completed with I-Jobs money.

City of Alden

Overview

Alden is located in the northwestern portion of Hardin County. The intersection of County Roads D20 and S27 is just south of town. Alden is 3.5 miles west of U.S. Highway 65, ten miles east of Interstate 35, and 5 miles north of U.S. Highway 20.

According to the City of Alden's website, in late 1855 and 1856, Henry Alden laid out what is known as the original town of Alden; later the township also took his name. The town of Alden was incorporated in 1879, with a voting result of 61 in favor and 14 opposed.

In 1869, the Dubuque and Sioux City Railroad (now the Illinois Central) came through to Webster City which helped delivery of needed staple items. The Chicago, Iowa and Dakota Railroad (now the Chicago Northwestern) came into Alden from Eldora in 1884. Now that transportation of perishable products in refrigerator cars was assured, a creamery was erected.

Many other successful businesses were also present such as: Rummel Wagon Works, Chet Wood's (manufacturer of dirt-loading equipment, manure spreaders and excavator and road builder), Hale- Roberts Stone Co. (now Iowa Limestone Company), ice houses, several hotels, elevator, lumberyard, etc.

In regard to education, the first schoolhouse in Alden was built in 1856. Ten years later a new one was built on a hill farther east. Another school, a part of the present one, was completed in 1924.

From 1854 to 1880, Alden had built several churches: The Congregational, First Methodist Episcopal, Immanuel-Evangelical and Reformed, and the German Society of the Methodist Episcopal. St. Paul's Lutheran (Missouri Synod) was established in 1908.

The first post office was established in 1855. The present post office was dedicated in 1969.

The Alden Hall or Lyceum was the main entertainment center for the town from early days until 1920s. There were programs there every Saturday Night from November to March. Besides local and area talent, there also was talent from other parts of the state, nation and even foreign countries. The Lyceum drew 100-400 people regularly. In those days Alden was called "The Athens of the West."

Many businesses thrived, and people traded in Alden for miles around. A couple of the favorite ones were Spencer's Department Store, located where the Clover Farm Grocery Store was, and Furry's Department Store, located in the Shamrock Café Building.

In 1868 the Iowa Falls and Sioux City Railroad was completed to Alden. During the winter of 1868- 1869, a depot building was erected. The first regular agent was J. M. Fisher, who took charge of the office September 1, 1869.

The old ball park, located at the County highway building, served baseball teams from the founding of the town. From 1886 to the 1940's, Egg Day and the 4th of July were well attended by Alden. Now the Lion's Club has an annual celebration in June or July. (City of Alden, 2011)

Utilities and Services

All basic services are available in the City of Alden except a medical clinic. The city provides water, emergency medical service, and a library so all other services are provided by either the County or private companies.

Table 26: Alden Utilities and Services

Service	Provider
Electricity	Alliant Energy
Gas	Alliant Energy
Water	City of Alden
Phone Services	Iowa Telecom
Cable/Internet Provider	Iowa Telecom/Woolstock Mutual Telephone Co
Emergency Medical Service	City of Alden and AMR
Law Enforcement	Hardin County Sheriff
Fire Protection	Volunteer Fire Department
Warning System	Siren set off by Hardin County or local fire dept.
HazMat Assistance	Northeast Iowa Response Group - Waterloo
Fuel Station	Co-op and FS
Grocery/Convenience	Hy-vee and Fareway
Solid Waste Removal	McDowell
Landfill	Hardin County Landfill
Library	City of Alden
Recycling	Hardin County
Public Transit	Peoplerides
Medical Clinic	None – use Iowa Falls

There are no fire departments in Hardin County with the capability of dealing with major hazardous materials incidents. This service is provided by the Northeast Iowa Response Group, in Waterloo, because that fire department has the needed training and equipment. The local fire department must decide whether or not to contact Waterloo's Fire Department for assistance.

City Government and Regulation

The City of Alden is governed by a mayor and five-member city council. To attract development, as a hazard mitigation related regulation, the city only enforces building codes for blighted buildings downtown, but other than that, nothing beyond the standard Iowa building codes. By not enforcing the strict building codes, new development in the community is more affordable than in other communities. The city does have a formal zoning ordinance to enforce land use aside from floodplain management. According to Iowa Homeland Security information, Alden is participating in the NFIP and has 5 policies in place, as of 07/31/2017, with $1,082,800 of insurance in force.

Technical and Fiscal Resources

The City of Alden operates like many small cities in Iowa. The mayor, council, city clerk, and maintenance staff handle the city's daily and long-term operations. Short-term and long-term planning needs like grant writing and management and plan preparation are usually handled by the local council of governments.

There are multiple ways the City of Alden could finance a hazard mitigation project. This city in particular maintains its own water system so fees for this service are available to finance projects. The financing resources available to the City of Alden are below.

- Grants
- General obligation bonds (up to 5% of City's valuation)
- Revenue bonds through publicly secured sources (paid back using sewer fees, water fees, road use tax, local option sales tax in accordance with approved referendum, revenue from certain enterprises, and tax increment financing)
- Capital improvements fund
- Special assessment taxes

Finance tools like impact fees cannot be used to fund projects because they are considered unconstitutional in the State of Iowa. For most projects in Alden, grants would need to be the main funding source in order for the project to be feasible.

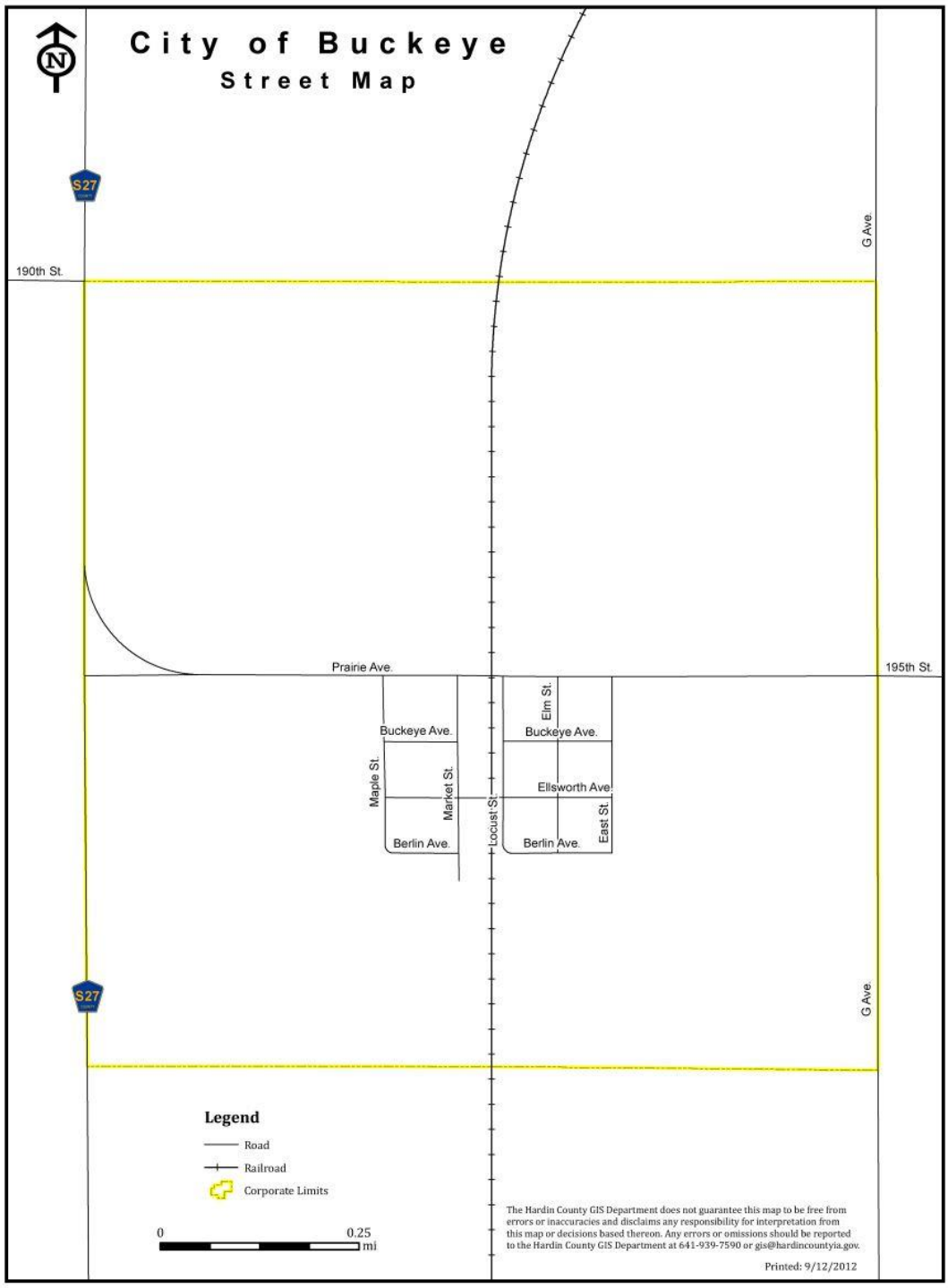
Other Mitigation Activities

Alden has received money in the past few years for sewer improvements, equipment purchasing, and loss of property.

City of Buckeye

Overview

The City of Buckeye is located in the west central portion of Hardin County. County Road S27 runs along its west side while U.S. Highway 20 is 1 mile north and U.S. Highway 65 is 7.5 miles east of town.



Buckeye is the smallest town in Hardin County with a population of 110 people and a total area of 1.0 square mile. There are no major businesses, social groups, or events, located in Buckeye.

Utilities and Services in Buckeye

Some basic services are available in Buckeye. Services and providers are listed below in Table 27.

Table 27: Buckeye Utilities and Services

Service	Provider
Electricity	Alliant Energy
Gas	LP Only
Water	Private companies
Phone Services	Windstream
Cable/Internet Provider	Windstream
Emergency Medical Service	Local first responders and AMC from Iowa Falls
Law Enforcement	Hardin County Sheriff
Fire Protection	Volunteer Fire Department
Warning System	Siren without backup, set off by Sherriff's Office
HazMat Assistance	Northeast Iowa Response Group - Waterloo
Fuel Station	Card Pumps
Grocery/Convenience Store	None
Solid Waste Removal	Knight Sanitation
Landfill	Hardin County Landfill
Library	None
Recycling	Hardin County Solid Waste
Public Transit	Peoplerides
Medical Clinic	None, use Iowa Falls

There are no fire departments in Hardin County with the capability of dealing with major hazardous materials incidents. This service is provided by the Northeast Iowa Response Group (NIRG), in Waterloo, because that fire department has the needed training and equipment. The local fire department must decide whether or not to contact Waterloo's Fire Department for assistance.

City Government and Regulation

The city is governed by a mayor and 5-member city council that maintains and enforces the city's code of ordinances.

The city does enforce building codes beyond the standard Iowa building codes. The city also has a formal zoning ordinance to enforce land use aside from floodplain management.

Currently, Buckeye is not participating in the NFIP.

Technical and Fiscal Resources

The City of Buckeye operates like many small cities in Iowa. The mayor, council, city clerk, and part- time maintenance staff handle the city's daily and long-term operations. Short-term and long-term planning needs like grant writing and management and plan preparation are handled by the local council of government, the Region 6 Planning Commission. The City of Buckeye is a member of the Commission and uses their services and expertise regularly.

There are multiple ways the City of Buckeye could finance a hazard mitigation project. This city does not maintain any of its own utilities so fees for these services are not available to finance projects. Resources available to the City of Buckeye are below.

- Grants
- General obligation bonds (up to 5% of City's valuation)
- Revenue bonds through publicly secured sources (paid back using road use tax, local option sales tax in accordance with approved referendum, revenue from certain enterprises, and tax increment financing)
- Capital improvements fund
- Special assessment taxes

Finance tools like impact fees cannot be used to fund projects because they are considered unconstitutional in the State of Iowa. For most projects in Buckeye, grants would need to be the main funding source in order for the project to be feasible.

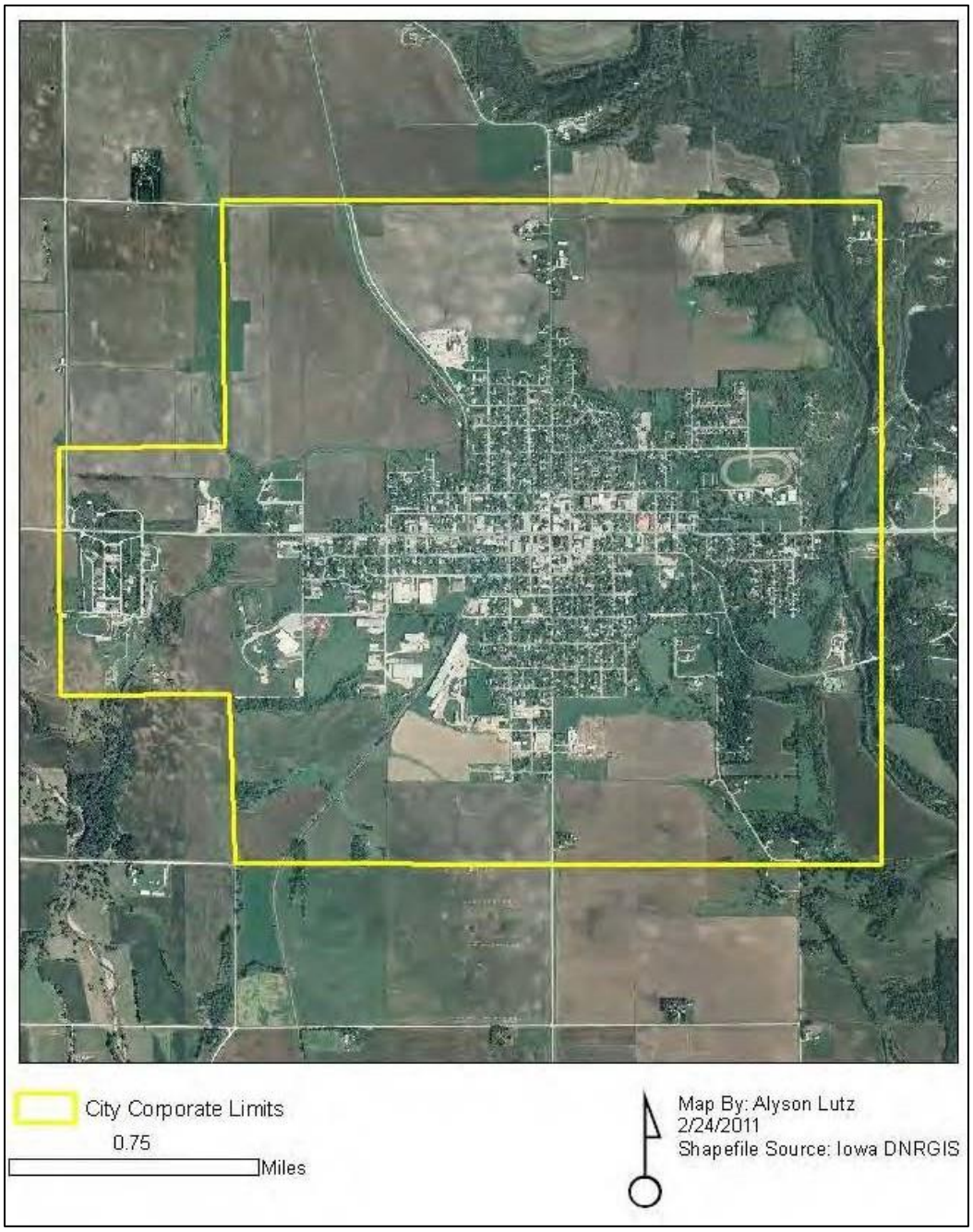
Other Mitigation Activities

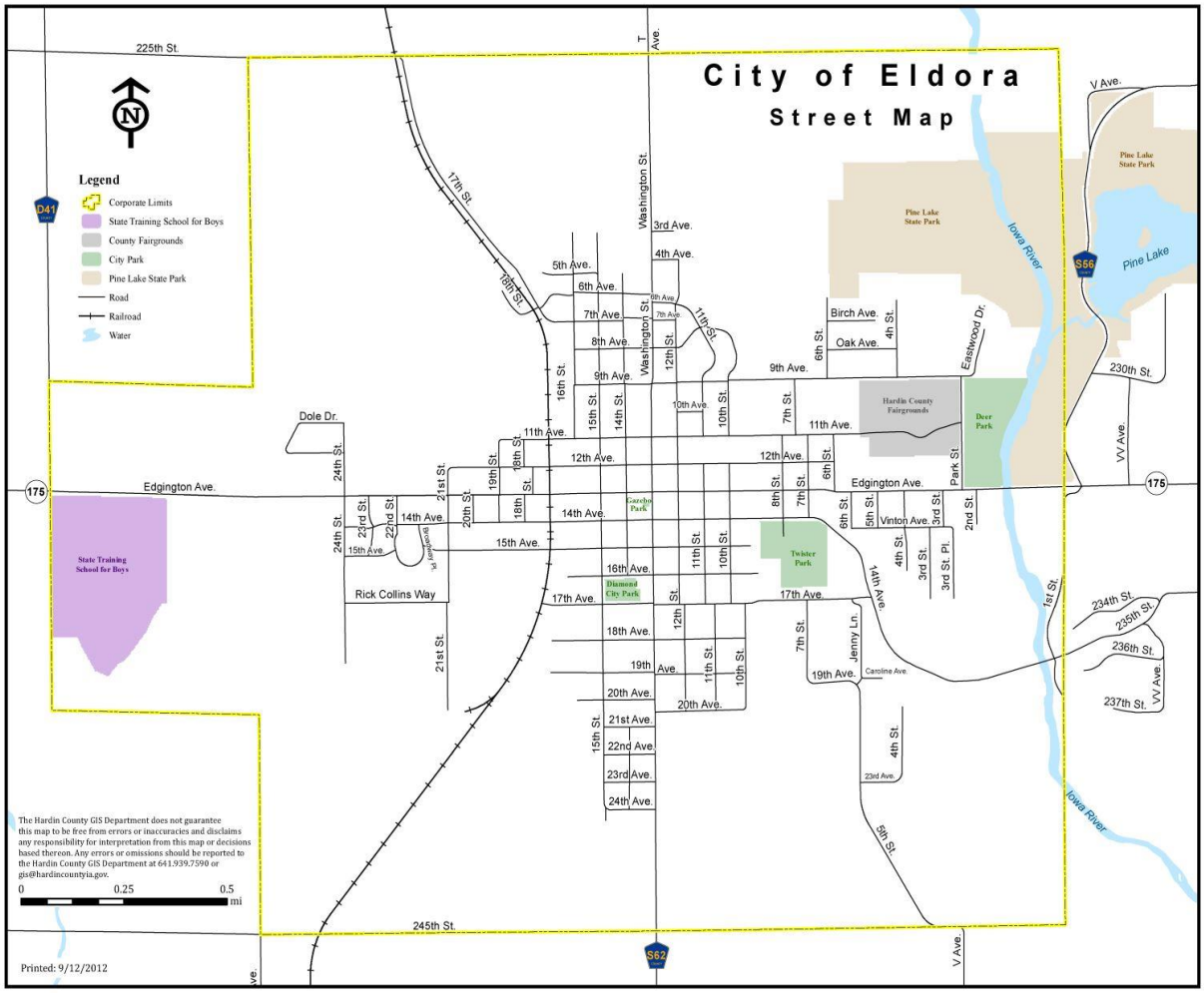
In the past several years, Buckeye has not been granted any Federal or State money for projects.

City of Eldora

Overview

Eldora is the county seat of Hardin and is located in east central portion of the county. Iowa 175 goes through the middle of town east/west. U.S. Highway 20 is 6.5 miles north.





Hardin County was organized in 1852 and Judge William McKay appointed two men to locate a suitable site for a county seat. In spring of 1853, they selected a site which is now known as the City of Eldora. The town was named by Mrs. S. R. Edgington after the name of her child who had just died. Edgington Avenue runs east/west through the center of town today.

Eldora has been the County seat since 1853. This location has been challenged several times in court cases and voting to decide the outcome. In 1892 Iowa Falls citizens offered the county $32,000 towards the building of a new courthouse if it were built in Iowa Falls. The Eldora citizens countered with an offer of $40,000 if the courthouse stayed in Eldora. (Iowa Genealogy, 2011)

Utilities and Services

All basic services are available in Eldora. All emergency services are provided by the City, which is not the case in many Hardin County cities.

Table 28: Eldora Utilities and Services

Service	Provider
Electricity	Alliant Energy
Gas	Alliant Energy
Water	City of Eldora
Phone Services	Heart of Iowa
Cable/Internet Provider	Mediacom, Heart of Iowa
Emergency Medical Service	Eldora Ambulance
Law Enforcement	Eldora Police, Hardin Co Sheriff
Fire Protection	Eldora Fire Department
Warning System	Pagers & Sirens w/backup, set off by County Sherriff
HazMat Assistance	Northeast Iowa Response Group - Waterloo
Fuel Station	FS, Kum and Go, Casey's
Grocery/Convenience	Fareway, Hy-Vee
Solid Waste Removal	Knight, Stone
Landfill	Hardin County Waste Management
Library	Eldora Public Library
Recycling	Hardin County Waste Management
Public Transit	Peoplerides
Medical Clinic	Eldora Clinic (McFarland Clinic, Greenbelt Homecare, Eldora Nursing Service), Valley View Nursing & Rehab

There are no fire departments in Hardin County with the capability of dealing with major hazardous materials incidents. This service is provided by the Northeast Iowa Response Group (NIRG), in Waterloo, because that fire department has the needed training and equipment. The local fire department must decide whether or not to contact Waterloo's Fire Department for assistance.

City Government and Regulation

The City of Eldora is governed by a mayor and five-member city council. The City maintains and enforces a code of ordinances.

The zoning districts and requirements in Eldora are traditional and regulate use, location, density, site development, and appearance. Eldora also enforces building codes beyond the standard Iowa building codes.

Technical and Fiscal Resources

The city manager, mayor, council, city clerk, and maintenance staff handle the city's daily and long-term operations. Also, many people in the Eldora community are active in organizations, city projects, and various initiatives. Eldora is also a member of the Region 6 Planning Commission and uses their services and expertise for certain projects.

There are multiple ways the City of Eldora could finance a hazard mitigation project. This city in particular provides its own water utility so it has those fees to use for projects. The other financing resources available to the City of Eldora are below.

- Grants
- General obligation bonds (up to 5% of City's valuation)
- Revenue bonds through publicly secured sources (paid back using sewer fees, water fees, road use tax, local option sales tax in accordance with approved referendum, revenue from certain enterprises, and tax increment financing)
- Capital improvements fund
- Special assessment taxes

Finance tools like impact fees cannot be used to fund projects because they are considered unconstitutional in the State of Iowa. For most projects in Eldora, grants would need to be the main funding source in order for the project to be feasible.

Plan Integration

The Comprehensive Plan for the City integrates elements of the Hazard Mitigation Plan, specifically a description of the relevant hazards.

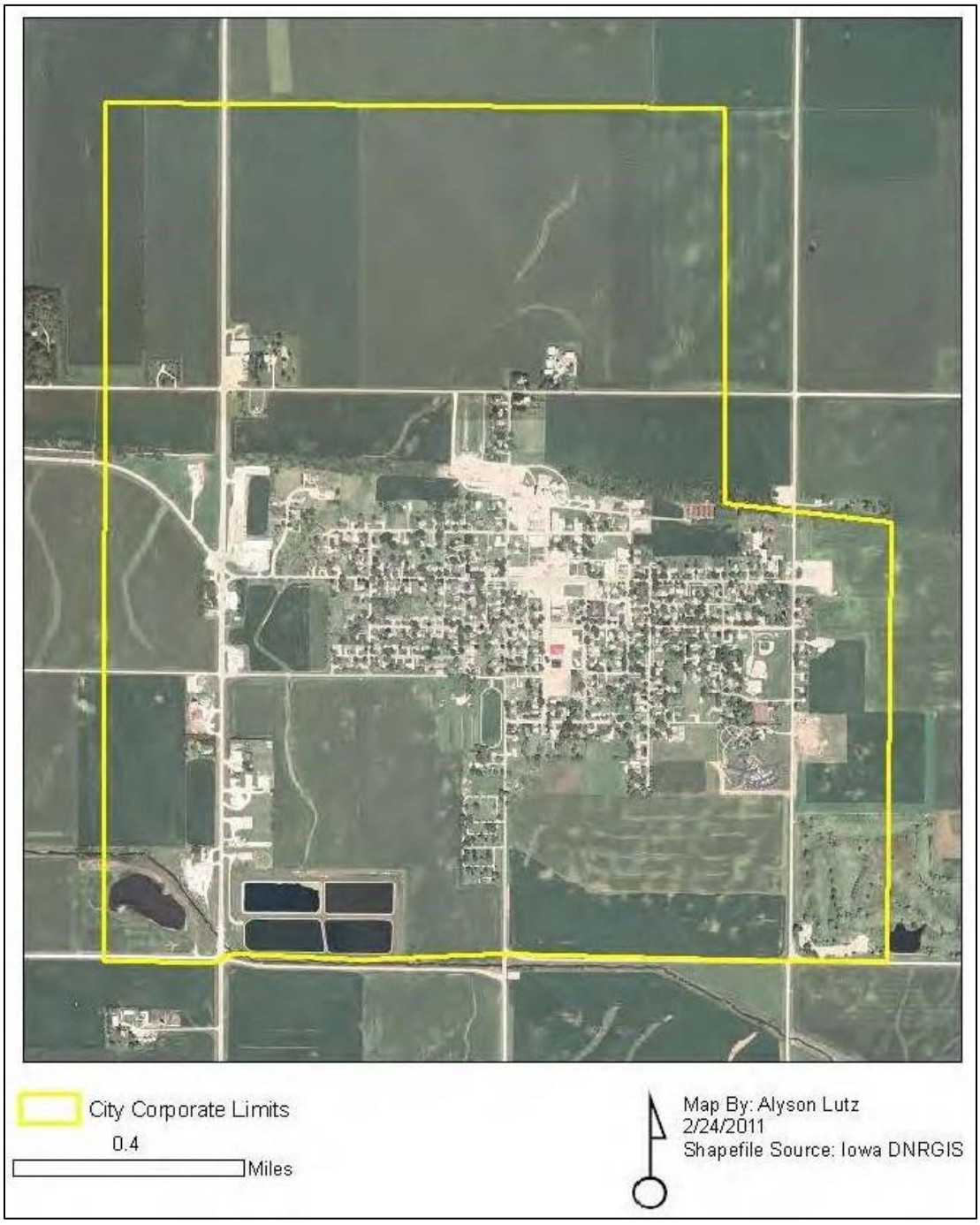
Other Mitigation Activities

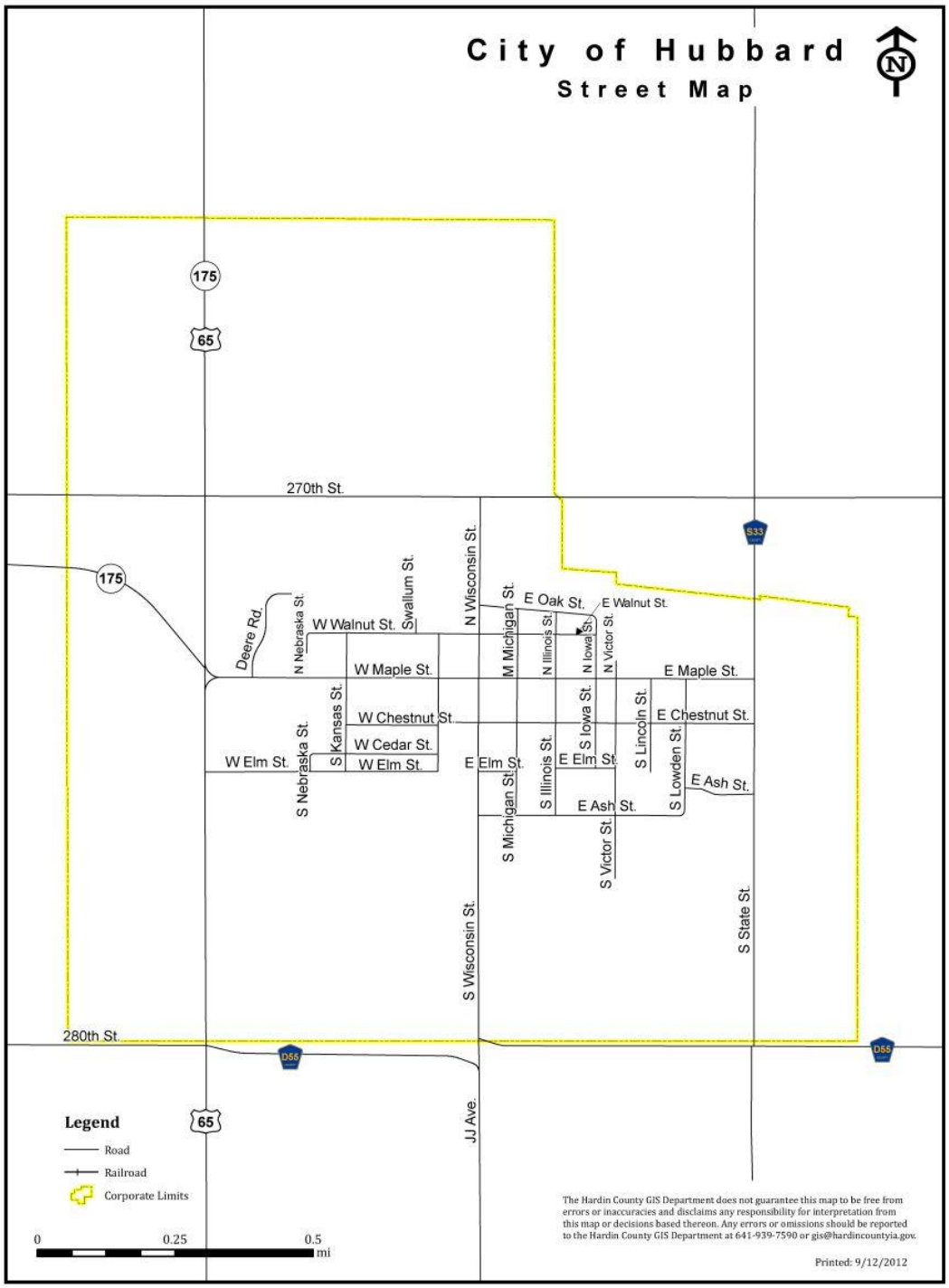
In the past several years, Eldora has been granted money from the US HUD Neighborhood Stabilization Program for demolition of dilapidated buildings.

City of Hubbard

Overview

The City of Hubbard is located in south-central Hardin County. Hubbard is just .5 miles east of U.S. Highway 65 and Iowa 175.





Hubbard, Iowa was named for Judge Nathaniel M. Hubbard, railroad attorney. Hubbard is one of the larger communities in the planning boundary with 885 people.

Utilities and Services

Several utilities and basic services are available in Hubbard. Utilities are not provided by the City, but safety services including fire protection and emergency response are provided. All other services are provided by private companies or Hardin County.

Table 29: Hubbard Utilities and Services

Service	Provider
Electricity	Alliant
Gas	Alliant
Water	City of Hubbard
Phone Services	Hubbard Cooperative Telephone
Cable/Internet Provider	Hubbard Cooperative Telephone
Emergency Medical Service	Hubbard Ambulance
Law Enforcement	Hardin County Sheriff
Fire Protection	Hubbard Fire Department
Warning System	Warning siren, no backup power, City set off
HazMat Assistance	Northeast Iowa Response Group - Waterloo
Fuel Station	Casey's, Prairie Land Co-op
Grocery/Convenience	Hometown Grocery, Casey's
Solid Waste Removal	McDowell's
Landfill	Hardin County Solid Waste Company
Library	Hubbard City Library
Recycling	Hardin County Solid Waste Company
Public Transit	Peoplerides
Medical Clinic	Hubbard Medical Clinic

There are no fire departments in Hardin County with the capability of dealing with major hazardous materials incidents. This service is provided by the Northeast Iowa Response Group (NIRG), in Waterloo, because that fire department has the needed training and equipment. The local fire department must decide whether or not to contact Waterloo's Fire Department for assistance.

Government and Regulation

Hubbard is governed by a mayor and five-member city council.

To attract development as a hazard mitigation related regulation, the city does not enforce building codes beyond the standard Iowa building codes. By not enforcing the strict building codes, new development in the community is more affordable than in other communities. The city does have a formal zoning ordinance to enforce land use aside from floodplain management.

According to Iowa Homeland Security information, Hubbard is participating in the NFIP and has 1 policy in place, as of 07/31/2017, with $126,800 of insurance in force.

Technical and Fiscal Resources

The City of Hubbard operates like many small cities in Iowa. The mayor, council and city clerk handle the city's daily and long-term operations. Short-term and long-term planning needs like grant writing and management and plan preparation are usually handled by the local council of government, the Region 6 Planning Commission. The City of Hubbard is a member of the Commission and uses their services and expertise.

There are multiple ways the City of Hubbard could finance a hazard mitigation project. This city in particular does not maintain its own utilities besides a water system, telephone and cable/internet so there are not many fees from these services available to finance projects. The resources available to the City of Hubbard are below:

- Grants
- General obligation bonds (up to 5% of City's valuation)
- Revenue bonds through publicly secured sources (paid back using road use tax, local option sales tax in accordance with approved referendum, revenue from certain enterprises, and tax increment financing)
- Capital improvements fund
- Special assessment taxes

Finance tools like impact fees cannot be used to fund projects because they are considered unconstitutional in the State of Iowa. For most projects in Hubbard, grants would need to be the main funding source in order for the project to be feasible.

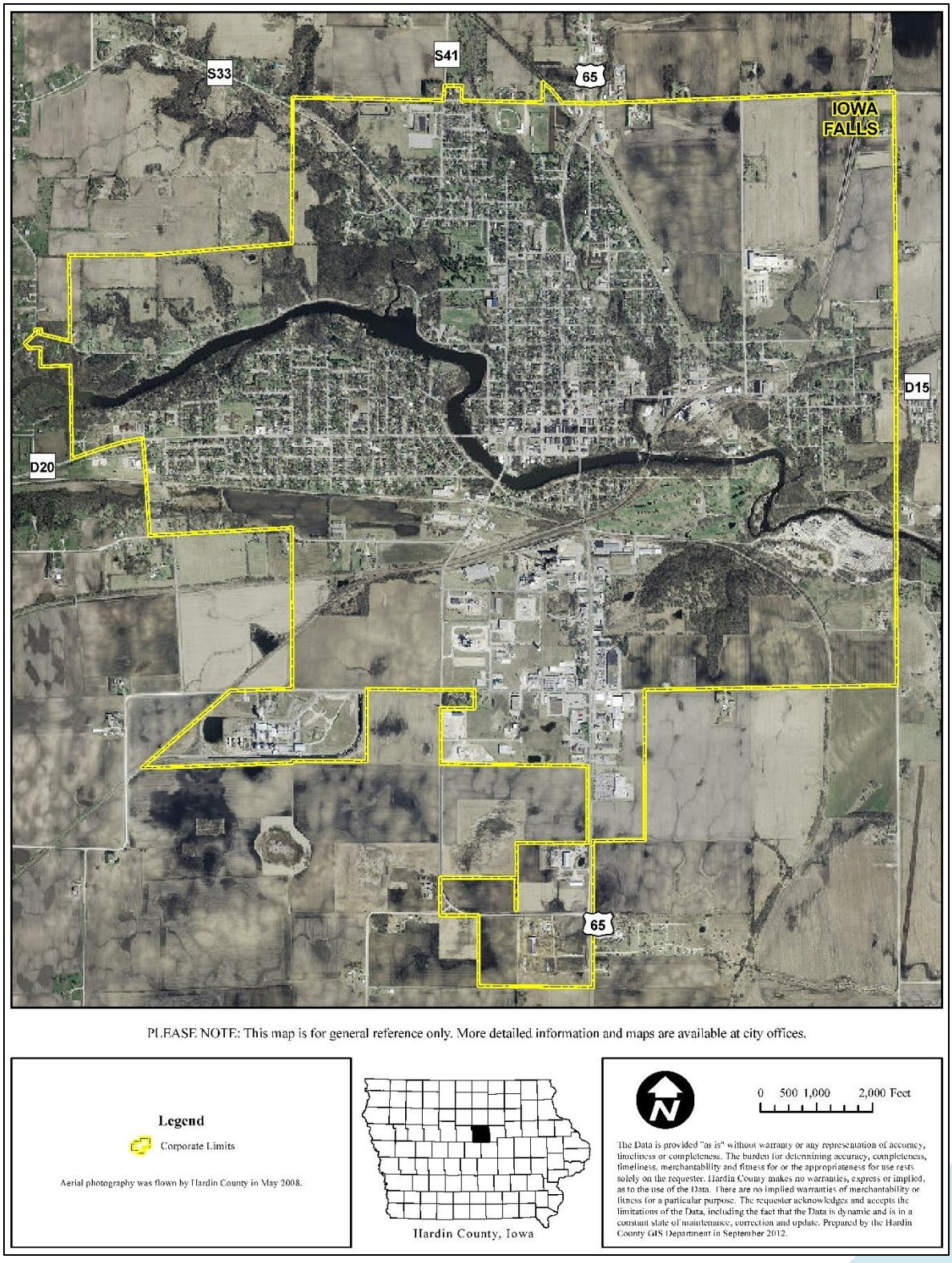
Other Mitigation Activities

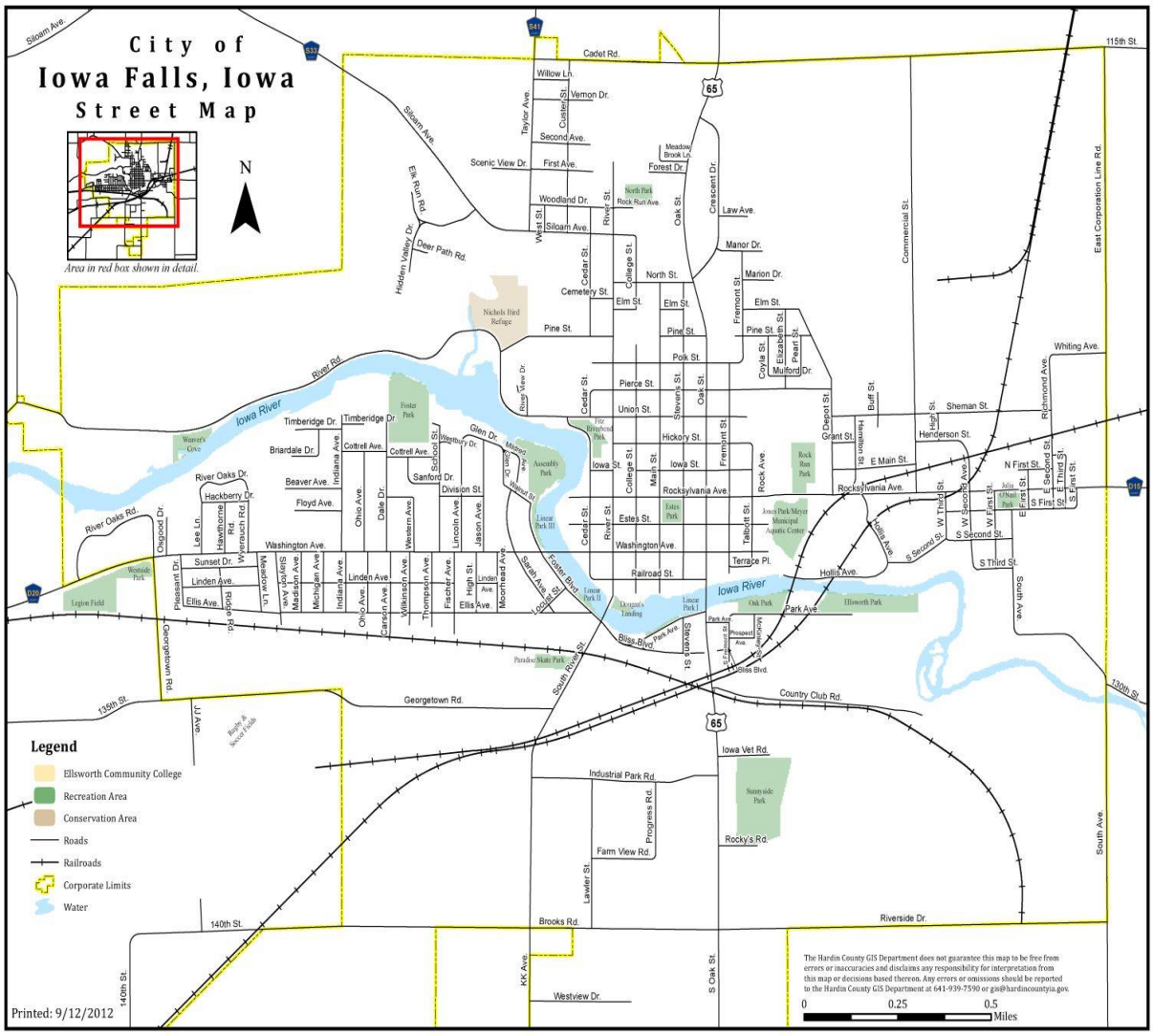
In 2008, Hubbard was granted Iowa Finance Authority money for water treatment projects.

City of Iowa Falls

Overview

The City of Iowa Falls is located in the north central portion of the county. U.S. Highway 65 runs north-south through the city and U.S. Highway 20 is 5 miles south of town.





According to the City's website, "Iowa Falls is located in Hardin County, Iowa, along the Iowa River. The parks and cliffs along the river have given Iowa Falls the nickname, 'The Scenic City.' A landmark in the city is its movie theater. Built as the Metropolitan Opera House in 1899, it presented plays, operas, and vaudeville in the town during the first half of the twentieth century, and today is listed on the National Register of Historic Places."

Utilities and Services

Iowa Falls is the largest city in Hardin County. All services, including two grocery stores, are available to residents. Only water utilities are maintained by the City while all other utilities are through private companies. Safety services are provided by the City and Hardin County.

Table 30: Iowa Falls Utilities and Services

Service	Provider
Electricity	Alliant, Midland Power Cooperative
Gas	Alliant
Water	City of Iowa Falls
Wastewater	City of Iowa Falls
Phone Services	Qwest, CenturyLink
Cable/Internet Provider	Mediacom
Emergency Medical Service	AMR Ambulance
Law Enforcement	City of Iowa Falls
Fire Protection	City of Iowa Falls
Warning System	Warning siren set off by Police
HazMat Assistance	Northeast Iowa Response Group - Waterloo
Fuel Station	3 Casey's, HandiStop, Rock C, Kwik Star
Grocery/Convenience	Fareway, HyVee
Solid Waste Removal	City of Iowa Falls
Landfill	Rural Iowa Waste
Library	City of Iowa Falls
Recycling	Hardin County Solid Waste
Public Transit	Peoplerides
Medical Clinic	McFarland, Iowa Falls Clinic
Hospital	Hansen Family Hospital
Airport	General Service Airport, Iowa Falls

There are no fire departments in Hardin County with the capability of dealing with major hazardous materials incidents. This service is provided by the Northeast Iowa Response Group (NIRG), in Waterloo, because that fire department has the needed training and equipment. The local fire department must decide whether or not to contact Waterloo's Fire Department for assistance.

City Government and Regulation

Iowa Falls is governed by a mayor and five-member city council. The city code includes 171 chapters, one of which is the code of ordinances.

The City enforces building codes beyond State of Iowa building code requirements. The City also enforces a zoning code.

According to Iowa Homeland Security information, Iowa Falls is participating in the National Flood Insurance Program. As of 07/31/2017, the City has 4 policies in place with $720,000 worth of insurance in force.

Technical and Fiscal Resources

The City of Iowa Falls operates like many small cities in Iowa. The city manager, mayor, council, city clerk, and maintenance staff handle the city's daily and long-term operations. The City of Iowa Falls is a member of the Region 6 Planning Commission and uses their services.

There are multiple ways the City of Iowa Falls could finance a hazard mitigation project. This city in particular does not maintain its own energy utilities so fees for these services are not available to finance projects, but the City does maintain the city's water system. The financing resources available to the City of Iowa Falls are below.

- Grants
- General obligation bonds (up to 5% of City's valuation)
- Revenue bonds through publicly secured sources (paid back using sewer fees, water fees, road use tax, local option sales tax in accordance with approved referendum, revenue from certain enterprises, and tax increment financing)
- Capital improvements fund
- Special assessment taxes

Finance tools like impact fees cannot be used to fund projects because they are considered unconstitutional in the State of Iowa. For most projects in Iowa Falls, grants would need to be the main funding source in order for the project to be feasible.

Plan Integration

The Comprehensive Plan for the City integrates elements of the Hazard Mitigation Plan, specifically a description of the relevant hazards.

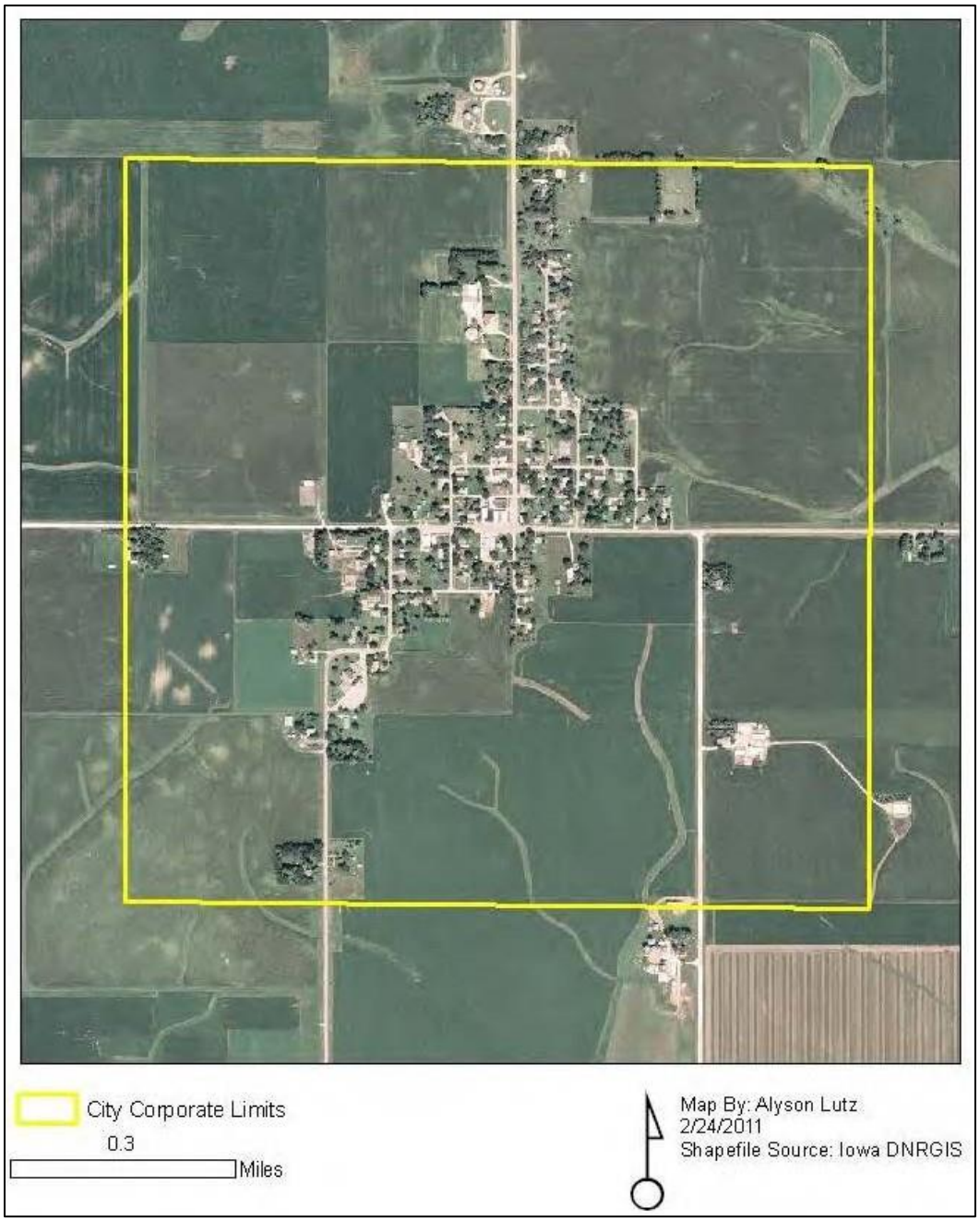
Other Mitigation Activities

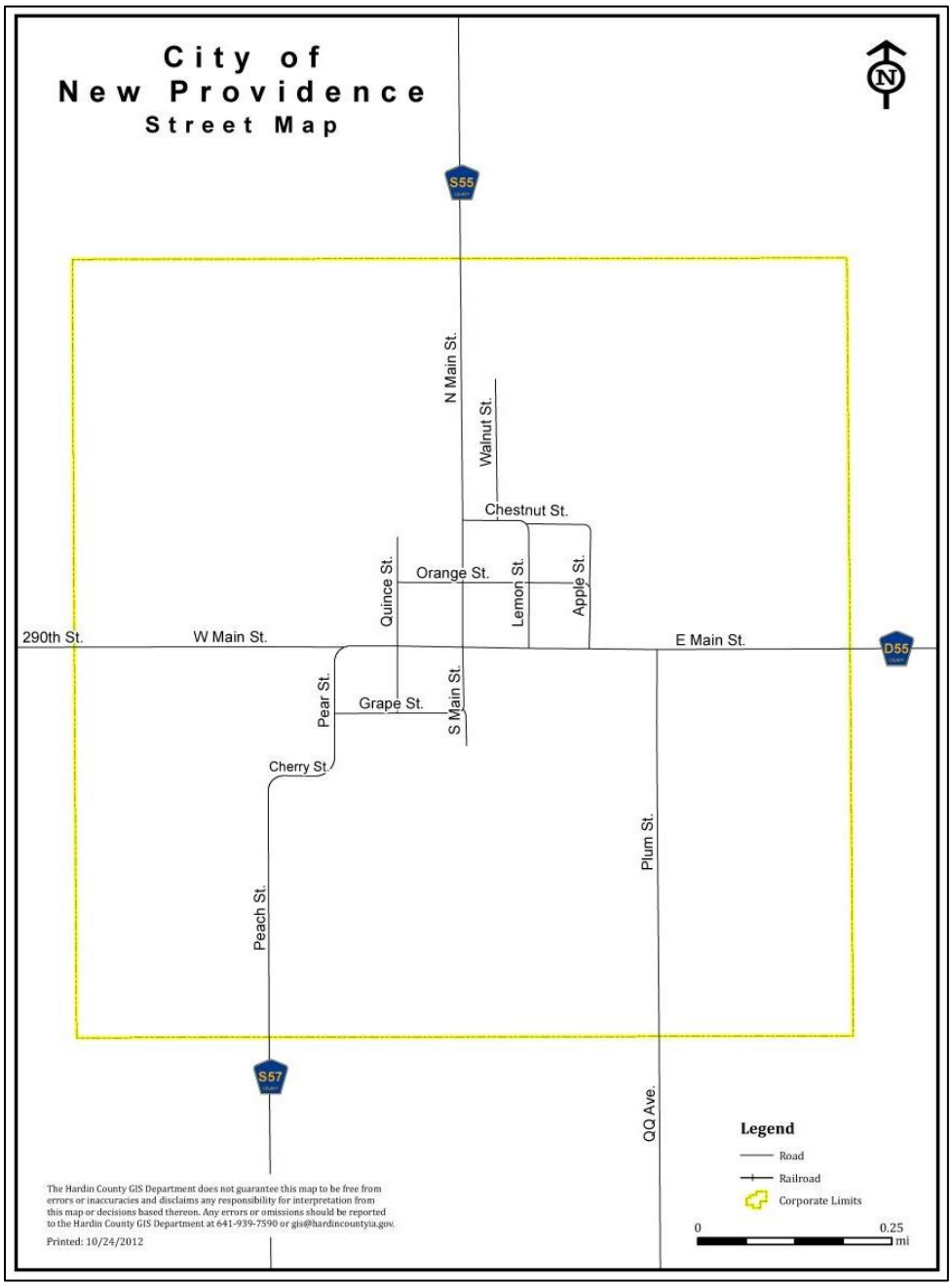
In the past several years, Iowa Falls has been granted money for Airport projects and CDBG Housing rehab projects.

City of New Providence

Overview

New Providence is located at the intersection of County Roads S55 and D55. New Providence is a little over 20 miles east of U.S. Interstate 35.





Some history of the town of New Providence can be found on The Teresa Miller Genealogy Page; “Honey Creek Friends Cemetery is the beautifully maintained resting place of many old time Quaker members of the Honey Creek Friends meeting near New Providence, Hardin County, Iowa. Across the road from the cemetery is the wonderful old brick Honey Creek Friends Church built in 1916 on the site of previous Quaker churches dating to 1852. The Honey Creek Friends Church is a National Historic Site.”

Utilities and Services

New Providence provides all utilities while solid waste/landfill/recycling are provided by private companies or the county, and safety services are provided by the City and Hardin County. All basic services are available to New Providence residents except grocery, fuel and medical clinic.

Table 31: New Providence Utilities and Services

Service	Provider
Electricity	Alliant
Gas	Alliant
Water	City of New Providence
Phone Services	Heart of Iowa
Cable/Internet Provider	None
Emergency Medical Service	None
Law Enforcement	Hardin County Sheriff's Office
Fire Protection	New Providence Fire Department
Warning System	Warning siren, set off by City Maintenance
HazMat Assistance	Northeast Iowa Response Group - Waterloo
Fuel Station	None
Grocery/Convenience	None
Solid Waste Removal	Private contracts/ Hardin County Solid Waste
Landfill	Hardin County Landfill
Library	None
Recycling	Private contracts/Hardin County Solid Waste
Public Transit	Peoplerides
Medical Clinic	None

There are no fire departments in Hardin County with the capability of dealing with major hazardous materials incidents. This service is provided by the Northeast Iowa Response Group (NIRG), in Waterloo, because that fire department has the needed training and equipment. The local fire department must decide whether or not to contact Waterloo's Fire Department for assistance.

City Government and Regulation

New Providence is governed by a mayor and 5-member city council that maintains the city's Code of Ordinances. The City enforces several formal land use controls like building and zoning codes.

According to information from Iowa Homeland Security, the City is not participating in the National Flood Insurance Program.

Technical and Fiscal Resources

The City of New Providence operates like many small cities in Iowa. The mayor, council, city clerk, and maintenance staff handle the city's daily and long-term operations. The City of New Providence is a member of the Region 6 Planning Commission and uses their services and expertise for certain activities like grant and plan writing.

There are multiple ways the City of New Providence could finance a hazard mitigation project. This city in particular does not maintain any of its utilities except a water system so there are not many fees from these services available for finance projects. The financing resources available to the City of New Providence are below.

- Grants
- General obligation bonds (up to 5% of City's valuation)
- Revenue bonds through publicly secured sources (road use tax, local option sales tax in accordance with approved referendum, revenue from certain enterprises, and tax increment financing)
- Capital improvements fund
- Special assessment taxes

Finance tools like impact fees cannot be used to fund projects because they are considered unconstitutional in the State of Iowa. For most projects in New Providence, grants would need to be the main funding source in order for the project to be feasible.

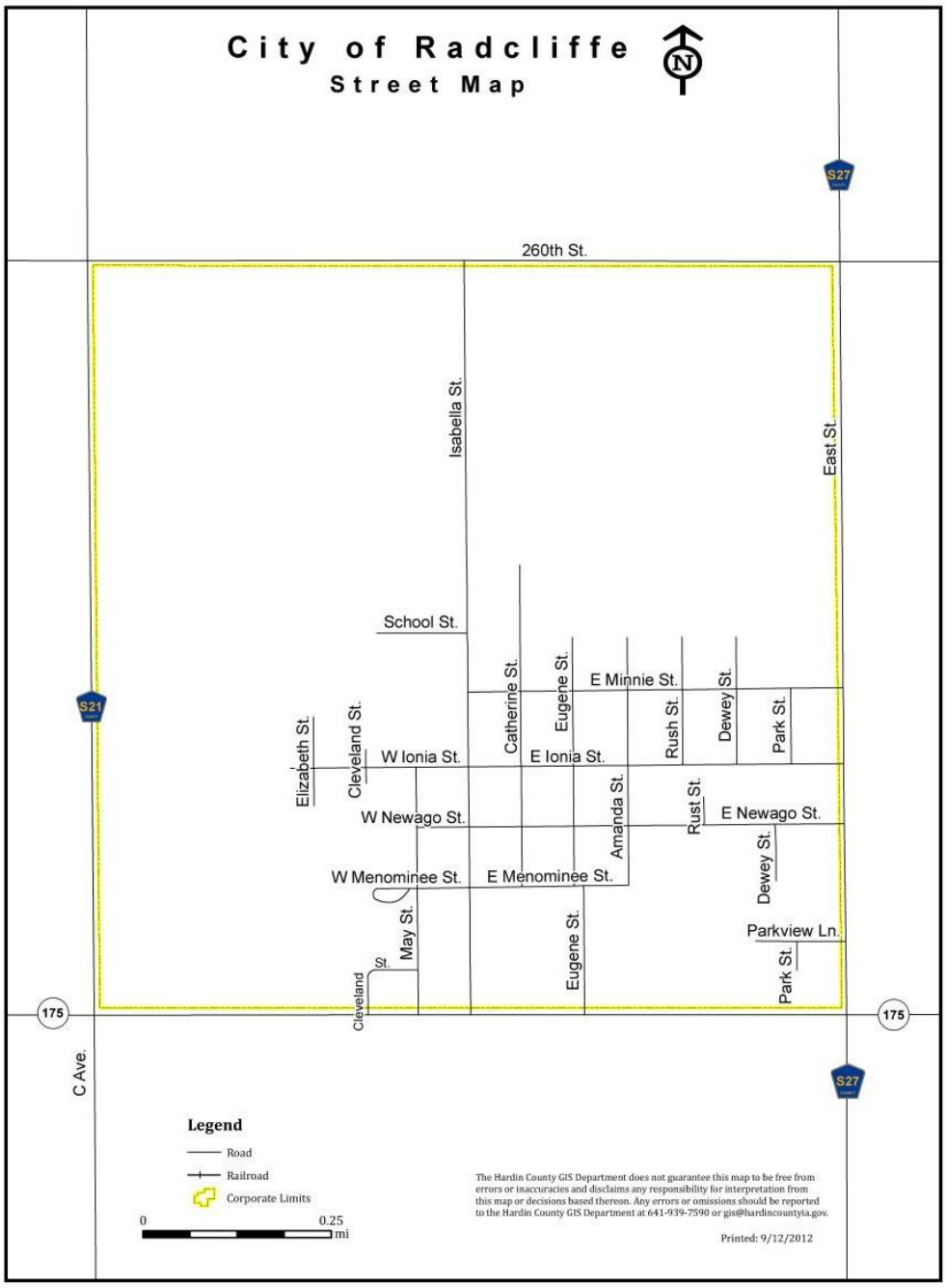
Other Mitigation Activities

In the past few years, the city has not received any Federal or State money for mitigation projects.

City of Radcliffe

Overview

Radcliffe is located at the intersection of Iowa 175 and County Road S27. It is situated very close to the Hardin/Hamilton County border, in southwestern Hardin County. It is approximately 7 miles east of Interstate 35.



Some history of Radcliffe, Iowa can be found in the Radcliffe Community Folks and Facts Illustrated website; "[this book] includes folks that lived in Radcliffe, Sherman and Garden City. It also included farm families that lived in Lincoln Township in Hamilton County, Concord Township in Hardin County and Sherman Township in Hardin County. These farm families shopped in these towns and later retired to the same communities. As my Great-Aunt Ella Britson Hinderaker said, 'We could get most anything that we needed in Radcliffe. In fact, we could probably purchase more in Radcliffe when I was a girl then they can now.' (Now being 1975)"

Utilities and Services

The City of Radcliffe provides both phone and cable/internet to Radcliffe residents. Safety services are also provided by the City except law enforcement, which is provided by Hardin County. Radcliffe has a fuel station/convenience store, but no grocery or medical clinic.

Table 32: Radcliffe Utilities and Services

Service	Provider
Electricity	Alliant
Gas	Alliant
Water	City of Radcliffe
Phone Services	Radcliffe Telephone
Cable/Internet Provider	Radcliffe Telephone
Emergency Medical Service	Local Volunteers
Law Enforcement	Hardin County Sheriff
Fire Protection	Radcliffe Volunteer Fire Dept.
Warning System	Warning siren set off by first responders and Hardin County
HazMat Assistance	Northeast Iowa Response Group - Waterloo
Fuel Station	Comart
Grocery/Convenience	Comart
Solid Waste Removal	Hardin County Solid Waste
Landfill	Hardin County Solid Waste
Library	Radcliffe Public Library
Recycling	Hardin County
Public Transit	Peoplerides
Medical Clinic	None

There are no fire departments in Hardin County with the capability of dealing with major hazardous materials incidents. This service is provided by the Northeast Iowa Response Group (NIRG), in Waterloo, because that fire department has the needed training and equipment. The local fire department must decide whether or not to contact Waterloo's Fire Department for assistance.

City Government and Regulation

Radcliffe is governed by a mayor and 5-member city council that maintains and enforces the City's Code of Ordinances. Radcliffe's Code includes building and zoning codes. Radcliffe does not participate in the NFIP according to information from Iowa Homeland Security.

Technical and Fiscal Resources

The City of Radcliffe operates like many small cities in Iowa. The mayor, council, city clerk, and maintenance staff handle the city's daily and long-term operations. Short-term and long-term planning needs like grant writing and management and plan preparation are usually handled by the local council of government, the Region 6 Planning Commission. The City of Radcliffe is a member of the Commission.

There are multiple ways the City of Radcliffe could finance a hazard mitigation project. Radcliffe purchases phone and cable/internet wholesale and distributes to residents along with maintain the city's water system so fees from these services can be used toward debt incurred for projects. The financing resources available to the City of Radcliffe are below.

- Grants
- General obligation bonds (up to 5% of City's valuation)
- Revenue bonds through publicly secured sources (utility fees, road use tax, local option sales tax in accordance with approved referendum, revenue from certain enterprises, and tax increment financing)
- Capital improvements fund
- Special assessment taxes

Finance tools like impact fees cannot be used to fund projects because they are considered unconstitutional in the State of Iowa. For most projects in Radcliffe, grants would need to be the main funding source in order for the project to be feasible.

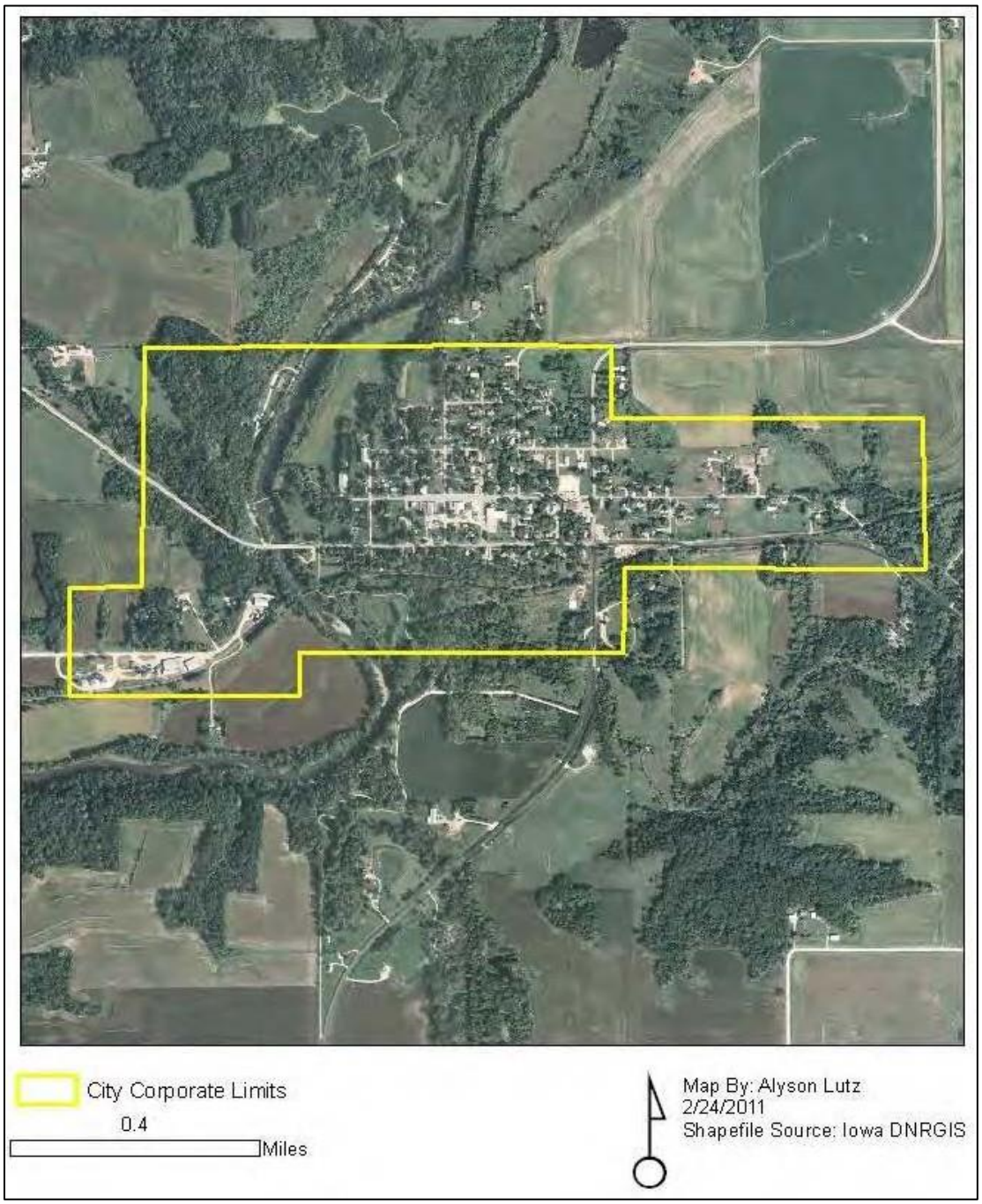
Other Mitigation Activities

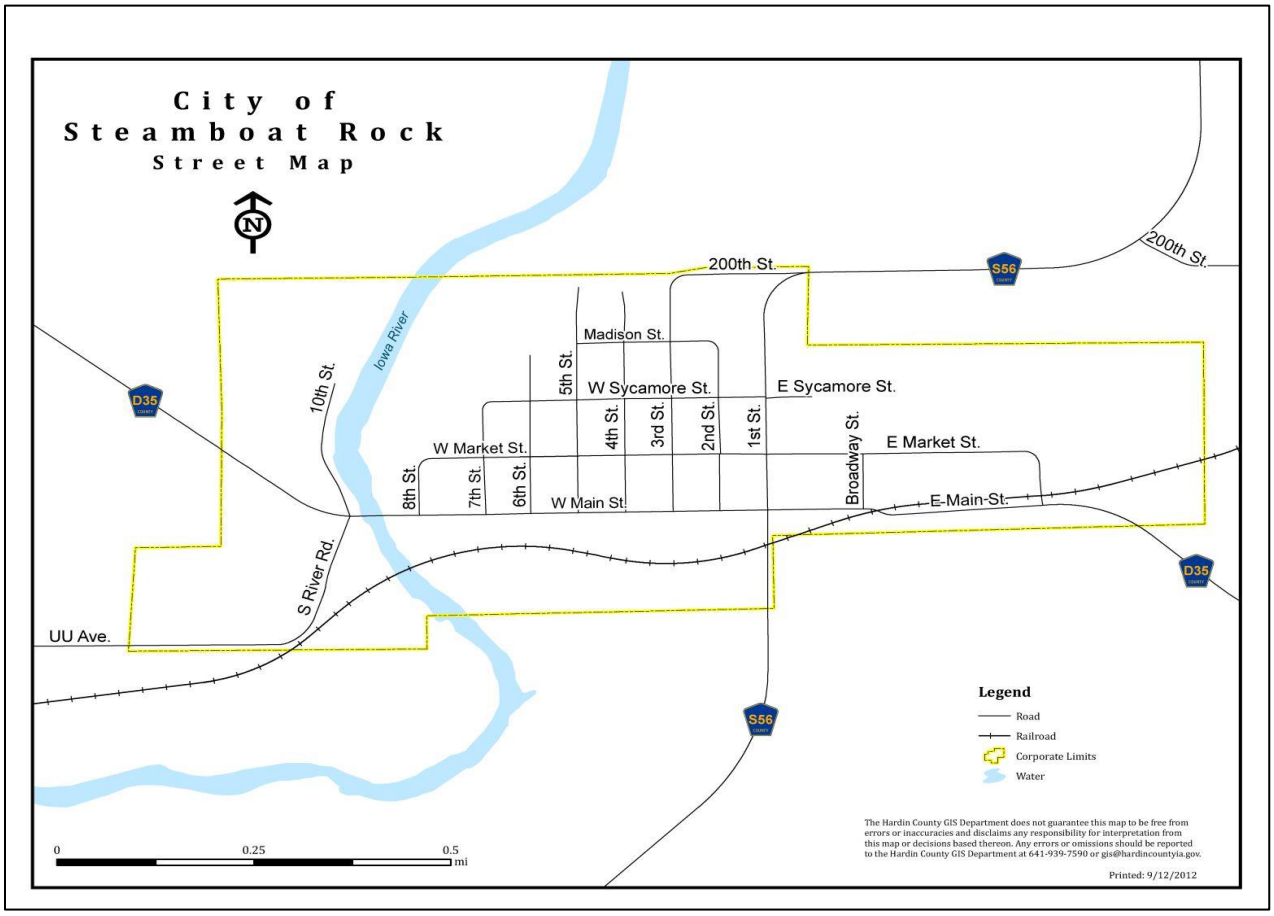
Radcliffe has not received any Federal or State funding in the past couple years for mitigation projects.

City of Steamboat Rock

Overview

Steamboat Rock is located at the intersection of County Road D35 and S56, in east central Hardin County. It is approximately a half mile to U.S. Highway, going north.





The City of Steamboat Rock has had two names in its history – that of “Lithopolis,” and “Steamboat Rock.”, according to Steamboat Rock Anchored in History, compiled by Terry L. Folkerts.

Lithopolis may have been the name given, when the town was platted, or it was taken from the name of the postal station that was established in 1856. There is also evidence that there were those who wanted it to remain as the name of the town.

Around the time the town was platted, some of the first citizens organized a Literary Society, which met during the winter of 1856-57. These early settlers from the east are thought to have “officially” given the town the name “Lithopolis” (Stone-City) on January 6, 1857 thinking that the Latin name was most appropriate for the intellectual status of the citizenry.

Others have speculated that the name meaning stone city, came because many of the original houses and buildings were built of stone. On June 6, 1870, the name was changed to Steamboat Rock, and made official five years prior to the town’s incorporation.

An explanation of the name Steamboat Rock comes from A.S. Root who located there in January 1857 and built and managed the hotel for 28 years: 'There is…inside the corporate limits, a point where a creek flows into the river. At this place… the current of the stream strikes the bank almost square. With the creek washing along there, the water had wore that bank so for a distance of 300 feet, that it looked like the side of a steamboat. As a result Mr. Lesh, so he told me, suggested Steamboat Rock as a name for the town. There was a projection like a wheel house and a pine tree stood on top. Since then lightening struck the tree and the wheel house projection dropped off so that the place does not retain so distinct an appearance like a steamboat…' (Steamboat Rock Historical Society)

Utilities and Services

The City of Steamboat Rock provides water and solid waste removal to Steamboat Rock residents. Safety services are also provided by the City except law enforcement, which is provided by Hardin County, and ambulance which is contracted out of Eldora. Steamboat Rock does have a fuel station/convenience store but no grocery or medical clinic. Residents must travel to Eldora for these services.

Table 33: Steamboat Rock Utilities and Services

Service	Provider
Electricity	Alliant
Gas	Alliant
Water	City of Steamboat Rock
Phone Services	Heart of Iowa
Cable/Internet Provider	Heart of Iowa
Emergency Medical Service	First Responders and Eldora Ambulance
Law Enforcement	Hardin County Sheriff
Fire Protection	Steamboat Rock Volunteer Fire Dept.
Warning System	Warning siren with backup, set off by Sherriff
HazMat Assistance	Northeast Iowa Response Group - Waterloo
Fuel Station	Rock Stop
Grocery/Convenience	Rock Stop
Solid Waste Removal	City of Steamboat Rock
Landfill	Hardin County
Library	Steamboat Rock Public Library
Recycling	Hardin County
Public Transit	Peoplerides
Medical Clinic	None

There are no fire departments in Hardin County with the capability of dealing with major hazardous materials incidents. This service is provided by the Northeast Iowa Response Group (NIRG), in Waterloo, because that fire department has the needed training and equipment. The local fire department must decide whether or not to contact Waterloo's Fire Department for assistance.

City Government and Regulation

Steamboat Rock is governed by a mayor and 5-member city council that maintains and enforces the City's Code of Ordinances. Steamboat Rock's Code include building codes but no zoning code.

According to Iowa Homeland Security information, Steamboat Rock is participating in the National Flood Insurance Program. As of 07/31/2017, the City has 2 policies in place with $523,000 worth of insurance in force.

Technical and Fiscal Resources

The City of Steamboat Rock operates like many small cities in Iowa. The mayor, council, city clerk, and maintenance staff handle the city's daily and long-term operations. Short-term and long-term planning needs like grant writing and management and plan preparation are usually handled by the local council of government, the Region 6 Planning Commission. The City of Steamboat Rock is a member of the Commission.

There are multiple ways the City of Steamboat Rock could finance a hazard mitigation project. Steamboat Rock only maintains the city's water system so fees from utilities are not plentiful but can be used toward debt incurred for projects. The financing resources available to the City of Steamboat Rock are below.

- Grants
- General obligation bonds (up to 5% of City's valuation)
- Revenue bonds through publicly secured sources (utility fees, road use tax, local option sales tax in accordance with approved referendum, revenue from certain enterprises, and tax increment financing)
- Capital improvements fund
- Special assessment taxes

Finance tools like impact fees cannot be used to fund projects because they are considered unconstitutional in the State of Iowa. For most projects in Steamboat Rock, grants would need to be the main funding source in order for the project to be feasible.

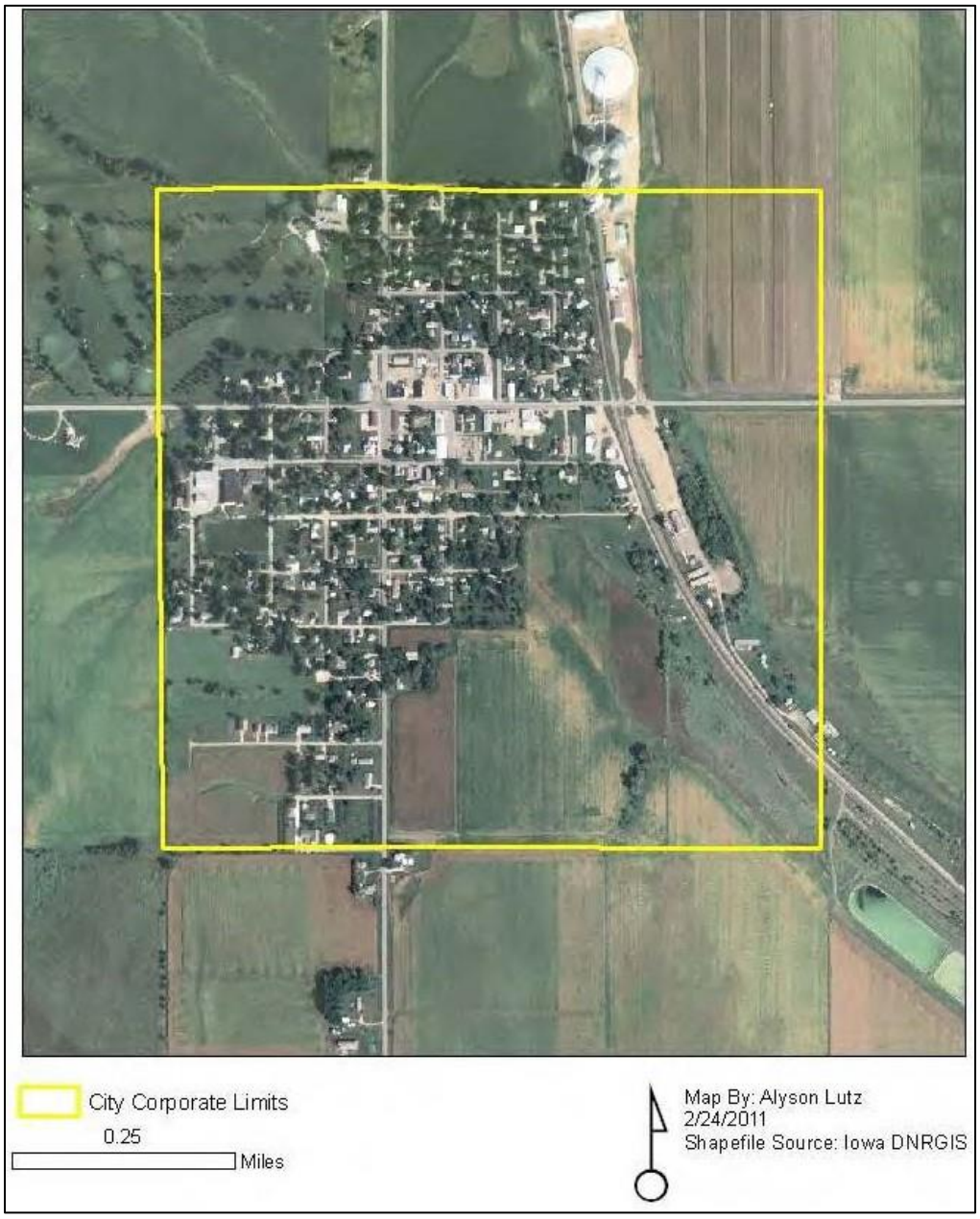
Other Mitigation Activities

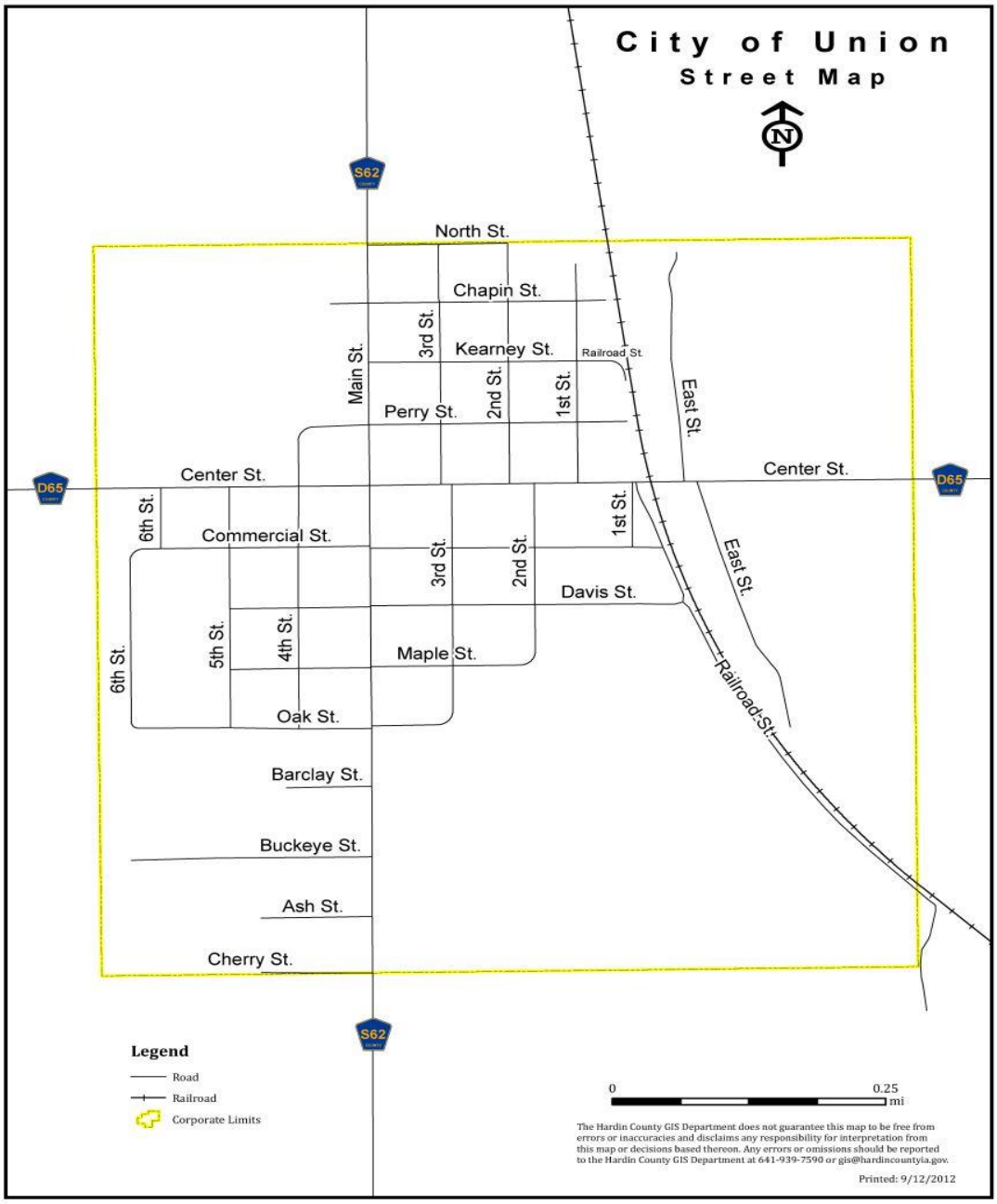
In the past several years, Steamboat Rock has been granted money for sewer improvements.

City of Union

Overview

Union is located very close to the Hardin/Grundy County border, in southeastern Hardin County at the point where County Road S62 and D65 intersect.





Some history of the City of Union can be found on their website;

Union is a small rural village built on the bluffs of the Iowa River. Union was the first community in Hardin County. Greenberry Haggin and his family entered this land in 1849, as the only white persons residing in Hardin County. The early settlers were mostly Quakers from North Carolina. Ethnic groups were primarily English and Irish with a few Germans. Almost all were farmers or had farm related interests. Union's Annual Tar Heel Days is named in honor of those early settlers from North Carolina, the "Tar Heel" state.

The main attraction for settlers was the prime farm land. The Iowa River provided water for saw mills and flour mills. There was timberland along the Iowa River for hunting small game, house building and firewood. Coal was mined north of Union.

Today, the principal industry is still agriculture. The factors that have made farming more efficient in terms of labor, such as research in plant breeding, veterinary medicine, and crop production, have also influenced population trends in the area. The town of Union, with strong support from its citizens, is striving to grow with the times while maintaining its valuable small-town characteristics. (City of Union, 2011)

Utilities and Services

The City of Union provides water utilities to Union residents. Safety services are also provided by the City except law enforcement, which is provided by Hardin County. Union has a fuel station, grocery/convenience store, but no medical clinic. Residents must travel to other cities for these services.

Table 34: Union Utilities and Services

Service	Provider
Electricity	Alliant
Gas	Alliant
Water	City of Union
Phone Services	Heart of Iowa
Cable/Internet Provider	Heart of Iowa
Emergency Medical Service	Union Ambulance
Law Enforcement	Hardin County Sheriff
Fire Protection	Union Volunteer Fire Dept.
Warning System	Warning Siren with backup, set off by Eldora
HazMat Assistance	Northeast Iowa Response Group - Waterloo
Fuel Station	Ginger Snap and Co-op
Grocery/Convenience	Gingersnap and Co-op
Solid Waste Removal	Knight Sanitation
Landfill	Knight Sanitation
Library	Union Public Library
Recycling	Moler Sanitation
Public Transit	Peoplerides
Medical Clinic	None

There are no fire departments in Hardin County with the capability of dealing with major hazardous materials incidents. This service is provided by the Northeast Iowa Response Group (NIRG), in Waterloo, because that fire department has the needed training and equipment. The local fire department must decide whether or not to contact Waterloo's Fire Department for assistance.

City Government and Regulation

Union is governed by a mayor and 5-member city council that maintains and enforces the City's Code of Ordinances. Union's Code includes building codes with building permitting, but no zoning code. Union has zoning regulations for designating restricted areas.

The City of Union is a participant in the NFIP according to information from Iowa Homeland Security. As of 07/31/2017, the community has 9 policies in place with $612,600 worth of insurance in force. There have been 5 paid losses worth $1,613.51.

Technical and Fiscal Resources

The City of Union operates like many small cities in Iowa. The mayor, council, city clerk, and maintenance staff handle the city's daily and long-term operations. Short-term and long-term planning needs like grant writing and management and plan preparation are usually handled by the local council of government, the Region 6 Planning Commission. The City of Union is a member of the Commission.

There are multiple ways the City of Union could finance a hazard mitigation project. Union maintains the city's water system so fees from that utility can be used toward debt incurred for projects. The financing resources available to the City of Union are below.

- Grants
- General obligation bonds (up to 5% of City's valuation)
- Revenue bonds through publicly secured sources (utility fees, road use tax, local option sales tax in accordance with approved referendum, revenue from certain enterprises, and tax increment financing)
- Capital improvements fund
- Special assessment taxes

Finance tools like impact fees cannot be used to fund projects because they are considered unconstitutional in the State of Iowa. For most projects in Union, grants would need to be the main funding source in order for the project to be feasible.

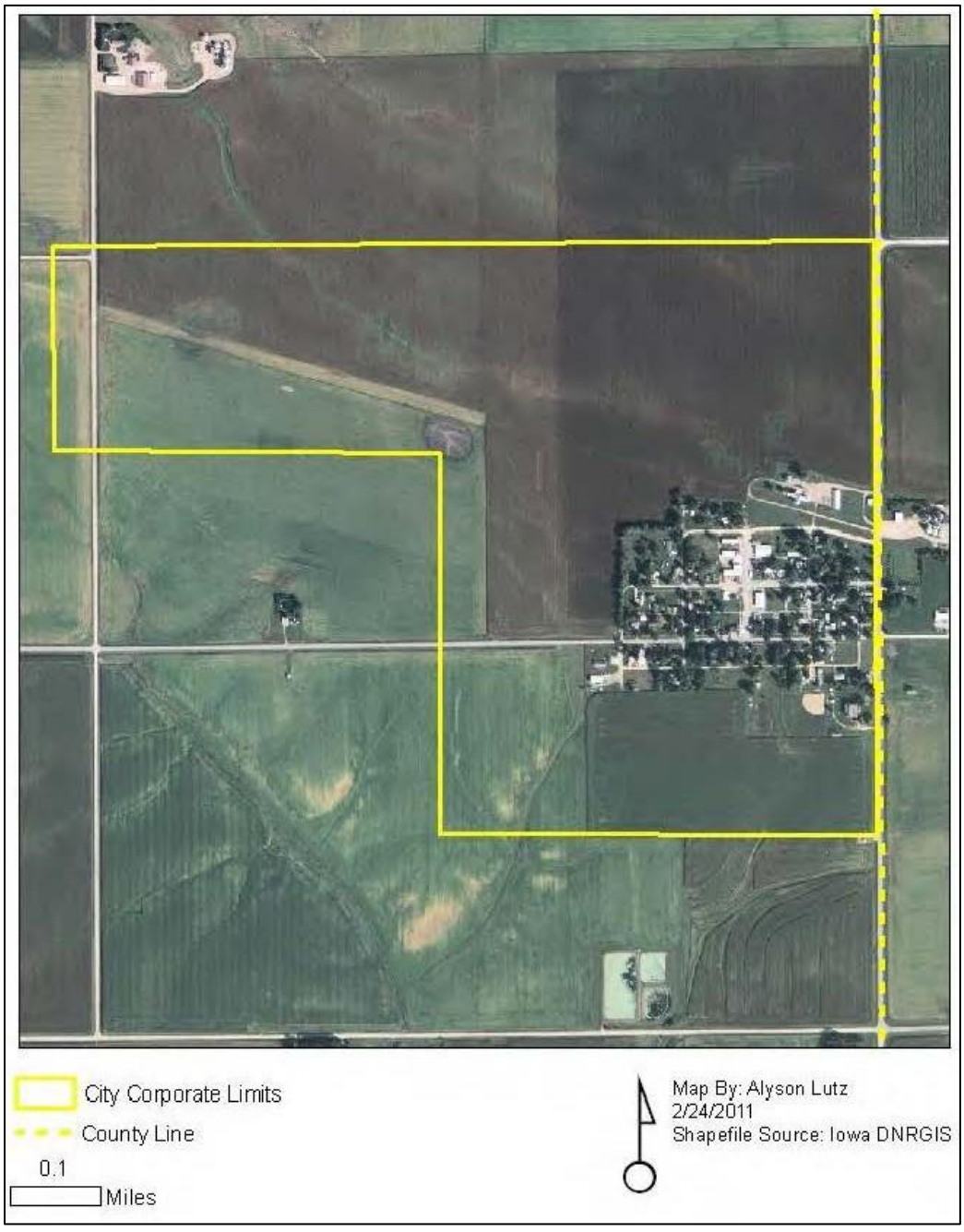
Other Mitigation Activities

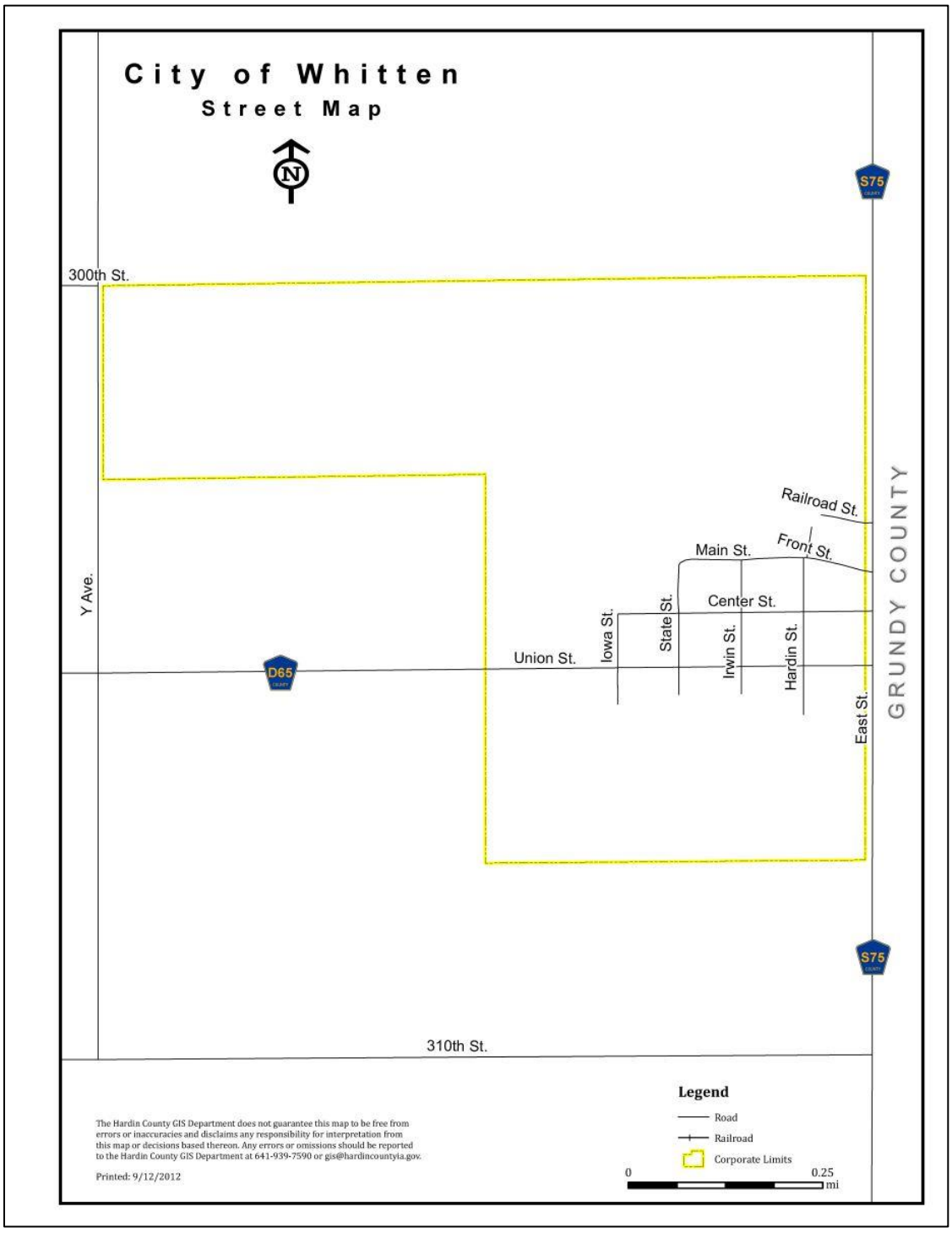
Union has not received any Federal or State funding for mitigation projects in the past few years.

City of Whitten

Overview

Whitten is located on the Hardin/Grundy County border, in southeastern Hardin County at the point where County Road D65 intersects B Ave (the county line).





The City of Whitten was named for C.C. Whitten, who helped get the railroad built in Hardin County. Whitten is one of the smallest cities in the county located in Union Township.

Utilities and Services

The City of Whitten does not provide any utilities to the residents. All those services are contracted to public and private companies. Safety services are provided by the City except law enforcement, which is provided by Hardin County, and ambulance. As for other services, Whitten does not have a fuel station, grocery/convenience store, or a medical clinic. Residents must travel to Eldora or Grundy County for those services.

Table 35: Whitten Utilities and Services

Service	Provider
Electricity	Alliant
Gas	Alliant
Water	Central Iowa Water Association
Phone Services	Heart of Iowa
Cable/Internet Provider	Heart of Iowa
Emergency Medical Service	None
Law Enforcement	Hardin County Sheriff
Fire Protection	Whitten Volunteer Fire Dept.
Warning System	Warning sire with backup, set off by fire chief
HazMat Assistance	Northeast Iowa Response Group - Waterloo
Fuel Station	None
Grocery/Convenience	None
Solid Waste Removal	Moler Sanitation
Landfill	Hardin County Landfill
Library	None
Recycling	Moler Sanitation
Public Transit	Peoplerides
Medical Clinic	None

There are no fire departments in Hardin County with the capability of dealing with major hazardous materials incidents. This service is provided by the Northeast Iowa Response Group (NIRG), in Waterloo, because that fire department has the needed training and equipment. The local fire department must decide whether or not to contact Waterloo's Fire Department for assistance.

City Government and Regulation

Whitten is governed by a mayor and 5-member city council that maintains and enforces the City's Code of Ordinances. Whitten's Code does not include building codes or a zoning code. The City of Whitten does not participate in the NFIP according to information from Iowa Homeland Security.

Technical and Fiscal Resources

The City of Whitten operates like many small cities in Iowa. The mayor, council, city clerk, and maintenance staff handle the city's daily and long-term operations. Short-term and long-term planning needs like grant writing and management and plan preparation are usually handled by the local council of government, the Region 6 Planning Commission. The City of Whitten is a member of the Commission.

There are multiple ways the City of Whitten could finance a hazard mitigation project. Whitten does not provide any utility services so no fees from utilities can be used toward debt incurred for projects. The financing resources available to the City of Whitten are below.

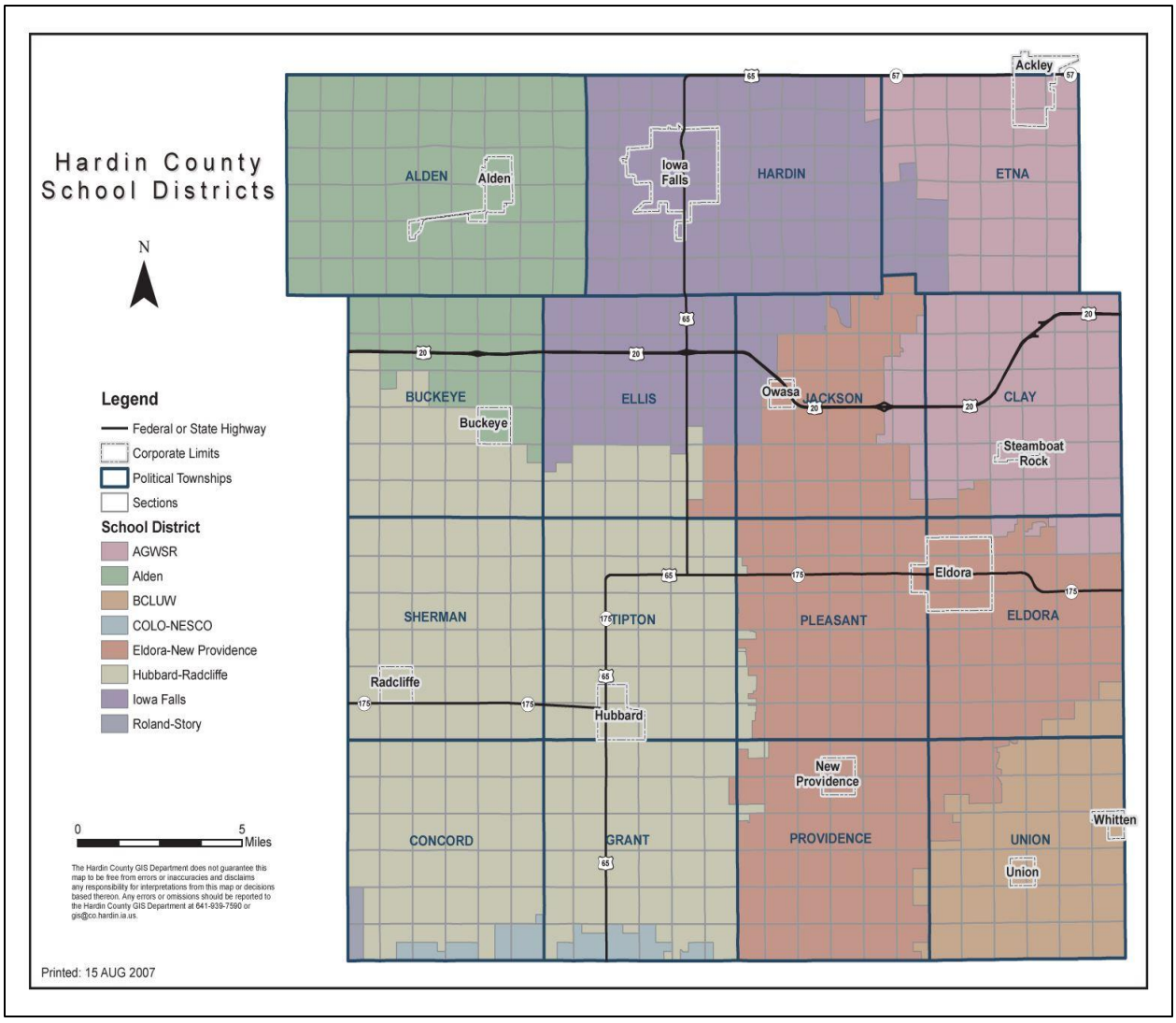
- Grants
- General obligation bonds (up to 5% of City's valuation)
- Revenue bonds through publicly secured sources (utility fees, road use tax, local option sales tax in accordance with approved referendum, revenue from certain enterprises, and tax increment financing)
- Capital improvements fund
- Special assessment taxes

Finance tools like impact fees cannot be used to fund projects because they are considered unconstitutional in the State of Iowa. For most projects in Whitten, grants would need to be the main funding source in order for the project to be feasible.

Other Mitigation Activities

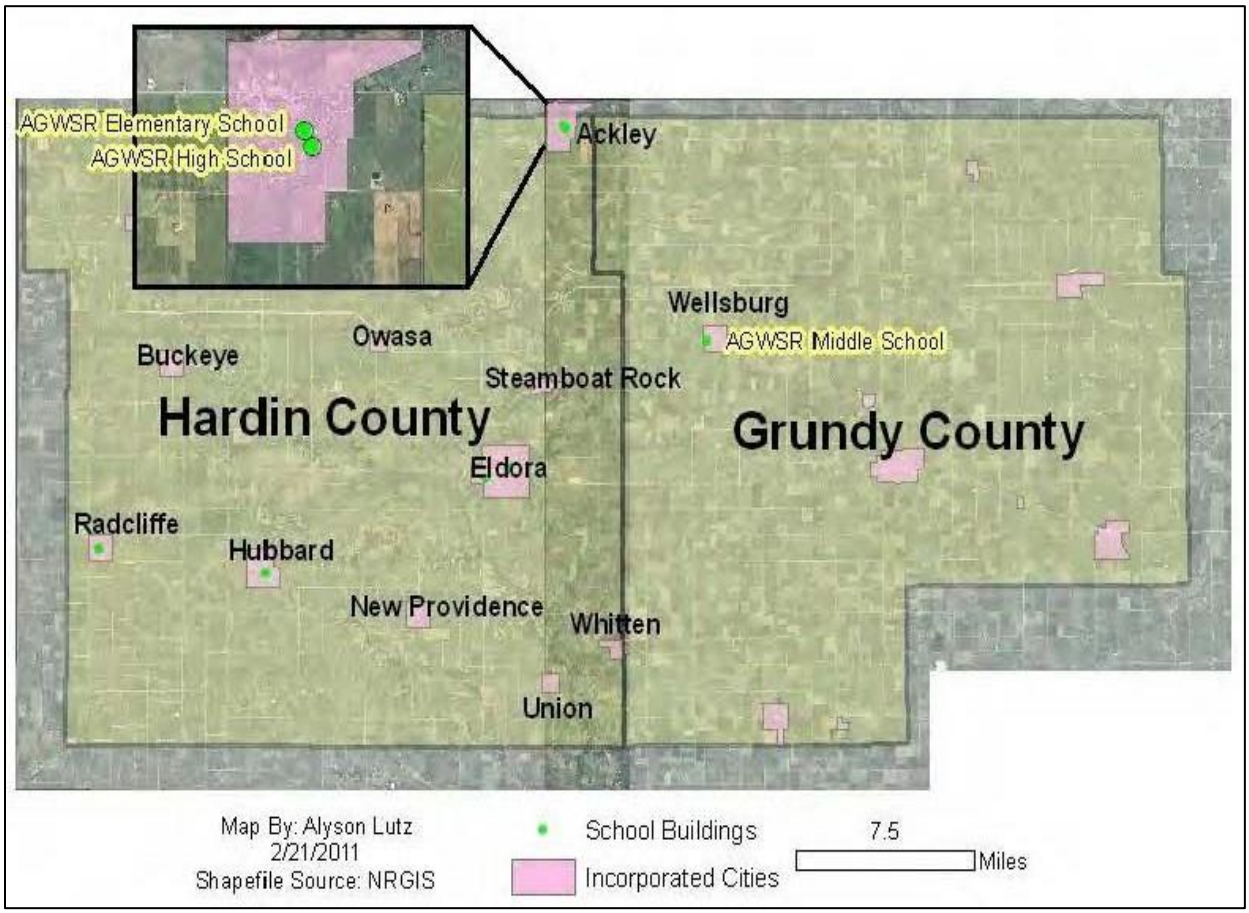
Whitten has not been granted any Federal or State funding for mitigation projects in the past few years.

Hardin County School Districts



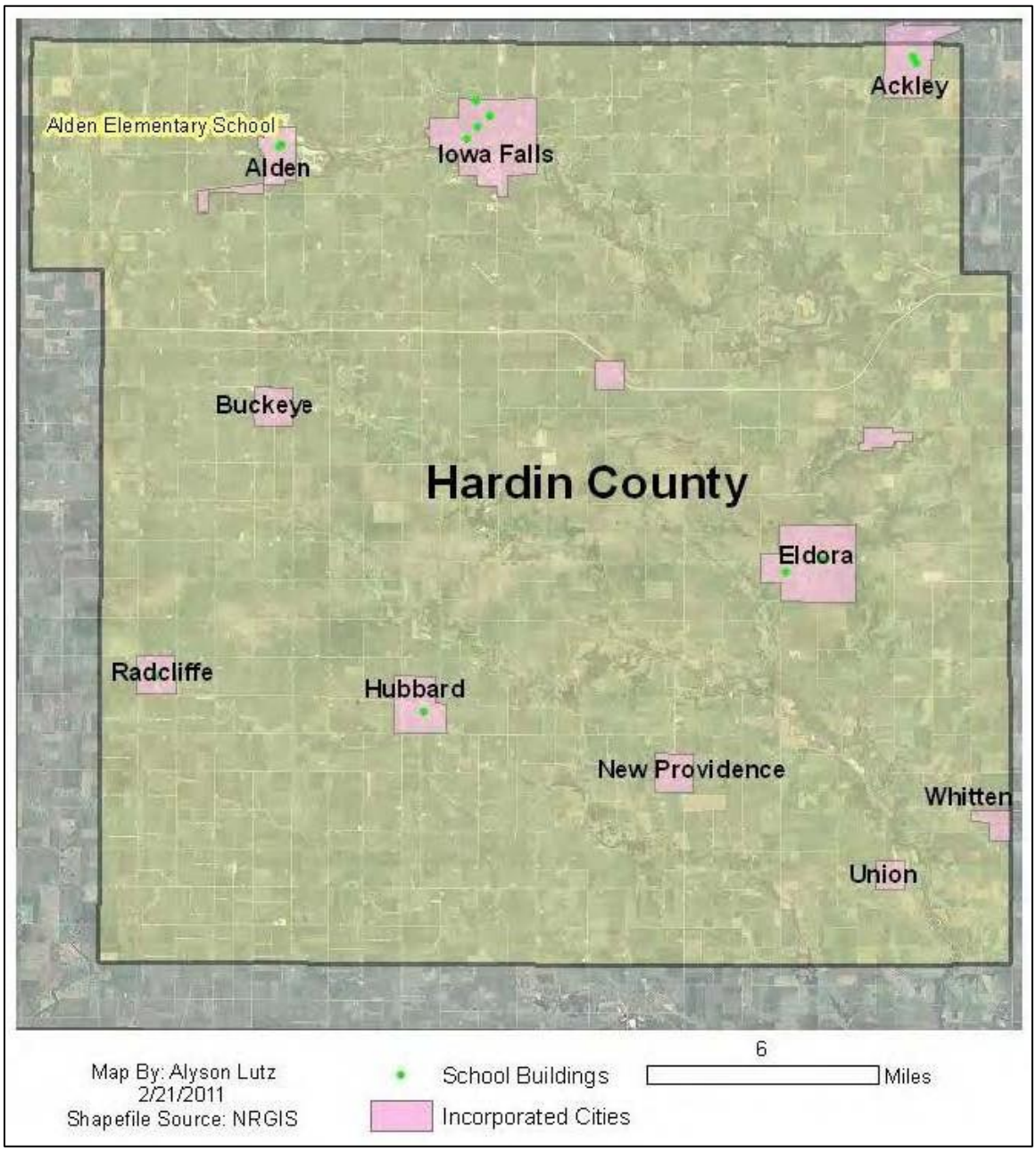
AGWSR Community School District

The AGWSR Community School District is located in Ackley, Iowa, a town in the very northeast corner of Hardin County, and Wellsburg, Iowa, located in west central Grundy County. There are 16 miles between the 2 towns. AGWSR serves the communities of Ackley, Geneva, Steamboat Rock, and Wellsburg which are scattered in the 4 counties of Butler, Franklin, Grundy, and Hardin. These towns are each located within 17 miles of the high school and middle school, in Ackley. This district contains the Ackley Elementary, Wellsburg Center and the High School with a district enrollment of approximately 700 students. For more information, visit their website at http://www.agwsr.org/.



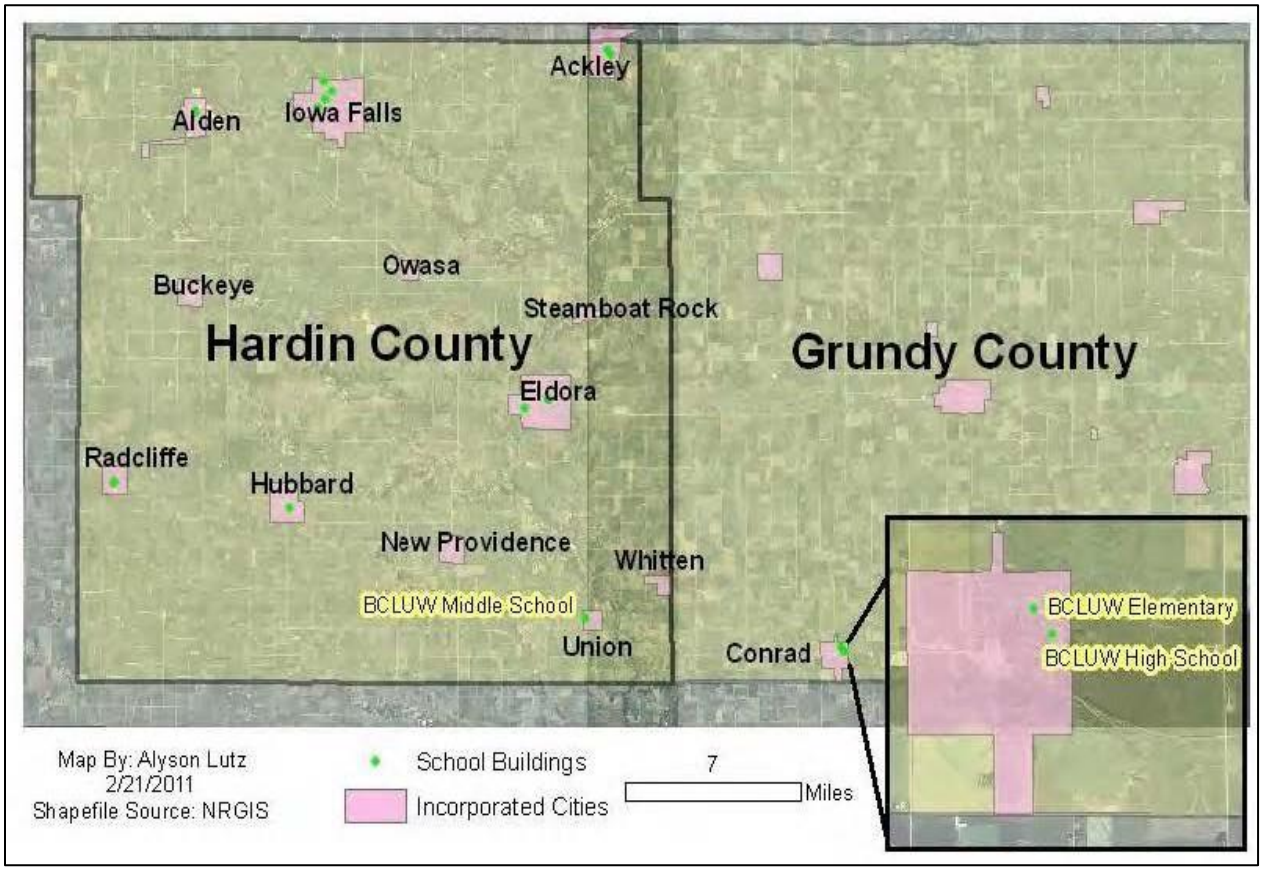
Alden Community School District

The Alden Community School District is located in Alden, Iowa. This school district only has one school, the Alden Elementary School. All children feed into the Iowa Falls School District after elementary school. Though the district shares a superintendent with Iowa Falls CSD, they are two separate districts with two separate boards of education. With a 237-student enrollment, the Alden Community School District is the smallest in Hardin County. For more information, visit their website at http://www.ifacadets.net/



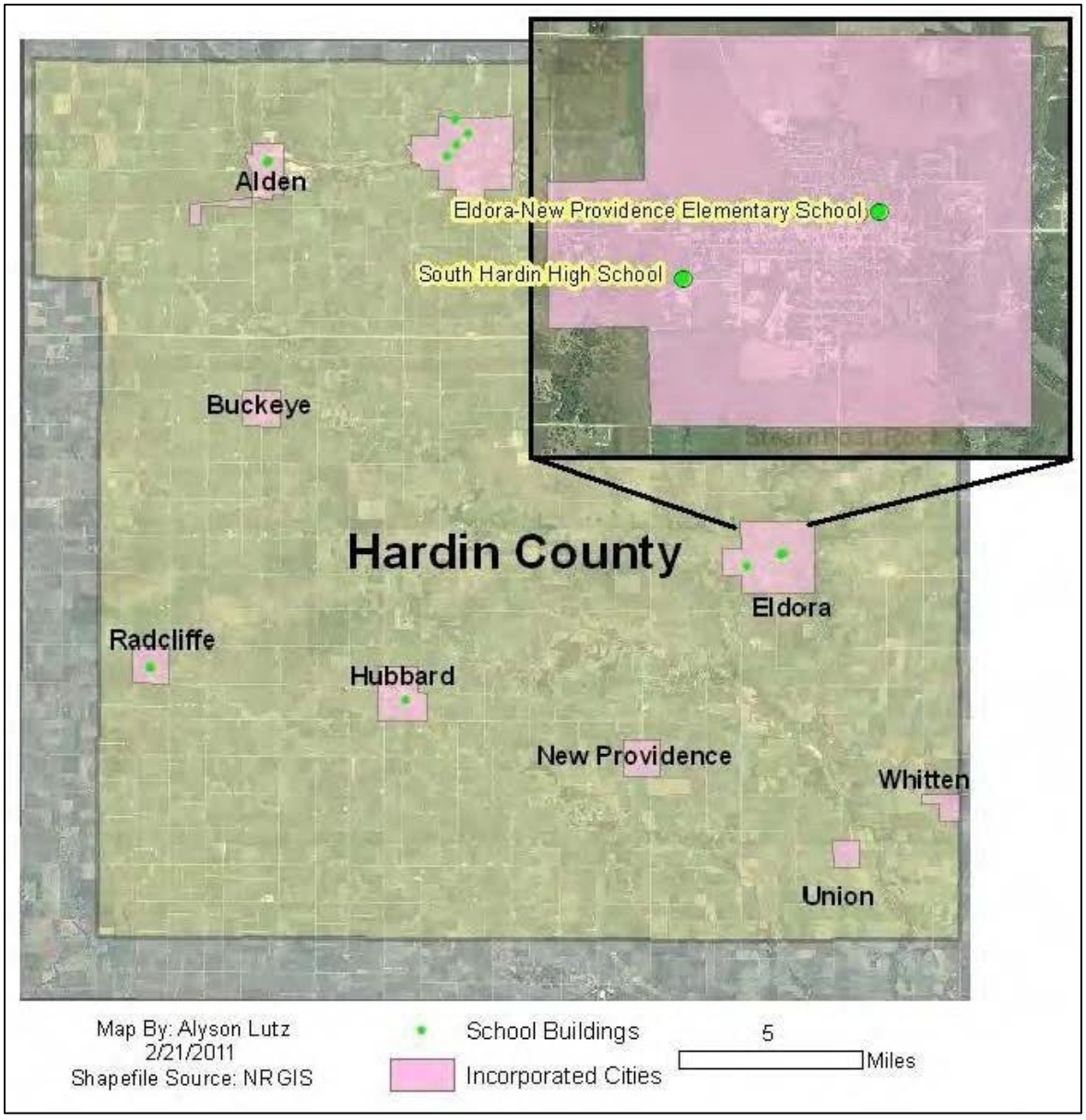
BCLUW Community School District

The BCLUW Community School District serves the communities of Beaman, Conrad, Liscomb, Union, and Whitten. This district is unique in that its jurisdiction stretches across a county boundary line. This district's offices are located in Conrad which is in the southwest portion of Grundy County. The school buildings are split between the two cities of Union (located in the south-east portion of Hardin County) and Conrad which are about 10 miles apart. Enrollment for this school district is split between the high school, middle school, and elementary school with 601 students enrolled during the 2015-2016 school year. For more information, visit their website at http://www.bcluw.k12.ia.us.



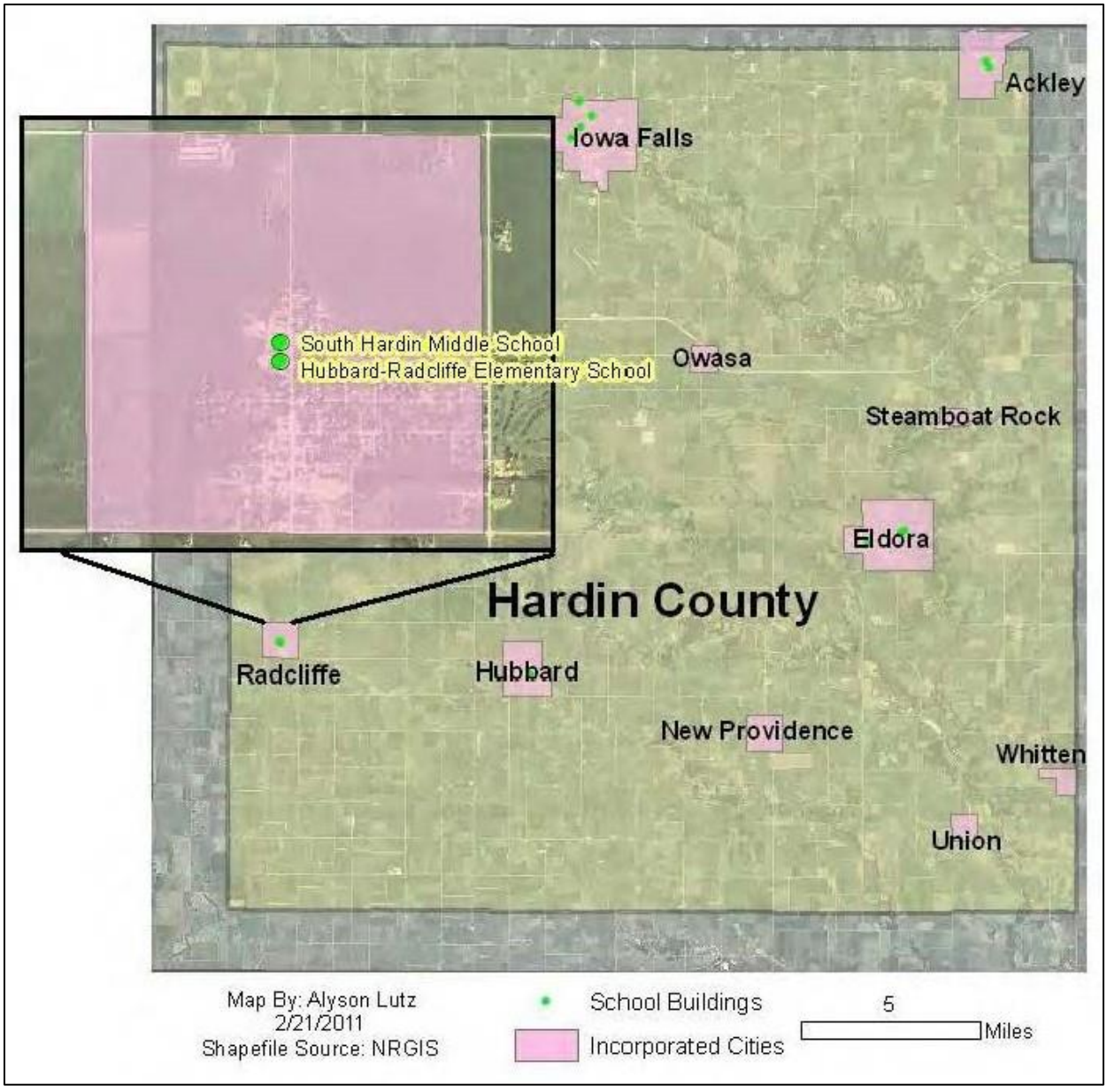
Eldora-New Providence Community School District

The Eldora-New Providence Community School District is located in Eldora, Iowa the county seat of Hardin County. Eldora is located in the east central portion of the county. This district contains the South Hardin High School and Eldora-New Providence Elementary School. There was a total of 560 students enrolled for the 2015-2016 school year. For more information, visit their website at http://www.eldora-np.k12.ia.us.



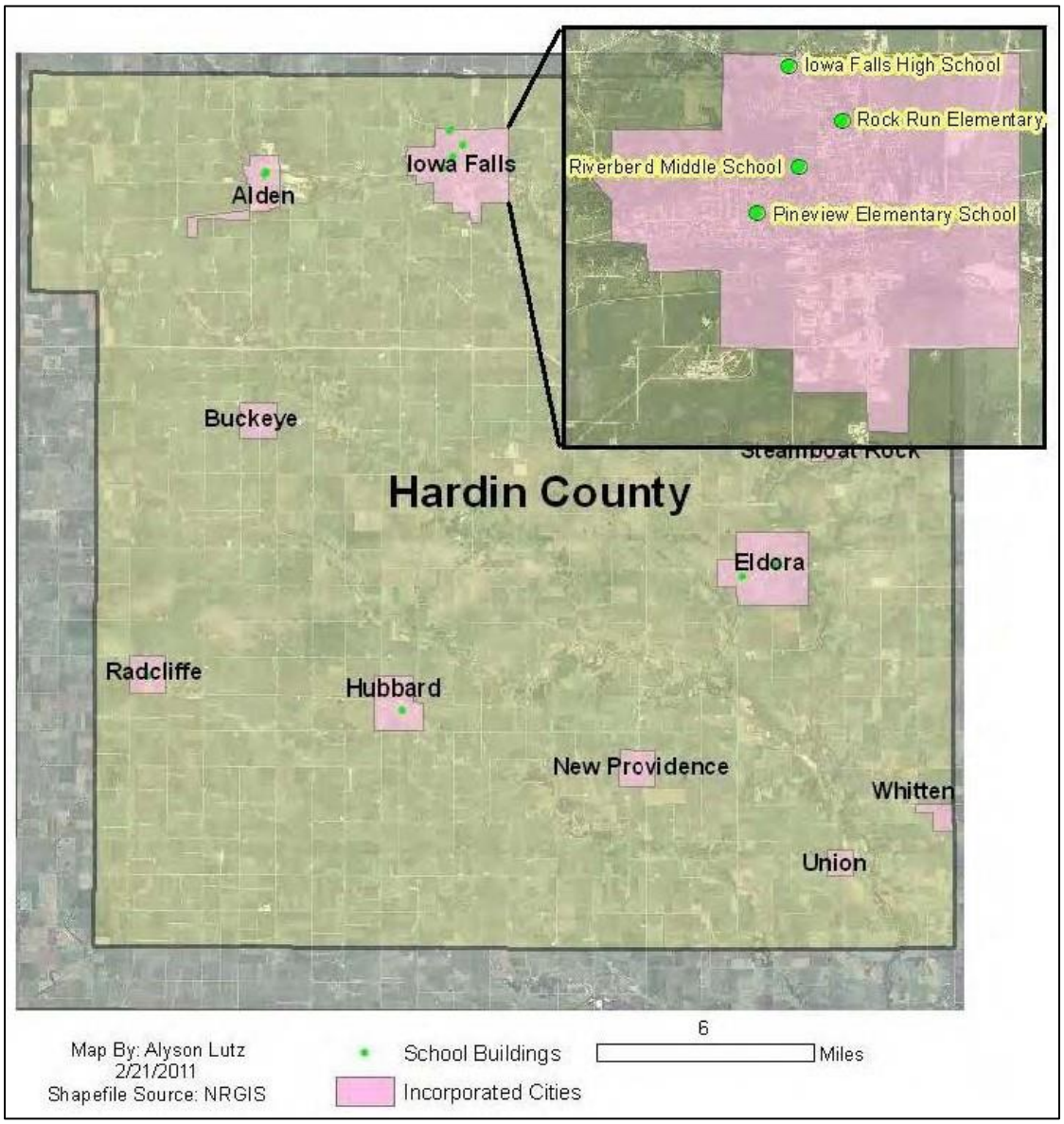
Hubbard-Radcliffe Community School District

The Hubbard-Radcliffe Community School District is located in Radcliffe, Iowa but also serves the City of Hubbard. Both communities are located in the west central portion of the county. This district contains the South Hardin Middle School and Hubbard- Radcliffe Elementary School with a 388-district student enrollment. These schools feed into the South Hardin High School in Eldora. For more information, visit their website at http://www.hubbard.k12.ia.us.



Iowa Falls Community School District

The Iowa Falls Community School District is located in Iowa Falls, Iowa. Iowa Falls is located in the north-central portion of the county. This district contains the Pineview Elementary School and Rock Run Elementary School. The 6th grade students from Iowa Falls Community School District are sent to Alden Elementary School in Alden School District. It also contains Riverbend Middle School and Iowa Falls-Alden High School, with a total of 1,126 students enrolled, the Iowa Falls Community School District is the largest school district in Hardin County. For more information, visit their website at http://www.ifacadets.net/



Government and Regulation

All of the school districts in Iowa are governed by a local school board that is elected by the public. School boards in Hardin County have either a five or seven-member board depending on how the district is divided. One member of the school board is chosen to be its president. Each school district's school board has several responsibilities and legal authorities. According to the Iowa Association of School Boards, some of the authorities include:

- Determine major educational goals and objectives, and implement a means of attaining the goals (mitigation through education)
- Adopt board policy which establishes the rules governing the operations of the school district (mitigation integrated into school policy)
- Utilize funds received through gifts, devises and bequests in the general or schoolhouse fund, unless limited by the terms of the grant (funding for mitigation projects)
- Insure against loss of property (major mitigation goal)
- Determine attendance centers for the district and the particular school each child will attend (determine the distance students must travel)
- Provide transportation services (transportation is extremely vulnerable to hazards)
- Incur indebtedness when authorized by the voters of the school corporation at an election (funding for mitigation projects)

This is not an exhaustive list of authority, but these are the authorities most relevant to hazard mitigation. Overall, the school board of the Hardin County school district can be extremely influential in the effectuation of hazard mitigation projects.

Aside from the school board, the superintendent and school district staff are extremely important to the operation of the school district. The superintendent is appointed by the school board and given the responsibility of running the daily and long-term operations of the school district. Along with each school building's principal, teachers, and staff, the superintendent is a key person in completing a hazard mitigation project.

Like all school districts in Iowa, each school building has emergency response plans in place. Emergency response activities like fire drills and student relocation during tornadoes or severe storms are practiced regularly. Many school buildings, though, do not have any prevention or mitigation measures in place.

Technical and Fiscal Resources

Each school district's school board, superintendent and staff, principals, teachers, and school staff are responsible for the district and each school building's daily and long-term operations. The public does have quite a bit of influence because it elects school board members and approves school tax levies in the community. Most planning efforts are handled within the school district and community unless recreational trails or hazard mitigation are involved. In those cases, the local council of government often gets involved.

Other Mitigation Activities

Each school district has plans and procedures for handling many hazards already like fire, tornado, severe weather, etc. The established procedures for these hazards are practiced on a regular basis through planned drills at school facilities. The Iowa Falls Community School District has applied twice in the past for Safe Routes to School money as the need arises, but was not funded either time. This program not only encourages kids to bike and walk to school, but helps school districts fund sidewalk and trail additions and improvements, which may help reduce traffic accidents involving pedestrians.

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Chapter 4: Risk Assessment

44 CFR Requirement §201.5(c)(2): *[The plan shall include] a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.*

The risk assessment process identifies and profiles relevant hazards and assesses the exposure of lives, property, and infrastructure to these hazards. The goal of the risk assessment is to estimate the potential loss in Hardin County, including loss of life, personal injury, property damage, and economic loss from a hazard event. The risk assessment process allows communities in Hardin County to better understand their potential risk from natural hazards and provide a framework for developing and prioritizing mitigation actions to reduce risk from future hazard events.

Hazard Identification

Ultimately, the hazards chosen for the plan were determined by the Steering Committee. First, the Steering Committee identified the hazards most likely to affect the county based on the previous Hazard Mitigation Plan, past disaster declarations in Iowa, research, and knowledge of the area.

Iowa has experienced 61 presidentially-declared disasters since 1953, nearly half of which have occurred since 2001 (28 declarations). The state's most recent disasters occurred in August of 2017, when severe storms, flooding, tornadoes, and winds caused significant impacts in northeastern Iowa. Iowa's disaster declarations are listed below.

Table 36: Disaster Declarations in Iowa 1953 - 2017

Date Declared*	Disaster Number	Disaster Type	Impacted Hardin County?
08/27/2017	DR-4334	Severe Storms, Tornadoes, Straight-line Winds, Flooding	
10/31/2016	DR-4289	Severe Storms, Flooding	
9/29/2016	DR-4281	Severe Storms, Straight-line Winds, Flooding	
7/31/2015	DR-4234	Severe Storms, Tornadoes, Straight-line Winds, Flooding	
8/5/2014	DR-4187	Severe Storms, Tornadoes, Straight-line Winds, Flooding	Yes
7/24/2014	DR-4184	Severe Storms, Tornadoes, Straight-line Winds, Flooding	
7/14/2014	DR-4181	Severe Storms, Tornadoes, Straight-line Winds, Flooding	
7/31/2013	DR-4135	Severe Storms, Tornadoes, Flooding	
7/2/2013	DR-4126	Severe Storms, Tornadoes, Flooding	Yes
5/31/2013	DR-4119	Severe Storms, Straight-line Winds, Flooding	
5/6/2013	DR-4114	Sever Winter Storm	
8/30/2011	DR-4018	Severe Storms and Flooding	
8/24/2011	DR-4016	Severe Storms, Straight-line Winds, Flooding	
6/27/2011	DR-1998	Flooding	
5/5/2011	DR-1977	Severe Storms, Tornadoes, Straight-line Winds	
7/29/2010	DR-1930	Severe Storms, Flooding, Tornadoes	
7/27/2010	DR-1928	Severe Storms and Flooding	
3/2/2010	DR-1880	Severe Winter Storms	Yes
2/25/2010	DR-1877	Severe Winter Storms	
8/13/2009	DR-1854	Severe Storm	
5/27/2008	DR-1763	Severe Storms, Tornadoes, Flooding	Yes
1/4/2008	DR-1737	Severe Winter Storm	
9/14/2007	DR-1727	Severe Storms, Flooding	
5/25/2007	DR-1705	Severe Storms, Flooding, Tornadoes	

3/30/2007	EM-3275	Snow	
3/14/2007	DR-1688	Severe Winter Storms	Yes
9/10/2005	EM-3239	Hurricane Katrina Evacuation	Yes
5/25/2004	DR-1518	Severe Storms, Tornadoes, Flooding	Yes
6/19/2002	DR-1420	Severe Storms, Flooding	
5/2/2001	DR-1367	Severe Storms, Flooding	
7/22/1999	DR-1282	Severe Storms, Flooding	
5/21/1999	DR-1277	Severe Storms, Flooding, Tornadoes	
7/2/1998	DR-1230	Severe Weather, Tornadoes, Flooding	Yes
11/20/1997	DR-1191	Severe Snow Storms	
8/21/1996	DR-1133	Flooding	Yes
6/24/1996	DR-1121	Flooding	
7/9/1993	DR-996	Flooding, Severe Storm	Yes
4/26/1993	DR-986	Flooding, Severe Storm	
10/2/1992	DR-965	Flooding, Severe Storm	
12/26/1991	DR-928	Ice Storm	Yes
7/12/1991	DR-911	Flooding, Severe Storm	
9/9/1990	DR-879	Flooding, Severe Storm	
5/26/1990	DR-868	Flooding, Severe Storm	Yes
7/28/1988	DR-814	Heavy Rain, High Winds, Tornadoes	
7/17/1987	DR-795	Storms, Flash Flooding	
6/27/1984	DR-715	Severe Storms, Tornadoes, Hail, Floods	
7/1/1979	DR-590	High Winds, Tornadoes	
6/24/1974	DR-443	Severe Storms, Flooding	
5/23/1973	DR-386	Severe Storms, Flooding	
9/26/1972	DR-354	Severe Storms, Flooding	
8/18/1972	DR-348	Severe Storms, Flooding	
8/14/1969	DR-269	Heavy Rains, Flooding	Yes
4/25/1969	DR-259	Flooding	
8/4/1968	DR-248	Heavy Rains, Flooding	
5/29/1968	DR-240	Tornadoes, Severe Storms	
4/22/1965	DR-193	Flooding	Yes
9/5/1962	DR-133	Flooding	
3/31/1961	DR-111	Flooding	
7/5/1958	DR-86	Flooding	
6/23/1954	DR-17	Flooding	
6/11/1953	DR-8	Flooding	

**Note that the date provided is the date the disaster was declared, not necessarily the date the disaster occurred.*

Data Sources: Iowa Homeland Security (December, 2016) & FEMA's Data Visualization: Disaster Declarations for States and Counties tool (December, 2016)

Fourteen of Iowa's presidentially declared disasters impacted Hardin County. Seven of those were from severe storms, five were from floods, one was for a hurricane (Hurricane Katrina

evacuation), and one was a severe ice storm. Half of Hardin County's presidentially declared disasters have occurred since 2004.

Hazard Identification

The 2011 Hardin County Multi-Jurisdictional Hazard Mitigation Plan identified 25 unique hazards that could possibly affect Hardin County. The hazards that were considered a general threat during the update process are listed in Table 37 and builds upon the hazards addressed in the 2011 plan.

Table 37: Probable Hardin County Hazards 2017

Natural Hazards	Technological Hazards
Animal/Crop/Plant Disease*	**Dam Failure***
Drought*	**Communications Failure**
Earthquake*	**Energy Failure**
Expansive Soils*	**HAZMAT (Hazardous Materials) Incident***
Extreme Heat*	**Highway Transportation Incident**
Flash Flood*	Infrastructure Incident*
Grass or Wildland Fire*	Levee Failure*
Hailstorm*	**Pipeline Transportation Incident**
Ice Storm	Radiological Incident*
Landslide*	**Railway Transportation Incident**
Riverine Flood*	**Structural Failure**
Sinkholes*	**Structural Fire**
Severe Winter Storm*	Transportation Incident*
Thunderstorms and Lightning*	**Human Caused Hazards**
Tornado*	**Terrorism (Armed Assault)**
Windstorm*	**Cyber Attack**

The hazards with an asterisk were included in the 2013 Iowa Hazard Mitigation Plan and **bolded hazards** were included in the 2017 Hardin County Multi-Jurisdictional Hazard Mitigation Plan. Hazard classification (natural, technological, and human caused) follows the 2013 Iowa Hazard Mitigation Plan.

It was determined by the steering committee and planning team that Expansive Soils, Landslide, Levee Failure, and Radiological Incident did not apply to Hardin County or pose a significant risk although these hazards are identified in the Iowa Hazard Mitigation Plan. Also, Transportation Incident was covered in the 2017 Hardin County Multi-Jurisdictional Hazard Mitigation Plan under Highway Transportation Incident and Railway Transportation Incident. Similarly, Infrastructure Incident was addressed under Structural Failure in the 2017 Hardin County Multi-Jurisdictional Hazard Mitigation Plan.

Expansive soils are not found in Hardin County and are not considered further in this Plan. Also, the lack of major elevation changes within Hardin County does not constitute a landslide threat to the people and property of Hardin County. Like expansive soils, landslides are not considered further in this Plan. There are no levees located in Hardin County.

At the countywide meetings, the Planning Team was asked to agree or disagree with the list of hazards in Table 37. This list of possible hazards was provided so Planning Team members could remove or add hazards to the list.

44 CFR §201.6(c)(2)(i): *[The risk assessment shall include a] description of the type… of all natural hazards that can affect the jurisdiction…*

The following table lists all the natural hazards along with all of the manmade hazards that could possibly affect Hardin County. Definitions are included so there is consistency in how each hazard is understood in the context of this plan.

Table 38: Hardin County Hazards and Definitions

Hazard	Definition
Drought	Lack of precipitation for a long period of time
Dam Failure	A break in or threat from any water retention fixture
Earthquake	Shaking or vibrating of the earth
Extreme Heat	Temperatures in excess of 100 degrees Fahrenheit or 3 days of 90 degrees
Flash Flood	Flooding with little or no warning where water levels rise at a fast rate
Grass or Wildland Fire	Uncontrolled fire that threatens life and property
Hailstorm	Balls or irregularly shaped lumps of ice fall with rain
River Flood	Rising or overflowing of a body of water onto adjacent land
Severe Winter Storm	Severe winter weather conditions that affect day-to-day activities
Ice Storm	Ice storms typically occur when precipitation falls from above freezing (32 degrees Fahrenheit) temperatures and comes in contact with air or surfaces that are below freezing.
Sinkholes	Collapsed land surface
Thunderstorms and Lightning	Heavy rains, high speed winds, tornadoes, hail
Tornado	Rotating column of air with wind speeds that can exceed 200 miles per hour
Windstorm	Extreme winds associated with severe storms
Animal/Crop/Plant Disease	Medical, health, or sanitation threat to wildlife or domestic animals
Communications Failure	Breakdown or disruption of normal communications
Energy Failure	Extended interruption of an energy source
Hazardous Materials Incident	Accidental release of chemical substances or mixtures that present a danger to the public
Highway Transportation Incident	Auto accident exceeding normal capabilities
Pipeline Transportation Incident	Break in a pipeline creates the potential for an explosion or leak of a dangerous substance (oil, gas, etc.)
Railway Transportation Incident	Derailment or accident threatening life and property
Structural Failure	Collapse of structures, includes roads, bridges, etc.
Structural Fire	Uncontrolled fire of structures that threatens life and property.
Terrorism	An armed assault is an attack with a weapon, often a gun or knife.
Cyber Attack	Attacks on computer systems, IT or other networks

Across Hardin County, there is variance in what hazards can affect particular jurisdictions. Some communities do not have a rail line and others are not susceptible to sinkholes. Hardin County is just one percent of Iowa's land area, but even in such a relatively small area, hazards

vary in their coverage. Refer to Table 39 for the hazards identified for each jurisdiction in Hardin County.

Table 39: Hardin County Hazard Boundaries

Hazard	Jurisdictions	Source(s) of Identification
Severe Winter Storm	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan NCDC Data Past disaster declarations
Ice Storm	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan NCDC Data Past disaster declarations
Highway Transportation Incident	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan Iowa DOT Data
Windstorm	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan NCDC Data
Tornado	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan NCDC Data Past Disaster Declarations
Flash Flood	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan NCDC Data
Structural Fire	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan Hardin County EMC Data
Hailstorm	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan NCDC Data
Thunderstorms and Lightning	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan NCDC Data
Hazardous Materials Incident	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan Hardin County EMC Data
Energy Failure	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan Hardin County EMC Data

River Flood	Ackley Alden Hubbard Iowa Falls Steamboat Rock Union Whitten Unincorporated Hardin County AGWSR School District Alden School District BCLUW School District Iowa Falls School District	Local knowledge Iowa Hazard Mitigation Plan NCDC Data FEMA FIRM Maps Past Disaster Declarations
Grass/Wildland Fire	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan
Railway Transportation Incident	Ackley Alden Buckeye Eldora Iowa Falls Steamboat Rock Union Unincorporated Hardin County AGWSR School District Alden School District BCLUW School District Eldora-New Providence School District Iowa Falls School District	Local knowledge Iowa Hazard Mitigation Plan Hardin County EMC Data
Drought	All Jurisdictions	Iowa Hazard Mitigation Plan
Animal/Crop/Plant Disease	Unincorporated Hardin County	Local knowledge Iowa Hazard Mitigation Plan
Pipeline Transportation Incident	Ackley Alden Eldora Hubbard Iowa Falls New Providence Radcliffe Steamboat Rock Union Whitten Unincorporated Hardin County AGWSR School District Alden School District BCLUW School District Eldora-New Providence School Dist Hubbard-Radcliffe School District Iowa Falls School District	Local knowledge Iowa Hazard Mitigation Plan Hardin County EMC Data
Extreme Heat	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan NCDC Data

Structural Failure	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan Hardin County EMC Data
Sinkholes	Ackley Alden Buckeye Eldora Iowa Falls Steamboat Rock Union Unincorporated Hardin County AGWSR School District Alden School District BCLUW School District Eldora-New Providence School Dist Iowa Falls School District	Local knowledge Iowa Hazard Mitigation Plan Iowa DNR Data
Dam Failure	Alden Eldora Iowa Falls Steamboat Rock Unincorporated Hardin County AGWSR School District Eldora-New Providence School Dist Iowa Falls School District	Iowa Hazard Mitigation Plan Iowa DNR Data
Earthquake	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan
Communications Failure	All Jurisdictions	Local knowledge Iowa Hazard Mitigation Plan
Terrorism	All Jurisdictions	Local knowledge
Cyber Attack	All Jurisdictions	Local knowledge

Maps are also a valuable tool for displaying which jurisdictions are affected by hazards. The following pages include maps that depict the hazard's coverage among the jurisdictions in the planning boundary.

Special Flood Hazard Areas

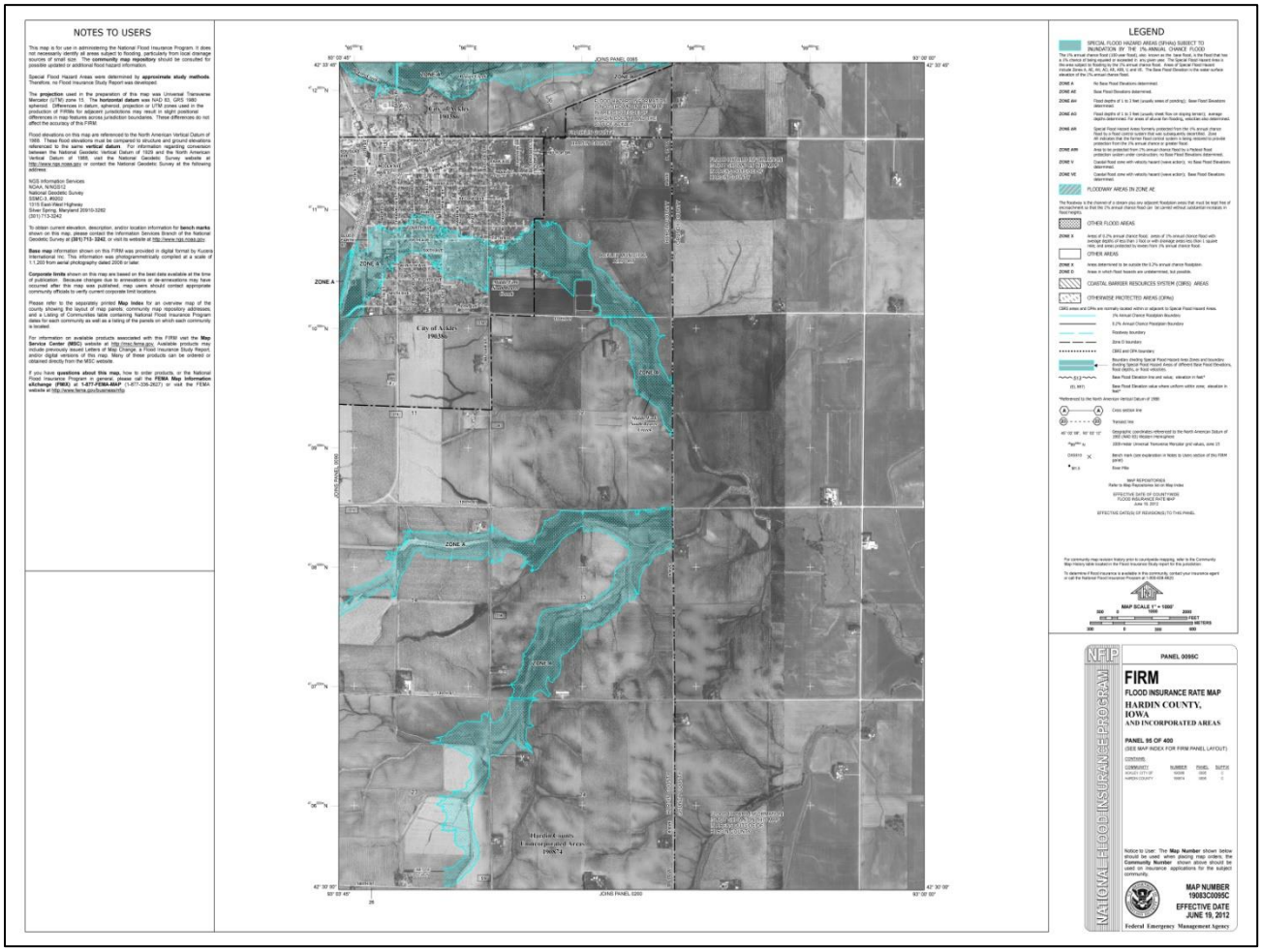
A GIS overlay of a flood boundary map, created by FEMA (derived from FIRM info) and a structure footprint shapefile (all structures in Hardin County larger than 150 sq. ft.) was performed by the County GIS Coordinator. In the flood boundary, 794 structures were identified (ranging from small outbuildings to residences to commercial buildings). A large majority were along the Iowa River from west of Alden through to Iowa Falls. Another section was along the river in Ackley. The last large section contained structures in the town of Union, much of which falls in the flood boundary. Valuations, if available, will be determined in the next update.

The Flood Insurance Rate Maps (FIRMs) below depict the Special Flood Hazard Areas in Hardin County, which indicate the areas that have 1% chance of flooding each year. A portion of each Hardin County jurisdiction is located in a Special Flood Hazard Area. As far as FEMA mapping is concerned, these are the only communities that have any flood plain mapping completed, and not all have the entire community map available. There are no records for the

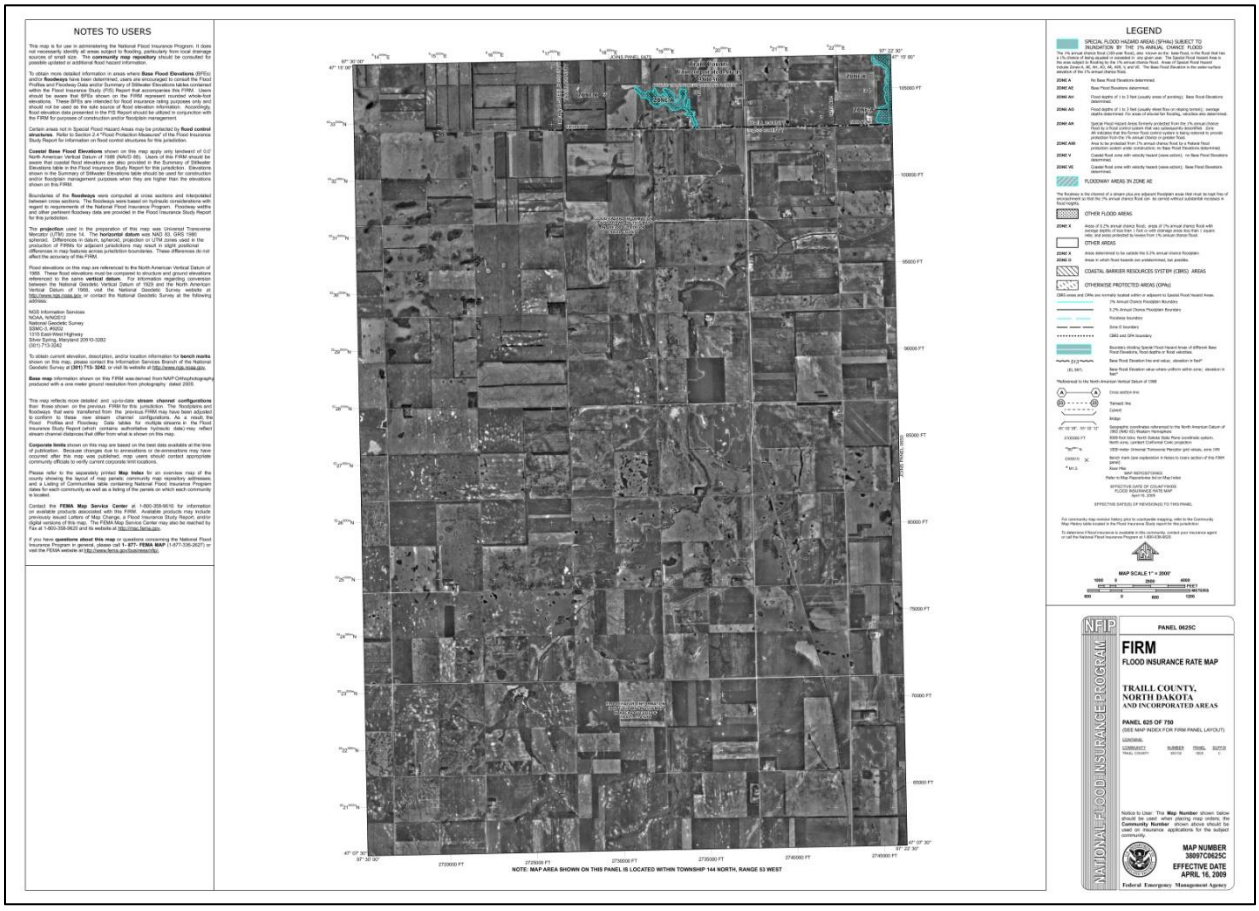
cities of Buckeye, New Providence, Radcliffe, Whitten or Unincorporated Hardin County. The specific boundaries of flooding for each jurisdiction will be discussed in the flood section of this plan.

Figure 22: Special Flood Hazard Areas

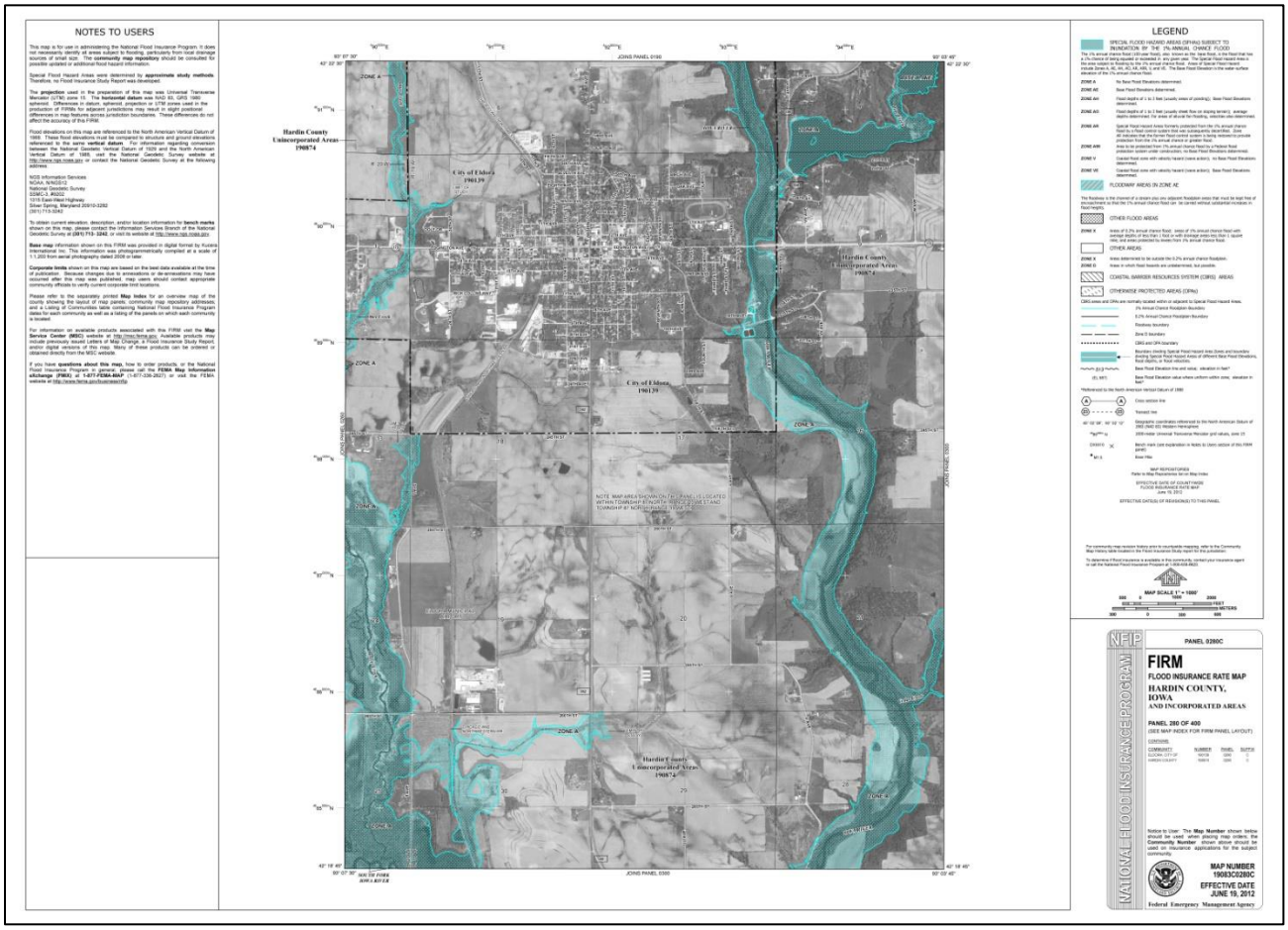
Ackley (Dec, 2016)



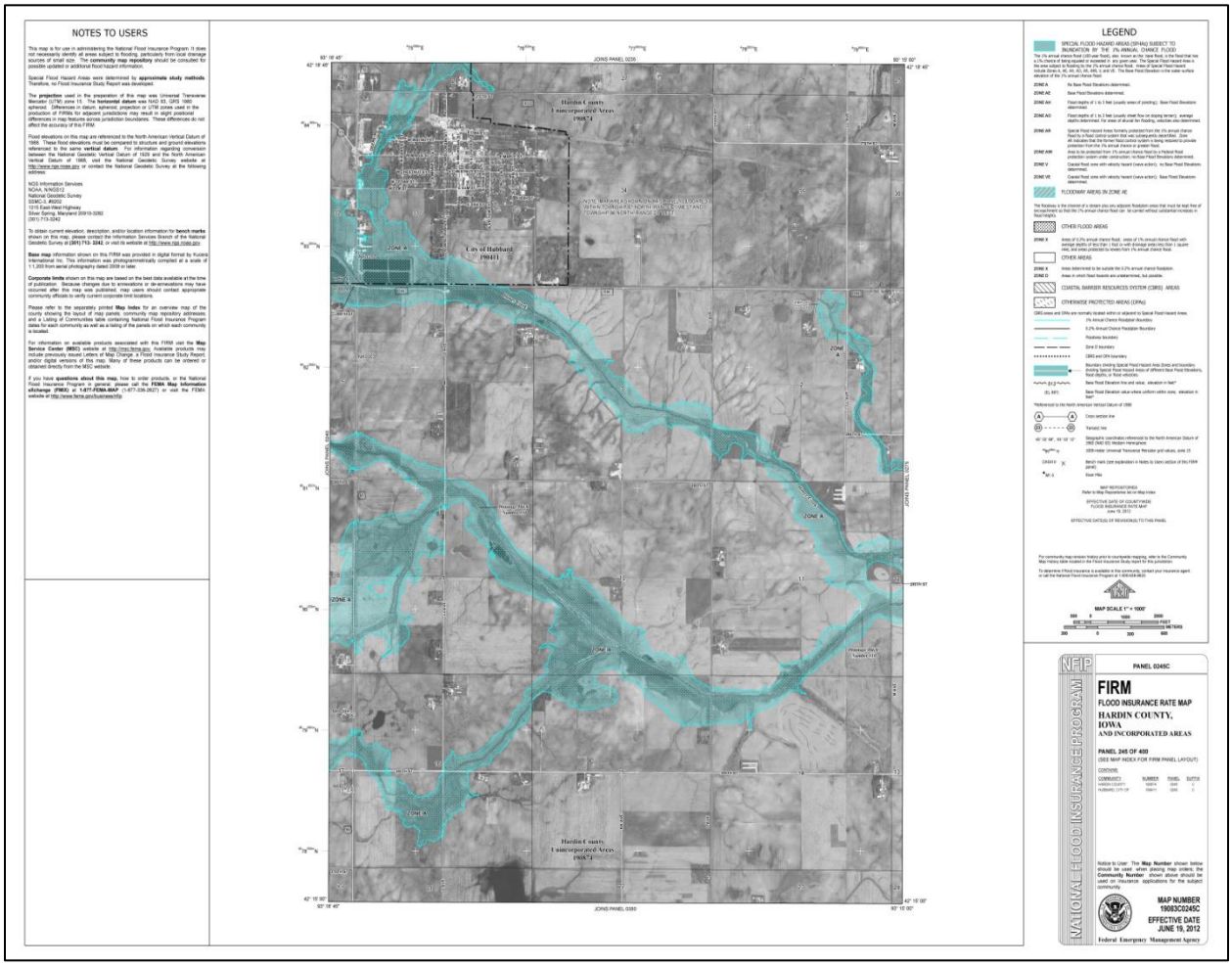
Alden (Dec, 2016)



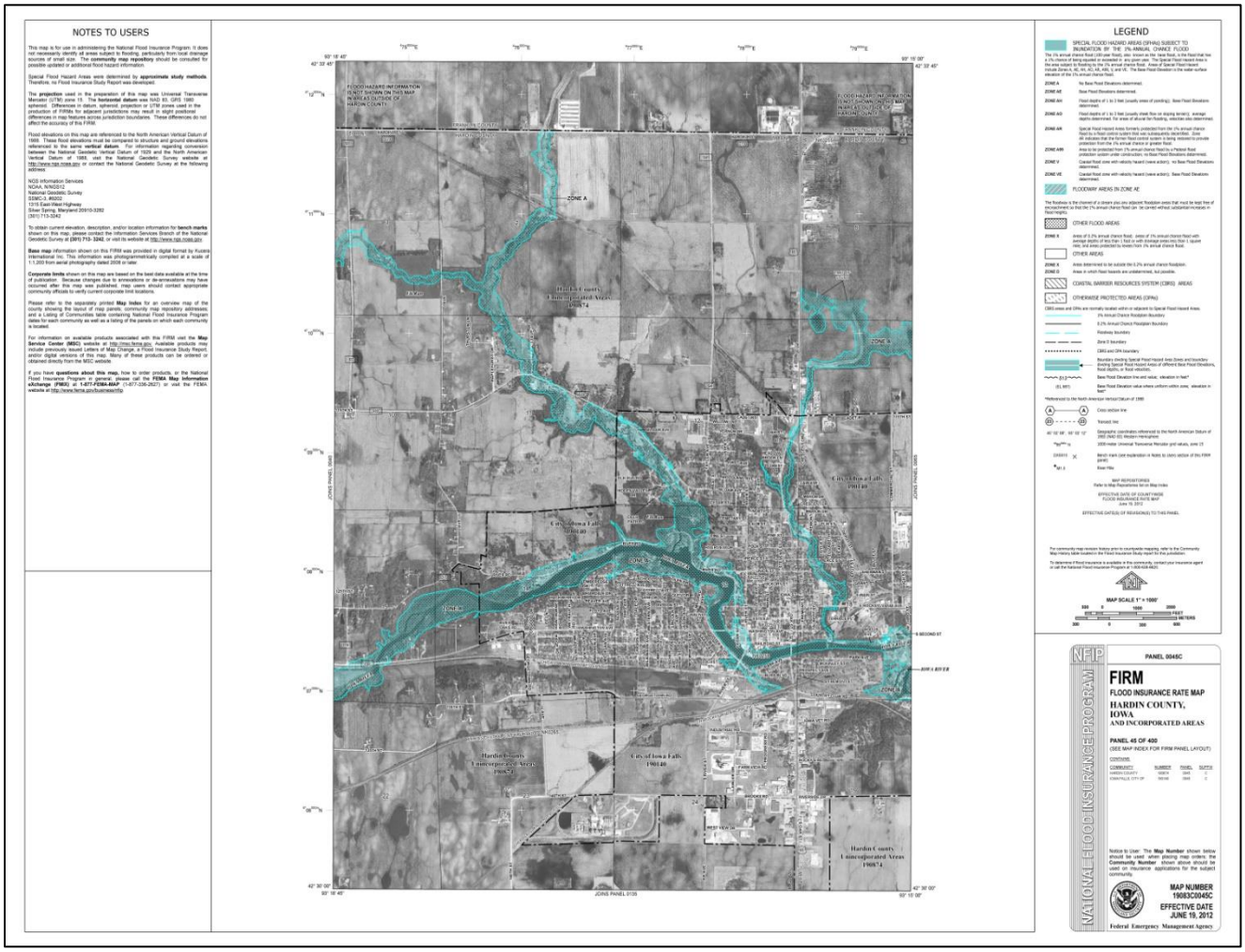
Eldora (Dec, 2016)



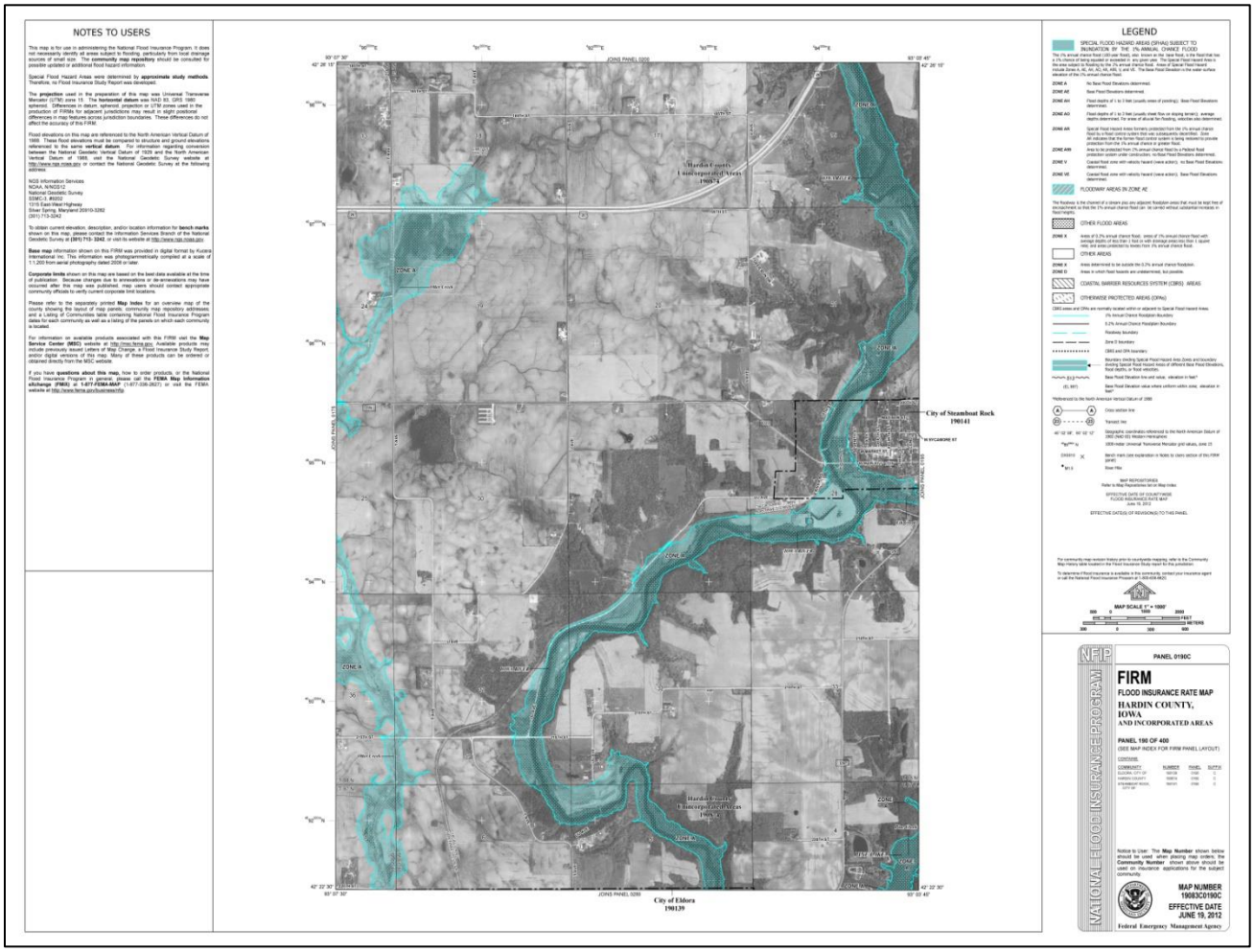
Hubbard (Dec, 2016)



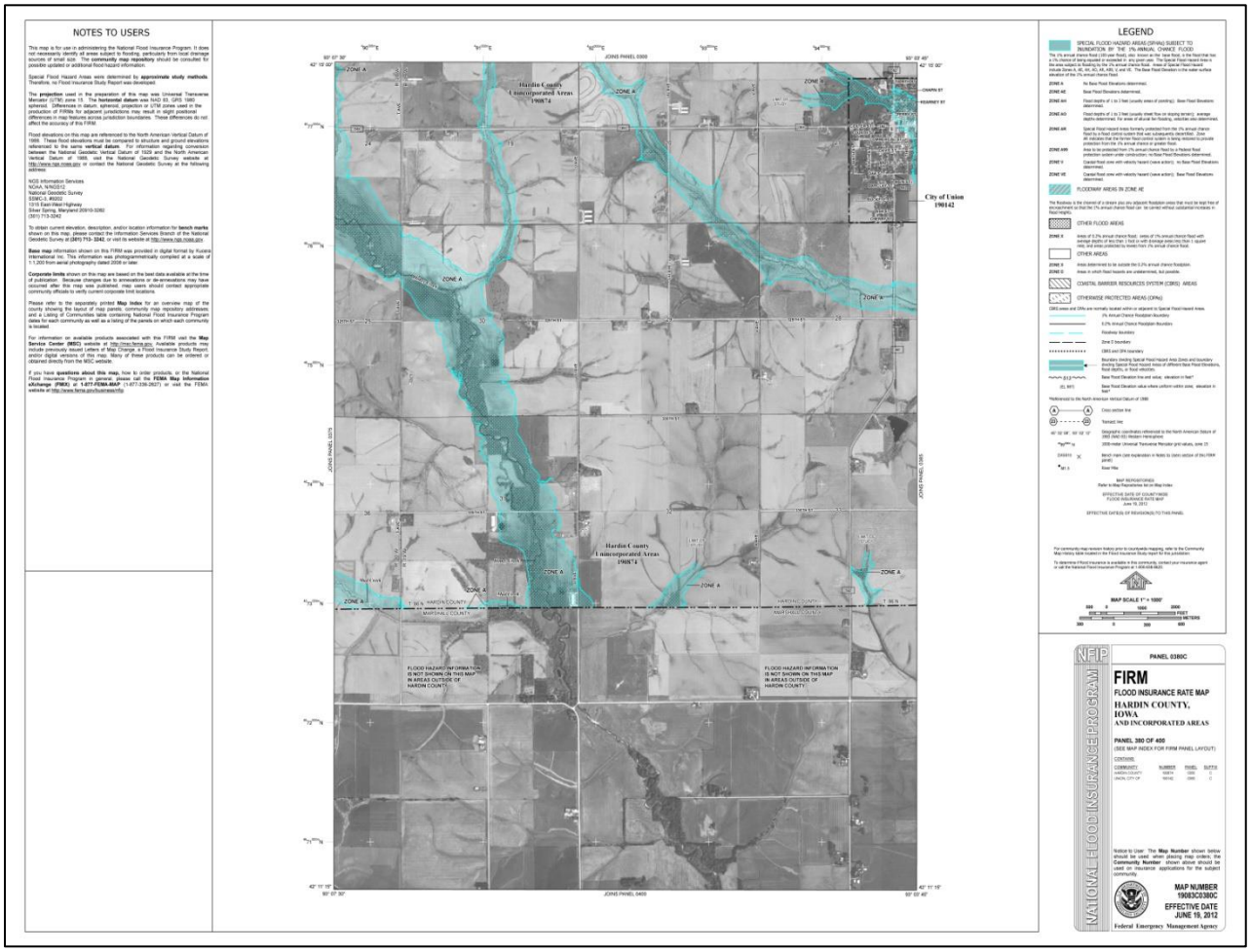
Iowa Falls (Dec, 2016)



Steamboat Rock (Dec, 2016)



Union (Dec, 2016)

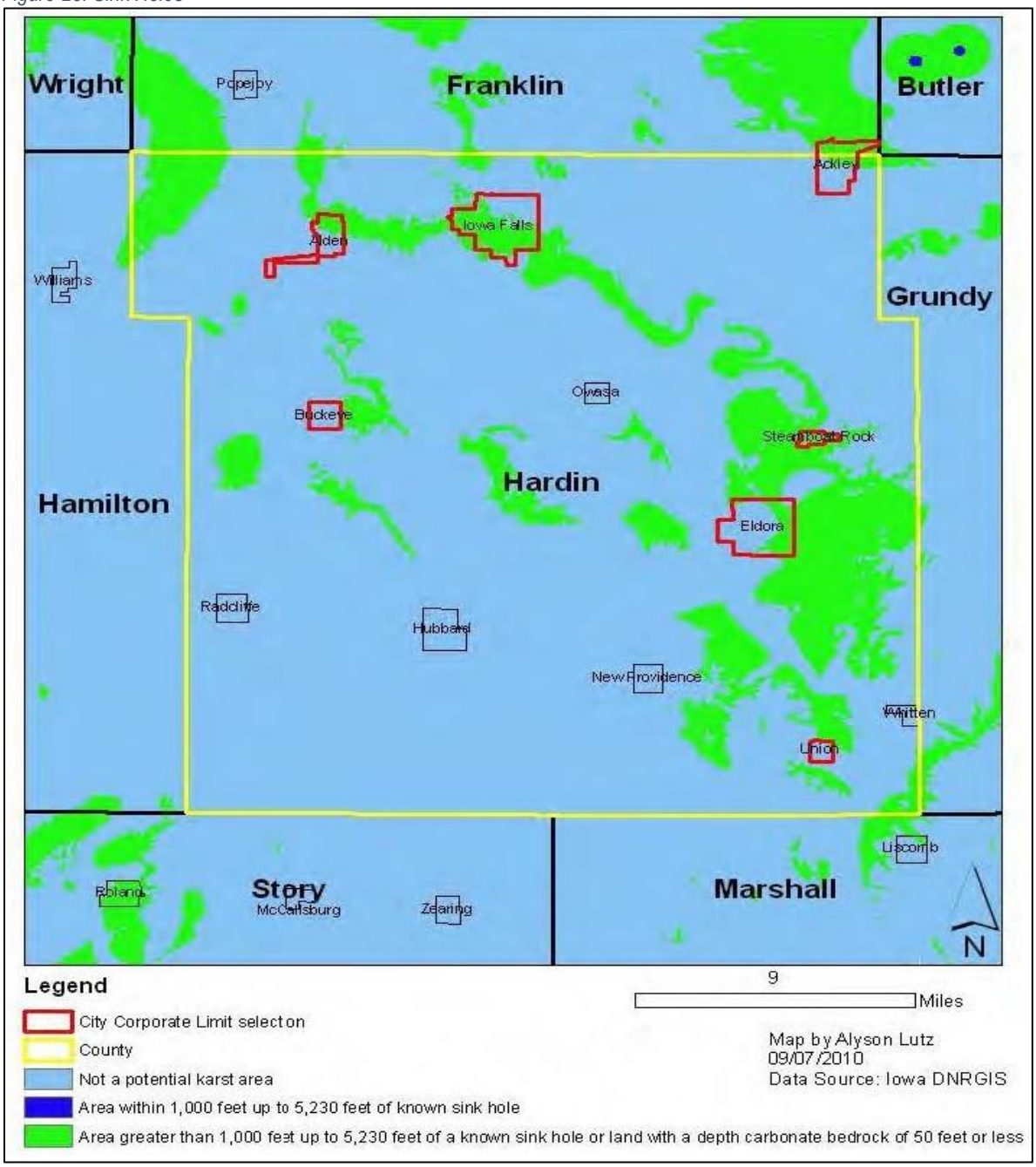


Source: FEMA Flood Map Service Center (https://msc.fema.gov/portal)

Sink Holes

Karst is a term that describes soils as an indicator of possible sink holes. The map below shows areas that are either near or vulnerable to sinkholes. There are seven cities in Hardin County that are vulnerable in terms of sink holes with large portions of the rural county also being vulnerable to this hazard, mostly in the east.

Figure 23: Sink Holes



Dam Failure

There are 17 dams located on the waterways of Hardin County, 3 of which are in the corporate city boundaries of Alden, Iowa Falls and Steamboat Rock. All of the dams in Hardin County will likely only cause minor damage if breeched. The Upper Pine Lake Dam and Lower Pine Lake Dam are located downstream of their respective lakes, and can possibly cause loss of life to unincorporated residents living in the area. The fact that there are 2 lakes upstream of Eldora heightens the threat of these possible dam failures. A lake is a body of water not to be underestimated; generally, all areas near and downstream from a failed dam can be adversely affected by a dam failure. Just in case this hazard may occur, the jurisdictions that are downstream from a dam were identified to be within dam failure hazard boundaries.

Figure 24: Dam Location Map

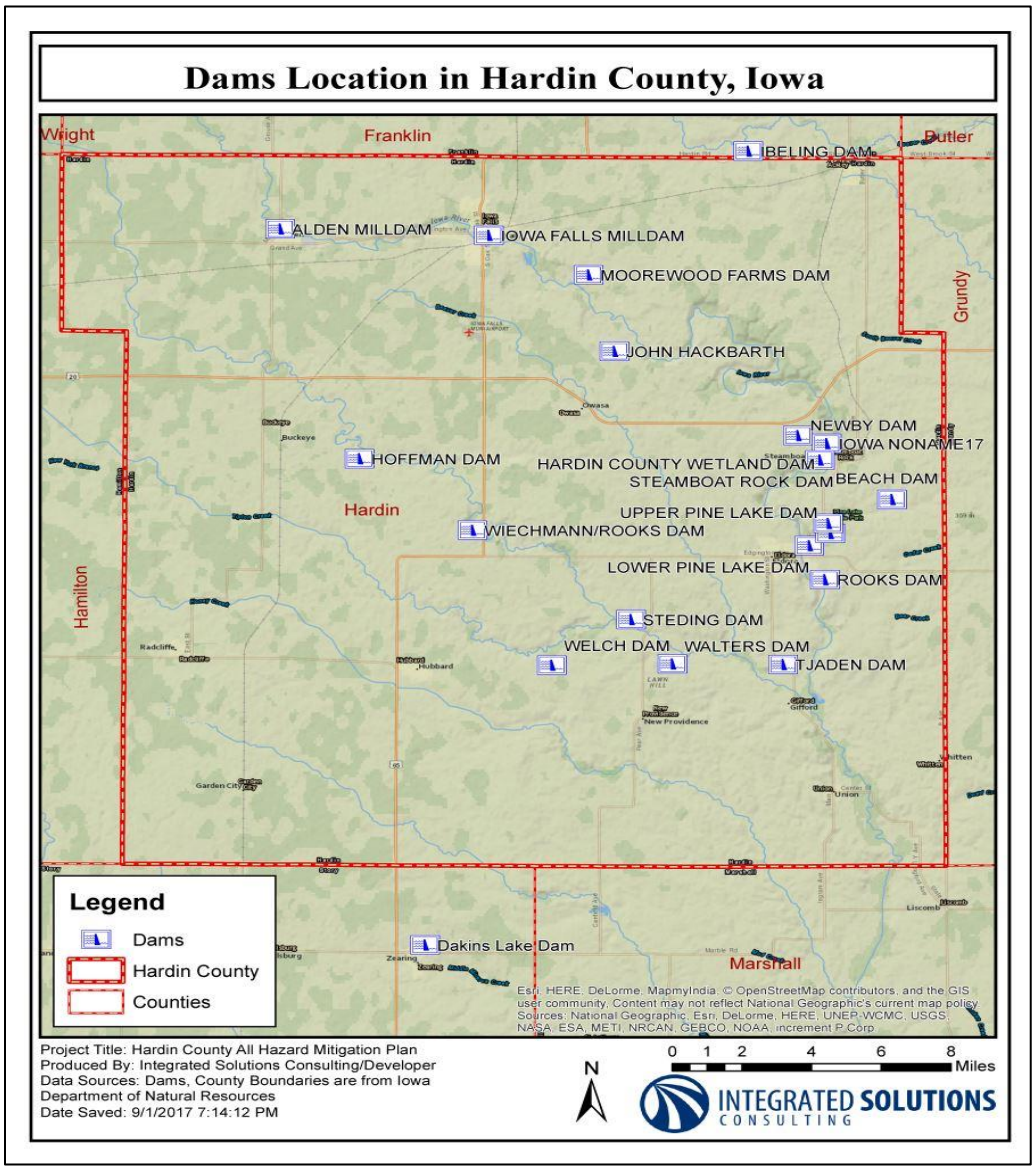
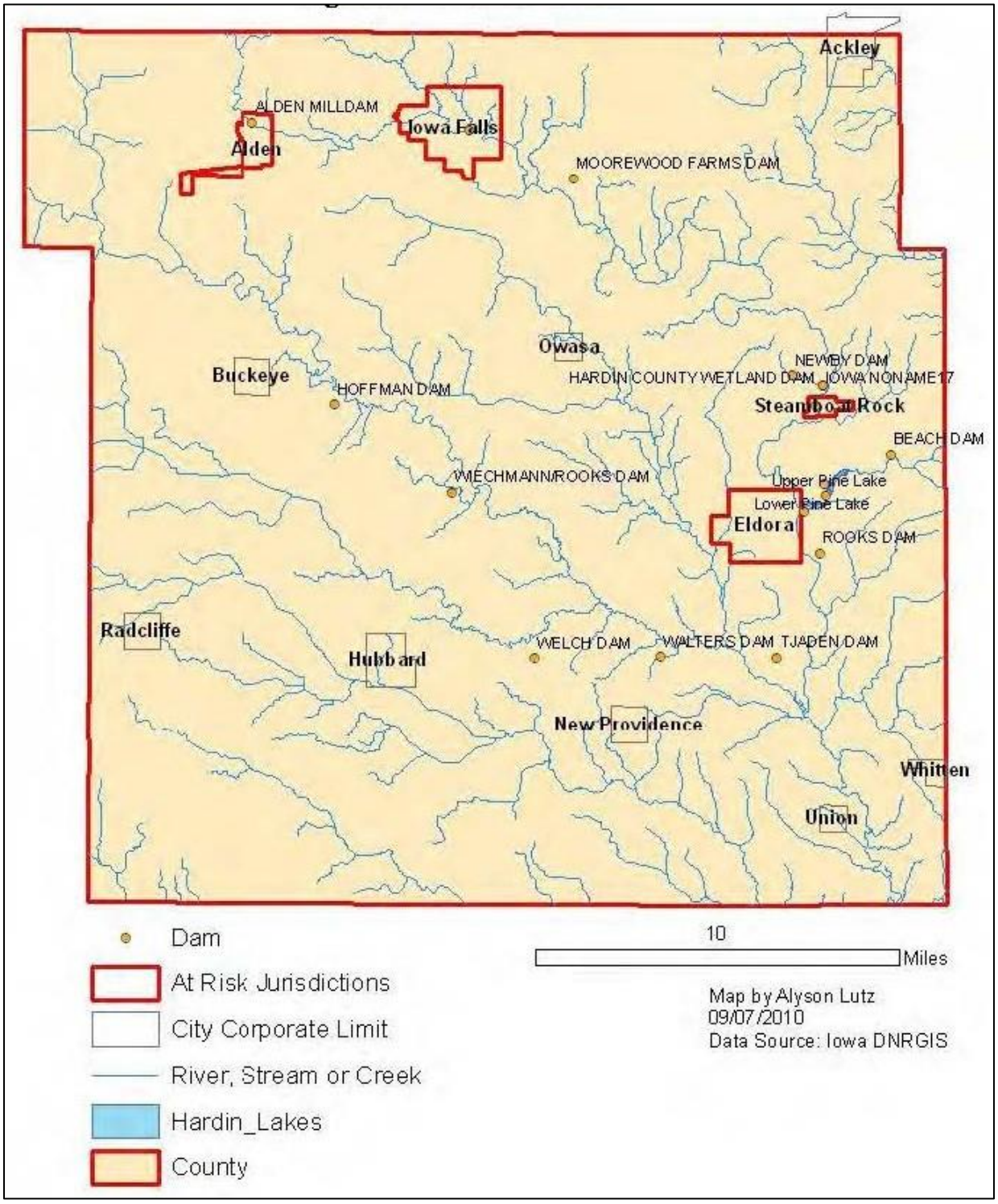


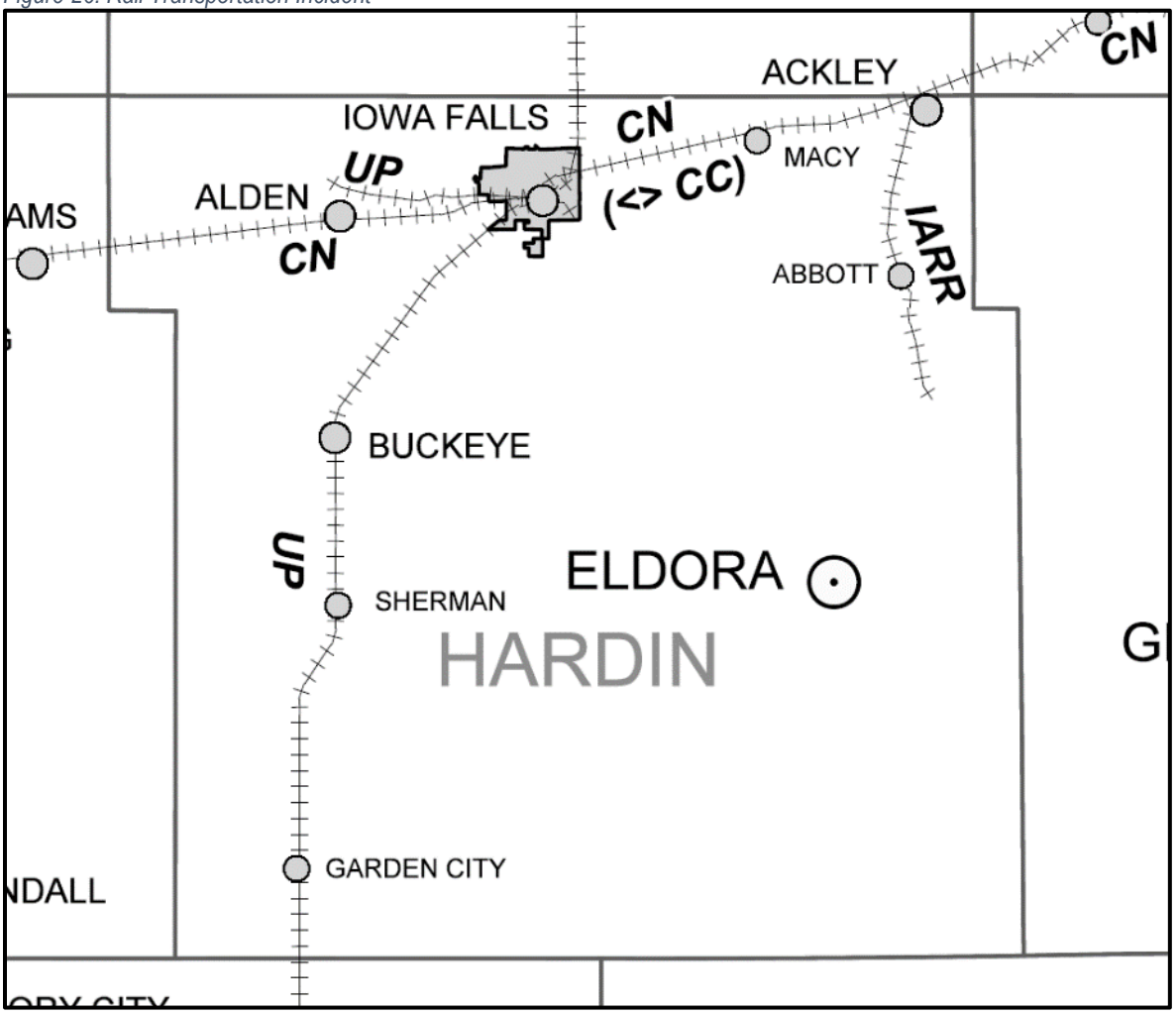
Figure 25: Dam Failure Map: Impacted Jurisdictions



Rail Transportation Incident

A Canadian National rail line runs east-west through the upper portion of Hardin County. A Union Pacific Railroad freight line runs north-south through the east and west (Kansas City to Minneapolis) portions of the county. The Iowa River Railroad ends just south of Pine Lakes Processing. Only the jurisdictions along the rail line should be at risk for a rail transportation incident. Overall, six of twelve jurisdictions are at risk for a rail transportation incident. Unincorporated Hardin County is listed, but only the immediate surroundings of the rail line throughout the county are most at risk.

Figure 26: Rail Transportation Incident

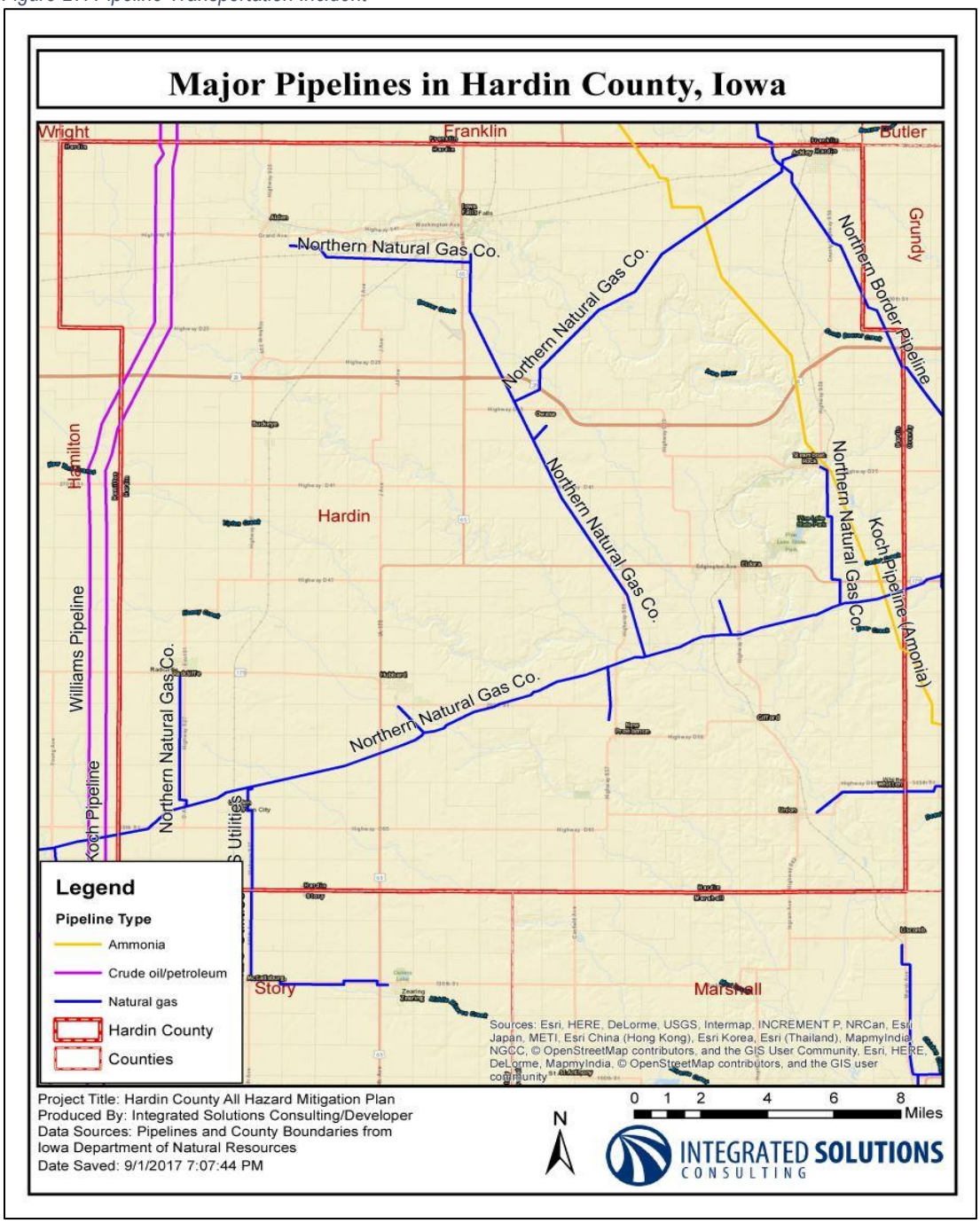


Source: Iowa State Railroad Map: IOWADOT (July 1, 2016)

Pipeline Transportation Incident

Major pipelines run through or by all jurisdictions in Hardin County except Buckeye. At least for natural gas lines, looking at the natural gas utility service availability in the county is an indicator besides this map. Most of the lines that run through the county (13) are natural gas along with one ammonia line and two petroleum lines.

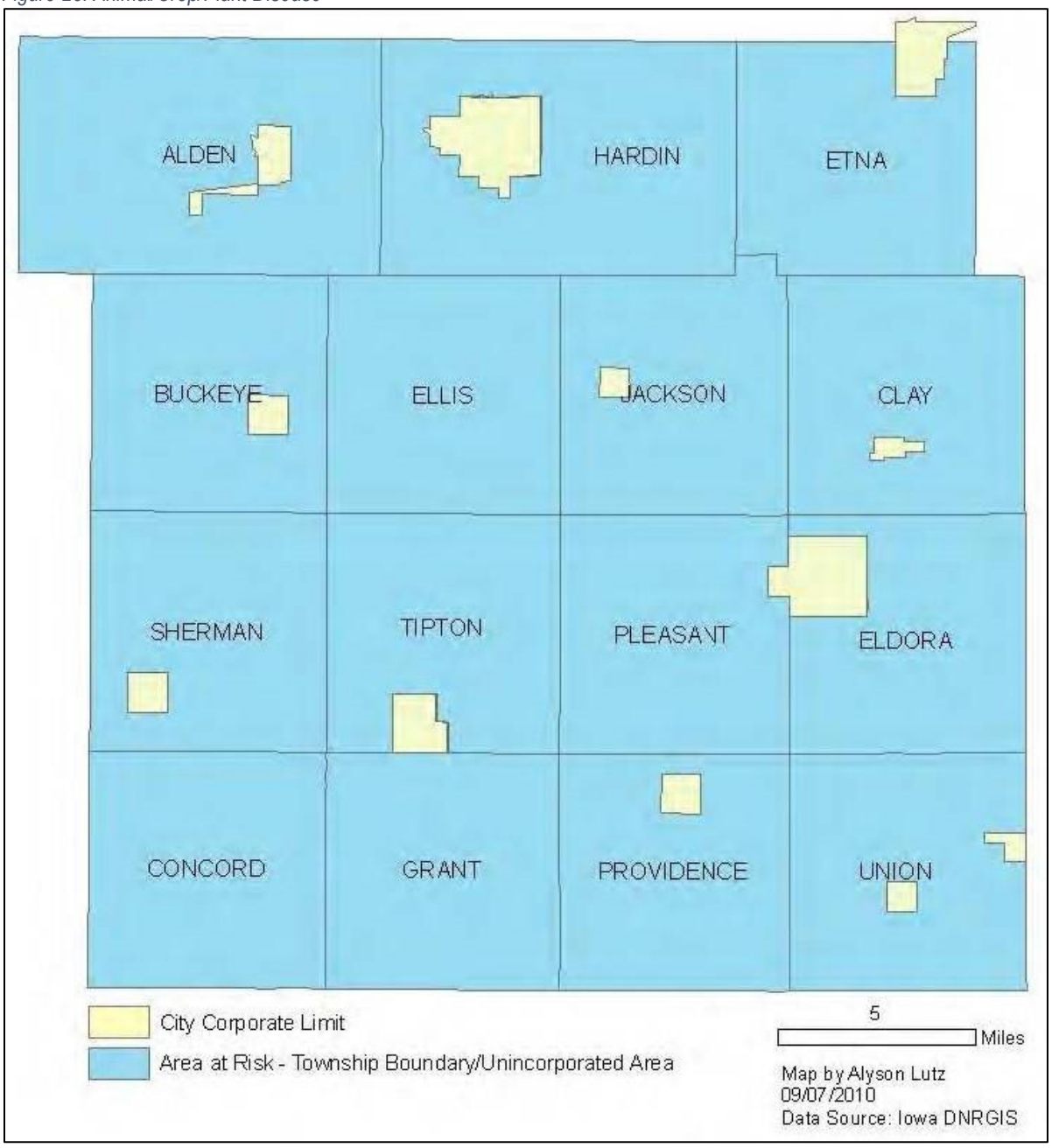
Figure 27: Pipeline Transportation Incident



Animal/Crop/Plant Disease

Hardin County identified Animal/Crop/Plant Disease as a potential hazard. The most at-risk areas are in the unincorporated portion of the county, which is more rural with livestock and wildlife. The incorporated cities of the county are much less likely to be affected by this hazard since there is very little, if any, livestock located within city corporate limits.

Figure 28: Animal/Crop/Plant Disease



Hazard Profiles

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

All hazards included in the Hardin County Multi-Jurisdictional Hazard Mitigation Plan were profiled. This was done through review of the 2011 Hardin County Multi-Jurisdictional Hazard Mitigation Plan, the 2013 Iowa Hazard Mitigation Plan, past events and declared disasters, reviewing data from Hardin County Emergency Management, and other research.

Each hazard is profiled in the same manner, and covers the following sections:

- Definition of the hazard
- General description of the hazard
- Historical occurrence of the hazard
- Probability of the hazard occurring in the future
- Vulnerability of citizens, visitors, and emergency responders during and after a hazard event
- Maximum geographic extent of the hazard
- Severity of the hazard's potential impact on human life and property
- Speed of onset or amount of warning time before the hazard occurs

The hazard scoring and ranking method is described in Hazard Ranking. The total score for each hazard is at the bottom of its profile. The higher the score, the higher priority the hazard is in Hardin County. The hazards will be formally ranked in the next step of the planning process.

Note that the hazards are profiled first by type (natural, technological, or human caused) and then alphabetically, so the profile order does not indicate any sort of ranking. The hazards will be ranked in the next step of the planning process.

Natural Hazards

According to FEMA, natural hazards are natural events that threaten lives, property, and other assets. Often, natural hazards can be predicted. They tend to occur repeatedly in the same geographical locations because they are related to weather patterns or physical characteristics of an area. CPG 201 states that natural hazards are the result from acts of nature. The following Natural Hazards are addressed in this plan.

- Animal/Crop/Plant Disease
- Drought
- Earthquake
- Extreme Heat
- Flood (Flash Flood)
- Flood (Riverine)
- Grass or Wildland Fire
- Hailstorm
- Ice Storms
- Severe Winter Storm
- Sinkholes
- Thunderstorm and Lightning
- Tornado
- Windstorm

Animal/Crop/Plant Disease

Animal/Crop/Plant Disease *[A medical, health, or sanitation threat to the wildlife or domestic animals like contamination, epidemics, plagues, and insect infestation]*

Description

Infectious diseases introduced onto an operation can have a devastating effect on cash flow and equity. Major animal diseases include foot and mouth disease, rinderpest, African swine fever, classical swine fever, brucellosis, lumpy skin disease, and others. Adverse effects of infectious diseases can occur at the farm or industry level. Some diseases may severely limit or eliminate animal marketing options (for example: to slaughter only). In the future producers may be responsible for potential pathogen contamination of the food supply or environment. Negative effects may be short- or long-term depending on the nature of the pathogen and level of concern among producers and consumers. Presence of some pathogens can also affect market access for high priority in day-to-day management decisions.

Historical Occurrence

According to the Animal Health Alert Network, run by the Food Safety & Animal Health Division of the Iowa Department of Agriculture and Land Stewardship, there have been three alerts between 2012 and 2015: avian influenza in 2015, epizootic hemorrhagic disease in 2012, and west nile virus in 2012.

According to Hardin County Emergency Management, there have been many incidents of animal disease outbreaks in the county due to the high concentration of animals. Rabies and West Nile are a challenge. There are also frequent crop disease and infestation outbreaks in the county.

Probability

As the nation's number one producer of corn, soybeans, eggs, and hogs, Iowa farmers and producers know the importance of securing America's food supply. With hundreds of thousands of head of livestock produced and transported in Iowa each year, Iowa could be a rich environment for a disease epidemic to take hold if precautions such as vaccinations and handling procedures are not rigorously followed.

According to Kelvin Leibold, ISU Hardin County Extension Farm Management Program Specialist, there are sure to be crop related diseases, fungus, molds, insect outbreaks that occur regularly every year and are treated by the farming community.

The Emerald Ash Borer was confirmed in Northeast Iowa in 2010. Although this insect has not been confirmed in Hardin County, the entire state was placed under quarantine in 2014 to slow the accidental movement of this insect by humans to areas outside of Iowa. This insect threatens to destroy every ash tree across the landscape. In some communities, ash trees compose 50% - 70% of the trees. The Emerald Ash Borer may have a similar impact to the Dutch Elm disease, which was first reported in Iowa in 1956 and went on to kill 95% of Iowa's urban American elms.

An Emerald Ash Borer (EAB) website, created and run by the University of Michigan Extension describes the ash border as metallic green and about 1/2-inch long. They expect that it probably came from Asia in wood packing material. An implication of their infestation is the effect on firewood in some states not being moved because of a quarantining effort. These quarantines are in place to prevent infested ash firewood, logs or nursery trees from being transported and starting new infestations. Some signs of EAB damage are canopy dieback, Epicormic shoots (sprouts growing from roots and trunk), bark splitting, serpentine galleries, D-shaped exit holes, and increased woodpecker activity/damage.

Another disease yet to arrive in Hardin County, but has the potential of being devastating is Asian Soybean Rust. According to ISU extension; this fungal plant disease creates small angular rust- colored spots on the beans and eventually turns the leaves of severely affected plants yellow and cause them to fall off. The fungus is spread from plant to plant by tiny, dust-like spores that are carried by the wind. The disease first appeared in the US in Louisiana in 2004 and is believed to have been carried to the US by hurricanes from farther south. The only management option available to soybean farmers is to spray fungicides at the first sign of rust.

Vulnerability

U.S. agriculture is very vulnerable to the introduction of a foreign animal/crop/plant disease. Outbreaks can be inadvertently introduced by contaminated material carried by an international traveler or by the importation of infected animals and animal products. Foreign animal/crop/plant disease could enter the U.S. vectored by wild animals, insects, or migratory birds or they could be intentionally introduced to cause severe economic problems or to target human health.

Maximum Extent

State and federal animal health programs have been very successful in preventing or limiting the scope and magnitude of animal emergencies. However, because threats to animal health are always changing and because the animal population is mobile, the possibility always exists for a local, regional, or statewide animal health emergency to occur. Unincorporated Hardin was identified as the jurisdiction most at risk for this hazard. Most livestock are located outside city corporate limits in Hardin County.

Severity

Animal health emergencies can take many forms: disease epidemics, large-scale incidents of feed and water contamination, extended periods without adequate water, harmful exposure to chemical, radiological, or biological agents, and large-scale infestations of disease-carrying insects or rodents, to name a few. One of the principal dangers of disease outbreaks they can rapidly overwhelm the animal care system. Perhaps the greatest animal health hazard would be the intentional release of a foreign animal disease agent to adversely impact a large number of animals. Such a release would likely not be an act of sabotage.

Speed of Onset

The private practitioner is the first line of defense and will undoubtedly be the first to witness the symptoms of Animal/Crop/Plant Diseases. The United States Department of Agriculture monitors reports submitted by veterinarians and labs to identify patterns. The department is proactive in providing information to the agricultural community on medical concerns. Conditions related to scope and magnitude can escalate quickly and area resources can be drained of vets, medications, and vaccinations rather quickly.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Animal/Crop/Plant disease	31	24	24	61	50	31	67	41	36

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Drought

Drought *[A prolonged period of prolonged lack of precipitation producing severe dry conditions]*

Description

There are four types of drought conditions that are relevant to Iowa:

- Meteorlogic drought, or precipitation deficiency;
- Hydrological drought, or declining surface water and groundwater supplies;
- Agricultural drought, or soil moisture deficiencies; and,
- Socioeconomic drought, or when physical water shortages begin to affect people.

Droughts can be spotty or widespread and last from weeks to a period of years. A prolonged drought can have a serious economic impact on a community. Increased demand for water and electricity may result in shortages of resources. Moreover, food shortage may occur if agricultural production is damaged or destroyed by a loss of crops or livestock. While droughts are generally associated with extreme heat, drought can and do occur during cooler months.

Historical Occurrence

According to the Palmer Drought Severity Index, a composite of evapotranspiration, recharge, runoff, loss, and precipitation, Iowa has suffered seven periods of drought condition since 1910. While some may have been more severe than others, agricultural areas were impacted much more than the metropolitan areas where impacts were indirect.

According to the National Climatic Data Center (NCDC), Hardin County has experienced seven drought events since 1950, all of which occurred after 2000. The most recent drought was in 2013. The total property damage from the seven drought events in Hardin County totals $12.65 million, and crop damaged reached a total of $83.35 million. No deaths or injuries were reported during any of these drought events.

Table 40: Drought Historical Occurrences

Date	Deaths	Injuries	Property Damage	Crop Damage
8/1/2013	0	0	$0	$21 M
10/1/2013	0	0	$0	$0
9/1/2012	0	0	$0	$0
8/1/2012	0	0	$0	$6 M
7/1/2012	0	0	$0	$45 M
8/1/2003	0	0	$12.65 M	$0
8/1/2001	0	0	$0	$11.35 M
Totals	**0**	**0**	**$12.65 M**	**$83.35 M**

Source: National Climatic Data Center, Storm Events Database

Probability

Drought is part of normal climate fluctuations. Climatic variability can bring dry conditions to the region for up to years at a time. Research and observations of the El Nino/La Nina climatic events are resulting in more predictable climatic forecasts.

Vulnerability

Those dependent on rain would be the most vulnerable during a drought. This means that agriculture, agribusiness, and consumers would be impacted. A drought limits the ability to produce goods and provide services. Because citizens draw their drinking water from groundwater sources, a prolonged severe drought may impact all citizens if there were to be a dramatic drop in the water table. Fire suppression can also become a problem due to the dryness of the vegetation and possible lack of water.

Maximum Extent

A drought would likely affect most of Hardin County and Iowa, if not the entire Midwest. Because of the dependence on precipitation and water, the agricultural areas would be most adversely impacted. Even though the agricultural areas would be most adversely impacted, the entire county would likely feel at least some impact.

Severity

Drought in the U.S. seldom results directly in the loss of life. Deaths associated with drought are usually related to a heat wave. Drought more directly affects agricultural crops, livestock, natural vegetation, and stream flows that include fish and aquatic vegetation. Impacts can be costly to the economy, environment, and general population.

Speed of Onset

Drought warning is based on a complex interaction of many different variables, water uses, and consumer needs. Drought warning is directly related to the ability to predict the occurrences of atmospheric conditions that produce the physical aspects of drought, primarily precipitation and temperature. There are so many variables that can affect the outcome of climatic interactions, and it is difficult to predict a drought in advance. An area may already be in a drought before it is recognized. While the warning of the drought may not come until the drought is already occurring, the secondary effects of a drought may be predicted and warned against weeks in advance.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Drought	25	32	55	61	54	40	56	51	36

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Earthquake

Earthquake *[Any shaking or vibration of the earth caused by the sudden release of energy that may impose a direct threat on life and property]*

Description

An earthquake is a sudden, rapid shaking of the earth caused by the breaking and shifting of rock beneath the Earth's surface. This shaking can cause buildings and bridges to collapse; disrupt gas, electric, and phone service; and sometimes trigger landslides, flash floods, and fires. The three general classes of earthquakes now recognized are: tectonic, volcanic, and artificially produced.

Historical Occurrence

Iowa as a whole has experienced the effects of only a few earthquakes in the past two centuries. The epicenters of 13 earthquakes have been located in the state. The majority have been along the Mississippi River. The last earthquake to occur in Iowa was in the southwestern Iowa town of Shenandoah in 2004. Since the early 1800s, at least 10 earthquakes have occurred outside of Iowa but have impacted areas in the state. The most recent quake felt in Iowa occurred in 2016 and occurred in northern Oklahoma. While more than 20 earthquakes have occurred in or impacted Iowa in the past 200 years, they have not seriously affected Iowa.

According to the USGS, there have been no earthquakes in Hardin County.

Probability

Seismologists attempt to forecast earthquake size and frequency based on data from previous events. In the New Madrid Fault Zone, this analysis is difficult because there are few historic moderate to large earthquakes, and the active faults are too deeply buried to monitor effectively.

Based on recurrence intervals for small earthquakes, scientists estimate a 90% chance of a Richter magnitude 6.0 earthquake in the New Madrid Fault Zone by 2040. A magnitude 6.5 in New Madrid would create a magnitude 4 effect in Iowa resulting in little or no damage.

Vulnerability

In general, peak ground acceleration (PGA) is a measure of the strength of ground movements. More specifically, PGA measures the rate in change of motion relative to the established rate of acceleration due to gravity. According to the United States Geological Services, the peak acceleration in Hardin County with a 2% probability of exceeding in 50 years is 2% g, which means the County faces a very little threat from earthquakes. Also, most of Iowa is located in Seismic Zone 0, which is the lowest risk zone in the United States.

Maximum Extent

The strongest earthquake in Iowa occurred in Davenport in 1934 and resulted in only slight damage. If a 6.5 Richter magnitude earthquake occurred along the New Madrid Fault Zone, Iowans in four southeast counties could experience trembling buildings, some broken dishes, and cracked windows. About 29 other counties, from Page to Polk to Muscatine, could experience vibrations similar to the passing of a heavy truck: rattling of dishes, creaking of walls, and swinging of suspended objects. If an earthquake were to occur as described, it would likely be felt in all of Hardin County.

Severity

Due to the relatively low magnitude of earthquakes that would occur in the state, and the distance from the epicenter of an earthquake that would occur in the New Madrid Fault Zone, Iowans would likely see only minor impacts. Fatalities would be nonexistent to very minimal, injuries limited to falls and from unsecured objects, property loss would likely be minimal, and economic loss could occur due to short disruptions in commercial and industrial activities.

Speed of Onset

Earthquake prediction is an inexact science. Even in areas that are well monitored with instruments, such as California's San Andreas Fault Zone, scientists can only determine where an earthquake is likely, but not when it will happen.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Earthquake	6	9	49	33	32	42	61	33	14

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Extreme Heat

Extreme Heat *[Temperatures, including heat index, in excess of 100 degrees Fahrenheit or three successive days of 90 degrees Fahrenheit. A heat advisory is issued when temperatures reach 105 degrees and a warning is issued at 115 degrees]*

Description

Extreme heat is described as a prolonged period of excessive heat and humidity. Humidity can increase how warm a high temperature feels; the heat index is a number in degrees Fahrenheit that tells how hot it really feels when relative humidity is added to the actual air temperature. Exposure to full sunshine can increase the heat index by at least 15 degrees. Extreme heat can impose stress on humans and animals. Heatstroke, sunstroke, cramps, exhaustion, and fatigue are possible with prolonged exposure or physical activity due to the body's inability to dissipate the heat. Urban areas are particularly at risk because of air stagnation and large quantities of heat absorbing materials such as streets and buildings. Extreme heat can also result in distortion and failure of structures and surfaces such as roadways and railroad tracks. If the National Weather Service expects high temperatures in an area, they may release a heat advisory or an excessive heat warning.

- **Heat Advisory:** A heat index of 100°F or higher is expected for a period of 3 hours or more. A heat advisory shall be continued through the overnight hours, following a day with excessive heat, if the heat index is not expected to fall below "around 75°F". A heat

advisory can be issued for a heat index less than 100°F when the cumulative effect of successive days of near advisory heat leads to potentially life-threatening conditions.

- **Excessive Heat Warning:** A heat index of 105°F or higher is expected for a period of 3 hours or more. An excessive heat warning shall be continued through the overnight hours, following a day with excessive heat, if the heat index is not expected to fall below "around 75°F". An excessive heat warning can be issued for a heat index less than 105°F when the cumulative effect of successive days of near warning heat leads to life threatening conditions.

Historical Occurrence

The record high temperature in Iowa was recorded at 110 in July 1936, when 12 record setting days topped 100 degrees in Des Moines. Between March and October, the record high for every day is above 90 degrees Fahrenheit.

According to the National Climatic Data Center, two excessive heat events have occurred in Hardin County since 1950.

Table 41: Extreme Heat Historical Occurrences

Date	Deaths	Injuries	Property Damage	Crop Damage
7/20/2016	0	0	$0	$0
7/15/2011	0	0	$135 K	$0
Total	**0**	**0**	**$135 K**	**$0**

Source: National Climatic Data Center, Storm Events Database

In addition, a heat event (not excessive) caused the death of one elderly woman in Hardin County on August 5, 2001, when she failed to open her windows during a particularly warm and humid period. No other deaths, injuries, or damage were caused by this event.

Probability

Based on historical information, Iowa will likely experience about 26 days a year with temperatures above 90 degrees. There is a very good change that there will also be a period of 3 consecutive days or more with temperatures in the 90s. It is also common for the temperature to hit 100 degrees or more once every three years during the summer months.

Vulnerability

Elderly people, small children, chronic invalids, those on certain medications or drugs (especially tranquilizers and anticholinergics), and persons with weight and alcohol problems are particularly susceptible to heat reactions. Healthy individuals working outdoors in the sun and heat are vulnerable as well. Individuals and families with low budgets as well as inner city dwellers can also be susceptible due to poor access to air-conditioned housing.

Maximum Extent

Most of the county and state would likely be impacted by extreme heat, but urban areas pose special risks. The stagnant atmospheric conditions of the heat wave trap pollutants in urban areas and add to the stresses of hot weather.

Severity

Extreme heat has broad and far-reaching sets of impacts. These include significant loss of life and illness, economic costs in transportation, agriculture, production, energy, and infrastructure. Transportation impacts include the loss of lift for aircrafts, softening of asphalt roads, buckling of highways and railways, and stress on automobiles and trucks (increase in mechanical failures). Livestock and other animals are adversely impacted by extreme heat. High temperatures at the wrong time inhibit crop yields as well. Electric transmission systems are impacted when power lines sag in high temperatures. High demand for electricity also outstrips supply, causing electric companies to have rolling blackouts. The demand for water also increases sharply during periods of extreme heat. This can contribute to fire suppression problems for both urban and rural fire departments.

Speed of Onset

As with other weather phenomena, periods of extreme heat are predictable within a few degrees within three days or so. Variations in local conditions can affect the actual temperature within a matter of hours or even minutes. 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.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Extreme Heat	13	17	24	41	25	46	67	29	19

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Flood (Flash Flood)

Flash Flood *[A flood event occurring with little or no warning where water levels rise at an extremely fast rate]*

Description

Flash flooding results from intense rainfall over a brief period, sometimes combined with rapid snowmelt, ice jam release, frozen ground, saturated soil, or impermeable surfaces. Most flash flooding is caused by slow-moving thunderstorms or thunderstorms repeatedly moving over the same area. Flash flooding is an extremely dangerous form of flooding which can reach full peak in only a few minutes and allows little or no time for protective measures to be taken by those in its path. Flash flood water moves at very fast speeds and can roll boulders, tear out trees, scour channels, destroy buildings, and obliterate bridges. Flash flooding often results in higher loss of life, both human and animal, than slower-developing river and stream flooding.

Historical Occurrence

Flash floods are the most common and widespread of all-natural disasters except fire. In Iowa, as much as 21" of rain has fallen in a 24-hour period. According to the National Climatic Data Center, seventeen flash flood events have affected Hardin County since 1996, when this hazard type began to be recorded in the National Climatic Data Center. These flash floods occurred mostly in Iowa Falls with a few at the Iowa Falls municipal airport and some beginning in Hubbard and ending in Eldora. No deaths or injuries were reported in any of the flash flood events.

Table 42: Flash Flood Events in Hardin County since 1996

Date	Deaths	Injuries	Property Damage	Crop Damage
6/29/2014	0	0	$3,000	$0
6/29/2014	0	0	$5,000	$0
6/24/2013	0	0	$250,000	$0
5/29/2013	0	0	$200,000	$0
5/26/2013	0	0	$25,000	$0
5/26/2013	0	0	$50,000	$0
6/8/2008	0	0	$20,000	$0
6/8/2008	0	0	$25,000	$0
5/6/2008	0	0	$25,000	$0
4/25/2008	0	0	$25,000	$0
4/25/2008	0	0	$5,000	$0
6/22/2007	0	0	$100,000	$250,000
8/16/2004	0	0	$10,000	$20,000
7/10/2000	0	0	$75,000	$200,000
7/2/1999	0	0	$50,000	$50,000
5/16/1999	0	0	$100,000	$0
6/16/1996	0	0	$200,000	$100,000
Total	**0**	**0**	**$1,168,000**	**$510,000**

Source: National Climatic Data Center (October, 2017)

Probability

Flash flooding has a high probability of happening in all communities in Hardin County. As land is converted from fields or woodlands to roads and parking lots, it loses its ability to absorb rainfall. Urbanization increases runoff two to six times over what would occur on natural terrain. As more development occurs, the amount of runoff produced also increases. Unless measures are taken to reduce the amount of runoff (or slow its movement), flash floods will continue to occur and possibly increase. Sewer systems that cannot handle large amounts of water in a short period of time may also cause flash floods.

An extreme flash flood event on the Iowa River may threaten the Eldora wastewater treatment facility and a bridge to enter the facility, making access difficult. Some homes and businesses may also be impacted during an extreme flash flood event.

Vulnerability

Flash floods can occur in any state in the country. Particularly at risk are those in low-lying areas; close to dry creek beds or drainage ditches; near water; or downstream from a dam, levee, or storage basin. People and property in areas with insufficient storm sewers and other drainage infrastructure can also be put at risk because the drains cannot rid the area of runoff quickly enough.

Nearly half of all flash flood fatalities are auto-related. Motorists often try to traverse water-covered roads and bridges and are swept away by the current. Six inches of swiftly moving water can knock people off their feet and only two feet of water can float a full-sized automobile. Recreational vehicles and mobile homes located in low-lying areas can also be swept away by water.

Maximum Extent

Areas in a floodplain, downstream from a dam or levee, or in low-lying areas can be impacted. People and property 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. Unlike areas impacted by a river/stream flood, flash floods can impact areas a good distance from the stream itself. Flash flood prone areas are not particularly those areas adjacent to rivers and streams. Streets can become swift moving rivers, and basements can become deathtraps because flash floods can fill them with water in a manner of minutes. All Hardin County communities are prone to flash flooding.

Severity

Flash floods are the number one weather-related killer in the United States. They can quickly inundate areas thought not to be flood-prone. Other impacts can include loss of life; property damage and destruction; damage and disruption of communications, transportation, electric service, and community services; crop and livestock damage, and interruption of business.

Hazards of fire, health and transportation accidents, and contamination of water supplies are likely effects of flash flooding situations. Since 1996, there have been 2,106 flash flooding events recorded in Iowa, which incurred 8 deaths, 14 injuries, $311,586,500 in property damages, and $54,257,500 in crop damages (National Climatic Data Center, December, 2016).

Speed of Onset

Flash floods are somewhat unpredictable, but there are factors that can point to the likelihood of a flood's occurring in the area. Flash floods 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. Warnings may not always be possible for these sudden flash floods. Predictability of flash floods depends primarily on the data available on the causal rain. Individual basins react differently to precipitation events. Weather surveillance radar is being used to improve monitoring capabilities of intense rainfall. Knowledge of the watershed characteristics, modeling, monitoring, and warning systems increase the predictability of flash floods. Depending on the location in the watershed, warning time can be increased. The National Weather Service forecasts the height of floods crests, the data, and time the flow is expected to occur at a particular location.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Flood	44	46	63	61	55	44	39	56	50

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Flood (Riverine)

River Flood *[A rising or overflowing of a tributary or body of water that covers adjacent land not usually covered by water when the volume of water in a stream exceeds the channel's capacity]*

Description

A flood is a natural event for rivers and streams. Excess water from snowmelt, rainfall, or storm surge accumulates and overflows onto the banks and adjacent floodplains. Floodplains are lowlands adjacent to rivers, lakes, and oceans that are subject to recurring floods. Hundreds of floods occur each year, making it one of the most common hazards in all of the United States. They can occur at any time of the year, in any part of the country, and at any time of day or night. Most injuries and deaths occur when people are swept away by flood currents, and most property damage results from inundation by sediment-filled water.

Several factors determine the severity of floods, including rainfall intensity (or other water source) and duration. A small amount of rain can also result in floods in locations where the soil is saturated from a previous wet period or if the rain is concentrated in an area of impermeable surfaces such as large parking lots, paved roadways, or other impervious developed areas.

Topography and ground cover are also contributing factors for floods. Water runoff is greater in areas with steep slopes and little or no vegetative ground cover.

Historical Occurrence

According to the NCDC, Hardin County has experienced 38 river flood events since 1996 with no deaths or injuries reported. The total property damages that resulted from these events total nearly $2 million, and the crop damages total nearly $21 million.

The costliest property damage due to a single flood event in Hardin County occurred on May 16, 1999 and incurred $200,000 in damages. The costliest crop damage event occurred on June 12, 2010 and totaled $20,000,000 (96% of Hardin County's total crop damages for all flooding events).

Table 43: Flood Events in Hardin County since 1996

Date	Deaths	Injuries	Property Damage	Crop Damage
12/14/2015	0	0	$50,000	$0
6/12/2010	0	0	$0	$20,000,000
5/7/2008	0	0	$75,000	$0
5/7/2008	0	0	$25,000	$0
5/7/2008	0	0	$50,000	$0
4/25/2008	0	0	$150,000	$0
3/2/2008	0	0	$20,000	$0
7/26/2005	0	0	$10,000	$30,000
6/26/2005	0	0	$74,070	$50,000
5/22/2004	0	0	$100,000	$298,039
7/5/2003	0	0	$10,000	$25,000
6/12/2001	0	0	$25,000	$50,000

5/1/2001	0	0	$75,000	$0
4/7/2001	0	0	$150,000	$0
3/23/2001	0	0	$7,500	$0
7/10/2000	0	0	$50,000	$25,000
6/13/2000	0	0	$20,000	$50,000
6/9/2000	0	0	$25,000	$25,000
6/9/1999	0	0	$50,000	$75,000
5/21/1999	0	0	$50,000	$10,000
5/16/1999	0	0	$200,000	$25,000
4/22/1999	0	0	$10,000	$0
4/6/1999	0	0	$7,000	$0
7/6/1998	0	0	$50,000	$100,000
6/29/1998	0	0	$50,000	$10,000
6/28/1998	0	0	$75,000	$20,000
6/27/1998	0	0	$50,000	$10,000
6/24/1998	0	0	$75,000	$20,000
6/21/1998	0	0	$100,000	$20,000
6/20/1998	0	0	$70,000	$5,000
6/18/1998	0	0	$100,000	$20,000
6/14/1998	0	0	$100,000	$20,000
6/8/1998	0	0	$50,000	$10,000
6/21/1997	0	0	$0	$0
5/1/1997	0	0	$0	$0
3/19/1997	0	0	$0	$0
2/18/1997	0	0	$0	$0
6/17/1996	0	0	$0	$0
Total	**0**	**0**	**$1,953,570**	**$20,898,039**

Source: National Climatic Data Center (October, 2017)

Probability

Flooding is very likely to occur in the Hardin County's cities and unincorporated areas. The chance of human injury is low; however, possibilities of property and/or crop damage is certain.

Vulnerability

The vulnerability from river flooding is quite delineated. Flood hazard mapping has allowed many communities to restrict development in hazardous areas, but development exists in many areas susceptible to flooding, so structures and people who live and work in buildings that are located in or near the floodplain are at risk. The following figures define the flood hazard boundaries for the county and the three largest communities in Hardin County.

Figure 29: Flood Hazard Boundary: Hardin County

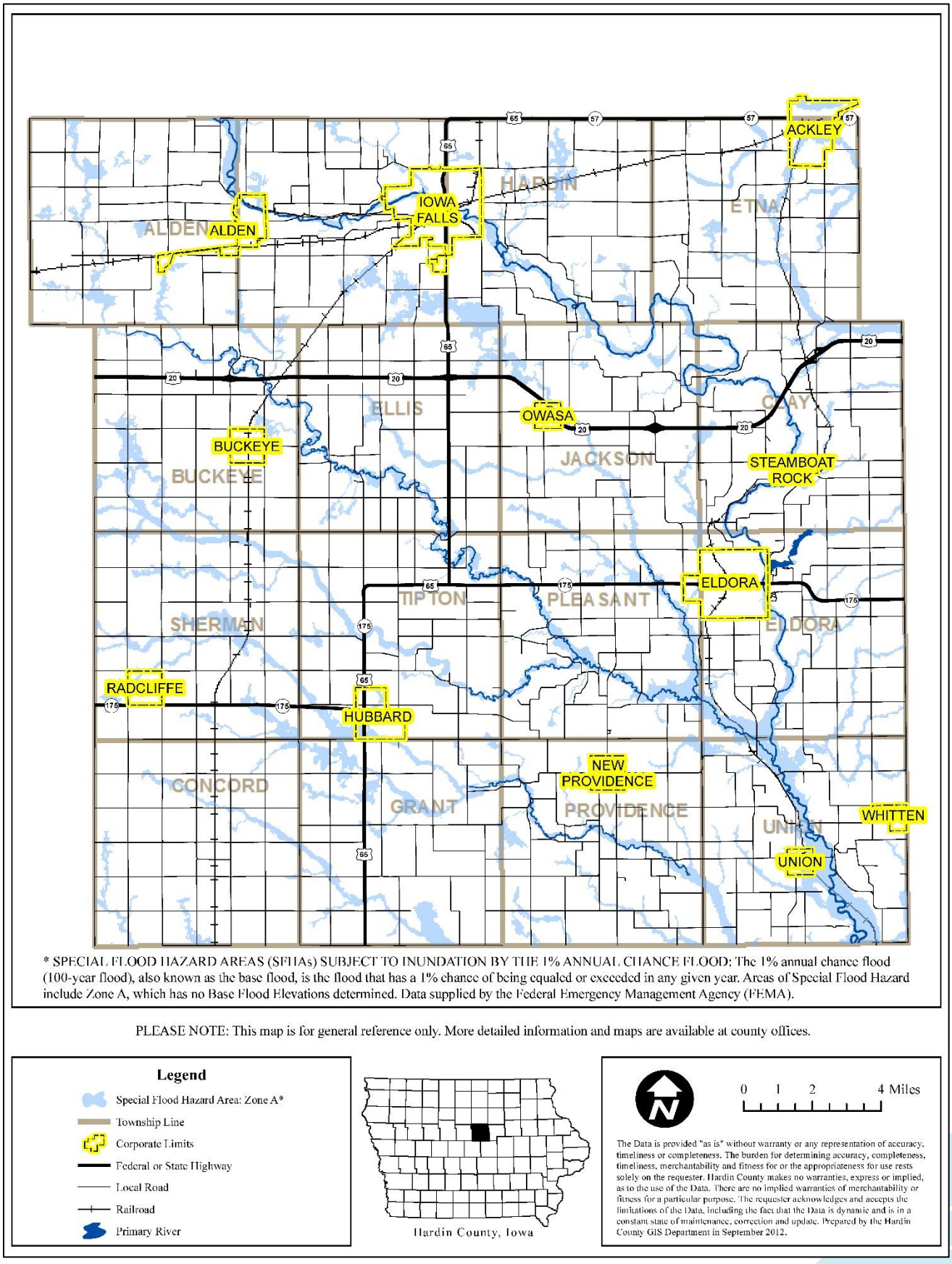


Figure 30: Flood Hazard Boundary and Land Use: Hardin County

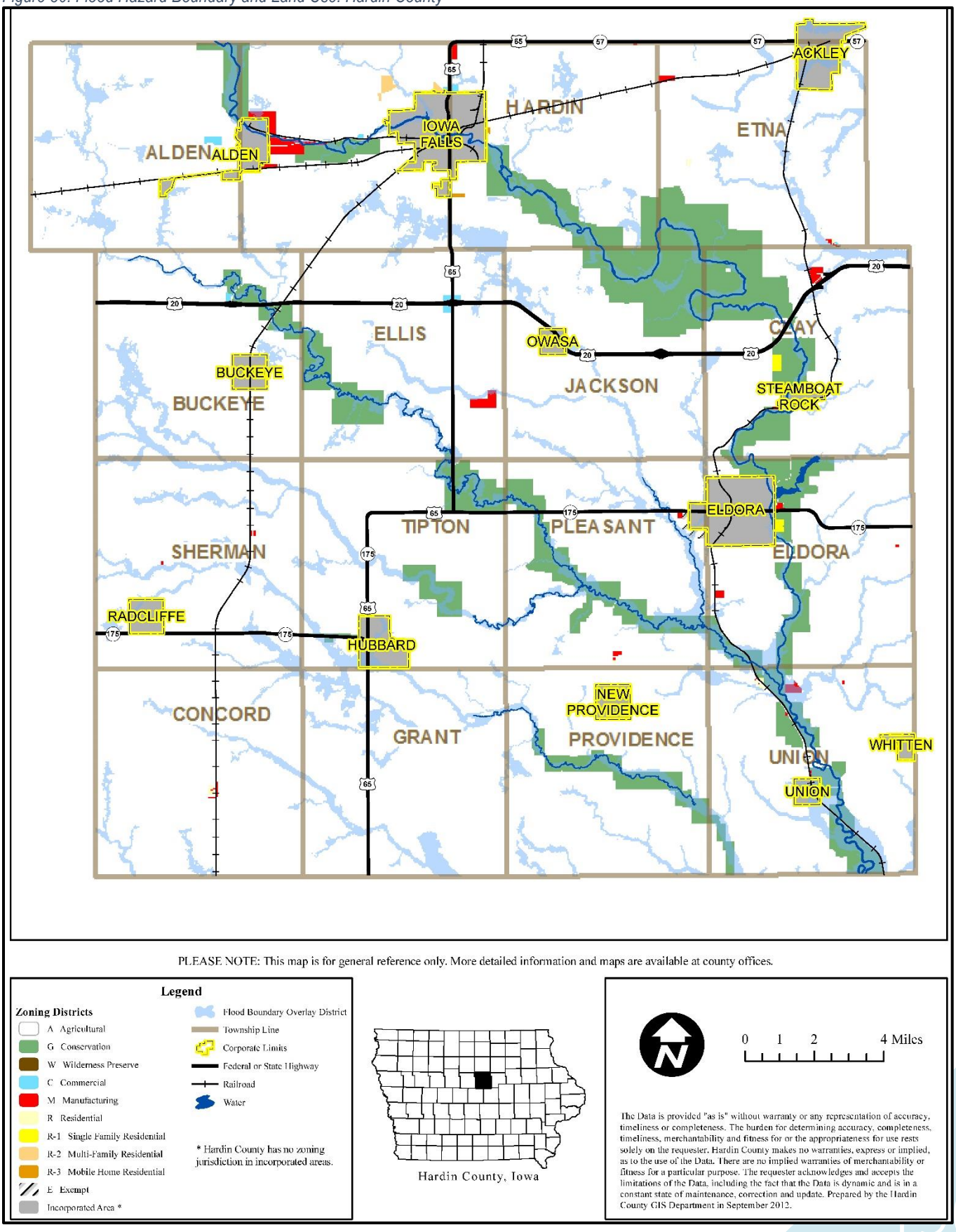


Figure 32: Flood Hazard Boundary: Ackley

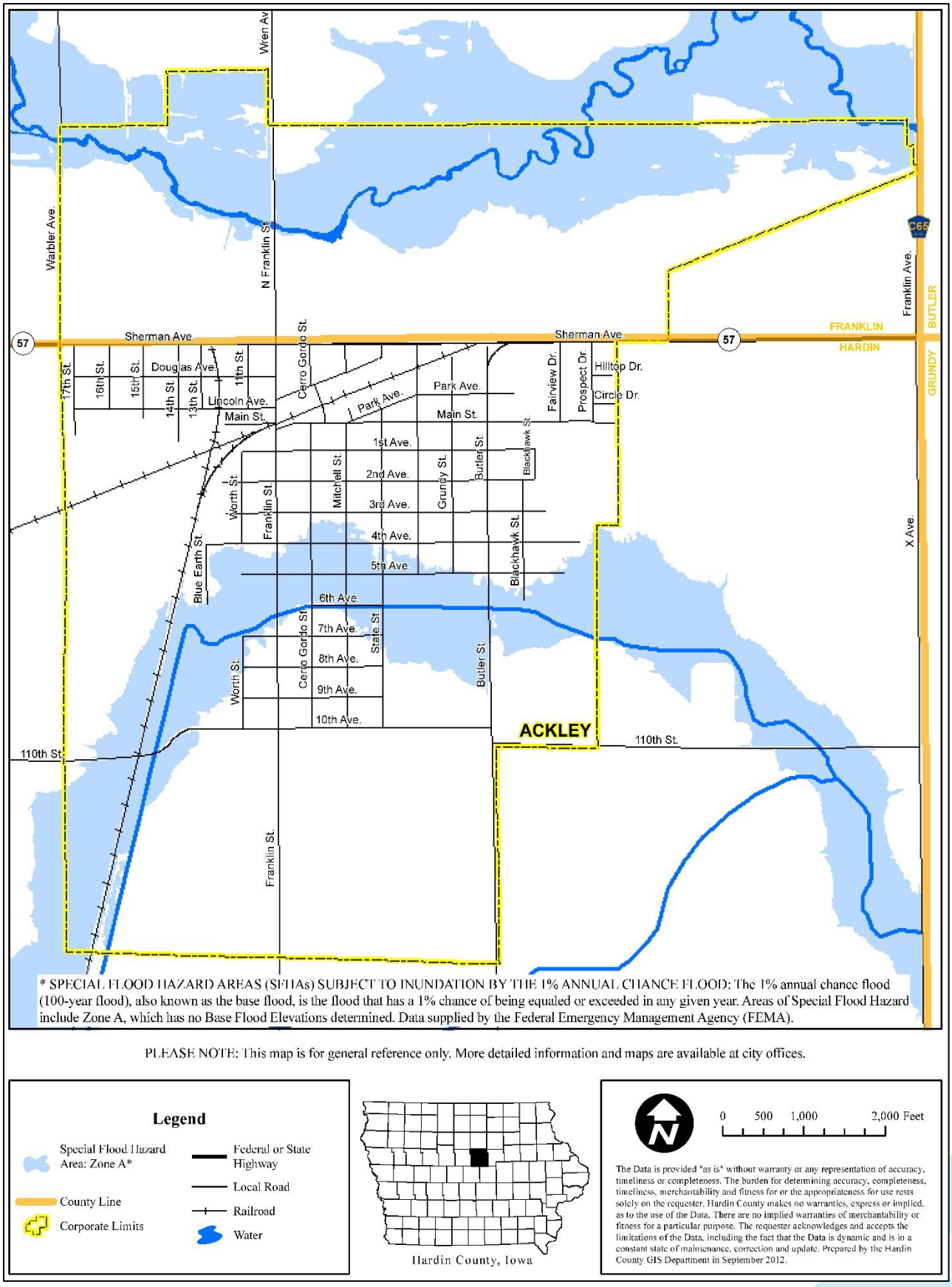


Figure 33: Flood Hazard Boundary and Land Use: Ackley

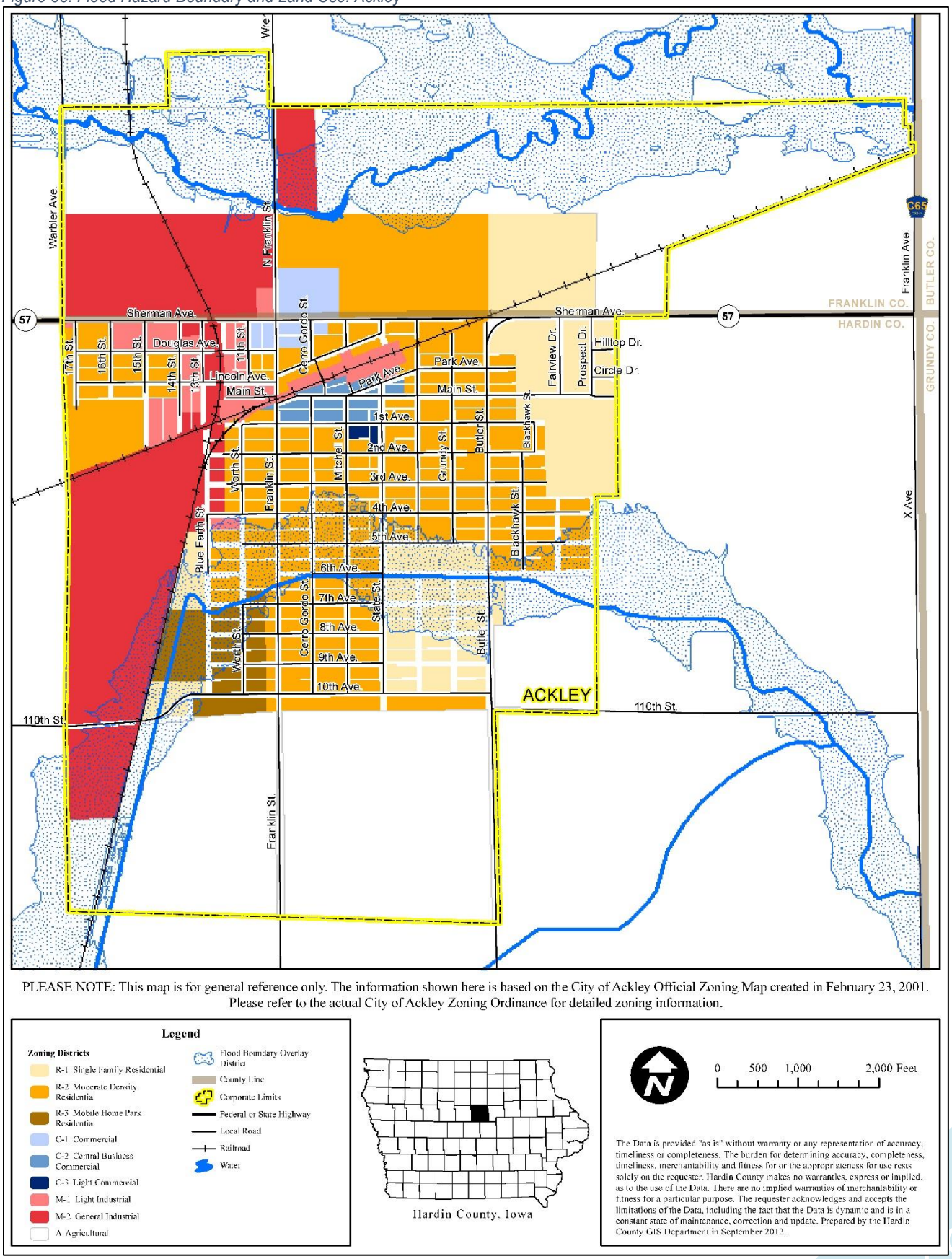
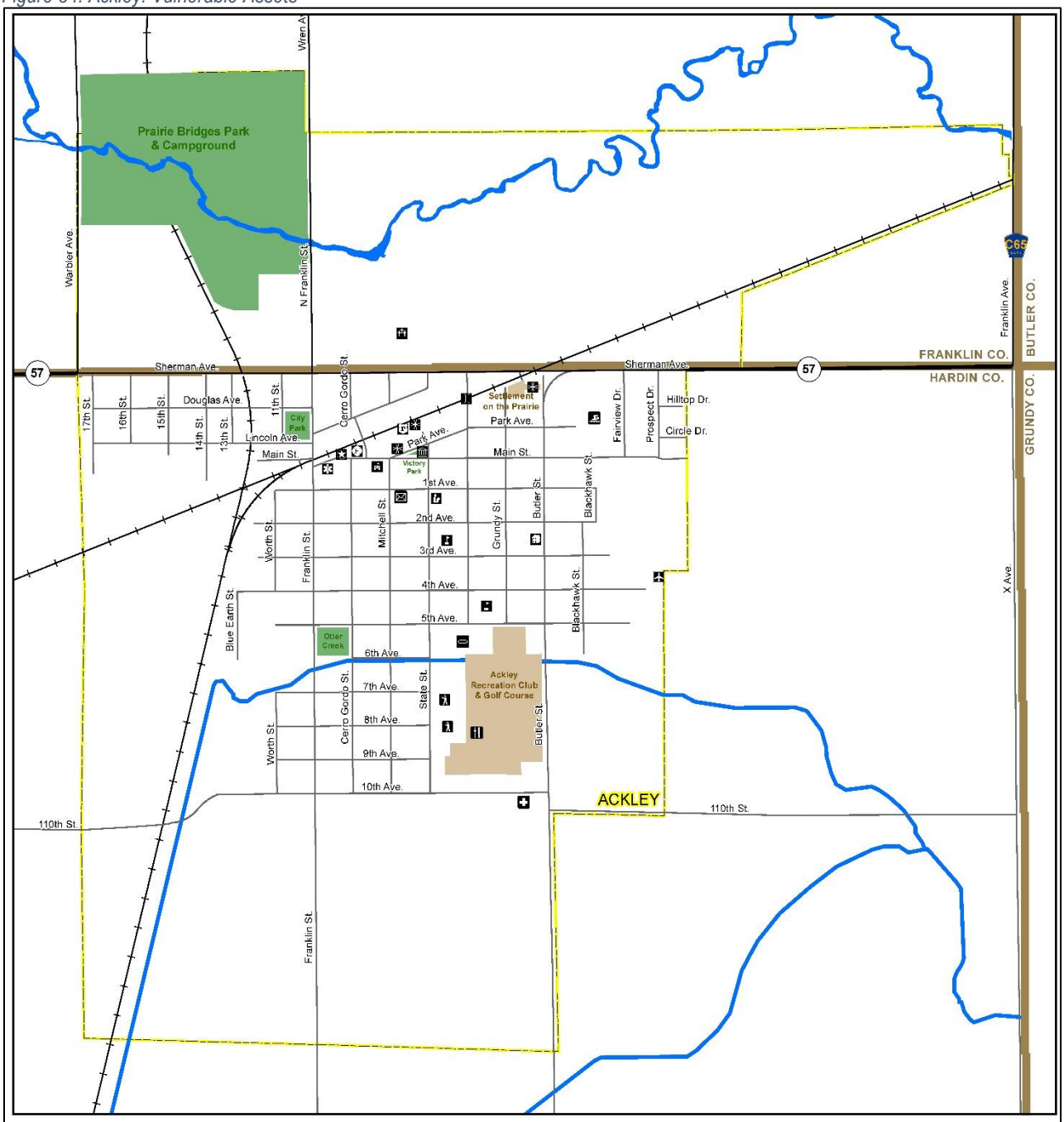


Figure 34: Ackley: Vulnerable Assets



PLEASE NOTE: This map is for general reference only. More detailed information and maps are available at city offices.

Legend

- Ackley Civic Center
- Ackley Recreation Club/Golf Course
- Airport
- Ambulatory Services
- Baseball Field
- City Hall/Heritage Center
- Fire Station
- Football Field
- Golf Course
- Historical Building
- Medical
- Municipal Pool
- Police Station
- Post Office
- Presbyterian Village
- Public Library
- School
- Veteran's Memorial
- Wooden Bridge
- Cemetery
- Corporate Limits
- Federal or State Highway
- Local Road
- County Line
- Park
- Railroad
- Water

Hardin County, Iowa

0 500 1,000 Feet

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Figure 35: Flood Hazard Boundary: Eldora

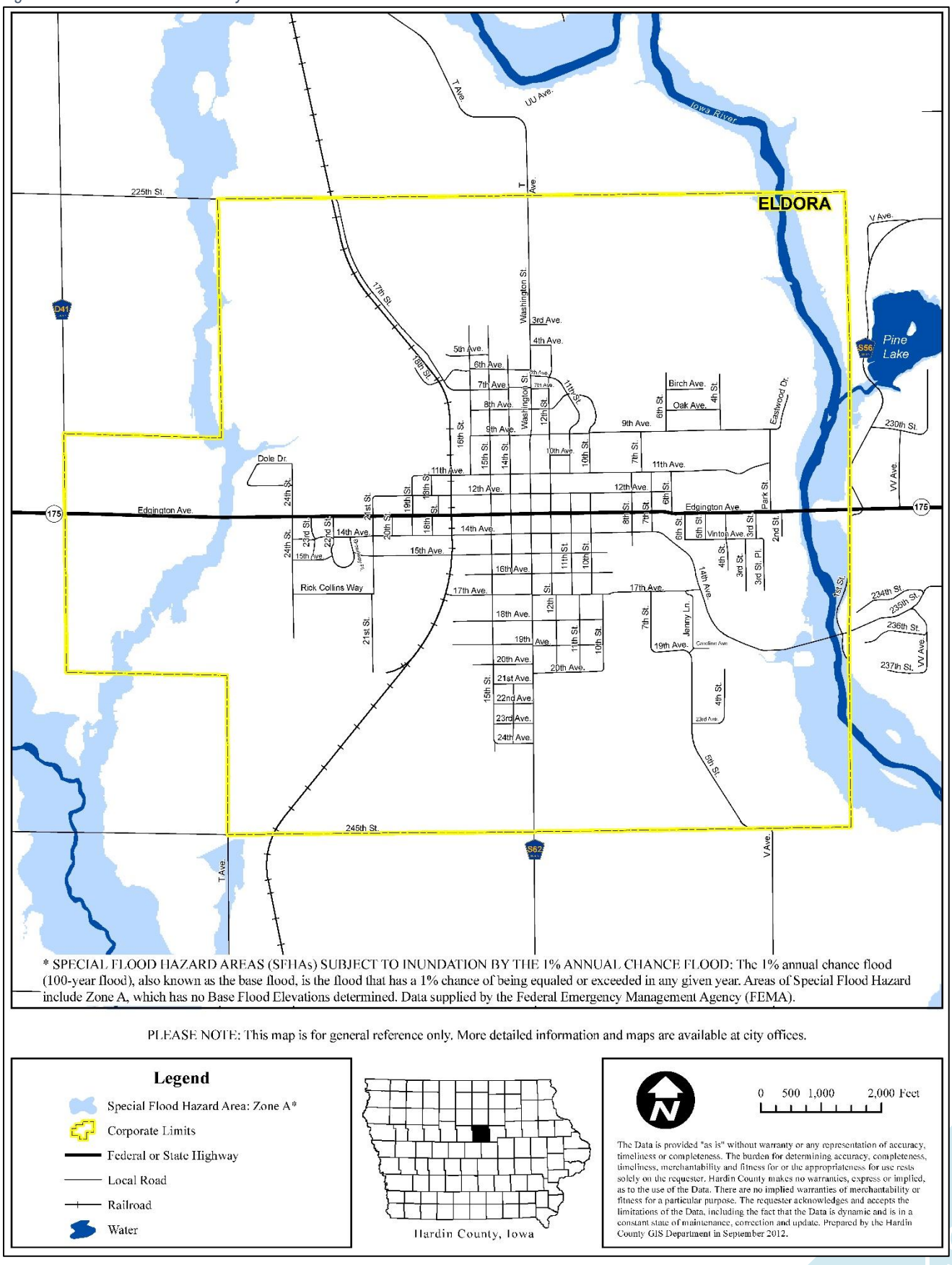
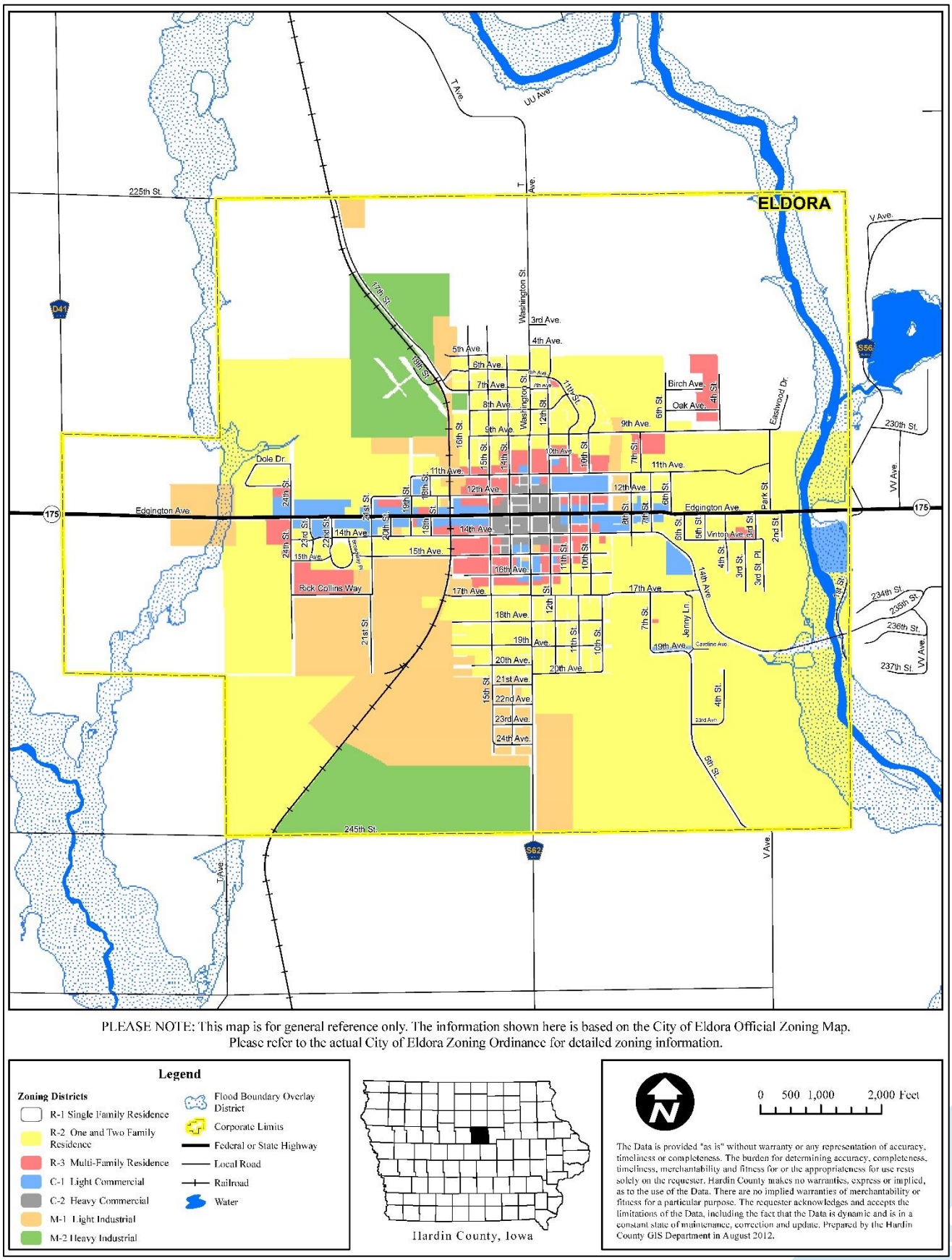
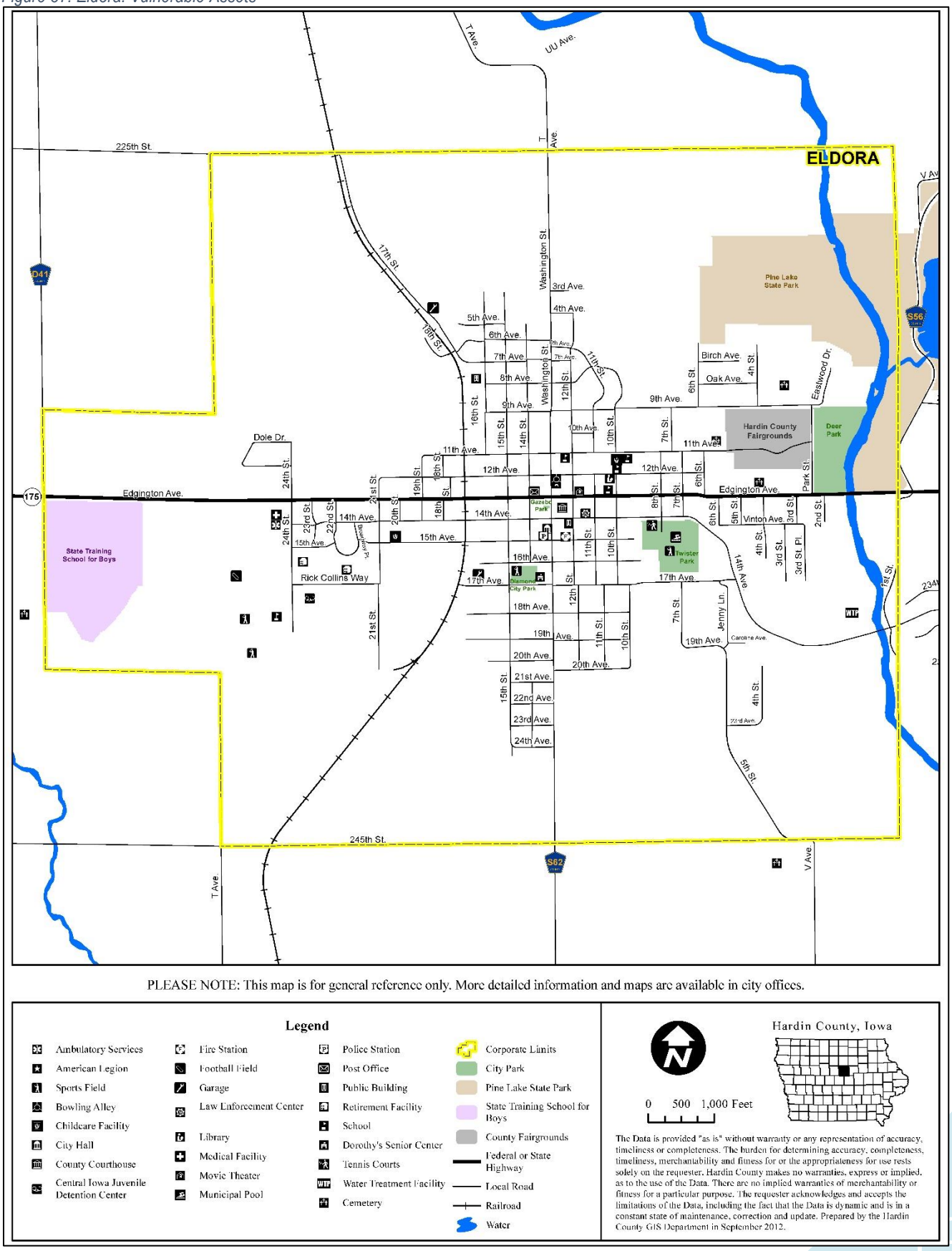


Figure 36: Flood Hazard Boundary and Land Use: Eldora



PLEASE NOTE: This map is for general reference only. The information shown here is based on the City of Eldora Official Zoning Map. Please refer to the actual City of Eldora Zoning Ordinance for detailed zoning information.

Figure 37: Eldora: Vulnerable Assets



PLEASE NOTE: This map is for general reference only. More detailed information and maps are available in city offices.

Legend

- Ambulatory Services
- American Legion
- Sports Field
- Bowling Alley
- Childcare Facility
- City Hall
- County Courthouse
- Central Iowa Juvenile Detention Center
- Fire Station
- Football Field
- Garage
- Law Enforcement Center
- Library
- Medical Facility
- Movie Theater
- Municipal Pool
- Police Station
- Post Office
- Public Building
- Retirement Facility
- School
- Dorothy's Senior Center
- Tennis Courts
- Water Treatment Facility
- Cemetery
- Corporate Limits
- City Park
- Pine Lake State Park
- State Training School for Boys
- County Fairgrounds
- Federal or State Highway
- Local Road
- Railroad
- Water

0 500 1,000 Feet

Hardin County, Iowa

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Figure 38: Flood Hazard Boundary: Iowa Falls

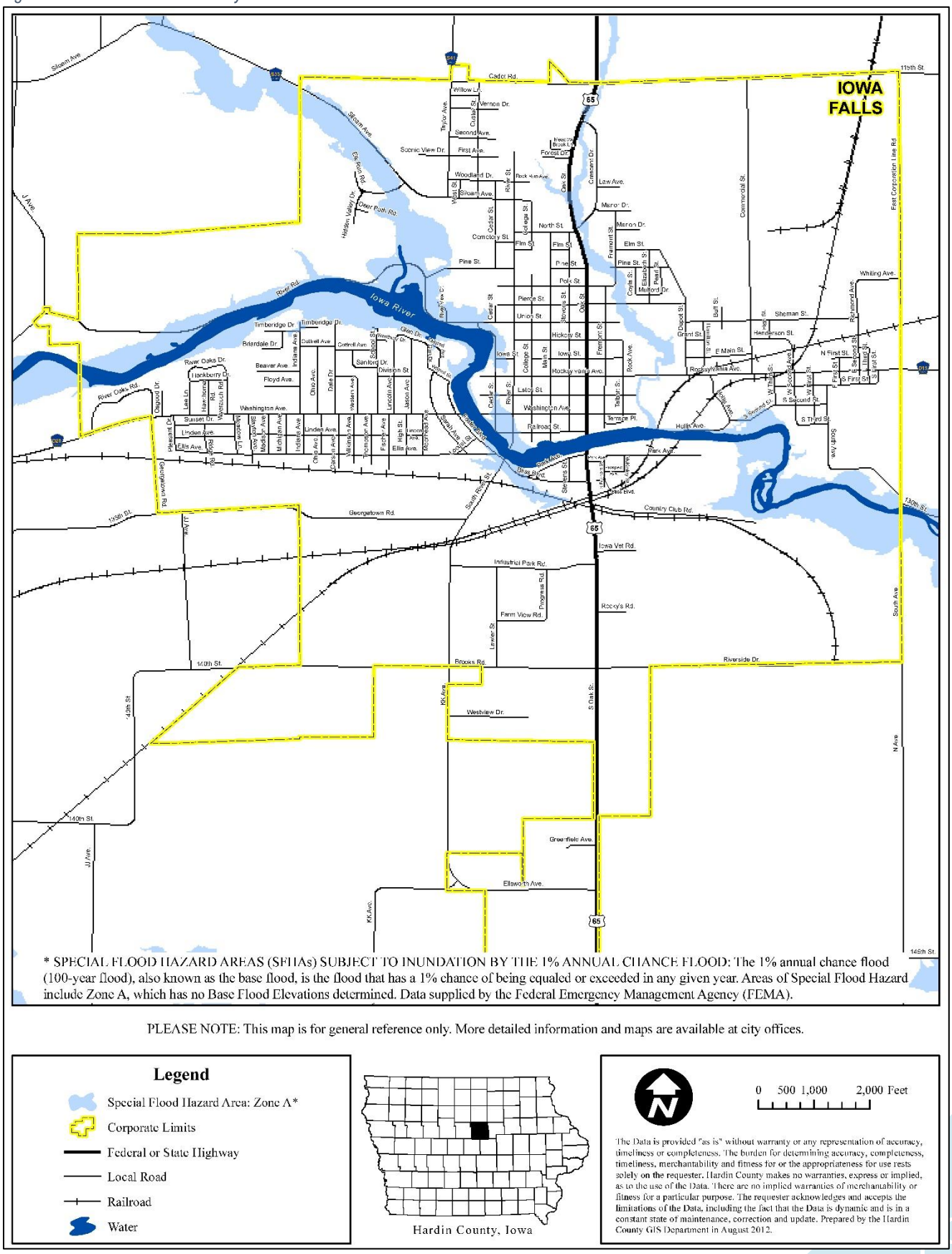


Figure 39: Flood Hazard Boundary and Land Use: Iowa Falls

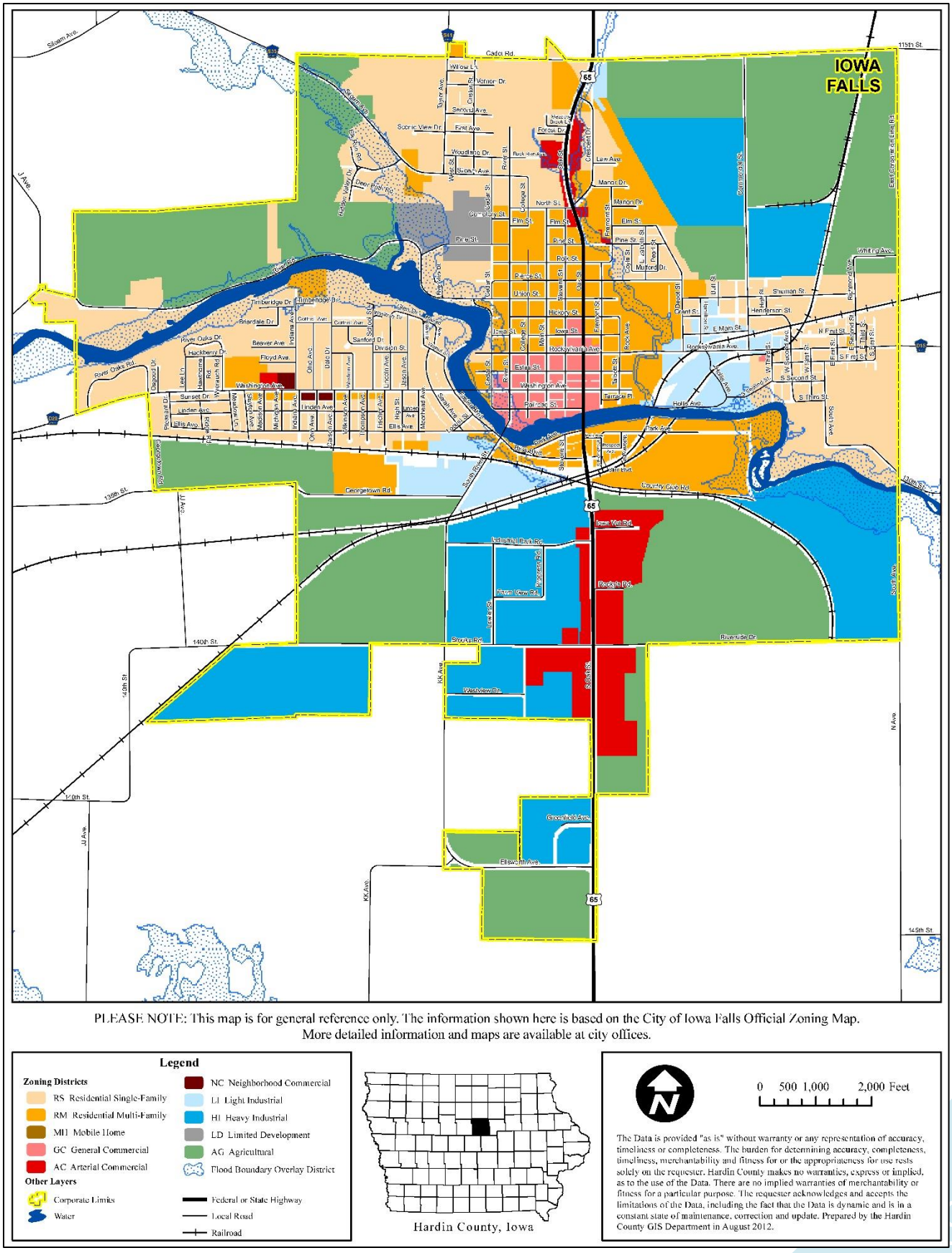
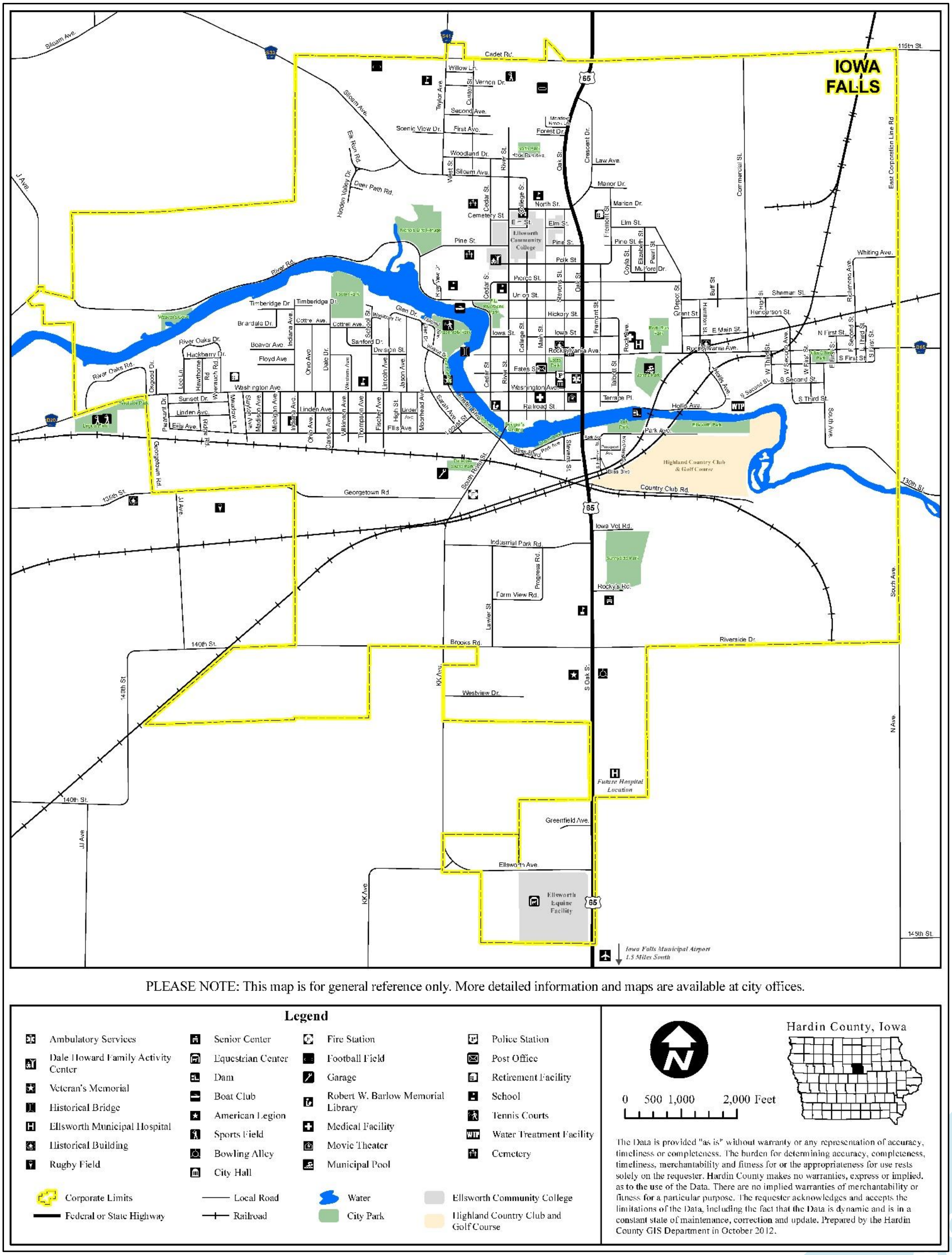


Figure 40: Iowa Falls: Vulnerable Assets



Maximum Extent

The Federal Emergency Management Agency has delineated the probable extent of the 1% annual chance floodplain in most areas. These Flood Insurance Rate Maps (FIRMs) show properties affected by the floods that have at least 1% chance of occurring in any particular year. Generally, these areas are in the floodplain or adjacent areas. As an estimate made from visual study of FEMA FIRMs, we can derive that 17% of the land in Hardin County is in or could be affected by the floodplain, with an understanding that there is no information for Buckeye, New Providence, Radcliffe, Whitten, and some parts of the other jurisdictions. A small portion of the land in Hardin County's incorporated cities is within the 1% annual chance floodplain, and a great deal of land outside the city corporate limits is also within the floodplain. All of the jurisdictions included in this plan are considered at risk.

Severity

Flooding impacts include potential loss of life; property damage and destruction; damage and disruption of communications, transportation, electric service, and community services; crop and livestock losses; and interruption of businesses. Hazards of fire, health and transportation accidents; and contamination of water supplies are likely effects of flooding situations as well.

Speed of Onset

Gauges along streams and rain gauges through the state provide for an early flood warning system. River flooding usually develops over the course of several hours or even days depending on the basin characteristics and the position of the particular reach of the stream. The national weather service provides flood forecasts for Iowa. Flood warnings are issued over emergency radio and television messages as well as the NOAA weather radios.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Flood	44	46	63	61	55	44	39	56	50

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown

Index Score	Overall Risk Ranking
0% - 25%	Low
26% - 50%	Medium
51% - 75%	High
76% - 100%	Extreme
N/A	Not Applicable or Unknown

Grass or Wildland Fire

Grass or Wildland Fire *[An uncontrolled fire that threatens life and property in either a rural or wooded area and is beyond normal day-to-day response capabilities]*

Description

Grass and wildland fires can occur when conditions are favorable such as during periods of drought when natural vegetation would be drier and subject to combustibility.

Historical Occurrence

According to the National Climatic Data Center, there have been no wildland or forest fire events reported in Hardin County (this hazard is called "Wildfire" in the NCDC). This does not account for small or contained grass fires that may not have been reported.

Probability

There is nearly 100% chance that there will be a grass fire in each county in the state each year. These may not be large enough to be recorded in the National Climatic Data Center.

Vulnerability

While wildfires have proven to be most destructive in the western states, they have become an increasingly frequent and damaging phenomenon nationwide. People choosing to live in wildland settings or the wildland-urban interface are more vulnerable to wildfires, and the value of exposed property is increasing at a faster rate than population. In Iowa, grass fires are often more easily contained and extinguished before there is damage to people or developed property. Fires often burn large portions of field crops in the fall when the crops are dry, and the harvesting equipment overheats or throws sparks. This can be quite costly to the farmer in terms of lost production.

Maximum Extent

Most grass fires are contained to highway right-of-way and rail right-of-way ditches and are less than a few acres in size. High winds can turn a small flame into a multi-acre grass fire within a matter of minutes. The extent is dependent upon conditions such as land use/land cover, moisture, and wind. Grass fires are equally likely to affect Hardin County communities where there is dense or high vegetation. Rural areas are much more likely to experience grass or wildland fire issues.

Severity

Most grass fires burn only the grasses, crops, or other low land cover. Injuries and deaths from fighting the fire most often occur by natural causes such as heart attack or stroke. Property damage is usually limited to grass, small trees, etc. Occasionally a house or outbuilding can be damaged or destroyed.

Speed of Onset

As mentioned above, most grassfires occur without warning and travel at a moderate rate. This situation depends upon conditions at the time such as moisture, wind, and land cover.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Grass or Wildland Fire	25	9	49	48	38	46	67	37	30

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Hailstorm

Hailstorm *[An outgrowth of a severe thunderstorm in which balls or irregularly shaped lumps of ice greater than 0.75 inches in diameter fall with rain]*

Description

Hail is produced by many strong thunderstorms. Strong rising currents of air within a storm carry water droplets to a height where freezing occurs. Ice particles grow in size until they are too heavy to be supported by the updraft. Hail can be as small as a pea or as large as a softball and can be very destructive to plants and crops. Pets and livestock are particularly vulnerable to hail.

Historical Occurrence

According to the National Climatic Data Center, there have been 112 hail events in Hardin County since 1971. The size of hail ranges from 0.75 inches in diameter to 3 inches. In total, 22 injuries were reported, all from the August 9, 2009 event, which heavily affected Eldora, Iowa. The property damage from these hail events cost $21.524 million and crop damage cost $56.472 million.

Figure 41: Hail Storm Incidents in Hardin County

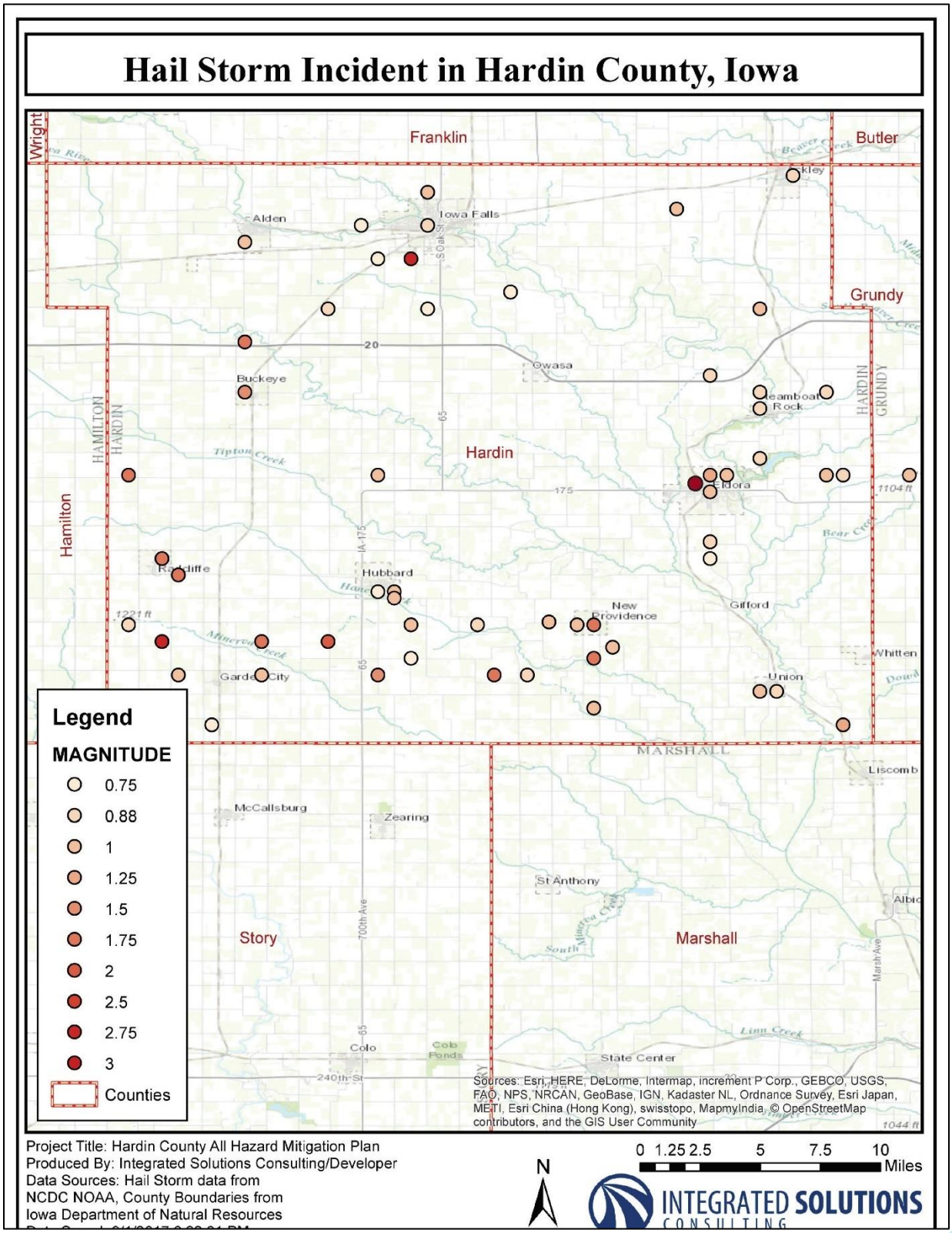


Table 44: Hail Events in Hardin County since 1971

Date	Magnitude	Deaths	Injuries	Property	Crops
4/15/2017	0.88	0	0	$0	$0
9/15/2016	0.88	0	0	$0	$0
6/3/2016	0.88	0	0	$0	$0
6/3/2016	0.88	0	0	$0	$0
6/3/2016	1	0	0	$0	$0
6/30/2014	1	0	0	$1,000	$5,000
6/30/2014	1	0	0	$0	$5,000
4/12/2014	0.88	0	0	$0	$0
4/12/2014	1.75	0	0	$10,000	$0
4/12/2014	1	0	0	$2,000	$0
4/12/2014	1	0	0	$0	$0
4/12/2014	1	0	0	$0	$0
4/12/2014	1	0	0	$2,000	$0
7/8/2013	0.75	0	0	$0	$5,000
4/29/2013	1	0	0	$10,000	$0
9/6/2010	1	0	0	$5,000	$10,000
6/18/2010	1.25	0	0	$3,000	$10,000
6/18/2010	1	0	0	$1,000	$5,000
8/9/2009	1.75	0	0	$500,000	$500,000
8/9/2009	1.75	0	0	$100,000	$100,000
8/9/2009	1.25	0	0	$25,000	$500,000
8/9/2009	3	0	22	$20,000,000	$55,000,000
8/9/2009	1	0	0	$2,000	$10,000
6/25/2008	0.88	0	0	$1,000	$15,000
6/14/2008	0.75	0	0	$0	$0
6/14/2008	0.88	0	0	$1,000	$5,000
6/14/2008	0.75	0	0	$0	$0
6/14/2008	0.88	0	0	$1,000	$5,000
5/25/2008	1.75	0	0	$10,000	$0
5/25/2008	0.88	0	0	$2,000	$0
5/25/2008	1.75	0	0	$10,000	$0
4/3/2007	0.88	0	0	$1,000	$0
4/2/2007	1	0	0	$3,000	$0
4/2/2007	1	0	0	$3,000	$0
6/24/2006	0.75	0	0	$0	$5,000
6/14/2006	0.75	0	0	$0	$5,000
4/13/2006	0.88	0	0	$2,000	$0
4/13/2006	0.88	0	0	$2,000	$0
4/13/2006	0.75	0	0	$0	$0
4/13/2006	1.75	0	0	$10,000	$0
4/13/2006	1	0	0	$2,000	$0
4/13/2006	2.75	0	0	$25,000	$0
4/13/2006	2	0	0	$25,000	$0
4/13/2006	1.5	0	0	$10,000	$0
4/13/2006	0.88	0	0	$2,000	$0
4/13/2006	1	0	0	$3,000	$0
4/13/2006	0.88	0	0	$2,000	$0

4/13/2006	1	0	0	$5,000	$0
4/13/2006	0.75	0	0	$0	$0
6/27/2005	0.88	0	0	$1,000	$5,000
6/27/2005	0.88	0	0	$2,000	$5,000
6/27/2005	0.88	0	0	$1,000	$5,000
6/27/2005	0.88	0	0	$1,000	$5,000
6/24/2005	0.88	0	0	$1,000	$5,000
6/8/2005	1	0	0	$5,000	$5,000
6/8/2005	0.75	0	0	$0	$5,000
6/8/2005	0.75	0	0	$0	$5,000
6/8/2005	0.75	0	0	$0	$5,000
6/8/2005	0.75	0	0	$0	$5,000
8/16/2004	1	0	0	$5,000	$5,000
5/21/2004	0.88	0	0	$3,000	$5,000
5/21/2004	1.75	0	0	$10,000	$5,000
5/21/2004	1.75	0	0	$20,000	$5,000
5/21/2004	1	0	0	$3,000	$5,000
5/21/2004	1	0	0	$3,000	$5,000
5/8/2004	1	0	0	$5,000	$3,000
5/8/2004	0.88	0	0	$3,000	$5,000
4/16/2004	0.88	0	0	$0	$0
7/9/2003	1.75	0	0	$10,000	$10,000
6/19/2002	0.75	0	0	$0	$5,000
4/18/2002	1.5	0	0	$15,000	$0
4/18/2002	1	0	0	$5,000	$0
4/18/2002	0.88	0	0	$3,000	$0
4/18/2002	1.75	0	0	$25,000	$0
4/18/2002	1	0	0	$7,000	$0
6/1/2001	1.75	0	0	$5,000	$5,000
6/1/2001	1.75	0	0	$30,000	$5,000
6/1/2001	1	0	0	$5,000	$3,000
6/1/2001	0.75	0	0	$0	$3,000
6/1/2001	0.75	0	0	$0	$10,000
6/1/2001	1.5	0	0	$10,000	$5,000
5/10/2001	1	0	0	$5,000	$0
5/10/2001	1	0	0	$3,000	$0
5/10/2001	1	0	0	$5,000	$0
5/10/2001	1.5	0	0	$10,000	$0
5/10/2001	1	0	0	$3,000	$0
5/10/2001	1.75	0	0	$25,000	$0
5/10/2001	2	0	0	$25,000	$0
9/13/2000	1	0	0	$3,000	$10,000
9/13/2000	1.75	0	0	$30,000	$30,000
5/30/2000	0.88	0	0	$2,000	$5,000
5/16/1999	2.5	0	0	$50,000	$0
5/16/1999	0.75	0	0	$1,000	$0
5/16/1999	0.75	0	0	$500	$0
5/16/1999	0.75	0	0	$500	$0
5/28/1998	3	0	0	$400,000	$100,000

6/5/1997	0.75	0	0	$1,000	$5,000
6/5/1997	0.75	0	0	$1,000	$3,000
6/23/1992	1	0	0	$0	$0
6/26/1990	1.75	0	0	$0	$0
5/30/1989	1.75	0	0	$0	$0
5/30/1989	1	0	0	$0	$0
5/30/1989	0.75	0	0	$0	$0
6/6/1980	1.75	0	0	$0	$0
6/6/1980	1.75	0	0	$0	$0
8/13/1976	1	0	0	$0	$0
6/22/1974	0.75	0	0	$0	$0
6/18/1974	1.75	0	0	$0	$0
9/21/1973	1.75	0	0	$0	$0
9/21/1973	1.75	0	0	$0	$0
7/6/1972	1	0	0	$0	$0
7/6/1972	1	0	0	$0	$0
5/31/1971	2.75	0	0	$0	$0
Total	**Average: 1.19**	**0**	**22**	**$21,524,000**	**$56,472,000**

Source: National Climatic Data Center (October, 2017)

Probability

Data on probability and frequency of occurrence of hailstorms is limited, but research indicates that any location in Iowa can expect on average two to three hailstorms per year.

Vulnerability

Agricultural crops such as corn and beans are particularly vulnerable to hailstorms stripping the plant of its leaves. Hail can also do considerable damage to vehicles and buildings. Hail only rarely results in loss of life directly, although injuries can occur.

Maximum Extent

The land area affected by a hail event is typically about the same size as the parent thunderstorm, an average of 15 miles in diameter around the center of the storm. Any area in Hardin County can be affected by this hazard.

Severity

Hailstorms cause nearly $1 billion annually in property and crop damage in the United States. The peak hail activity coincides with the Midwest's peak agricultural season. Financial impacts resulting from damage to property is in the millions of dollars every year, most of which is covered by crop and hazard insurance.

Speed of Onset

Forecasting hailstorms (as with their parent thunderstorms) is becoming quite accurate due to the advancement in Doppler radar and other technologies operated by the National Weather

Service and television network weather departments. Warnings are usually available 20 to 30 minutes prior to the occurrence of the storm.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Hailstorm	50	27	55	48	43	46	67	43	47

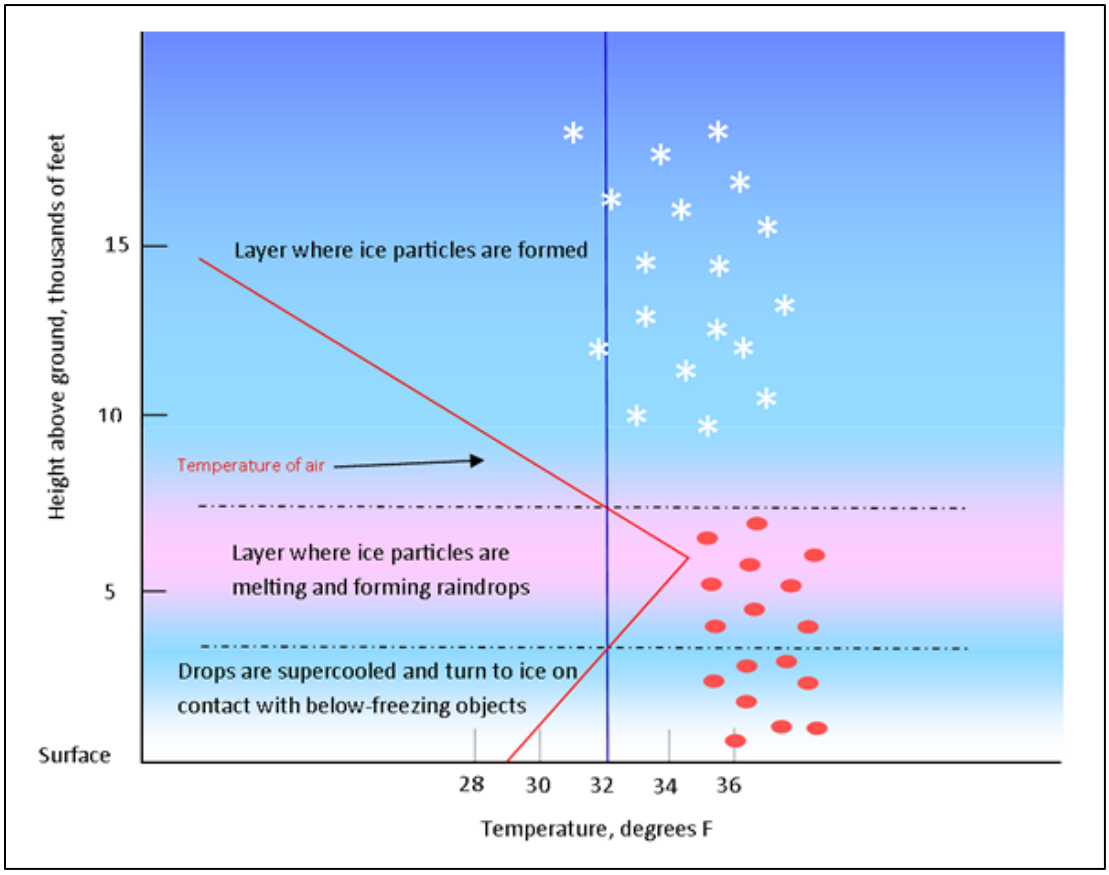
Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Ice Storm

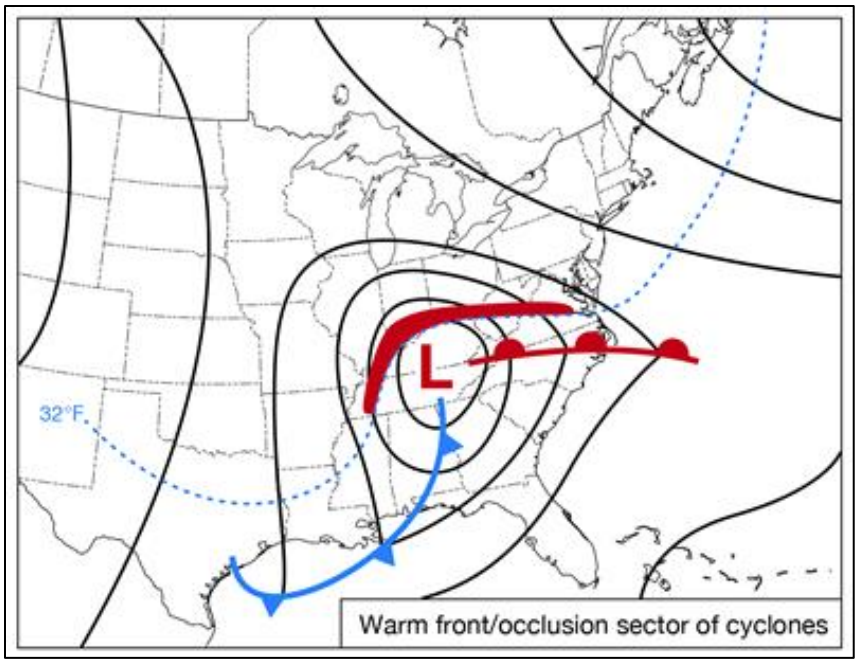
The U.S. National Weather Service defines ice storms as the accumulation of at least 1/4 inch (0.625 cm) of ice on exposed surfaces.

Description

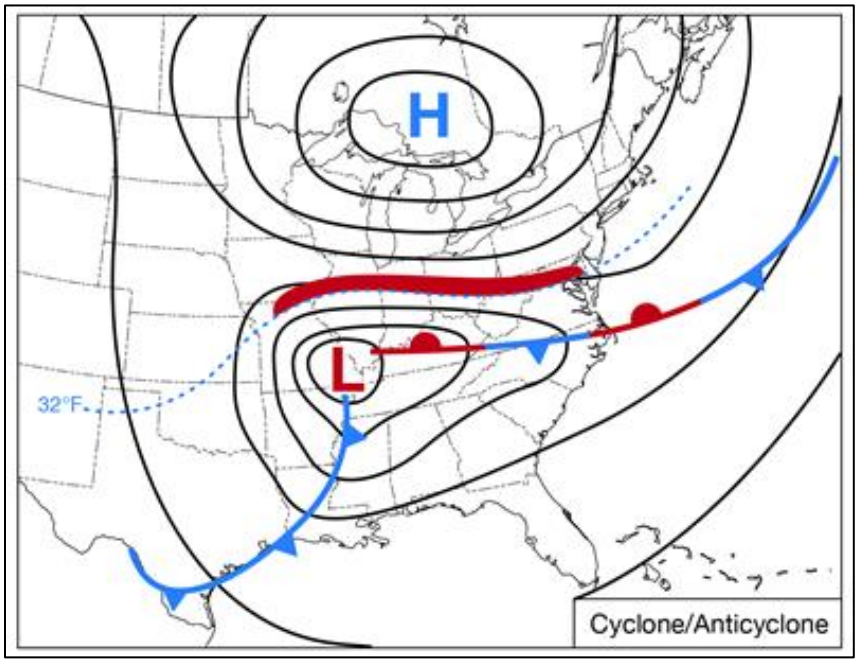
The ice formation process is influenced by general weather patterns. Typically, ice storms can develop when a moist winter warm front passes over a colder surface-air layer. Rain falls from a warmer layer (above 32ºF/0ºC) through layers of cooler air (below 32ºF/0ºC) without freezing, becoming super cooled. Less commonly, ice storms occur when the temperature at the top of clouds is greater than 15ºF (-10ºC), ice particles are in low concentration or do not form, and super cooled water arises. In either case, ice accumulates when super cooled rain freezes on contact with surfaces that are at or below the freezing point (32ºF/0ºC). Most ice storms last only a few hours, but they may occur over several days depending on weather patterns.



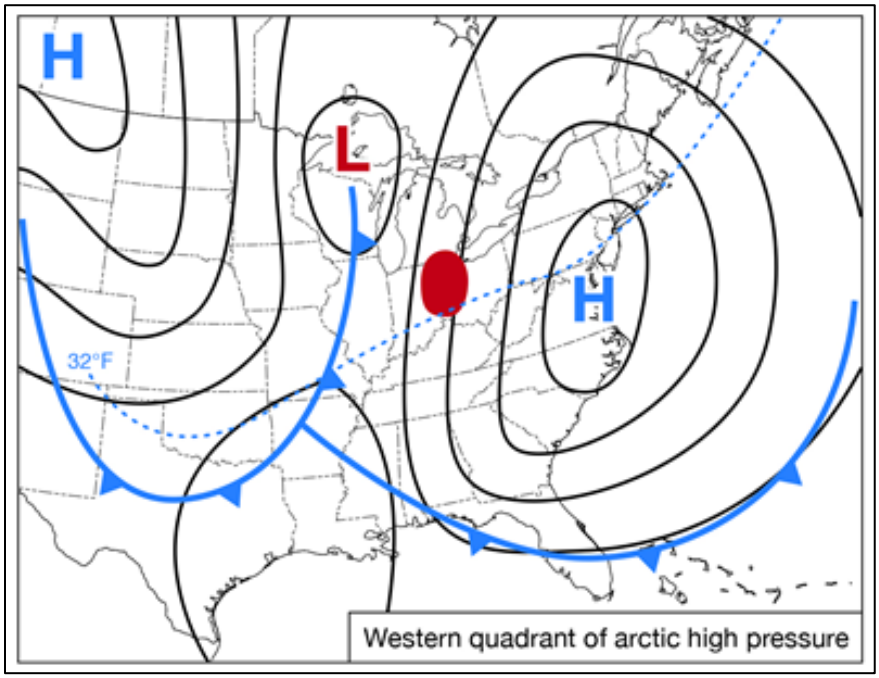
There are three winter weather patterns that tend to favor freezing rain in the Midwest.



This is the typical winter storm “model” in the Midwest. The majority of the precipitation tends to occur north and west of the low-pressure center (red band on the map). Rain can generally be found close to the low center and to the southeast where the temperature will be greater than freezing several hundred feet above the ground. The freezing rain will develop where the cold air near the ground is the shallowest, just north of the low center. North of the freezing rain area will typically be a band of ice pellets (sleet) and then further north, snow. In this situation the freezing rain tends to be light and of relatively short duration.



This weather pattern differs from the first one in that the surface high pressure system is centered due north or northeast of the low-pressure center. This setup maintains a flow of cold air near the surface and prevents the northward advancement of warmer air. Strong southerly winds in the warm sector southeast of the low feeds, moist air northward over the frontal boundary resulting in rising air which forms clouds and precipitation. This weather pattern typically results in the most severe ice storms. The severity arises from the tendency for the precipitation to be of long duration resulting in heavy icing, high winds in the area of ice accumulation due to the pressure difference between the high and the low, and surface temperatures well below freezing.



This weather pattern for freezing rain is the least common in the Midwest, occurring less than a third of the time compared to the previous two patterns. Southerly winds on the west side of the high and in advance of the low and trailing cold front can produce a band of clouds and precipitation. Freezing rain tends to occur in a circular pattern just north of the 32°F isotherm.

Historical Occurrence

According to the National Climatic Data Center, there have been 12 ice storm events in Hardin County since 1950. All of the recorded events have occurred from 1997 to 2017. There have been no deaths or injuries attributed to this hazard. Total property damage incurred totals $303,330.

Table 45: Ice Storm Historical Occurrences

Date	Deaths	Injuries	Property Damage	Crop Damage
12/21/1997	0	0	2.05K	0.00K
01/04/1998	0	0	20.40K	0.00K
03/17/1998	0	0	5.88K	0.00K
02/11/1999	0	0	5.00K	0.00K
02/08/2001	0	0	75.00K	0.00K
04/04/2003	0	0	5.00K	0.00K
01/01/2005	0	0	5.00K	0.00K
12/01/2007	0	0	10.00K	0.00K
12/11/2007	0	0	50.00K	0.00K
01/20/2010	0	0	100.00K	0.00K
01/27/2013	0	0	25.00K	0.00K
01/15/2017	0	0	0.00K	0.00K
TOTAL	**0**	**0**	**303.33K**	**0.00K**

Source: National Climatic Data Center (October, 2017)

Probability

Data on probability of ice storms in this region is limited, but recent trends indicate that Hardin County can expect an ice storm once every two to three years on average. However, data also suggests it is possible that ice storms could become more frequent across the Midwest due to shifts in oceanic currents.

Vulnerability

Urban areas are more vulnerable to economic and physical damage than rural areas because of the concentration of utilities and transportation systems — all of which may be affected to a great degree by an ice storm.

Businesses or any other place that relies on electricity to function would be vulnerable in the event of an ice storm. Those without adequate shelter or heating resources, populations dependent on electricity for life support functions, and individuals who choose to attempt transportation would all be especially at risk as well. Trees and agricultural crops are also particularly susceptible to the effects of an ice storm.

Maximum Extent

Ice storms can impact large areas, often severely impeding the functioning of multiple counties. In the worst U.S. incidents, ice storms impacted entire states, requiring presidential disaster declarations. The damage or power outages caused by ice storms can sometimes last for several days or weeks.

Severity

Injuries or fatalities can occur easily during an ice storm, as roads often become almost impossible to safely traverse. People may be unable to travel entirely or even safely exit their homes in the worst situations. The loss of power during ice storms has indirectly resulted in a relatively high rate of illness and death due to unintentional carbon monoxide (CO) poisoning. Damage to electrical facilities can often lead to widespread power outages lasting for extended periods of time. Roads may be blocked by downed trees and power lines, requiring substantial disaster response. Besides impacts on critical infrastructure, trees and crops will likely also be heavily damaged by the weight of ice accumulation.

Speed of Onset

Although winter storms in general can be predicted with relatively high accuracy up to a week in advance, predicting what form precipitation will fall in (and in what amounts) can be extremely difficult. Local conditions may influence whether rain, freezing rain, or snow will fall. Meteorologists typically can predict where the general precipitation lines will fall a few days before it occurs, however.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Ice Storms	38	34	63	58	50	40	33	52	44

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Severe Winter Storm

Severe Winter Storm *[Severe winter weather conditions that affect day-to-day activities. These can include blizzard conditions, heavy snow, bowing snow, freezing rain, heavy sleet, and extreme cold]*

Description

Winter storms are common during winter months of October through April. The various types of extreme winter weather cause considerable damage. Heavy snows cause immobilized transportation systems, downed trees and power lines, collapsed buildings, and loss of livestock and wildlife.

Blizzard conditions are winter storms which last at least three hours with sustained wind speeds of 35 mph or more, reduced visibility of ¼ mile or less, and white-out conditions. Heavy snows of more than six inches in a 12-hour period or freezing rain greater than ¼ inch accumulation causing hazardous conditions in the community can slow or stop the flow of vital supplies as wells as disrupting emergency and medical services. Loose snow begins to drift when the wind speed reaches 9 to 10 mph under freezing conditions. The potential for some drifting 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 losses over large areas of Iowa and rendered assistance unavailable to those in need due to impassable roads. Frigid temperatures and wind chills are dangerous to people, particularly the elderly and the very young. Dangers include frostbite or hypothermia. Water pipes, livestock, fish and wildlife, and pets are also at risk from extreme cold and severe winter weather.

Historical Occurrence

There are many accounts of large numbers of deaths due to cold and blizzards in Iowa's history. While we are not as vulnerable as the early settlers, there are recent accounts of multiple deaths from snowstorms and extreme cold around the state.

Since 1996, Hardin County has had 75 blizzards, extreme cold/wind chill, frost/freeze, heavy snow, ice storm, winter storm, and winter weather events, causing no deaths or injuries, but incurring $1,445,680 in property damage and $4,000,000 in crop damage.

Table 46: Blizzard Events in Hardin County since 1996

Date	Deaths	Injuries	Property Damages	Crop Damages
2/7/2016	0	0	$0	$0
1/8/2015	0	0	$0	$0
2/20/2014	0	0	$25,000	$0
1/26/2014	0	0	$10,000	$0
12/20/2012	0	0	$100,000	$0
2/1/2011	0	0	$25,000	$0
12/11/2010	0	0	$75,000	$0
1/25/2010	0	0	$75,000	$0
12/9/2009	0	0	$50,000	$0
12/20/2008	0	0	$0	$0
3/1/2007	0	0	$100,000	$0
1/22/2005	0	0	$5,000	$0
3/9/2002	0	0	$5,000	$0
12/21/2000	0	0	$20,000	$0
12/18/2000	0	0	$25,000	$0
1/17/1999	0	0	$5,000	$0
1/9/1997	0	0	$0	$0
3/24/1996	0	0	$0	$0
1/28/1996	0	0	$0	$0
1/26/1996	0	0	$0	$0
1/18/1996	0	0	$0	$0
Total	**0**	**0**	**$520,000**	**$0**

Source: National Climatic Data Center (December, 2016)

Table 47: Extreme Cold/Wind Chill Events in Hardin County since 1996

Date	Deaths	Injuries	Property Damages	Crop Damages
1/6/2015	0	0	$0	$0
1/27/2014	0	0	$0	$0
1/5/2014	0	0	$0	$0
Total	**0**	**0**	**$0**	**$0**

Source: National Climatic Data Center (December, 2016)

Table 48: Frost/Freeze Events in Hardin County since 1996

Date	Deaths	Injuries	Property Damages	Crop Damages
4/11/2012	0	0	$0	$1,500,000
10/10/2009	0	0	$0	$2,500,000
5/13/1997	0	0	$0	$0
9/14/1996	0	0	$0	$0
Total	**0**	**0**	**$0**	**$4,000,000**

Source: National Climatic Data Center (December, 2016)

Table 49: Heavy Snow Events in Hardin County since 1996

Date	Deaths	Injuries	Property Damages	Crop Damages
2/25/2015	0	0	$0	$0
1/5/2015	0	0	$0	$0
2/26/2013	0	0	$5,000	$0
1/20/2012	0	0	$0	$0
12/8/2009	0	0	$10,000	$0
1/20/2007	0	0	$0	$0
12/14/2005	0	0	$5,000	$0
1/4/2005	0	0	$10,000	$0
2/2/2004	0	0	$0	$0
3/4/2003	0	0	$1,000	$0
3/1/2002	0	0	$5,000	$0
3/7/1998	0	0	$50,000	$0
1/20/1998	0	0	$10,450	$0
2/3/1997	0	0	$0	$0
12/25/1996	0	0	$0	$0
1/26/1996	0	0	$0	$0
Total	**0**	**0**	**$96,450**	**$0**

Source: National Climatic Data Center (December, 2016)

Table 50: Ice Storm Events in Hardin County since 1996

Date	Deaths	Injuries	Property Damages	Crop Damages
1/27/2013	0	0	$25,000	$0
1/20/2010	0	0	$100,000	$0
12/11/2007	0	0	$50,000	$0
12/1/2007	0	0	$10,000	$0
1/1/2005	0	0	$5,000	$0
4/4/2003	0	0	$5,000	$0
2/8/2001	0	0	$75,000	$0
2/11/1999	0	0	$5,000	$0
3/17/1998	0	0	$5,880	$0
1/4/1998	0	0	$20,400	$0
12/21/1997	0	0	$2,050	$0
Total	**0**	**0**	**$303,330**	**$0**

Source: National Climatic Data Center (December, 2016)

Table 51: Winter Storm Events in Hardin County since 1996

Date	Deaths	Injuries	Property Damages	Crop Damages
2/2/2016	0	0	$0	$0
12/28/2015	0	0	$0	$0
11/20/2015	0	0	$0	$0
2/1/2015	0	0	$50,000	$0
3/10/2013	0	0	$5,000	$0
1/30/2013	0	0	$25,000	$0
12/19/2012	0	0	$25,000	$0
1/6/2010	0	0	$25,000	$0
4/5/2009	0	0	$20,000	$0
12/18/2008	0	0	$5,000	$0
12/8/2008	0	0	$10,000	$0
2/24/2007	0	0	$250,000	$0
4/6/2003	0	0	$5,000	$0
2/8/2001	0	0	$50,000	$0
12/10/2000	0	0	$24,900	$0
2/17/2000	0	0	$10,000	$0
1/19/2000	0	0	$1,000	$0
3/8/1999	0	0	$10,000	$0
1/1/1999	0	0	$10,000	$0
Total	**0**	**0**	**$525,900**	**$0**

Source: National Climatic Data Center (December, 2016)

Table 52: Winter Weather Events in Hardin County since 1996

Date	Deaths	Injuries	Property Damages	Crop Damages
1/28/2003	0	0	$0	$0
Total	**0**	**0**	**$0**	**$0**

Source: National Climatic Data Center (December, 2016)

Probability

Winter storms regularly move easterly and use both the southward plunge of arctic cold air from Canada and the northward flow of moisture from the Gulf of Mexico to produce heavy snow and sometimes blizzard conditions in Iowa and other parts of the Midwest. From 1983 to 1998, Des Moines averaged nearly 50 days a year with falling snow. The cold temperatures, strong winds, and heavy precipitation are the ingredients of winter storms. Most counties can usually expect 2 or 3 winter storms a season with an extreme storm every 3 to 5 years on average. A snowfall of 6 inches or more from one storm only occurs in 49% of Iowa winters, while a large winter storm of 10 inches or more will occur about once every three years.

Vulnerability

Hazardous driving conditions due to snow and ice on highways and bridges lead to many traffic accidents. The leading cause of death during winter storms is transportation accidents. About 70% of winter-related deaths occur in automobiles and about 25% are people caught out in the storm. The majority of these are males over 40 years of age. Emergency services such as police, fire, and ambulance are unable to respond due to road conditions. Emergency needs of remote or isolated residents for food or fuel, as well as feed, water, and shelter for livestock are unable to be met. People, pets, and livestock are also susceptible to frostbite and hypothermia during winter storms. Those at risk are primarily either engaged in outdoor activity like shoveling snow, digging out vehicles, assisting stranded motorists, or are the elderly or very young. Schools often close during extreme cold or heavy snow conditions to protect the safety of children and bus drivers. Citizens' use of kerosene heaters and other alternative forms of heating may create other hazards such a structural fires and carbon monoxide poisoning.

Maximum Extent

Winter storms are quite vast and would likely impact multiple counties. Certain areas may experience local variations in storm intensity and quantity of snow or ice. The Iowa Department of Transportation, county road departments, and local public works agencies are responsible for the removal of snow and treatment of snow and ice with sand and salt on the hundreds of miles of streets and highways in the area. Overall, any area of Hardin County can be affected.

Severity

Immobilized transportation, downed trees and electrical wire, building and communication tower collapse, and bodily injury or death are just a few of the impacts of a severe winter storm. Vehicle batteries and diesel engines are stressed, and the fuel often gels in extreme cold weather. This impacts transportation, trucking, and rail traffic. Rivers and lakes freeze, and subsequent ice jams threaten bridges and can close major highways. Ice jams can also create flooding problems when temperatures begin to rise.

An ice coating at least ¼ inch in thickness is heavy enough to damage trees, overhead wires, and similar objects and to produce widespread power outages. Buried water pipes can burst causing massive ice problems, loss of water, and subsequent evacuations during sub-zero temperatures.

Fire during winter storms presents a great danger because water supplies may freeze, and firefighting equipment may not function effectively, or personnel and equipment may be unable to get to the fire. If power is out, interiors of homes become very cold, causing pipes to freeze and possibly burst.

Cold temperature impacts on agriculture are frequently discussed in terms of frost and freeze impacts early or late in growing seasons and on unprotected livestock. The cost of snow removal, repairing damage, and loss of business can have large economic impacts on a community.

Speed of Onset

The National Weather Service has developed effective weather advisories that are promptly and widely distributed. Radio, television, and Weather Alert Radios provide the most immediate means to do this. Accurate information is made available to public officials and the public up to a day in advance. Several notifications made by the National Weather Service include winter storm warning, blizzard warning, winter weather advisory, and a frost/freeze advisory.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Severe Winter Storm	56	41	63	61	43	42	33	53	55

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Sinkholes

Sinkholes *[Land surface that is collapsed into subsurface voids]*

Description

Sinkholes are common where the rock below the land surface is limestone, carbonate rock, salt beds, or rocks that can naturally be dissolved by ground water circulating through them. As the rock dissolves, spaces and caverns develop underground. Sinkholes are dramatic because the land usually stays intact for a while until the underground spaces just gets too big. If there is not enough support for the land above the spaces, then a sudden collapse of the land surface can occur. These collapses can be small, or they can be huge and can occur where a house or road is on top.

Karst is a term that refers to geologic, hydrologic, and landscape features associated with the dissolution of soluble rocks, such as carbonates and evaporites. A common feature of karst landscapes are sinkholes, which form when the land surface collapses into subsurface voids formed in the slowly dissolving rock.

In Iowa, carbonate rocks form the uppermost bedrock over roughly the eastern half of the state, and are mantled with a variable thickness of glacial and other unconsolidated materials. Where these unconsolidated materials are less than 50 feet, and particularly less than 25 feet thick, sinkholes may occur.

New sinkholes have been correlated to land-use practices, especially from ground-water pumping and from construction and development practices. Sinkholes can also form when natural water- drainage patterns are changed, and new water-diversion systems are developed. Some sinkholes form when the land surface is changed, such as when industrial and runoff-storage ponds are created. The substantial weight of the new material can trigger an underground collapse of supporting material, thus causing a sinkhole.

The overburden sediments that cover buried cavities in the aquifer systems are delicately balanced by ground-water fluid pressure. The water below ground is actually helping to keep the surface soil in place. Ground-water pumping for urban water supply and for irrigation can produce new sinkholes in sinkhole-prone areas. If pumping results in a lowering of ground-water levels, then underground structural failure, and thus, sinkholes, can occur.

Historical Occurrence

There are three areas in Iowa where large numbers of sinkholes exist: (1) within the outcrop belt of the Ordovician Galena Group carbonates in Allamakee, Clayton, and Winneshiek counties; (2) in Devonian carbonates in Bremer, Butler, Chickasaw, and particularly Floyd and Mitchell counties; and (3) along the erosional edge of Silurian carbonates in Dubuque and Clayton counties.

According to the Iowa Department of Natural Resources, there are no significant sink holes in Hardin County. However, according to the Iowa DNR, the areas immediately West of Iowa Falls, West and East of Gifford, North of Eldora, and South of Union have the potential for a karst.

Probability

In Hardin County, Ackley, Eldora, Iowa Falls, and Steamboat Rock are all susceptible to the sinkhole hazard with no less than one third of each jurisdiction in the hazard area extent. Buckeye is directly adjacent to a sinkhole hazard area, creating the possibility of some land in the jurisdiction to be affected. Unlike other counties in Region 6's Jurisdiction, there are several large rural areas in most of the townships that are susceptible to sink holes but like other counties, there is no history of this issue so the probability of a sinkhole occurring is very low. However, according to Hardin County Emergency Management, there is one sink hole in rural northern Hardin County that is close to taking away a historic cemetery.

Vulnerability

If a sinkhole were to form, people and structures located on or near the sink hole are the most at risk for injury, death, and property damage. People can be injured while the sinkhole is forming as well as after by falling into the open sinkhole. People, buildings, and infrastructure can basically be swallowed by a sink hole.

Maximum Extent

There are three areas in Iowa where large numbers of sinkholes exist: (1) within the outcrop belt of the Ordovician Galena Group carbonates in Allamakee, Clayton, and Winneshiek counties; (2) in Devonian carbonates in Bremer, Butler, Chickasaw, and particularly Floyd and Mitchell counties; and (3) along the erosional edge of Silurian carbonates in Dubuque and Clayton counties. The only areas that are at risk for this hazard are unincorporated portions of Hardin County. For this jurisdiction, the worst-case scenario would be if a sink hole actually developed in these areas, but the sink hole would more than likely not be large.

Severity

Sinkhole impacts included potential loss of life; property damage and destruction; damage and disruption of communications, transportation, electric service, and community services; crop and livestock losses; and interruption of businesses. Hazards of fire, health, and transportation accidents; and contamination of water supplies are likely effects. Much of this depends on the location and size of a sinkhole.

Most of Iowa's sinkholes occur in rural areas where their main impact is rendering some land unsuitable for row-crop agriculture. Sinkholes have also resulted in the failure of farm and other types of ponds, roads, and one sewage-treatment lagoon. As sinkholes sometimes allow surface runoff to directly enter bedrock aquifers, their presence has implications for groundwater quality.

Speed of Onset

Sinkholes are a geological hazard that forms over time. A community can only be aware of their potential to develop a sink hole but often cannot be warned before a sinkhole forms.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Sinkholes	6	2	49	33	32	46	67	31	14

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Thunderstorm and Lightning

Thunderstorm and Lightning *[Atmospheric imbalance and turbulence resulting in heavy rains, winds reaching or exceeding 58 mph, tornadoes, or surface hail at least 0.75 inches in diameter]*

Description

Thunderstorms are common in Iowa and can occur singly, in clusters, or in lines. They are formed from a combination of moisture, rapidly raising warm air, and a lifting mechanism such as clashing warm and cold air masses. Most thunderstorms produce only thunder, lightning, and rain. Severe storms, however, can produce tornadoes, high straight-line winds above 58 mph or higher, microburst, lightning, hailstorms, and flooding.

The National Weather Service considers a thunderstorm severe if it produces hail at least ¾ inch in diameter, wind 58 mph or higher, or tornadoes. High straight-line winds, which can often exceed 60 mph, are common occurrences and are often mistaken for tornadoes.

Lightning is an electrical discharge that results from the buildup of positive and negative charges within a thunderstorm. When the buildup becomes strong enough, lightning appears as a “bolt.” This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning reaches temperatures approaching 50,000 degrees Fahrenheit in a split second. This rapid heating, expansion, and cooling of air near the lightning creates thunder.

Historical Occurrence

According to the National Climatic Data Center, Hardin County has experienced 145 thunderstorm wind and lightning events since 1959 (although it is expected that there have been more lightning events than recorded in the NCDC). Out of these events, no deaths and no injuries occurred. The total property damage from these storms was just over $4 million, and the crop damage totals $1.5 million. The wind speeds ranged from zero mph to over 103 mph (90 knots).

Table 53: Lightning Events in Hardin County Since 1959

Date	Deaths	Injuries	Property Damages	Crop Damages
8/3/2004	0	0	$50,000	$0
8/5/2000	0	0	$3,000	$0
7/16/2000	0	0	$75,000	$0
Total	**0**	**0**	**$128,000**	**$0**

Source: National Climatic Data Center (October, 2017)

Table 54: Thunderstorm Wind Events in Hardin County Since 1959

Date	Wind Speed	Deaths	Injuries	Property Damages	Crop Damages
6/28/2017	50	0	0	$0	$0
4/15/2017	52	0	0	$0	$0
3/6/2017	61	0	0	$20,000	$0
3/6/2017	56	0	0	$0	$0
3/6/2017	61	0	0	$15,000	$0
7/17/2016	56	0	0	$10,000	$0
7/17/2016	56	0	0	$20,000	$0
7/17/2016	61	0	0	$20,000	$0
7/17/2016	76	0	0	$0	$0
7/6/2016	52	0	0	$0	$0
6/3/2016	54	0	0	$0	$0
6/3/2016	61	0	0	$10,000	$0
8/9/2015	63	0	0	$30,000	$0
6/22/2015	65	0	0	$10,000	$0
6/22/2015	65	0	0	$20,000	$0
8/31/2014	48	0	0	$0	$1,000
8/31/2014	48	0	0	$0	$1,000
8/31/2014	48	0	0	$0	$1,000
8/31/2014	57	0	0	$5,000	$0
8/31/2014	52	0	0	$0	$0
8/31/2014	52	0	0	$0	$0
6/30/2014	70	0	0	$10,000	$25,000
6/30/2014	56	0	0	$0	$0
6/30/2014	65	0	0	$75,000	$0
6/16/2014	53	0	0	$25,000	$0
7/22/2013	52	0	0	$2,000	$0
7/22/2013	56	0	0	$5,000	$0
5/29/2013	52	0	0	$0	$0
5/20/2013	52	0	0	$5,000	$0
9/2/2011	65	0	0	$100,000	$50,000
9/2/2011	72	0	0	$500,000	$500,000
9/2/2011	52	0	0	$3,000	$0
9/2/2011	52	0	0	$5,000	$0
9/2/2011	65	0	0	$50,000	$100,000
7/22/2011	50	0	0	$10,000	$0
7/22/2011	61	0	0	$10,000	$0
6/20/2011	61	0	0	$0	$15,000
7/16/2010	52	0	0	$2,000	$0
6/25/2010	56	0	0	$5,000	$0
6/25/2010	50	0	0	$2,000	$0
6/17/2010	52	0	0	$3,000	$0
8/9/2009	61	0	0	$500,000	$100,000
8/9/2009	61	0	0	$25,000	$10,000
8/9/2009	89	0	0	$25,000	$50,000
8/9/2009	90	0	0	$1,000,000	$500,000
8/9/2009	61	0	0	$5,000	$10,000
8/9/2009	57	0	0	$10,000	$0

6/23/2009	57	0	0	$15,000	$0
6/23/2009	54	0	0	$5,000	$0
6/23/2009	61	0	0	$5,000	$10,000
6/23/2009	59	0	0	$2,000	$0
6/15/2008	61	0	0	$20,000	$0
6/15/2008	52	0	0	$5,000	$0
6/15/2008	52	0	0	$10,000	$0
6/15/2008	50	0	0	$5,000	$0
6/15/2008	65	0	0	$0	$0
6/14/2008	52	0	0	$2,000	$0
6/11/2008	60	0	0	$2,000	$0
5/25/2008	61	0	0	$15,000	$0
5/25/2008	61	0	0	$20,000	$0
4/24/2008	52	0	0	$1,000	$0
7/18/2007	50	0	0	$3,000	$0
7/18/2007	52	0	0	$10,000	$0
6/21/2007	61	0	0	$3,000	$0
3/31/2007	52	0	0	$1,000	$0
3/31/2007	71	0	0	$5,000	$0
3/30/2006	52	0	0	$10,000	$0
3/30/2006	52	0	0	$5,000	$0
3/30/2006	65	0	0	$25,000	$0
6/29/2005	65	0	0	$5,000	$0
6/29/2005	61	0	0	$10,000	$0
6/29/2005	50	0	0	$1,000	$0
6/27/2005	61	0	0	$10,000	$0
6/27/2005	65	0	0	$5,000	$10,000
6/27/2005	57	0	0	$5,000	$0
8/16/2004	52	0	0	$3,000	$0
8/3/2004	70	0	0	$25,000	$5,000
8/3/2004	57	0	0	$15,000	$5,000
8/3/2004	57	0	0	$10,000	$2,000
8/3/2004	52	0	0	$5,000	$0
5/29/2004	52	0	0	$5,000	$0
8/26/2003	52	0	0	$5,000	$2,000
8/26/2003	50	0	0	$2,000	$0
7/9/2003	56	0	0	$15,000	$5,000
4/18/2002	56	0	0	$10,000	$0
9/7/2001	70	0	0	$75,000	$10,000
9/7/2001	65	0	0	$35,000	$5,000
9/7/2001	52	0	0	$5,000	$0
8/22/2001	61	0	0	$2,000	$5,000
4/20/2001	75	0	0	$100,000	$0
4/11/2001	70	0	0	$15,000	$0
4/11/2001	70	0	0	$20,000	$0
7/9/2000	52	0	0	$5,000	$0
6/13/2000	52	0	0	$5,000	$0
6/13/2000	61	0	0	$25,000	$2,000
5/22/2000	50	0	0	$5,000	$0
7/2/1999	52	0	0	$5,000	$0

7/2/1999	50	0	0	$2,000	$0
7/2/1999	50	0	0	$2,000	$0
4/8/1999	61	0	0	$5,000	$0
6/29/1998	50	0	0	$1,000	$0
6/18/1998	61	0	0	$25,000	$2,000
6/18/1998	56	0	0	$25,000	$2,000
6/18/1998	52	0	0	$15,000	$0
5/28/1998	69	0	0	$100,000	$10,000
5/28/1998	61	0	0	$50,000	$1,000
5/15/1998	57	0	0	$20,000	$0
5/15/1998	57	0	0	$30,000	$3,000
5/15/1998	57	0	0	$50,000	$3,000
8/15/1997	65	0	0	$30,000	$10,000
6/20/1997	70	0	0	$75,000	$5,000
6/20/1997	60	0	0	$25,000	$5,000
6/20/1997	70	0	0	$40,000	$5,000
6/20/1997	50	0	0	$10,000	$0
6/20/1997	50	0	0	$2,000	$0
6/20/1997	60	0	0	$25,000	$5,000
5/27/1996	50	0	0	$5,000	$0
8/28/1995	50	0	0	$40,000	$5,000
8/28/1995	61	0	0	$30,000	$10,000
6/6/1994	50	0	0	$50,000	$0
8/23/1993	56	0	0	$50,000	$5,000
8/22/1993	50	0	0	$50,000	$5,000
8/18/1993	50	0	0	$50,000	$5,000
3/22/1991	50	0	0	$0	$0
8/9/1990	50	0	0	$0	$0
8/9/1990	50	0	0	$0	$0
8/5/1989	69	0	0	$0	$0
8/5/1989	61	0	0	$0	$0
5/8/1988	50	0	0	$0	$0
5/8/1986	52	0	0	$0	$0
9/6/1980	0	0	0	$0	$0
9/6/1980	0	0	0	$0	$0
6/6/1980	52	0	0	$0	$0
7/13/1979	0	0	0	$0	$0
6/28/1978	64	0	0	$0	$0
4/14/1976	0	0	0	$0	$0
8/24/1975	0	0	0	$0	$0
6/22/1974	0	0	0	$0	$0
6/22/1974	0	0	0	$0	$0
5/21/1974	58	0	0	$0	$0
8/31/1973	0	0	0	$0	$0
7/29/1973	0	0	0	$0	$0
7/1/1973	0	0	0	$0	$0
5/23/1970	61	0	0	$0	$0
6/28/1959	0	0	0	$0	$0
Totals	**Average: 53.4**	**0**	**0**	**$3,941,000**	**$1,505,000**

Source: National Climatic Data Center (October, 2017)

Probability

Iowa experiences between 30 and 50 thunderstorms days per year on average. With Iowa's location in the interior of the U.S., there is a very high likelihood that a few of these summer storms will become severe and cause damage. Because of the humid continental climate that Iowa experiences, ingredients of a severe thunderstorm are usually available (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).

Vulnerability

People in unprotected areas, mobile homes, or automobiles during a storm are at risk. Sudden strong winds often accompany a severe thunderstorm and may blow down trees across roads and power lines. Lightning presents the greatest immediate danger to people and livestock during a thunderstorm. It is the second most frequent weather-related killer in the U.S. with nearly 100 deaths and 500 injuries each year (floods and flash floods are the number one cause of weather related deaths in the U.S.).

Livestock and people who are outdoors, especially under a tree or other natural lightning rods, in or on water, or on or near hilltops are at risk from lightning. Hail can be very dangerous to people, pets, and livestock if shelter is not available.

Flash floods and tornadoes can develop during thunderstorms as well. People who are in automobiles or along low-lying areas when flash flooding occurs and people who are in mobile homes are vulnerable to the impacts of thunderstorms.

Maximum Extent

Thunderstorms and lightning have the ability to span a large area like all of Hardin County but in most cases, it affects smaller areas and moves across the county over time. It is possible for the entire county to be affected by a large thunderstorm and lightning event that moves across the entire county, but this hazard can also be more isolated and only affect certain areas.

Severity

Like tornadoes, thunderstorms and lightning can cause death, serious injury, and substantial property damage. Severe thunderstorms can bring a variety of associated hazards with them including straight-line winds in excess of 100 mph. Straight-line winds are responsible for most thunderstorm damage. High winds can damage trees, homes (especially mobile homes), and businesses and can knock vehicles off of the road. The power of lightning's electrical charge and intense heat can electrocute people and livestock on contact, split trees, ignite fires, and cause electrical failures.

Thunderstorms can also bring large hail that can damage homes and businesses, break glass, destroy vehicles, and cause bodily injury to people, pets, and livestock. One or more severe thunderstorms occurring over a short period can lead to flooding and cause extensive damage, power and communication outages, and agricultural damage.

Speed of Onset

Some thunderstorms can be seen approaching, while others hit without warning. The National Weather Service issues severe thunderstorm watches and warnings as well as statements about severe weather and localized storms. These messages are broadcast over NOAA Weather Alert Radios and area television and radio stations. Advances in weather prediction and surveillance have increased warning times. The resolutions of radar and Doppler radar have increased the accuracy of storm location and direction. Weather forecasting and severe weather warnings issued by the National Weather Service usually provide residents and visitors alike adequate time to prepare. Isolated problems arise when warnings are ignored.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Thunderstorm and Lightning	56	16	49	48	29	46	67	36	45

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Tornado

Tornado *[A violent, destructive, rotating column of air taking the shape of a funnel-shaped cloud that progresses in a narrow, erratic path—rotating wind speeds can exceed 200 mph and travel across the ground at average speeds of 25 to 30 mph]*

Description

A tornado is a violent whirling wind characteristically accompanied by a funnel shaped cloud extending down from a cumulonimbus cloud. A tornado can be a few yards to about a mile wide where it touches the ground. An average tornado, however, is a few hundred yards wide. It can move over land for distances ranging from short hops to many miles, causing great damage wherever it descends. The funnel is made visible by the dust sucked up and by condensation of water droplets in the center of the funnel. The rating scale used to rate tornado intensity is the Enhanced Fujita Scale (EF).

Historical Occurrence

In the U.S., Iowa is ranked third in the number of strong-violent (F2-F5) tornadoes per 10,000 square miles. From 2000-2013, Iowa averaged 17 tornadoes per year. In Iowa most tornadoes occur in the spring and summer months, but twisters can and have occurred in every month of the year. Late afternoon to evening hour tornadoes are the most common, but they can occur at any time of the day. There have been 17 Presidential Disaster Declarations for disaster events that included tornadoes in Iowa since 1968.

According to the National Climatic Data Center, there have been 39 tornadoes and 7 funnel cloud events reported (number of days with events was 27 and 6 respectively). From these events, 0 deaths and 3 injuries have occurred.

The intensity of these tornadoes ranges from EF0 to EF4. The total property damage throughout the county totaled about $34.5 million, and the crop damage was $29,000.

Figure 42: Tornado Incidents in Hardin County

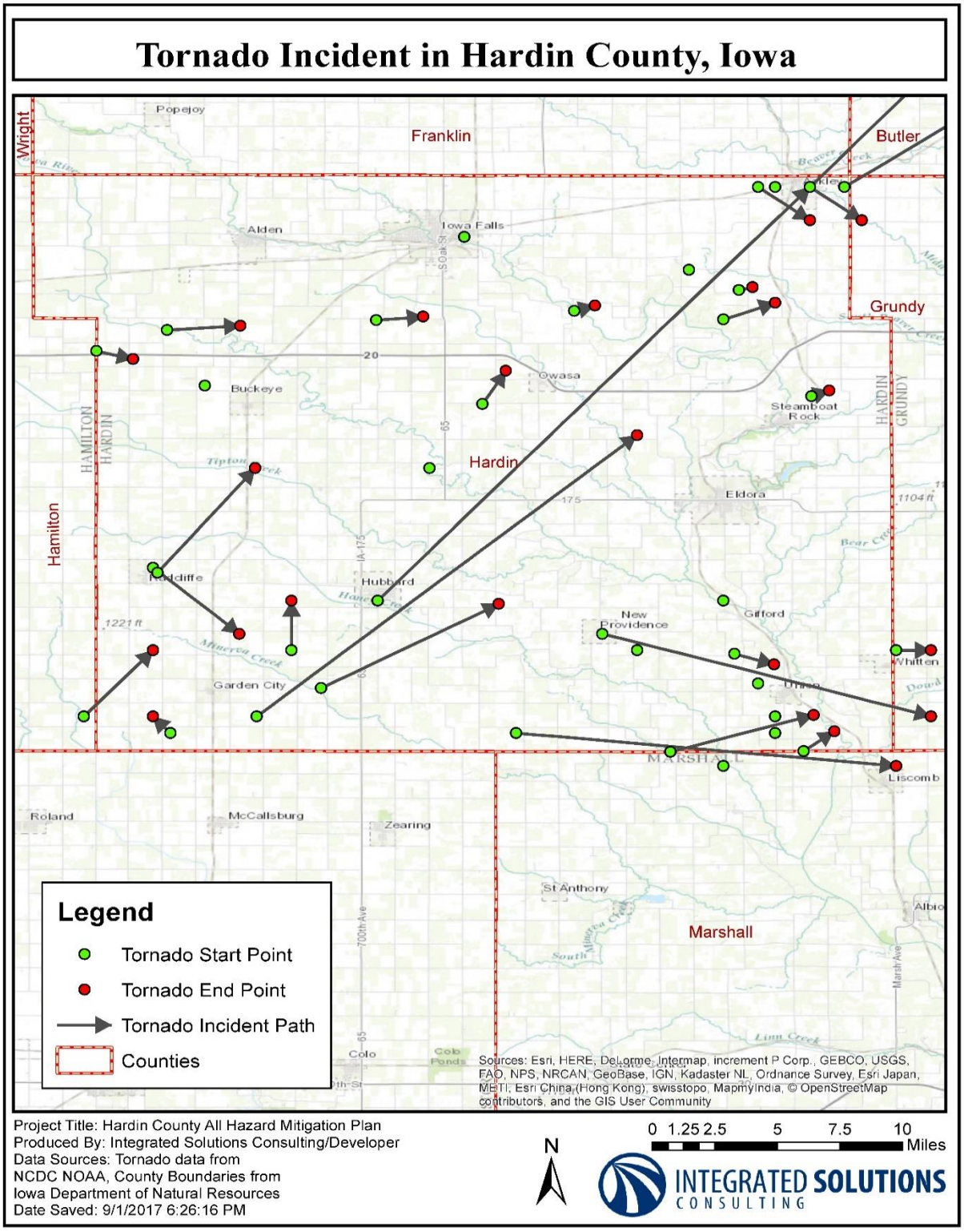


Table 55: Tornado Events in Hardin County since 1953

Date	Tornado Strength	Deaths	Injuries	Property Damages	Crop Damages
3/06/2017	EF1	0	0	$5,000	$0
11/28/2016	EF0	0	0	$25,000	$0
8/31/2014	EF1	0	0	$100,000	$5,000
8/31/2014	EF0	0	0	$0	$1,000
8/31/2014	EF0	0	0	$0	$2,000
8/31/2014	EF1	0	0	$25,000	$4,000
6/30/2014	EF1	0	0	$50,000	$5,000
6/30/2014	EF0	0	0	$2,000	$2,000
6/29/2014	EF1	0	0	$1,000	$2,000
6/21/2009	EF0	0	0	$0	$1,000
6/21/2009	EF0	0	0	$0	$1,000
6/21/2009	EF0	0	0	$0	$2,000
11/12/2005	F1	0	0	$75,000	$0
11/12/2005	F0	0	0	$10,000	$0
8/16/2004	F0	0	0	$0	$1,000
8/16/2004	F1	0	0	$2,000	$2,000
8/3/2004	F0	0	0	$20,000	$1,000
4/18/2002	F0	0	0	$1,000	$0
4/20/2001	F1	0	0	$500,000	$0
5/22/2000	F0	0	0	$0	$0
6/6/1995	F0	0	0	$1,000	$0
6/23/1992	F0	0	0	$2,500	$0
4/29/1991	F1	0	0	$250,000	$0
3/22/1991	F3	0	0	$2,500,000	$0
3/22/1991	F2	0	0	$250,000	$0
3/22/1991	F1	0	0	$250,000	$0
7/11/1990	F0	0	0	$2,500	$0
6/28/1990	F3	0	0	$2,500,000	$0
6/28/1990	F0	0	0	$25,000	$0
5/30/1989	F4	0	3	$2,500,000	$0
5/24/1989	F4	0	0	$25,000,000	$0
9/21/1973	F1	0	0	$2,500	$0
5/31/1971	F2	0	0	$250,000	$0
7/14/1970	F2	0	0	$25,000	$0
7/16/1969		0	0	$25,000	$0
5/7/1964	F1	0	0	$25,000	$0
5/20/1960	F1	0	0	$25,000	$0
5/20/1953	F3	0	0	$0	$0
5/20/1953	F3	0	0	$0	$0
Total	**F1**	**0**	**3**	**$34,450,000**	**$29,000**

Source: National Climatic Data Center (October, 2017)

Table 56: Funnel Cloud Events in Hardin County since 1953

Date	Deaths	Injuries	Property Damages	Crop Damages
6/28/2017	0	0	$0	$0
6/24/2013	0	0	$0	$0
7/7/2011	0	0	$0	$0
6/20/2011	0	0	$0	$0
6/22/2010	0	0	$0	$0
6/8/2010	0	0	$0	$0
6/8/2010	0	0	$0	$0
Total	**0**	**0**	**$0**	**$0**

Source: National Climatic Data Center (October, 2017)

Probability

Historically, Iowa gets about 17 tornadoes per year. Looking at historical data, tornadoes do not occur every year in Hardin County. The years that the county does have a tornado, though, sometimes have multiple tornadoes, such as in the years of 1989, 1990, 1991, 2004, 2005, 2009, and 2014.

Vulnerability

Those most at risk from tornadoes include people living in mobile homes, campgrounds, and other dwellings without secure foundations or basements. People in automobiles are also very vulnerable to twisters. The elderly, very young, and the physically and mentally handicapped are most vulnerable because of the lack of mobility to escape the path of destruction. People who may not understand watches and warnings due to language barriers are also at risk.

Maximum Extent

Generally, the destructive path of a tornado is only a couple hundred feet in width, but stronger tornadoes can leave a path of devastation up to a mile wide. Normally, a tornado will stay on the ground for no more than 20 minutes; however, one tornado can touch ground several times in different areas. Large hail, strong straight-line winds, heavy rains, flash flooding, and lightning are also associated with severe storms and may cause significant damage to a wider area. The most damaging tornado that is likely to occur is an EF3, based on historical tornado events in Hardin County, however the average strength is an EF1.

Severity

The severity of damage from tornadoes can be very high. Impacts can range from broken tree branches, shingle damage to roofs, and some broken windows; all the way to complete destruction and disintegration of well-constructed structures, infrastructure, and trees. Injury or death related to tornadoes most often occurs when buildings collapse; people are hit by flying objects or are caught trying to escape the tornado in a vehicle.

Speed of Onset

Tornadoes strike with an incredible velocity and may provide little to no warning. Wind speeds may approach 300 mph and the storm can travel across the ground at more than 70 mph. These winds can uproot trees and structures and turn harmless objects into deadly missiles, all in a matter of seconds. The advancement in weather forecasting has allowed tornado watches to be delivered to those in the path of these storms up to hours in advance. The best lead-time for a specific severe storm and tornado is about 30 minutes. Tornadoes have been known to change paths very rapidly, thus limiting the time in which to take shelter.

Tornadoes may not be visible on the ground due to blowing dust or driving rain and hail.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Tornado	38	44	63	58	50	31	33	55	45

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Windstorm

Windstorm *[Extreme winds associated with severe winter storms, severe thunderstorms, downbursts, and very steep pressure gradients]*

Description

Extreme winds other than tornadoes are experienced in all regions of the United States. It is difficult to separate the various wind components that cause damage from other wind-related natural events that often occur with or generate windstorms.

Historical Occurrence

Large-scale extreme wind phenomena are experienced over every region of the United States. Historically, high wind events are associated with severe thunderstorms and blizzards. It is often difficult to separate windstorms and tornado damage when winds get above 70 knots.

According to the National Climatic Data Center, there have been 35 high wind events in Hardin County. These windstorms occurred between 1996 and 2016. The wind speeds during these windstorms ranged from less than one mph to 70 mph. There have been no deaths or injuries reported during these windstorm events. The total amount of property damage from these windstorms is $1.155 million, and the total crop damage is about $30,000.

Table 57: High Wind Events in Hardin County Since 1996

Date	Speed (Knots)	Deaths	Injuries	Property Damages	Crop Damages
2/19/2016	50	0	0	$0	$0
11/11/2015	51	0	0	$0	$0
5/27/2013	40	0	0	$25,000	$0
5/26/2013	56	0	0	$10,000	$0
1/1/2012	36	0	0	$10,000	$0
6/13/2011	35	0	0	$10,000	$0
10/27/2010	51	0	0	$25,000	$0
10/26/2008	52	0	0	$25,000	$25,000
4/15/2006	36	0	0	$50,000	$0
1/24/2006	37	0	0	$10,000	$0
11/15/2005	35	0	0	$30,000	$0
11/12/2005	35	0	0	$50,000	$0
5/12/2005	35	0	0	$10,000	$0
1/22/2005	51	0	0	$10,000	$0
12/12/2004	50	0	0	$50,000	$0
5/24/2004	52	0	0	$25,000	$0
4/27/2004	35	0	0	$75,110	$0
4/18/2004	35	0	0	$80,000	$0
11/12/2003	50	0	0	$50,000	$0
5/30/2003	35	0	0	$25,000	$0
2/11/2003	50	0	0	$5,000	$0

5/11/2002	50	0	0	$75,000	$0
3/9/2002		0	0	$50,000	$0
4/7/2001	54	0	0	$50,000	$0
5/10/1999	50	0	0	$25,000	$0
3/17/1999	50	0	0	$30,000	$0
11/10/1998	61	0	0	$300,000	$5,100
4/12/1998		0	0	$50,000	$0
5/5/1997	52	0	0	$0	$0
4/6/1997	55	0	0	$0	$0
10/29/1996	57	0	0	$0	$0
4/25/1996	52	0	0	$0	$0
3/24/1996	54	0	0	$0	$0
2/10/1996	56	0	0	$0	$0
1/17/1996	55	0	0	$0	$0
Total	**Average: 47.1**	**0**	**0**	**$1,155,110**	**$30,100**

Source: National Climatic Data Center (October, 2017)

Probability

Based on historical data, Hardin County should expect at least one windstorm each year, but because it is difficult to separate a windstorm from other hazard events such as a thunderstorm, there may be occurrences of high winds that may not necessarily be considered a windstorm.

Vulnerability

Those most at risk from windstorms include people living in mobile homes, campgrounds, and other dwellings without secure foundations or basements. People in automobiles are also very vulnerable to windstorms. The elderly, very young, and the physically and mentally handicapped are most vulnerable because of the lack of mobility to escape the path of destruction. People who may not understand watches and warnings due to language barriers are also at risk.

Maximum Extent

Unlike tornadoes, windstorms may have a destructive path that is tens of miles wide. Large hail, strong straight-line winds, heavy rains, flash flooding, and lightning are also associated with severe storms and may cause significant damage to a wider area. Wind speeds can reach up to 70 knots or greater during a windstorm event, so a major event is possible.

Severity

The severity of damage from windstorms can be very high. Impacts can range from broken tree branches, shingle damage to roofs, and some broken windows, all the way to complete destruction and disintegration of well-constructed structures, infrastructure, and trees. Injury or death related to windstorms most often occurs when buildings collapse; people are hit by flying objects or are caught trying to escape the windstorm in a vehicle. Crop damage is often associated with windstorms, laying down crops, breaking stalks, and twisting plants, reducing the yield and making it difficult to harvest.

Speed of Onset

Wind speeds may approach 120 miles per hour and the storm can travel across the ground at more than 30 mph. These winds can uproot trees and structures and turn harmless objects in to deadly missiles, all in a matter of seconds. The advancement of weather forecasting has allowed watches to be delivered to those in the path of these storms up to hours in advance. The best lead-time for a specific severe storm is about 30 minutes.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Windstorm	44	31	49	48	43	46	67	43	43

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Technological Hazards

According to FEMA, technological hazards include dam failures, fires, hazardous materials events, nuclear accidents, power failures, and telecommunications failures. Advancements in technology and the increased development and use of chemicals over the past decades have resulted in the rise of a new and wide range of threats. Usually, little or no warning precedes incidents involving technological hazards. In some cases, victims may not know they have been affected until many years later. The number of technological incidents is escalating, mainly as a result of the increased number of new substances and the opportunities for human error inherent in the use of these materials. Natural events can trigger technological disasters. CPG 201 states that technological hazards are the result from accidents or the failures of systems and structures.

Technological Hazards addressed in this plan include:

- Dam Failure
- Communications Failure
- Energy Failure
- Hazardous Materials Incident
- Highway Transportation Incident
- Pipeline Transportation Incident
- Railway Transportation Incident
- Structural Failure
- Structural Fire

Dam Failure

Dam Failure *[A break in, or imposed threat from, any water retention fixture which may endanger population downstream of the containment area]*

Description

Dams are constructed for a variety of uses, including flood control, erosion control, water supply impoundment, hydroelectric power generation, and recreation. Flooding, operating error, poor construction, lack of maintenance, damage due to burrowing animals, vandalism, terrorism, and earthquakes can cause dam failure. Dams are classified into three categories based on the potential risk to people and property should a failure occur:

- High Hazard – if the dam was to fail, lives would be lost, and extensive property damage could result;
- Moderate (Significant) Hazard – failure could result in loss of life and significant property damage; and,
- Low Hazard – failure results in minimal property damage only.

The classification may change over time because of development downstream from the dam since it construction. Older dams may not have been built to the standards of its new classification. Dam hazard potential classifications have nothing to do with the material condition of a dam, only the potential for death or destruction due to the size of the dam, the size of the impoundment, and the characteristics of the area downstream of the dam. The Iowa Department of Natural Resources tracks all dams in the State of Iowa with a height of at least 25 feet or a total storage of at least 50-acre feet of water. The inventory excludes dams less than 6 feet high regardless of storage capacity and dams less than 15-acre feet of storage regardless of height.

Historical Occurrence

There are no major dam failures to report for Hardin County.

Probability

The probability of a major dam failure occurring in or affecting Hardin County is low.

Vulnerability

People and property along streams are most vulnerable. Facilities and lives considerable distances from the actual impoundment are not immune from the hazard. Depending on the size and volume of the impoundment as well as the channel characteristics, a flash flood can travel a significant distance.

Maximum Extent

The area impacted following a dam failure would be limited to those areas in and near the floodplain. People and property outside the floodplain could also be impacted depending on the proximity to the dam and the height above the normal stream level.

According to the Iowa Water Coalition, there are three dams located within the city limits of Alden, Iowa Falls, and Steamboat Rock.

Failure at the Upper or Lower Pine Lake Dams (one being downstream of the other) can affect some unincorporated areas which are downstream and around the Upper and Lower Pine Lakes and the City of Eldora.

Severity

There are approximately 3,800 dams in the State of Iowa Dam Inventory. There are 103 high hazard dams and 225 moderate (significant) hazard dams in Iowa. There are no high hazard dams and two moderate (significant) dams in Hardin County. The severity of damage could range from property damage, if a small subdivision impoundment failed, all the way to multiple deaths, injuries, and extensive property damage if a large high-hazard dam, such as the Saylorville Reservoir, failed upstream from Des Moines.

Speed of Onset

A dam failure can be immediate and catastrophic leaving little or no time to warn those downstream of the imminent hazard. With maintenance and monitoring, weak areas and possible failure points can be identified allowing time for evacuation and securing of the dam. Most dams are only inspected periodically thus allowing problems to go undetected until a failure occurs.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Dam Failure	13	19	49	48	55	34	67	44	23

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Communications Failure

Communications Failure *[The widespread breakdown or disruption of normal communication capabilities. This could include major telephone outages, loss of local government radio facilities, or long-term interruption of electronic broadcast services]*

Description

Emergency 911, law enforcement, fire, emergency medical services, public works, and emergency warning systems are just a few of the vital services which rely on communication systems to effectively protect citizens. Business and industry rely heavily on various communication media as well. Mechanical failure, traffic accidents, power failure, line severance, and weather can affect communication systems and disrupt service. Disruptions and failures can range from localized and temporary to widespread and long-term. If switching stations are affected, an outage could be more widespread.

Historical Occurrence

According to Hardin County Emergency Management, communication problems arose during the 2009 hail storm in Eldora. Phone and cell phone problems occurred after the storm, as well as a loss of communication towers at the Sheriff's Department.

Probability

Widespread communications losses are unlikely due to backup systems and redundant system designs. Local communications failures are likely to affect small areas of the county.

Vulnerability

Citizens of the community would be impacted only indirectly. Phone and data transmission could be impacted. Most communication systems that are highly necessary have backup and are redundant in order to provide continuity of service.

Maximum Extent

Most communications failures would be limited to localized areas. In the event of a widespread communications failure, only portions of Hardin County would be impacted, but this highly unlikely due to the support of other jurisdictions and secondary communication devices.

Severity

A communications failure would not directly result in injuries or fatalities. Most financial losses would be incurred due to the direct damage to electronic equipment and the communication system infrastructure. If emergency 911 systems were to fail due to phone communication disruption, secondary impacts could occur by the inability of citizens to alert responder of their needs. Inter-agency and intra-agency communications would be limited. Data transmission could also be affected. This could disrupt business and financial transactions resulting in potential loss of business.

Speed of Onset

A communications failure would likely occur with little or no warning. It is usually impossible to predict a communications failure. Some communications may be shut down for a short while for improvements or maintenance. These disruptions are usually made during period of low demand and those who rely on them are given previous notice that the system will be out of service.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Communications Failure	13	9	49	48	29	46	67	35	21

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Energy Failure

Energy Failure *[An extended interruption of electric, petroleum or natural gas service, which could create a potential health problem for the population]*

Description

International events could potentially affect supplies of energy-producing products, while local conditions could affect distribution of electricity, petroleum, or natural gas. The magnitude and frequency of energy shortages are associated with international markets. Local and state events such as ice storms can disrupt transportation and distribution systems. If disruptions are long lasting, public shelters may need to be activated to provide shelter from either extreme cold or extreme heat. Stockpiles of energy products eliminate short disruptions, but can also increase the level of risk to the safety of people and property in proximity to the storage site.

On the other hand, there are also shorter-term interruptions of energy due to some sort of damage or malfunction to infrastructure. An example is a loss of electricity due to damaged electric lines or loss of natural gas due to a damage pipeline.

Historical Occurrence

According to Hardin County Emergency Management, the county has power outages several times a year. Most are caused by weather events including; strong winds, lightning, ice, fallen trees, etc. They are mostly short lived and of little significance.

On September 25, 2017, Emergency Management in Hardin County was activated in response to severe weather in Iowa Falls. Downed power lines caused power outages throughout the City. No injuries or deaths were reported.

Probability

Only when free market forces cease to provide for the health, welfare, and safety of the citizens, can governments take appropriate actions to limit the effects of an energy shortage. The State of Iowa has three strategies to limit the likelihood of an energy shortage. Through voluntary and mandatory demand reduction mechanisms; the substitution of alternative energy sources when possible; and state government programs to curtail excessive use, energy supply and demand can be kept in check. The federal government has a strategic petroleum reserve to supplement the fuel supply during energy emergencies. Shortage, especially electrical shortage, can be unpredictable with immediate effects. Natural events, human destruction, price escalation, and national security energy emergencies can cause unavoidable energy shortages. Hardin County Emergency Management states that several power outages occur per year. Several are due to disaster conditions like ice, snow, and hailstorms.

Vulnerability

Because Iowa is almost entirely dependent on out-of-state resources for energy, Iowans must purchase oil, coal, and natural gas from outside sources. World and regional fuel disruptions are felt in Iowa. It is likely that increasing prices will occur as market mechanisms are used to manage supply disruptions. This will disproportionately affect the low-income population because of their lower purchasing power. Agricultural, industrial, and transportation sectors are also vulnerable to supply, consumption, and price fluctuations. In Iowa, petroleum represents 97% of transportation fuel. Individual consumers such as commuters are also vulnerable.

In the case of shorter term outages, people in their homes or care facilities are vulnerable if they have special medical needs that require equipment powered by electricity or some other form of power that can be lost. During times of extreme temperature, people are vulnerable because they may not be able to heat or cool their home.

Maximum Extent

The effects of energy shortage would be felt throughout Hardin County. If it were a major supply interruption type of incident local shortages could be quickly covered, because the distribution systems are very developed. An energy failure due to damaged infrastructure could affect a small or large are of the county, but this depends on what type and degree of damage that causes the loss.

Severity

Injuries and fatalities would not be directly caused by an energy shortage. Injuries and fatalities could occur if energy was not available for heating during extreme cold periods or for cooling during extreme heat. Hospitals, shelters, emergency response vehicles and facilities, and other critical facilities would have priority during energy shortages. Rotating blackouts, voluntary conservation measures, and possibly mandatory restrictions could be used to limit the severity of an energy shortage. Effects could range from minor heating and air conditioning disruptions to transportation limitations all the way to civil unrest due to the high demand, low supply, and subsequent high price. Business disruption and increased cost of business would have far-reaching financial implications across many sectors of the economy.

Speed of Onset

The Iowa Department of Natural Resources Energy Bureau monitors domestic and international energy situations and has developed a plan to deal with an energy crisis. Signs that an energy shortage may be developing can be recognized even months in advance, but energy shortages/emergencies can rise suddenly and unexpectedly. Supply distribution problems in other countries and local weather situations can lead to low supply coupled with high demand in a matter of a day or two. As for outages, there is no warning for this type of energy failure.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Energy Failure	25	16	49	58	35	46	67	40	32

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Hazardous Materials Incident

Hazardous Materials Incident *[Accidental release of chemical substances or mixtures that presents danger to the public health or safety]*

Description

A hazardous substance is one that may cause damage to persons, property, or the environment when released to soil, water, or air. Chemicals are manufactured and used in ever increasing types and quantities. As many as 500,000 products pose physical or health hazards and can be defined as “hazardous chemicals.” Each year, over 1,000 new synthetic chemicals are introduced and transported across the county via semi-truck and train. Hazardous substances are categorized as toxic, corrosive, flammable, irritant, or explosive. Hazardous materials incidents generally affect a localized area, and the use of planning and zoning can minimize the area of impact.

Historical Occurrence

According to Hardin County Emergency Management, the county has hazardous materials incidents every year. Because of the location of major highways and railroads through most towns in Hardin County, most incidents are transportation related. Intentional dumping, accidental spills, and improper disposal are also occurrences in the county. These include ethanol, oil, fuel oil, farm chemicals, manure, ethanol byproducts, bio-diesel byproducts, and others.

On July 8, 2017, in the City of Ackley, a CN Mechanical Department employee noted liquid coming from a transportation tank car that contained alcohol NOS. It was discovered that the liquid line valve was not as tightened as needed on the eduction pipe. Although there were no injuries or fatalities, there was $18,453 in total damages.

Probability

Large quantities of hazardous materials are transported daily on Iowa streets, highways, interstates, and railways. Roadways are a common site for the release of hazardous materials. Railways are another source for hazardous materials releases. The Department of Transportation regulates routes and speed limits used by carriers and monitor the types of hazardous materials crossing state lines. Despite increasing safeguards, more and more potentially hazardous materials are being used in commercial, agricultural, and domestic uses and are being transported on Iowa roads and railways.

Vulnerability

A hazardous materials incident can occur almost anywhere, so any area is considered vulnerable to an accident. People, pets, livestock, and vegetation in close proximity to transportation corridors and populations downstream, downwind, and downhill of a released substance are particularly vulnerable. Depending on the characteristics of the substance released, a larger area may be in danger from 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.

Maximum Geographic Extent

Most of the hazardous materials incidents are localized and are quickly contained or stabilized by highly trained fire departments and hazardous materials teams. Hardin County has an agreement with the Northeast Iowa Response Group for hazmat response because their firemen are trained for hazardous materials incidents. The Northeast Iowa Response Group provides HazMat Ops and HazMat Recertification training to emergency responders. Depending on the characteristic of the hazardous or the volume of product involved, the affected area can be as small as a room in a building or as large as 5 square miles or more. Many times, additional regions outside the immediately affected area are evacuated for precautionary reasons. More widespread effects occur when the product contaminates the municipal water supply or water system such as a river, lake, or aquifer. All jurisdictions are at risk for this hazard.

Severity of Impact

Many injuries and fatalities due to transport of hazardous materials are related to the collision itself rather than the product released. Immediate dangers from hazardous materials include fires and explosions. The release of some toxic gases may cause immediate death, disablement, or sickness if absorbed through the skin, injected, ingested, or inhaled. Contaminated water resources may be unsafe and unusable, depending on the amount of contaminant. Some chemicals cause painful and damaging burns if they come in direct contact with skin. Contamination of air, ground, or water may result in harm to fish, wildlife, livestock, and crops. The release of hazardous materials into the environment may cause debilitation, disease, or birth defects over a long period of time. Loss of livestock and crops may lead to economic hardships within the community. The occurrence of a hazardous materials incident many times shuts down transportation corridors for hours at a time while the scene is stabilized, the product is off-loaded, and reloaded on a replacement container.

Speed of Onset

When managed properly under current regulations, hazardous materials pose little risk. However, when handled improperly or in the event of an accident, hazardous materials can pose a significant risk to the population. Hazardous materials incidents usually occur very rapidly with little or no warning. Even if reported immediately, people in the area of the release have very little time to be warned and evacuated.

During some events, sheltering in-place is the best alternative to evacuation because the material has already affected the area and there is no time to evacuate safely. Public address systems, television, radio, and the NOAA Weather Alert Radios are used to disseminate emergency messages about hazardous materials incidents.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Hazardous Materials Incident	38	16	49	48	43	46	67	40	39

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Highway Transportation Incident

Highway Transportation Incident *[A single or multi-vehicle incident which requires responses exceeding normal day-to-day capabilities]*

Description

An extensive surface transportation network exists in Hardin County. Local residents, travelers, business, and industry rely on this network on a daily basis. Thousands of trips a day are made on the streets, roads, and highways. If the designed capacity of the roadway is exceeded, the potential for a major highway incident increases. Weather conditions play a major factor in the ability of traffic to flow safely in and through the county; as does the time of day and day of week. Incidents involving buses and other high-occupancy vehicles could trigger a response that exceeds the normal day-to-day capabilities of response agencies.

Historical Occurrence

According to the Iowa Department of Transportation, there were 970 crashes between 2007 & 2011 (the most recent years for which data is available).

Table 58: 2007 - 2011 Crash History, All Rural Crashes, Hardin County

Year	Crashes						Injuries					
	Crashes	Fatal	Major	Minor	Poss/Unk	PDO	Injuries	Fatalities	Major	Minor	Possible	Unknown
2007	223	2	8	29	46	137	143	4	11	43	85	0
2008	189	2	10	29	27	121	83	2	10	35	35	1
2009	208	6	9	19	31	143	106	6	12	34	53	1
2010	208	1	7	22	35	143	88	1	7	28	49	3
2011	142	5	7	16	22	92	74	5	8	32	27	2
Total	**970**	**17**	**41**	**115**	**161**	**636**	**494**	**18**	**48**	**172**	**256**	

Source: Iowa Department of Transportation, General Crash County Data by County

Probability

Although traffic engineering, inspection of traffic facilities, land use management of areas adjacent to roads and highways, and the readiness of local response agencies have increased, highway incidents continue to occur. As the volume of traffic on the county's streets and highways increases, the number of traffic accidents will likely also increase. The combination of large numbers of people on the road, unpredictable weather conditions, potential mechanical problems, and human error always leaves open the potential for a transportation accident.

Vulnerability

Those who use the surface transportation system are most vulnerable. Travelers, truckers, delivery personnel, and commuters are at risk all time that they are on the road. During high traffic hours and holidays the number of people on the road in Hardin County is higher. This is also true before and after major gatherings such as sporting events, concerts, and conventions. Pedestrians and citizens of the community are less vulnerable but still not immune from the impacts of a highway incident.

Maximum Extent

Hardin County is crisscrossed by hundreds of miles of roads and highways. Highway incidents are usually contained to areas on the roadway or directly adjacent to the roadway. Very few highway incidents affect areas outside the traveled portion of the road and the right-of-way. Extensive segments of the transportation system can be impacted during significant weather events, such as a large snowstorm, when multiple individual accidents occur. The area of impact can extend beyond the localized area if the vehicle(s) is involved in transporting hazardous materials.

Severity

Highway incidents threaten the health and lives of people in the vehicles, pedestrians, and citizens of the community if hazardous materials are involved. Mass casualty events can occur if mass transit vehicles are involved. Community bus and school buses have a good safety record, but accidents can and do occur. Numerous injuries are a very real possibility in situations involving mass transit vehicles. Property damage would be limited to vehicles and cargo involved; roads, bridges, and other infrastructure; utilities such as light and power poles; and third-party property adjacent to the accident scene such as buildings and yards. Between 2001 and 2005 there were 1580 car crashes and 23 of these crashes resulted in 25 fatal injuries.

Speed of Onset

There is usually no warning of highway incidents. During snow storms and other weather events that may impede travel, travelers, response agencies, and hospitals alike can be notified of hazardous travel conditions.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Highway Transportation Incident	63	29	35	48	32	46	67	37	48

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Pipeline Transportation Incident

Pipeline Transportation Incident *[A break in a pipeline creating a potential for an explosion or leak of a dangerous substance—oil, gas, water from water mains, etc.—possibly requiring evacuation]*

Description

Iowa is served by many high-pressure pipelines to residents and industries. An underground pipeline incident can be caused by environmental disruption, accidental damage, or sabotage. Incidents can range from a small slow leak that is not ignited to a large rupture in which the gas is ignited. Inspection and maintenance of the pipeline system along with marked gas line locations and an early warning and response procedure can lessen the risk to those in proximity to the pipelines.

Historical Occurrence

According to Hardin County Emergency Management, pipeline leaks and explosions have occurred in both Hubbard and Union. There was a natural gas pipeline explosion in downtown Hubbard in December 2000.

No other records of significant natural gas pipeline incidents were found for Hardin County from 2010 - 2017.

Probability

The vast majority of pipeline incidents that occur are caused by third-party damage to the pipeline, often due to construction or some other activity that involves trenching or digging operations. With development occurring at an unprecedented rate and the ground becoming more and more congested with utilities, the probability of an underground pipeline incident is significant.

Petroleum and natural gas pipeline accidents occur with some regularity, but they usually have a limited impact and are quickly and adequately handled by pipeline company emergency crews and local and state responders. Pipeline operators are required to coordinate all safety preparedness and response activities with the communities. Planning, training, and exercising of emergency procedures with all involved parties helps to limit the occurrence and severity of incidents.

Vulnerability

People and property with pipelines on their land or nearby are the most at risk. In the event of a pipeline incident, those downwind and downhill of the release are the most vulnerable. People excavating earth near a pipeline are also at risk. Private homes and business served by natural gas have small diameter pipelines connected to their structure. The underground pipelines cross public streets, roads, and highways as well as streams. Iowa's natural environment is also vulnerable to contamination from an underground pipeline incident.

Maximum Extent

Though often overlooked, petroleum and natural gas pipelines pose a real threat in the community. Most incidents affect only the area directly above or near the damaged pipeline. Depending on the size of pipeline and amount of product released, the extent of impact could be several hundred feet in diameter. Large areas may need to be evacuated to remove people from the threat of fire, explosion, or exposure. Pipelines have automatic shutoff valves installed so that damaged sections can be isolated, and the volume of product escaping can be limited. Identification and caution signs are posted wherever pipelines pass under roads, streams, fence lines, or at any above ground utilities.

Major pipelines are located in or around Hardin County, Montezuma, Grinnell, and Brooklyn. Other Hardin County cities do not have natural gas service and use other sources for power. The jurisdictions with major pipelines are much more likely to be affected by a potential pipeline transportation incident than those jurisdictions that do not.

Severity

Petroleum and natural gas pipelines can leak or erupt and cause property damage, environmental contamination, injuries, and even loss of life. Accidents may be caused by internal or external corrosion, defective welds, incorrect operation, outside damage, or other defective pipeline or equipment. Most incidents involve crude oil, gasoline, or natural gas pipelines. All petroleum liquids pose dangers from fire or explosion, and the fire may produce poisonous or irritating gasses. Toxic fumes and direct contact can cause health hazards. Vapor clouds can travel a distance and settle in low-lying areas where the fumes may overcome people and animals. Released products should be treated as any other hazardous material. Large areas may need to be evacuated to remove people from the threat of fire, explosion, or exposure. These evacuations potentially save lives and limit injury, but they also disrupt businesses and inconvenience residents. A break in water pipelines may impact fire protection and continuity of operations at business and industry and may affect the area by saturating the soil and causing rapid erosion.

Speed of Onset

A pipeline incident may occur suddenly, but sight, sound, and smell can alert individuals that there may have been damage done to a pipeline in the area. Products may bubble up from the ground or collect in low-lying areas, a roaring or hissing noise may be heard, and most products give off distinct odor. These warning signs can alert individuals not to use any devices that may act as ignition sources and cause a fire or explosion.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Pipeline Transportation Incident	13	10	49	41	38	42	50	37	21

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Railway Transportation Incident

Railway Transportation Incident *[A derailment or a train accident which directly threatens life or property, or which adversely impacts a community's capabilities to provide emergency services]*

Description

Railway incidents may include derailments, collisions, and highway/rail crossing incidents. Train incidents can result from a variety of causes. Human error, mechanical failure, faulty signals, and problems with the track can all lead to railway incidents. Results of an incident can range from minor "track hops" to catastrophic hazardous materials incidents and even passenger casualties.

With the many miles of track in Iowa, there are numerous at-grade crossings at which vehicles must cross the railroad tracks. These crossings can be found throughout the County.

Historical Occurrence

There have been several train derailments and other railway incidents over past 10 years in Hardin County, according to Hardin County Emergency Management and FRA. One incident took place near Gifford, and involved hazardous materials and a bridge collapse. Several train accidents causing derailments have occurred near Buckeye.

Table 59: Hardin Count Railway Accident/Incident Data from 2008 - July 2017

Category	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	CY 2013	CY 2014	CY 2015	CY 2016	CY 2017 PARTIAL	% Change From CY 2016 to CY 2017	% Change From CY 2008 to CY 2017	Total For CY 2008 to CY 2017
Number of railroads included	2	2	2	2	2	2	2	2	2	2	.	.	.
TOTAL ACCIDENTS/INCIDENTS 1/	5	1	2	2	.	.	1	.	.	1	.	.	12
--- Total fatalities	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Total nonfatal conditions	4	1	.	2	.	.	.	.	.	1	.	.	8
--- Employee on duty deaths	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Nonfatal EOD injuries	3	.	.	2	.	.	.	.	.	.	.	.	5
--- Nonfatal EOD illnesses	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Total employee on duty cases	3	.	.	2	.	.	.	.	.	.	.	.	5
--- Cases with days absent from work	2	.	.	2	.	.	.	.	.	.	.	.	4

--- Trespasser deaths, not at HRC	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Trespasser injuries, not at HRC	1	.	.	.	.	.	.	.	.	.	.	.	1
--- Passengers kld in train accs or crossing incidents	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Passengers inj in train accs or crossing incidents	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Passengers kld in other incidents	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Passengers inj in other incidents	.	.	.	.	.	.	.	.	.	.	.	.	.
TRAIN ACCIDENTS	.	.	.	1	.	.	1	.	.	.	.	.	2
--- Train accident deaths	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Train accident injuries	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Human factor caused	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Track caused	.	.	.	1	.	.	1	.	.	.	.	.	2
--- Motive power/equipment caused	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Signal caused, all track types	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Signal caused, main line track	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Miscellaneous caused	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Collisions	.	.	.	.	.	.	.	.	.	.	.	.	.
-------- Collisions on main line track	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Derailments	.	.	.	1	.	.	1	.	.	.	.	.	2
--- Other types, e.g., obstructions	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Train accidents on main line 5/	.	.	.	1	.	.	1	.	.	.	.	.	2
--- Accidents on yard track	.	.	.	.	.	.	.	.	.	.	.	.	.
--- HAZMAT RELEASES	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Cars carrying hazmat	.	.	.	1	.	.	.	.	.	.	.	.	1
--- Hazmat cars damaged/derailed	.	.	.	.	.	.	.	.	.	.	.	.	0
--- Cars releasing	.	.	.	.	.	.	.	.	.	.	.	.	0
--- Accidents with reportable damage over $100K	.	.	.	1	.	.	1	.	.	.	.	.	2
..... PERCENT of all train accidents	.	.	.	100.000	.	.	100.000	.	.	.	.	.	.
--- Accidents with reportable damage over $500K	.	.	.	.	.	.	.	.	.	.	.	.	.

..... PERCENT of all train accidents	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Accidents with reportable damage over $1M	.	.	.	.	.	.	.	.	.	.	.	.	.
..... PERCENT of all train accidents	.	.	.	.	.	.	.	.	.	.	.	.	.
HIGHWAY-RAIL INCIDENTS	1	1	2	.	.	.	.	.	.	.	.	.	4
--- Highway-rail incidents deaths	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Highway-rail incidents injuries	.	1	.	.	.	.	.	.	.	.	.	.	1
--- Incidents at public xings	1	1	2	.	.	.	.	.	.	.	.	.	4
..... PERCENT of total Highway-rail incidents	100.000	100.000	100.000	.	.	.	.	.	.	.	.	.	.
OTHER ACCIDENTS/INCIDENTS 3/	4	.	.	1	.	.	.	.	.	1	.	.	6
--- Other incidents deaths	.	.	.	.	.	.	.	.	.	.	.	.	.
--- Other incidents injuries	4	.	.	2	.	.	.	.	.	1	.	.	7

FOOTNOTE 1. Total Accidents is the sum of Train Accidents, Crossing Incidents, and Other Accidents/Incidents

FOOTNOTE 2. Class I Railroad Group selections are reported based on the System Reporting Level to ensure all subsidiary railroads are included

FOOTNOTE 3. Other Accidents/Incidents are events other than Train Accidents or Crossing Incidents that cause physical harm to persons

FOOTNOTE 4. Data does not support rates being calculated when either or both Region and/or State are selected.

FOOTNOTE 5. Percent Change columns are not calculated when the current year is 'Partial' or 'No Data' is available. See FAQ for More Detail.

Source: http://safetydata.fra.dot.gov/

Probability

There are over 60 railroad crossings in Hardin County. The miles of railroad track in the county combined with the large number of street and highway crossings makes the probability of highway/rail collision significant. Derailments are also possible, while a major derailment would occur less frequently.

Vulnerability

People and property in close proximity to the railway lines, crossing, sidings, switching stations, and loading/unloading points are most at risk. Those away from railroad track and facilities are vulnerable only to large-scale incidents including those in which hazardous materials are involved.

Maximum Extent

A Canadian National rail line runs east-west through the upper portion of Hardin County. A Union Pacific Railroad freight line runs north-south through the east and west (Kansas City to Minneapolis) portions of the county. The Iowa River Railroad runs from Marshalltown to Ackley. This route goes north-south in the eastern part of the county. There are 101 railways crossings throughout Hardin County. Vehicle/train collisions are usually limited to areas in and near intersections. Rarely, the incident will result in widespread effects. The direct area of impact is usually quite small, but depending on the materials involved, the effect could reach areas up to 1-5 miles from the scene. Harmful products may contaminate streams, rivers, water distribution systems, and storm water systems. If this occurs, a large portion of the community could be affected. The ability of response agencies to contain the product on-scene usually limits the area affected.

Severity

Railway incidents can result in death, injury, and property damage. Deaths and injuries can range from those directly involved to citizens in the community affected by hazardous materials.

Depending on the materials involved, evacuations may occur, moving residents away from dangerous products and the possibility of explosion. Gases, liquids, and solids can contaminate air, soil, and water in and near the incident scene. If a railway incident occurred in an urban area, the health and welfare of thousands of people could be put in jeopardy. Damage may be limited to the train, railcars, and cargo involved, but it can also include loss of production, business disruption due to evacuations, and business disruptions of those served by the railroad. Business and traffic disruptions could last several days until the clean-up efforts are complete.

Speed of Onset

Like other transportation incidents, railway incidents occur with no warning. There may be a limited amount of time to warn those in the pathway of the harmful effects.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Rail Incident	38	16	49	48	35	46	67	38	38

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Structural Failure

Structural Failure *[The collapse (part or all) of any public or private structure including roads, bridges, towers, and buildings]*

Description

A road, bridge, or building may collapse due to the failure of the structural components or because the structure was overloaded. Natural events such as heavy snow may cause a roof of a building to collapse under the weight of the snow. Heavy rains and flooding can undercut and washout a road or bridge. The age of the structure is sometimes independent of the cause of the failure.

Enforcement of building codes can better guarantee that structures are designed to hold up under normal conditions. Routine inspection of older structures may alert inspectors to “weak” points. The level of damage and severity of the failure is dependent on factors such as the size of the building or bridge, the number of occupants of the building, the time of day, day of week, amount of traffic on the road or bridge, and the type and amount of products stored in the structure.

Historical Occurrence

According to Hardin County Emergency Management, there have been no major structural failures in the last five years. The ones that did occur were old houses, barns, and out buildings.

Probability

Civil structures may fail in a variety of modes. The unprecedented growth in technology has resulted in a host of problems related to complex structures, special materials, and severe operation and environmental loads, such as fire, excessive vibrations, explosion, high-energy piping failures, missiles, and earthquakes. With the possible exception of misuse, accidental or environmental loads, the causes of failure may be found in deficiencies in design, detailing, material, workmanship, or inspection. With the aging structures in the county along with problems with new materials, structural failures will continue to occur. Efforts to inspect and maintain structures will lessen the probability of a failure, but not guarantee that it will not happen in the future. Internal weaknesses can be hidden from inspectors and not be realized until it is too late.

Vulnerability

There are many buildings in Hardin County that are very old, or which may become hazardous in the event of an earthquake, fire, high winds, or other natural events. All bridges are vulnerable to the effects of elements and the deterioration that results. Increases in the amount and weight of traffic they are expected to support increase their vulnerability to failure.

Maximum Extent

The impacts of the failed structure would be contained to the immediate area and adjacent properties. This could be as small as the house and yard of a fallen chimney, or the area could be relatively extensive if the structure that failed was a multi-story building of a downtown or a tall communication tower. All Hardin County jurisdictions are at risk for this hazard. Dam failure would affect a much larger area.

Severity

Bridge failures and debris in streets and sidewalks would interrupt normal routes of travel. Functional purpose of the building would be terminated or suspended until the integrity of the structure could be restored. Personal injury, death, and property damage may occur in the collapse itself or by falling debris from nearby structures. There would also be a considerable cost to replace or fix the structure, not to mention the loss of revenue that would occur because the structure could not be used. Utilities may be cut off to surrounding areas and communication transmissions may be lost for a period of time.

Speed of Onset

The actually failure of the structure would like occur suddenly with little or no warning. There are several events that could lead up to the failure, and these have various warning times and are discussed in separate hazard worksheets. Causal hazards can include fire, explosion, overloading of ice and snow, vibration, earthquakes, flooding, high wind, erosion, chemical corrosion, subsidence, and lack of general upkeep.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Structural Failure	13	21	49	33	43	49	50	38	22

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Structural Fire

Structural Fire *[An uncontrolled fire in a populated area that threatens life and property and is beyond normal day-to-day response capabilities]*

Description

Structural fires present a great threat to life and property and the potential for large economic losses. Modern fire codes and fire suppression requirements in new construction and building renovations, couple with improved firefighting equipment, training, and techniques, lessen the chance and impact of major urban fire. Most structural fires occur in residential structures, but the occurrences of a fire in a commercial or industrial facility could affect more people and pose a greater threat to those near the fire or fighting the fire because of the volume or type of the material involved.

Historical Occurrence

Structural fires occur on a regular basis, averaging 15-20 a year. In March 2016, at 3 a.m. a fire broke out in a building once used as a YMCA. The Eldora, Union, and Steamboat Rock fire departments successfully extinguished the blaze and no injuries were reported.

Probability

Much of the fire prevention efforts have gone into nonresidential fires and the results have been highly effective. Even with an increase in the prevention efforts in residential fires, both residential and nonresidential fire will continue to occur. During colder months, clogged chimneys and faulty furnaces and fire places can increase the probability of structural fires.

Vulnerability

Older structures with outdated electrical systems not built to current fire codes are particularly vulnerable to fire. Combustible building materials obviously are more vulnerable than structures constructed of steel or concrete. Structures without early detection devices are more likely to be completely destroyed before containment by response agencies. Structures in areas served by older, small, or otherwise inadequate water distribution infrastructure such as water mains and hydrants are also at significant risk. Problems vary from region to region, often as a result of climate, poverty, education, and demographics, but Iowa has about 13.4 fire deaths per million people. The fire death risk is nearly two times that of the average population for children 5 years of age or less.

Maximum Geographic Extent

With modern training, equipment, fire detection devices, and building regulations and inspections, most fire can be quickly contained and limited to the immediate structure involved. Certain circumstances, such as the involvement of highly combustible material or high winds, can threaten a larger area. The age and density of a particular neighborhood can also make it more vulnerable to fire due to the spreading of fire from neighboring structures. All Hardin County jurisdictions are at risk for structural fires.

Severity of Impact

Based on data from 2010 to 2015, there is a death in every 180 fires and an injury in every 34 fires. Each fire causes an average of $20,682 in direct property damage (2015 dollars).

Table 60: National Fire Statistics, 2000 - 2015

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage as Reported	Direct Property Damage in 2015 Dollars
2000	505,500	3,535	19,600	$8.5	$11.7
2001*	521,500	3,220	17,225	$8.9	$11.9
2002	519,000	2,775	15,600	$8.7	$11.2
2003	519,500	3,385*	15,600	$8.7*	$11.2*
2004	526,000	3,305	15,525	$8.3	$10.4
2005	511,00	3,105	15,325	$9.2	$11.2
2006	524,000	2,705	14,350	$9.6	$11.3
2007	530,500	3,000	15,350	$10.6*	$12.2*
2008	515,000	2,900	14,960	$12.4*	$13.6*
2009	480,500	2,695	14,740	$10.8	$12.0
2010	482,000	2,755	15,420	$9.7	$10.6
2011	484,500	2,640	15,635	$9.7	$10.2
2012	480,500	2,470	14,700	$9.8	$10.1
2013	487,500	2,470	14,700	$9.8	$10.1
2014	494,000	2,860	13,425	$9.8	$9.8
2015	501,500	2,685	13,000	$10.3*	$10.3*

*Does not include the events of 9/11/01, where there were 2,451 civilian deaths, 800 civilian injuries and $33.44 billion in property loss.
*Includes 100 fire deaths in the Station Night Club Fire in Rhode Island and 31 deaths in tow nursing home fires in Connecticut and Tennessee.
*Does not include the Southern California wildfires with an estimated property damage of $2 billion.
*This does not include the California Fire Storm 2007 with an estimated property damage of $1.8 million.
*Does not include the California wildfires 2008 with an estimated property damage of $1.4 billion.
*Does not include the California wildfire 2015 with an estimated property damage of $2.0 billion.

Source: National Fire Protection Association Structure Fires

Table 61: Average National Fire Statistics by Decade

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage as Reported	Direct Property Damage in 2015 Dollars
1977 - 1979	1,065,500	6,275	25,382	$4.4	$15.6
1980 - 1989	860,600	5,132	24,539	$6.2	$14.1
1990 - 1999	588,200	3,785	22,498	$7.4	$11.8
2000 - 2009	515,250	3,110	15,828	$9.6	$11.7
2010 - 2015	488,333	2,711	14,376	$9.8	$10.1

Source: National Fire Protection Association Structure Fires

Speed of Onset

While fires usually start with little or no warning time, alert devices can allow time for responders to contain the fire and allow occupants to evacuate the structure.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Structural Fire	38	29	49	48	38	46	67	41	39

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Human-Caused Hazards

According to CPG 201, human-caused incidents are the result from the intentional actions of an adversary, such as a threatened or actual chemical attack, biological attack, or cyber incident. Human-caused hazards in this plan include:

- Terrorism: Armed Assault
- Cyber Attack

Terrorism: Armed Assault

Description

According to the Global Terrorism Database (GTD), "terrorism" is defined as an intentional act of violence or threat of violence by a non-state actor. In addition, two of the following three criteria must be met.

1. The violent act was aimed at attaining a political, economic, religious, or social goal;
2. The violent act included evidence of an intention to coerce, intimidate, or convey some other message to a larger audience (or audiences) other than the immediate victims; and
3. The violent act was outside the precepts of International Humanitarian Law.

Armed Assault/Active Assailant: (Most Likely Form of Terrorism in Hardin County)

An armed assault is an attack with a weapon, often a gun or knife. These types of attacks can and have happened in many types of venues, including schools, places of work, and public areas such as religious locations, malls, transportation centers, and entertainment venues. Armed assaults with guns in schools have become a topic of major discussion and frustration in America, as attacks continue to occur with little political action to stop them. Most attacks are committed by an individual or small number of perpetrators with their own ideology (often compounded by mental illness), however some have been claimed by known terrorist organizations. Motivation for these attacks often includes at least one if not more of the following themes: revenge, power, loyalty, terror or profit. Revenge is the most common motivator.

Historical Occurrence

According to data gathered from the Global Terrorism Database, there have been 35 terrorist incidences in Iowa from 1970 – 2017. These have resulted in 0 known fatalities and 43 injuries.

Table 62: Terrorist/Armed Assault Historical Occurrences

DATE	COUNTRY	CITY	PERPETRATOR GROUP	FATALITIES	INJURED	TARGET TYPE
2016-10-15	United States	Reasnor	Unknown	0	0	Business
2016-08-01	United States	Reasnor	Unknown	0	0	Utilities
2016-08-01	United States	Newton	Unknown	0	0	Utilities
2016-07-31	United States	Oskaloosa	Unknown	0	0	Utilities
2006-09-11	United States	Davenport	Anti-Abortion extremists	0	0	Business

DATE	COUNTRY	CITY	PERPETRATOR GROUP	FATALITIES	INJURED	TARGET TYPE
2002-05-03	United States	Elizabeth	Anti-Government extremists	0	0	Private Citizens & Property, Government (General)
2002-05-03	United States	Morrison	Anti-Government extremists	0	1	Private Citizens & Property, Government (General)
2002-05-03	United States	Mount Carroll	Anti-Government extremists	0	1	Private Citizens & Property, Government (General)
2002-05-03	United States	Eldridge	Anti-Government extremists	0	1	Private Citizens & Property, Government (General)
2002-05-03	United States	Bloomington	Anti-Government extremists	0	1	Private Citizens & Property, Government (General)
2002-05-03	United States	Anamosa	Anti-Government extremists	0	1	Private Citizens & Property, Government (General)
2002-05-03	United States	Farley	Anti-Government extremists	0	1	Private Citizens & Property, Government (General)
2002-05-03	United States	Asbury	Anti-Government extremists	0	1	Private Citizens & Property, Government (General)
1995-03-29	United States	Des Moines	Aryan Republican Army	0	0	Business
1994-11-11	United States	Des Moines	Aryan Republican Army	0	0	Business
1994-02-15	United States	Davenport	Aryan Republican Army	0	0	Business
1994-01-25	United States	Ames	Aryan Republican Army	0	0	Business
1978-06-15	United States	West Des Moines	Unknown	Unknown	Unknown	Abortion Related

DATE	COUNTRY	CITY	PERPETRATOR GROUP	FATALITIES	INJURED	TARGET TYPE
1971-05-07	United States	Iowa City	Students for a Democratic Society	0	0	Government (General)
1970-09-05	United States	DeWitt	Black Nationalists	0	2	Police
1970-06-29	United States	Des Moines	Black Panthers (suspected)	0	0	Educational Institution
1970-06-21	United States	Des Moines	Black Panthers (suspected)	0	0	Police
1970-06-13	United States	Des Moines	Black Panthers (suspected)	0	20	Business
1970-05-22	United States	Ames	Black Panthers (suspected)	0	10	Police
1970-05-13	United States	Des Moines	Black Panthers (suspected)	0	2	Police
1970-04-27	United States	Ames	Left-Wing Militants	0	0	Private Citizens & Property
1970-04-27	United States	Iowa City	Black Nationalists (suspected)	0	2	Business
1970-02-23	United States	South Sioux City	Strikers	0	0	Utilities
1970-02-23	United States	South Sioux City	Strikers	0	0	Utilities
1970-02-23	United States	South Sioux City	Strikers	0	0	Utilities
1970-02-23	United States	South Sioux City	Strikers	0	0	Utilities
1970-02-04	United States	Akron	Strikers	0	0	Private Citizens & Property
1970-01-30	United States	South Sioux City	Strikers	0	0	Business
1970-01-30	United States	South Sioux City	Strikers	0	0	Unknown
1970-01-22	United States	South Sioux City	Strikers	0	0	Private Citizens & Property

Probability

The probability of a terrorist attack in Iowa is extremely low. Based on the GTD data from 1970 – 2017 approximately .8 people in Iowa are injured due to a terrorist attack every year. Put in another way, there is approximately 80% chance that one person in Iowa will be injured because of terrorism each year. According to the GTD there have been no recorded deaths in Iowa during this time span due to terrorism. Even the injuries are largely due to a handful of events that occurred in 1970.

Vulnerability

Due to the unpredictable nature of terrorist activities, pinpointing exactly which populations are most vulnerable is difficult. Military facilities, businesses, educational institutions, civil authorities, and private persons can all be the target of terrorist activities.

Maximum Extent

Terrorist activities have the potential to affect large numbers of people both directly and indirectly. For example, the terrorist attacks on September 11th not only caused many fatalities, but impacted the entire United States on a deep emotional level. Although such large-scale terrorist attacks are extremely rare, the massive amounts of people they can impact demand that this hazard be given consideration. Although the State of Iowa is unlikely to be the target of events like those on September 11th, terrorist attacks aimed at the power grids – or any other critical computer systems or infrastructure servicing communities – have the potential to impact large numbers of people.

Severity

Terrorist attacks can take on many forms. Typical outcomes of such events can include death, serious injury, and destruction of key landmarks or critical infrastructure. Another significant impact of these incidents includes the intense civil disturbance, unrest, and fear that such an event can cause.

Speed of Onset

Terrorist activities usually occur with no public warning whatsoever. The sudden nature of the such attacks are largely what make them successful. Although there are measures that can be taken to prepare for such an event, predicting with accuracy when and where terrorism will occur is very difficult.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Armed Assault	6	19	24	58	35	44	39	37	15

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Cyber Attack

Description

Advancements in technology have increased the productivity of our nation and made daily operations and markets reliant on cyber systems. As a result, the United States has become, and will increasingly continue to be, vulnerable to non-traditional attacks including cyber attacks on information and operations. Cyberspace is the nervous system for all critical infrastructures and is composed of hundreds of thousands of interconnected computers, servers, routers, switches, and fiber optic cables that allow our critical infrastructures to work. Studies performed by the Government Accounting Office and the Computer Security Institute found that the number of cyber security threats to both public and private sectors are on the rise. In 2000 there were over 20,000 cyber attacks to commercial institutions and 30,000 cyber attacks to federal agencies. The aggressors range from nation-states to unorganized groups or individuals.

The attacks on computer systems can come in the form of viruses, Trojans, worms, spoofs, or hoaxes from virtually anywhere in the world. Computer viruses, ranging from devastating to simply annoying, are sent out daily by organizations and individual hackers, and intermittently by people who fail to protect their computer software.

There are many changes taking place in the computer security arena, including:

- Decline of unauthorized computer system use and reported dollar amount of annual financial losses resulting from security breaches
- Virus attacks and denial of service outpaced theft of proprietary information

During a cyber attack, the initial attack may go undetected for a long time, hibernating until it is launched years after initially installed. A slow attack that is not reported for an extended period-of-time allows for logic bombs, trap doors, Trojan horses, and viruses to be inserted periodically over time and in a place of the intruder's choosing.

Cyber attacks can be divided into two main categories: attacks against data, and attacks against physical infrastructure. Because our society is so dependent on technology, a large-scale cyber attack could overwhelm government and/or private-sector resources quickly, as well as threaten lives, property, the economy and national security.

Attacks against data are more disruptive in nature:

- DoS attacks (Denial of Service) (prevents legitimate usage of service or access of data)
- Malware (virus or worm) (can be essentially harmless)
- Unauthorized intrusions (compromise confidentiality or availability)
- Website defacement (meant to send a message)

Attacks against physical infrastructure can be disruptive or destructive:

- Malware (virus or worm) (shut down or delete systems/data)
- Unauthorized intrusion (shut off or destroy systems

Historical Occurrence

Although there are no records of cyber-related breaches occurring within Hardin County, other districts in the State of Iowa have encountered this threat. On October 2, 2017, a hacker group known as the "Dark Overlord" attacked the Johnston Community School District near Des Moines. The hackers posted student names, addresses, and telephone numbers onto publicly accessible websites and sent a series of explicit, threatening texts to the parents of several students. Multiple government officials warned the public that hundreds of other Iowa governments and schools were vulnerable as well.

Probability

There is no specific time or season for cyber attacks. Probability/Frequency depends on the level of security, as well as how many attacks are being conducted.

Vulnerability

The US is heavily reliant upon cyberspace. Any disruption to Internet service or critical infrastructure information systems could potentially "threaten lives, property, the economy, and national security." For example, individuals and businesses are reliant on information systems and the Internet for daily tasks; without access to these systems, there could be major financial losses. Furthermore, delivery systems including water, electricity, even things such as groceries rely on information systems to coordinate and complete the delivery. Emergency services, such as 911 dispatch would have difficulties because most phone lines work via the Internet. Medical response and care is reliant on electricity, water and information systems and the Internet to access medical records. If the Internet was not available, many information systems would be useless and operations for many of the critical infrastructure sectors may stop altogether, causing major problems for both the public and private sector.

Maximum Extent

A cyber attack could have the potential to affect large numbers of people both directly and indirectly. A cyber attack upon our society could be catastrophic. If security is not able to contain attacks and if secondary and tertiary systems are not in place for the critical infrastructure, then a seemingly small cyber attack could quickly spread and grow to a large magnitude.

Severity

Cyber terrorism can cause significant disruption to critical information, computer systems, computer programs, and data, capable of impacting all levels of society.

Speed of Onset

Duration depends upon the level of security and the ability of the security systems to contain attacks and provide for backup means of conducting the critical infrastructure. The onset of an attack could be immediate or delayed. For example, a DoS attack would cause immediate issues; however, a malware attack or unauthorized intrusion attack may go on for months before the breach is noticed.

Hazard Evaluation and Impact/Consequence Assessment

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Cyber Attack	13	4	55	48	38	40	33	39	22

Legend (See Hazard Ranking Methodology for additional parameters)		
Index Score	**Frequency/Probability & Vulnerability Index Rating**	**Capability/Capacity & Mitigation Index Rating**
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown
Index Score	**Overall Risk Ranking**	
0% - 25%	Low	
26% - 50%	Medium	
51% - 75%	High	
76% - 100%	Extreme	
N/A	Not Applicable or Unknown	

Hazard Ranking Methodology

Hardin County recognizes that a community's All Hazard Risk Assessment is the fundamental building block of the four core functions of emergency management: prepare, respond, recover, and mitigate. In today's hazard environment, emergency management is the crux of solving the complex challenges that face our communities during an emergency or following a disaster. The disaster activity over the past several years has re-emphasized the importance for communities to invest in creating thorough strategies to develop comprehensive emergency plans and to test, train, and exercise all emergency operations.

The objective of the risk methodology is to devise a process to compare and evaluate which natural, technological, and human-caused hazards are the greatest threats to the County and where mitigation actions should be focused to provide the best value to County. The All-Hazard Risk Assessment describes, analyzes, and assesses the risks facing the County from three categories of hazards: Natural, Technological, and Human-Caused. Natural hazards are those events that are a result of our surrounding environment, such as wildfires and flooding. Technological hazards are events that are a result of the failure of infrastructure and systems that we have become dependent on for daily activities, such as transportation networks or utilities. Human-caused hazards are those events that are a result of local, national, or international societal interactions, such as terrorism.

Disasters Are Not Isolated Events

Past disaster events, both natural and manmade, indicate that disasters cannot be viewed or solved as isolated instances. In other words, the rising number of disasters and ensuing damages, including human losses, can be viewed as "symptoms of broader and more basic problems". These problems stem from the intricate relationships society shares with both the natural and constructed environments.

According to Dr. Denis Mileti:

> *"Many disaster losses – rather than stemming from unexpected events – are the predictable result of interactions among three major systems: the physical environment, which includes hazardous events; the social and demographic characteristics of the communities that experience them; and the buildings, roads, bridges, and other components of the constructed environment".*
>
> *Source: Mileti, Denis (1999). Disasters by Design. Joseph Henry Press: Washington DC.*

Dr. Mileti's findings demonstrate that these destructive events must be understood and assessed from a holistic point of view, and that current and future solutions for reducing damages and human losses must acknowledge that disasters occur at the intersection between the physical environment, social community characteristics, and the constructed environment. While the escalating losses from disasters will continue to result in part from the continuing expansion of the constructed environment, it can also be attributed to the fact that "all these systems – and their interactions – are becoming more complex with each passing year".

Therefore, the County All Hazard Risk Assessment update assumed that hazard events exacerbate preexisting conditions of a community, and that a community's hazard risk is a function of its vulnerability and potential hazard impact. To mitigate against these risks and hazards, capacities and capabilities of managing potential impacts are evaluated as well as a disaster's cascading impacts on communities, residents, essential services, and critical assets. The figure below provides a general illustration of this relationship between the pre-existing conditions in a community (i.e. pre-disaster vulnerability and efforts to mitigate and build capabilities) and the potential impact from various hazards.

Figure 43: Community Conditions, Vulnerabilities and Hazard Impacts

Source: Integrated Solutions Consulting

Although incorporating vulnerability, capability, and cascading impacts in a risk assessment is complex, it is imperative to include these relationships in the methodology to the best ability possible to ensure the usefulness of the outputs. Understanding these interdependent relationships can assist in operational, hazard, agency, and community planning.

Many of the hazards in the Risk Assessment do not pose a significant risk because of their low-probability of occurring or minimal impact; however, these hazards are still addressed in this report. Hazards that were determined to not occur in Iowa were removed from the Risk Assessment.

1. **Description**
   The description gives an overarching picture of the hazard.

2. **Location/Exposure & Extent**
   The location identifies which area the hazard may impact. The extent seeks to answer the question "How bad could it get?" Based on the best available data, this section discusses the single most impactful example of the hazard in terms of death, bodily harm, and/or damages. For example, this is not a tally of the total damages caused by a single type of hazard. This section also describes the rating scale, if one is available (i.e., Saffir-Simpson scale, Enhanced Fujita scale, etc.).

3. **Frequency/Probability & Previous Occurrences**
   This section describes how often the hazard has occurred. The National Climatic Data Center was used to populate this section for many natural hazards. If there were no previous examples of this hazard affecting the County, or the County was only minimally

affected, other geographical areas were considered, including State, National and in some cases, International locations.

4. Vulnerability & Potential Impact/consequence

To ensure consistency between hazard categories, the methodology chosen must have the ability to be uniformly applied to hazards. Differences in the hazard's impact area, amount and severity of damage, duration of the event, and direct and indirect economic impacts make it difficult to develop empirical values that can be universally applied to each hazard category. Therefore, the risk methodology developed was based on a function of the probability of the event occurring and its potential impact. Each hazard risk assessment went through a review process involving a Steering Committee consisting of County representatives. The risk associated with each hazard was evaluated based on the hazard's probability and frequency of occurrence, consequences of past events, and potential damage to the physical vulnerabilities (i.e. critical infrastructure, building stock, etc.), social vulnerabilities (i.e., special populations, socio-economic conditions), and community conditions (i.e. community organizations, environment, government) of the County.

5. Hazard Evaluation and Impact/consequence Assessment

Finally, the hazard assessment section shows the ratings assigned to the various categories of the Community Vulnerability, Risk, and Resiliency (CVR2) process. The CVR2 process is a scientific and patented method developed by Integrated Solutions Consulting for analyzing hazard risk.

Using the CVR2 process, each hazard is evaluated based on the probability of a hazard occurring, the potential magnitude of the hazard, and potential impacts. The CVR2 hazard assessment also provides consideration to the community's efforts to mitigate and build capacity to manage each hazard threat. The CVR2 hazard risk analysis incorporates the outputs provided by the vulnerability and capability/capacity indices to provide an overall hazard risk score that can be prioritized. The following table identifies the indicators and measurements, describes why these are important, and presents the key used to evaluate each indicator.

Building off the theoretical finding that disasters are not isolated events, the CVR2 process analyzes a series of vulnerability indices to evaluate the different types of impacts that may be possible by the hazard. Categories are areas of potential vulnerability, for example, social vulnerability. This is further evaluated based on a series of scientific indicators such as special population types such as the elderly. Each indicator is assessed to provide a complete picture of the potential impact that each hazard poses on the community. The following table identifies the indicators and measurements, describes why these are important, and presents the key used to evaluate each indicator.

Table 63: Hazard Assessment

Indicators & Measurements	Description	Rating Key
Hazard-Specific Frequency & Probability	Frequency of past occurrences and probability of future occurrences based on predictive modeling or scientific research.	Extreme High Medium Low

Indicators & Measurements	Description	Rating Key
Hazard-Specific Magnitude & Scale	The potential magnitude of the hazard and scale or size of the hazard.	Extreme High Medium Low
Capability & Capacity	The community's capability and capacity to manage the hazard, such as floodplain management programs or anti-terrorism surveillance	Very Capable Capable Somewhat Capable Minimally Capable
Mitigation Assessment	The community's efforts to mitigate the hazard such as a buying out flood-prone properties, building codes, etc.	Very Capable Capable Somewhat Capable Minimally Capable
Consequence & Impact Assessment	The potential severity of the impacts and consequences of the event. This assessment provides consideration to the Hazard Impact Analysis.	Extreme High Medium Low

Table 64: Hazard Impact Analysis

Categories and Indicators	Description	Rating Key
Physical Vulnerabilities Hazard Impact Analysis • Critical Infrastructure • Key Resources • Building Stock	The built environment provides the setting for human activity, ranging in scale from personal residential structures and buildings to neighborhoods and cities that often includes supporting infrastructure, such as transportation networks, energy and water systems. The CVR2's Physical Vulnerability Index (PVI) evaluates critical infrastructure, key resource assets, and building stock risk exposure to hazards using a series of indicators and measurements.	Very Vulnerable Vulnerable Somewhat Vulnerable Minimally Vulnerable
Social Vulnerabilities Index (SVI) Hazard Impact Analysis • Special Populations • Cultural Conditions • Socio-Economic Conditions	Social vulnerability can be broadly viewed as the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recovery from the impact of a hazard or threat. Social vulnerability can also be looked at as the susceptibility of community groups (elderly, children, etc.) to the impacts of hazards, as well as their resiliency or ability to adequately recover from them. It should be noted that susceptibility is not only a function of demographic characteristics, but also more complex factors such as health care provision, social capital, and access to lifelines. The CVR2's Social Vulnerability Index (SVI) evaluates the hazard risk exposure of special population types, socio-economic conditions, and cultural conditions using a series of open-source data measurements. There are a number of potential special populations that may be used in the descriptions below including: • Children: Those under 18 years old	Very Vulnerable Vulnerable Somewhat Vulnerable Minimally Vulnerable

Categories and Indicators	Description	Rating Key
	• Dialysis Patients: Patients who are reliant on dialysis to survive • Disabled: Those who have a mental or cognitive disability • Elderly: Those over 65 • Low-Income/Poor: Those who do not make a living wage or are below the poverty line • Pet Owners: Those who live with and/or take care of animals • Transient: Tourists, commuters, and homeless • University Students: Those who attend a college or university, often between ages 18 & 23 • Vehicle Ownership: Those who do not have access to a vehicle	
Community Conditions Vulnerability Index (CVI) Hazard Impact Analysis • Community Organizations • Economic Conditions • Environmental Conditions • Government Conditions • Special Properties	Community-level indicators are measures of conditions that consider how the area may be impacted during a hazard event. A community is a complex system of many interconnected components. This assessment is not meant to capture this system in its entirety, but rather to focus on specific categories of indicators. The CVR2's Community Conditions Vulnerability Index focuses specifically on four broad categories (economic, environmental, community organizations, governmental conditions), comprised of a series of evidence-based indicators and measurements of community vulnerability.	Very Vulnerable Vulnerable Somewhat Vulnerable Minimally Vulnerable

The true value of the CVR2 assessment is the ability to compare a wide variety of hazards and threats, from floods to acts of terrorism, using the same format for each hazard type. The scoring mechanism enables the community to identify areas of strength and weakness, as well as support the case for further mitigation and planning projects to build up the resilience of the area.

Limitations

The analysis of hazards is complicated by a number of factors including laws, customs, ethics, values, attitudes, political preferences, complex infrastructures and the built environment. The hazard analysis developed for the County's Hazard Mitigation Plan should be considered an initial step to evaluate the community's hazards. A hazard analysis does provide a wealth of valuable information that is essential for identifying goals, prioritizing actions, planning and preparedness, and recovering and mitigating future hazards.

The assessment of data and identifying the risk to a community is not a hard science. It is not possible to predict hazards or their impacts. Hazard analysis data and conclusions are not absolute. The perception of what constitutes a risk and a judgment of its impact can differ from individual to individual. The changing natural, built, or societal environments can have a significant effect on each hazard assessment. For this reason, it is important to periodically update this document. A hazard risk assessment does provide a guide to evaluate Hardin County's risks and guide the mission of protecting their members and interests.

Hazard Risk Determination

The determination of the risks associated with each hazard were not based on empirical values, but instead based on a function of the probability of the event occurring and its potential impact. This approach was necessary due to the complexities of a uniformed all-hazard approach and the numerous direct and indirect factors for a unique community like Hardin County.

At the most fundamental level, both DHS and FEMA recognize that risk is equal to frequency (and/or probability) multiplied by consequence (R = F × C). More specifically, in order to have a certain level of risk, there must be a probability or likelihood for that event to occur. Likewise, if the event does occur but there is no impact or consequence, the level of risk is negated or substantially reduced.

Whereas measuring frequency/probability of a hazard is often straightforward, defining and measuring the consequence is more complex. At the most basic level, consequence is an assessment of the potential impact(s) if the attack or hazard event actually occurs. In this assessment, the consequence of an event (or the impact) will be interdependent on the following factors: vulnerabilities (i.e. social, physical, and community conditions), capabilities and capacities, mitigation, and the characteristics (i.e. magnitude, scale, etc.) of the hazard event or attack itself. Again, the frequency/probability of the hazard is not included in assessing the consequence because without the event, there is no consequence or impact.

The algebraic conceptual framework that drives the CVR2 tool is based on the overarching premise that the impacts of a disaster are a direct correlation to the pre-existing conditions and vulnerabilities of the community; and secondly, although risk exposure can be reduced, a community can never completely eliminate disaster impacts by implementing mitigation projects or by building capabilities and capacities.

It is important to recognize that the greater the rigor used in the methodology, the more reliable the output and the more effective the jurisdiction's preparedness efforts will be. For this reason, the CVR2 relies on a large spectrum of evidence-based categories, indicators and measurements all of which are important in understanding a community's hazard risk potential. The algorithm of the CVR2 allows for the systematic analysis of these categories, indicators and measurements and provides the consistency needed to uniformly evaluate the hazard risk potential across all hazards.

Figure 44: Risk Assessment Methodology and Formula

$$\left[\text{Probability and Frequency} \times \text{Potential Magnitude \& Scale}\left[\frac{f_{V1}\left[\text{Average Social Vulnerability-Impact Score} + \text{Average Physical Vulnerability-Impact Score} + \text{Average Community Conditions Vulnerability-Impact Score}\right]}{f_{X1}\left[\text{Average Capabilities \& Capacities Score} + \text{Average Mitigation Score}\right]}\right]\right]^{\left(\frac{f_{V2}}{f_{X2}}\right)}$$

The algorithm above recognizes that the potential impact from a hazard is a function of the pre-existing vulnerabilities in a community. Additionally, the algorithm recognizes that although you can reduce your potential impact and vulnerability to hazards by increasing your capability and

implementing mitigation, vulnerability cannot be eliminated. Communities cannot achieve absolute resiliency to any hazard.

More specifically, the variable fV represents the numeric relationship that although there is a direct correlation between a community's vulnerability and potential impacts; the extent of the vulnerability exposure varies from hazard to hazard. Similarly, fX represents the numeric relationship that recognizes that capabilities, capacities and ability to mitigate cannot eliminate a threat and, therefore, cannot be absolute. In simple terms, vulnerability, capability and mitigation will never be more than 100% or less than 0% (both of which would be practically and theoretically impossible).

Finally, the algorithm recognizes that communities can have vulnerabilities, capabilities, capacities, and ability to mitigate that are specific to the community and therefore should be considered all hazards. This is represented in the $fV1$ *and* $fX1$ variables. An example of this would be a community's overall level of preparedness or trust in government. Additionally, communities may also have hazard-specific vulnerabilities or taken hazard specific measures to mitigate or build capabilities to manage a specific hazard. This is represented by the $fV2$ and $fX2$ variables. An example of this would be a community participating in FEMA's National Flood Insurance Program.

Overall Hazard Ranking and Risk Scores

The following tables represent the overall risk scores for Hardin County based on the described methodology.

Table 65: Legend for Risk Assessment Categories and Scores

Index Score	Vulnerability Index Rating	Capability/Capacity Index Rating
0% - 25%	Minimally Vulnerable	Minimally Capable
26% - 50%	Somewhat Vulnerable	Somewhat Capable
51% - 75%	Vulnerable	Capable
76% - 100%	Very Vulnerable	Very Capable
N/A	Not Applicable or Unknown	Not Applicable or Unknown

Index Score	Overall Risk Ranking
0% - 25%	Low
26% - 50%	Medium
51% - 75%	High
76% - 100%	Extreme
N/A	Not Applicable or Unknown

Note: We cannot assume that this ranking is accurate across the entire county. Hazard boundaries already indicate that areas are affected by different hazards. The vulnerability assessment will further refine what hazards should be considered in determining goals and mitigation actions for each jurisdiction.

According to the ranking method, higher scores coincide with a greater potential impact on the county. The hazards that have the greatest potential for affecting Hardin County are severe winter storms, highway transportation incidents, windstorms and tornadoes. Other hazards rank very closely, too. In Hardin County, the high-ranking hazards occur the most frequently and cause the most damage throughout the County.

The other hazards ranked lower may occur less frequently, but do not necessarily cause less damage. Hazards like sinkholes and earthquake are ranked low, but this makes them no less important. Their low ranking is mainly due to lack of historical data or knowledge. If one of these hazards were to occur, the results could be devastating.

Table 66: Hazard Risk Scores

See next page for the table.

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Severe Winter Storm	56	41	63	61	43	42	33	53	55
Flood	44	46	63	61	55	44	39	56	50
Highway Transportation Incident	63	29	35	43	32	46	67	37	48
Hailstorm	50	27	55	48	43	46	67	43	47
Tornado	38	44	63	58	50	31	33	55	45
Thunderstorm and Lightning	56	16	49	43	29	46	67	36	45

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Ice Storms	38	34	63	58	50	40	33	52	44
Windstorm	44	31	49	48	43	46	67	43	43
Structural Fire	38	29	49	48	38	46	67	41	39
Hazardous Materials Incident	38	16	49	48	43	46	67	40	39
Railway Transportation Incident	38	16	49	48	35	46	67	38	38
Animal/Crop/Plant disease	31	24	24	61	50	31	67	41	36

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Drought	25	32	55	61	54	40	56	51	36
Energy Failure	25	16	49	58	35	46	67	40	32
Grass or Wildland Fire	25	9	49	43	38	46	67	37	30
Dam Failure	13	19	49	48	55	34	67	44	23
Cyber Attack	13	4	55	48	38	40	33	39	22
Structural Failure	13	21	49	33	43	49	50	38	22

Hazard	Frequency & Probability	Potential Magnitude and Scale	Physical Vulnerability Hazard Impact	Social Vulnerability Hazard Impact	Community Conditions Hazard Impact	Overall Capability and Capacity	Mitigation	Hazard Consequence & Impact Score	Overall Risk Rating
Communications Failure	13	9	49	48	29	46	67	35	21
Pipeline Transportation Incident	13	10	49	41	38	42	50	37	21
Extreme Heat	13	17	24	41	25	46	67	29	19
Armed Assault	6	19	24	58	35	44	39	37	15
Earthquake	6	9	49	33	32	42	61	33	14
Sinkholes	6	2	49	33	32	46	67	31	14

Vulnerability Assessment

Requirement 44 CFR §201.6(c)(2)(ii): *[The risk assessment shall include] a description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.*

Methodology

The vulnerability assessment further defines and quantifies populations, buildings, critical facilities, and other community assets at risk to natural, technological, and human caused hazards. This assessment was conducted based on the best available data and the significance of each particular hazard. Data to support the vulnerability assessment was collected from the following sources:

- Statewide GIS datasets compiled by state and federal agencies
- Asset mapping completed by each jurisdiction
- Existing plans and reports
- Local knowledge
- Public and Planning Team input

The vulnerability assessment also considers the varying degrees of vulnerability across the planning boundary for each hazard. Hardin County is extremely vulnerable to certain hazards while others may occur but are much less of a threat people and property. The effects of hazards can be very unique and must be considered as such.

Vulnerability

44 CFR §201.6(c)(2)(iii): *For multijurisdictional plans, the risk assessment must assess each jurisdiction's risk where they vary from the risks facing the entire planning area.*

Hardin County is not equally vulnerable to all of the hazards identified in this plan. There are varying degrees throughout the county, and this section of the plan will assess these differences. In the context of hazard mitigation, vulnerability is how open a jurisdiction is to damage from a particular hazard. A hazard may potentially destroy the entire community or damage just a few homes. Lives may or may not be in danger. These and several other aspects are important to consider when assessing vulnerability.

The results from the hazard ranking were used to help determine how vulnerable Hardin County and its individual jurisdictions are to natural, technological, and human caused hazards.

A high priority rating generally indicates that the hazard is a major threat to a jurisdiction. Its effects may be widespread and severe, and may result in loss of life and major property damage. Since effects vary among high priority hazards, a more detailed description of a hazard's potential effects is provided later in this section.

A hazard with a medium priority may also be a major threat to a jurisdiction, but its effects are on a smaller, less-severe scale. The details of these hazards will also be discussed later in this section. Low priority hazards do not pose a major threat to the jurisdiction. If they were to occur, their effects would likely not be widespread or very severe when compared to the high and medium priority hazards.

Table 67: Risk and Vulnerability Across Hardin County

Hazard	Jurisdictions	Score	Priority
Severe Winter Storm	All Jurisdictions	55	High
Flood	Ackley Alden Hubbard Iowa Falls Steamboat Rock Union Whitten Unincorporated Hardin County AGWSR SD Alden SD BCLUW SD Iowa Falls SD	50	Medium
Highway Trans Incident	All Jurisdictions	48	Medium
Hailstorm	All Jurisdictions	47	Medium
Tornado	All Jurisdictions	45	Medium
Thunderstorms & Lightning	All Jurisdictions	45	Medium
Ice Storm	All Jurisdictions	44	Medium
Windstorm	All Jurisdictions	43	Medium
Structural Fire	All Jurisdictions	39	Medium
Haz Mat Incident	All Jurisdictions	39	Medium
Railway Trans Incident	Ackley Alden Buckeye Eldora Iowa Falls Steamboat Rock Union Unincorporated Hardin County AGWSR SD Alden SD BCLUW SD Eldora-New Providence SD Iowa Falls SD	38	Medium
Animal /Crop/Plant Disease	Unincorporated Hardin County	36	Medium
Drought	All Jurisdictions	36	Medium
Energy Failure	All Jurisdictions	32	Medium
Grass/Wildland Fire	All Jurisdictions	30	Medium
Dam Failure	Alden Eldora	23	Low

	Iowa Falls Steamboat Rock Unincorporated Hardin County AGWSR SD Eldora-New Providence SD Iowa Falls SD		
Cyber Attack	All Jurisdictions	23	Low
Structural Failure	All Jurisdictions	22	Low
Communications Failure	All Jurisdictions	21	Low
Pipeline Trans Incident	Ackley Alden Eldora Hubbard Iowa Falls New Providence Radcliffe Steamboat Rock Union Whitten Unincorporated Hardin County AGWSR SD Alden SD BCLUW SD Eldora-New Providence SD Hubbard-Radcliffe SD Iowa Falls SD	21	Low
Extreme Heat	All Jurisdictions	19	Low
Terrorism: Armed Assault	All Jurisdictions	15	Low
Earthquake	All Jurisdictions	14	Low
Sinkholes	Ackley Alden Buckeye Eldora Iowa Falls Steamboat Rock Union Unincorporated Hardin County AGWSR SD Alden SD BCLUW SD Eldora-New Providence SD Iowa Falls SD	14	Low

Community Assets

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

This section covers the location and density of the population, structures, critical facilities, infrastructure, and other important assets in Hardin County that may be at risk of the natural, technological, and human-caused hazards identified in the previous section.

Hazards designated as "planning boundary-wide" can affect all of the people, structures, critical facilities, infrastructure, and other assets identified in this section. The planning boundary-wide hazards include (in no particular order):

- Communication Failure
- Drought
- Energy Failure
- Extreme Heat
- Flash Flood
- Grass or Wildland Fire
- Hailstorm
- Severe Winter Storm
- Structural Failure
- Structural Fire
- Thunderstorm and Lightning
- Tornado
- Windstorm
- Hazardous Materials Incident
- Highway Transportation Incident
- Earthquake
- Terrorism: Armed Assault
- Cyber Attack

The hazards that only affect certain jurisdictions and require more specific analysis include (in no particular order):

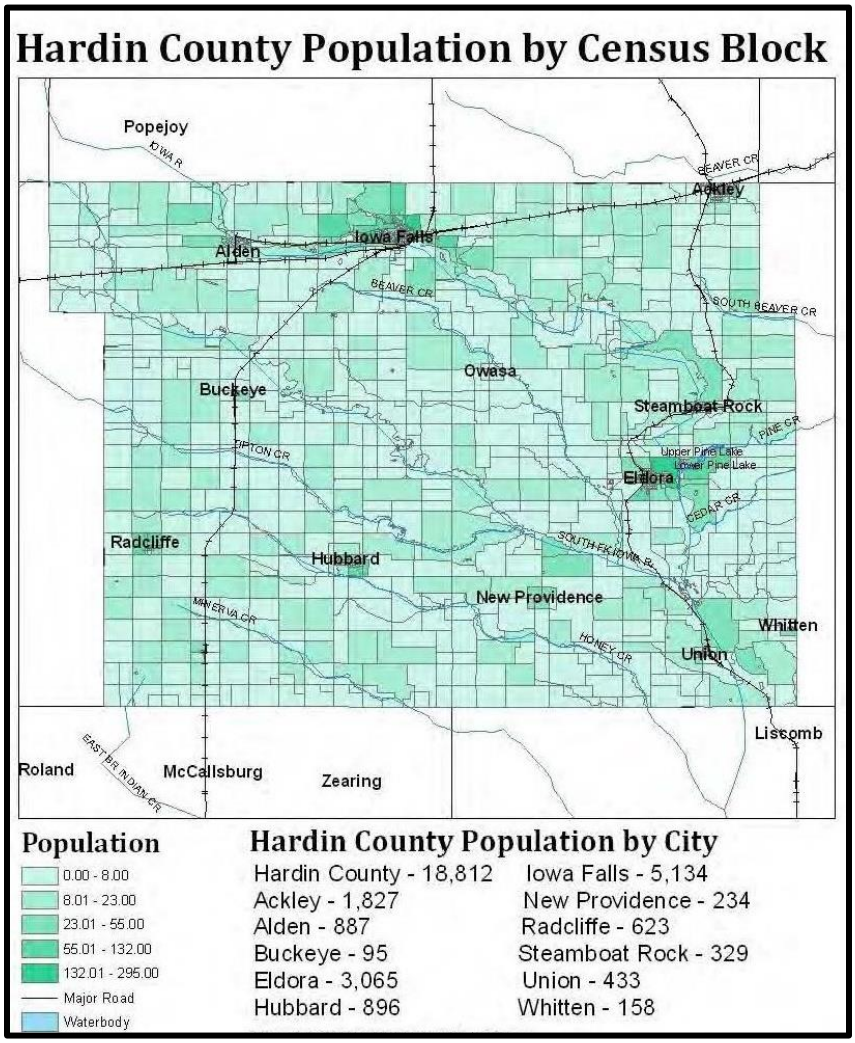
- Animal/Crop/Plant Disease—Unincorporated Hardin County
- Dam Failure—Unincorporated Hardin County, Alden, Eldora, Iowa Falls, Steamboat Rock
- Pipeline Transportation Incident— Unincorporated Hardin County, Ackley, Alden, Eldora,
- Hubbard, Iowa Falls, New Providence, Radcliffe, Steamboat Rock, Union, Whitten
- Railway Transportation Incident— Unincorporated Hardin County, Ackley, Alden, Buckeye, Eldora, Iowa Falls, Steamboat Rock, Union
- River Flooding— Unincorporated Hardin County, Ackley, Alden, Hubbard, Iowa Falls, Steamboat Rock, Union, Whitten
- Sinkholes— Unincorporated Hardin County, Ackley, Alden, Buckeye, Eldora, Iowa Falls, Steamboat Rock, Union

Each hazard and its effects will be discussed in the next section of this plan. This section is purely a summarization of the assets that are generally in danger when a hazard event occurs and their importance to the corresponding jurisdiction. There are quite a few similarities between jurisdictions, but there are also dozens of assets unique to each jurisdiction.

Human Assets

The people who live and visit Hardin County are the first priority for providing protection from natural, technological, and human caused hazards. One of the two main goals of hazard mitigation are to prevent human injury and death. Nearly 17,400 people live in Hardin County and thousands more visit and travel through the county regularly (American Community Survey, 2011-2015 5-Year Estimate). Refer to the figure below for the population distribution across Hardin County.

Figure 45: Hardin County Population by Jurisdiction and Census Block

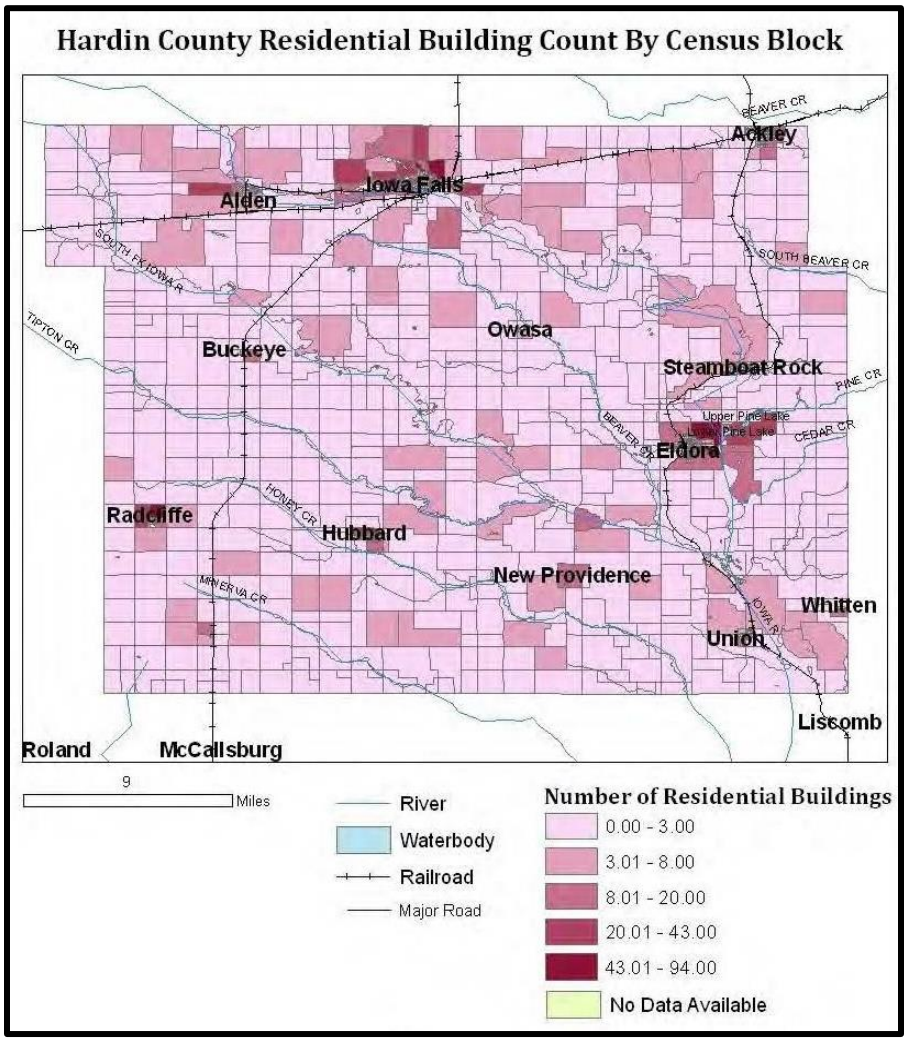


The largest concentration of people in Hardin County is in its incorporated cities. Eldora and Iowa Falls have the highest populations followed by Ackley. The rest of the population is evenly spread among the smaller cities and the unincorporated areas throughout the county.

Structural Assets

The other main goal of hazard mitigation is to prevent property damage, which can be both dangerous and extremely expensive to repair. For the sake of analysis, Hardin County's structural assets were divided into five different use categories: residential, commercial, industrial, agricultural, and historic. Figure 46 below features residential structures.

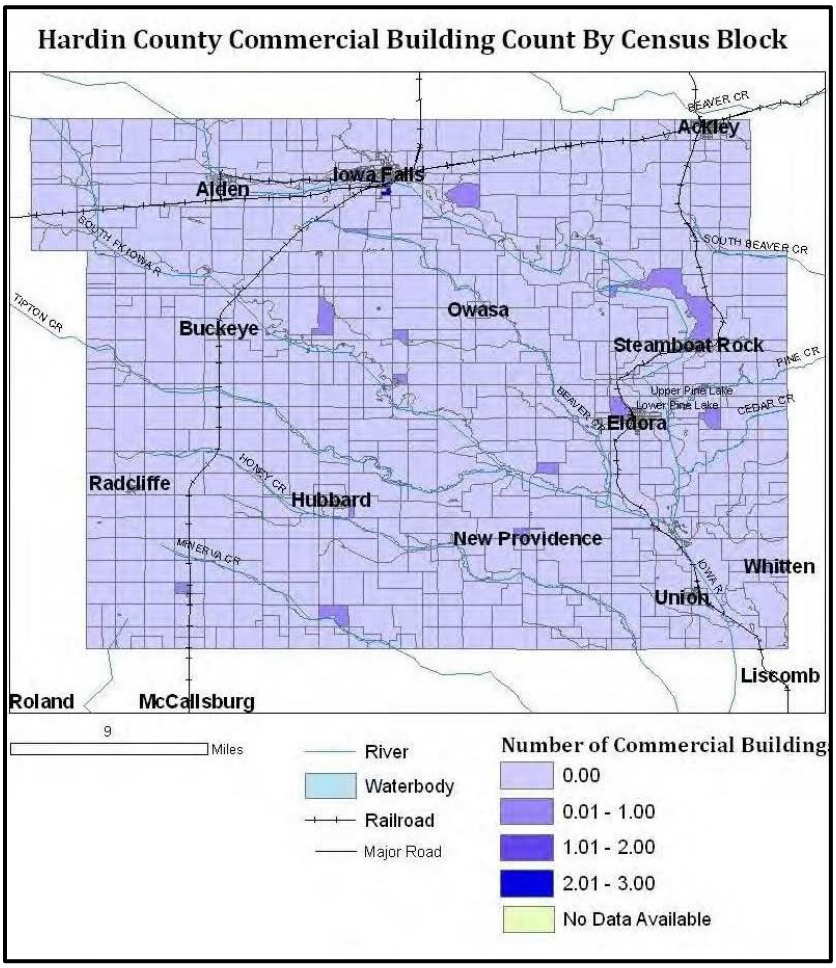
Figure 46: Hardin County Residential Building Count by Census Block



The pattern of residential development resembles the population distribution of the county since it is based on residence. The majority of residential structures are concentrated in the county's largest cities, including Alden. Smaller concentrations can be found in the smaller cities of Hardin County and throughout the unincorporated areas. Overall, the majority of the structures in Hardin County are for residential use. Refer to Figure 46.

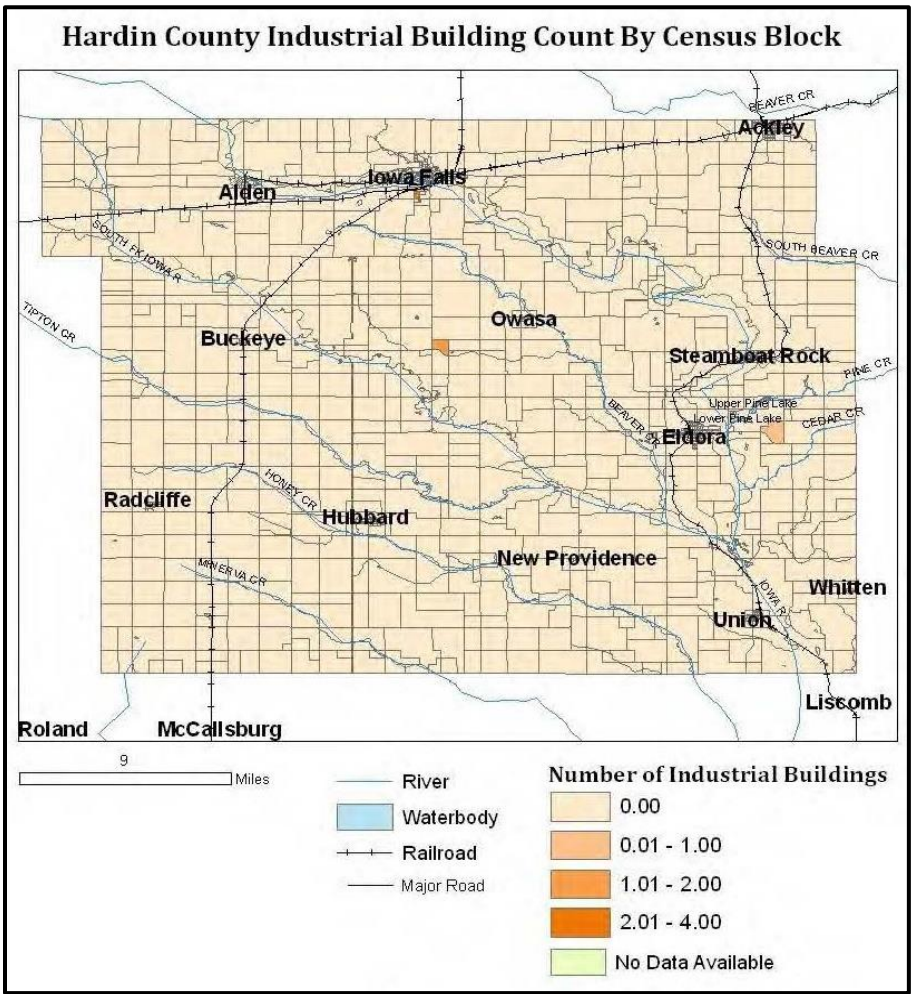
The second structure type, commercial, somewhat resembles the patterns of residential development. Most other commercial buildings are scattered in unincorporated portions of the county. The highest concentrations of buildings in one census block, though, is just two to three so there are no extremely dense areas of commercial buildings. Generally, Hardin County's largest cities have higher concentrations but there are also denser areas in the unincorporated, city periphery.

Figure 47: Hardin County Commercial Building Count by Census Block



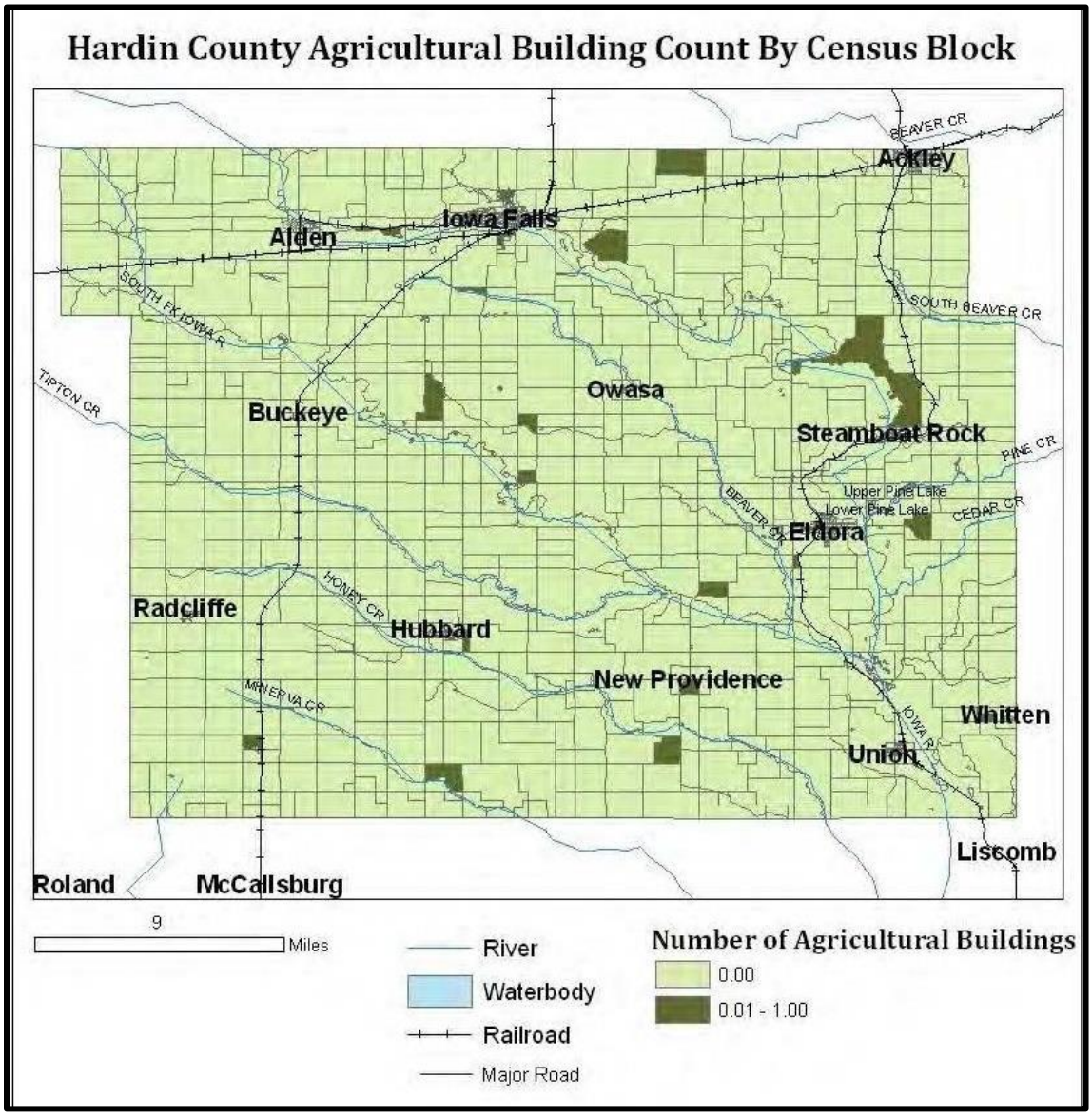
The concentration of industrial buildings is also not very dense with the highest concentration ranging from just two to four buildings. Refer to Figure 48. There are four areas that stand out as the densest industrial areas with two to four buildings. There is a single area with 1 industrial building. Overall, Hardin County does not have a high concentration of these buildings in any area, so the county's industrial economy is not very vulnerable.

Figure 48: Hardin County Industrial Building Count by Census Block



The distribution of Hardin County's agricultural buildings is scattered, somewhat like the commercial buildings. None of the areas are extremely dense because the highest range in number of buildings per census block is just one building. Most agricultural buildings are located outside of city corporate limits in the unincorporated areas of the county. Refer to Figure 49 for the location of agricultural buildings in Hardin County.

Figure 49: Hardin County Agricultural Building Count by Census Block



Historic Assets

The 34 historic sites are spread across most of Hardin County. There is one major cluster of historic sites in the city of Iowa Falls, which can be seen in the call out in Figure 50. This cluster contains a majority of the sites in the county. Because these historic sites are in such close proximity, they should have a high priority and consideration when it comes to protection from hazards. Many of these sites are used presently as critical facilities and therefore, maintain a high importance to the city. The full list of Hardin County's historic sites is below:

Table 68: Historic Locations in Hardin County

	Name	Address	City
1	Illinois Central Combination Depot--Ackley	N. of Railroad St., between State and Mitchell Sts.	Ackley
2	Alden Public Library	1012 Water St.	Alden
3	Alden Bridge	Main St. over Iowa R.	Alden
4	Eldora Public Library	1219 14th Ave.	Eldora
5	Hardin County Courthouse	Edgington Ave.	Eldora
6	First Congregational Church	1209 12th St.	Eldora
7	Eldora Downtown Historic District	Approximately ten blocks in downtown Eldora around the courthouse square	Eldora
8	Hardin County Home Historic District	28483 Cty. Rd.D41	Eldora
9	Civilian Conservation Corps--Prisoner of War Recreation Hall	301 11th Ave.	Eldora
10	Carnegie-Ellsworth Public Library	520 Rocksylvania Ave.	Iowa Falls
11	Edgewood School of Domestic Arts	719 River St.	Iowa Falls
12	Metropolitan Opera House	515 Washington St.	Iowa Falls
13	Iowa Falls Union Depot	E. Rocksylvania Ave. and Depot St.	Iowa Falls
14	Mills Tower Historic District	E. Rocksylvania Ave. 1/3 mi. E of Freight House	Iowa Falls
15	McClanahan Block	613 Washington Ave.	Iowa Falls
16	Princess--Sweet Shop	607 Washington Ave.	Iowa Falls
17	First National Bank	601 Washington Ave.	Iowa Falls
18	Ellsworth--Jones Building	511 Washington Ave.	Iowa Falls
19	St. Matthew's by the Bridge Episcopal Church	Jct. of Oak and Railroad Sts.	Iowa Falls
20	Sentinel Block	702 Washington Ave.	Iowa Falls
21	W. R. C. Hall	710 Washington Ave.	Iowa Falls
22	US Post Office--Iowa Falls	401 Main St.	Iowa Falls
23	Estes Park Band Shell	Estes Park	Iowa Falls
24	River Street Bridge	River St. over Iowa R.	Iowa Falls
25	Washington Avenue Bridge	US 20 over Iowa R.	Iowa Falls
26	Iowa Falls Bridge	US 65 over Iowa R.	Iowa Falls
27	Slayton Farms--Round Barn	20478 135th St.	Iowa Falls
28	Union Cemetery Gardener's Cottage	Union Cemetery	Iowa Falls

29	Washington Avenue Commercial Historic District	401-714 Washington Ave., 300 blk. Stephens, & 200 & 300 blks. Oak Sts.	Iowa Falls
30	Kurtz, Glenn and Nell, Lustron Home and Garage	2017 Washington Ave.	Iowa Falls
31	Honey Creek Friends' Meetinghouse	SW of New Providence	New Providence
32	New Providence School Gymnasium	106 N. Main St.	New Providence
33	Steamboat Rock Consolidated Schools Building	306 W. Market St.	Steamboat Rock
34	Folkert Mound Group	Address Restricted	Steamboat Rock

Source: National Register of Historic Places and National Park Service, as of October, 2017

Refer to Figure 50. This map shows the location of each historic site with its corresponding number in the list above as its identifier.

Figure 50: Hardin County Historic Sites

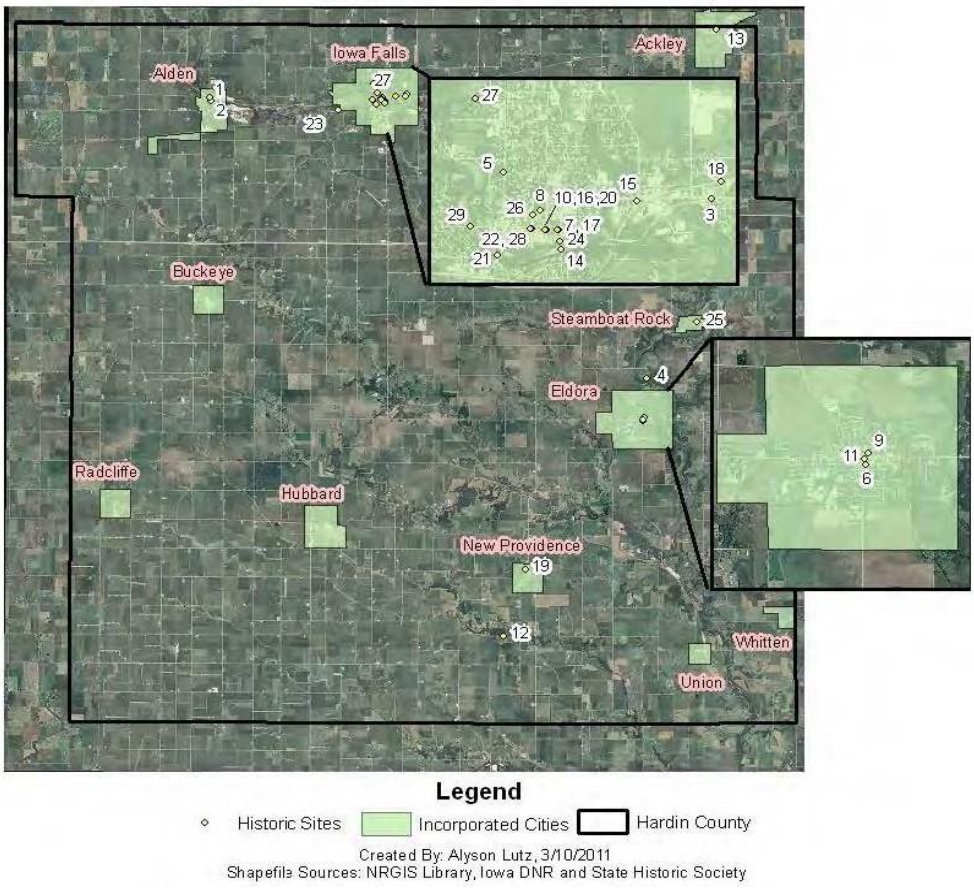
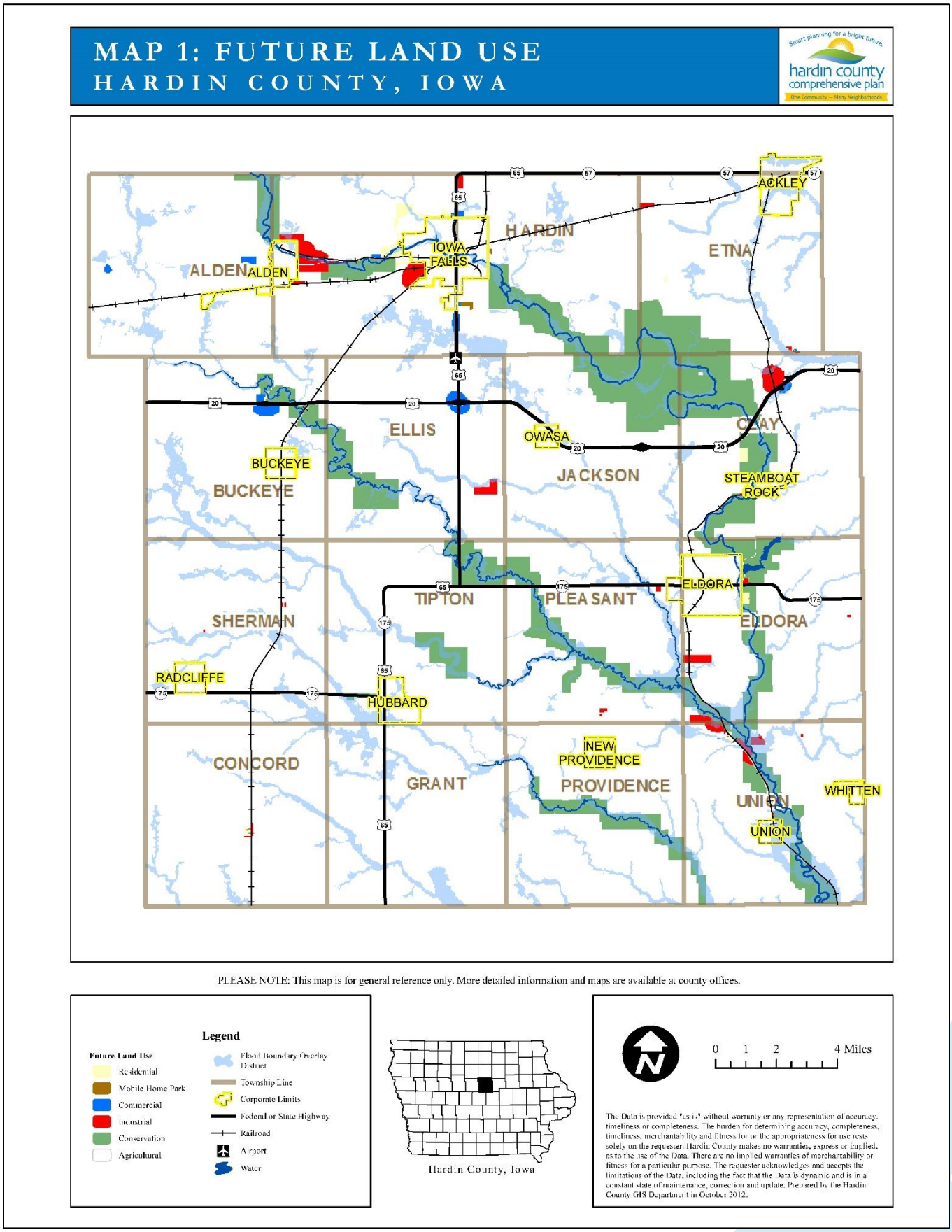


Figure 51: Future Land Use



Jurisdiction Identified Assets, Critical Facilities, and Vulnerable Populations

In the 2011 mitigation plan, a community asset diagram was completed for each individual jurisdiction and the unincorporated areas of Hardin County. The schools were also included in this process by having school representatives participate in asset mapping for the community in which their buildings are located. The assets particular to each jurisdiction can be found in this section. For the 2017 update, assets were verified and updated, as needed. Changes were minimal (and noted as appropriate). Therefore, maps from the 2011 version were utilized.

Critical facilities and vulnerable populations were also identified for each jurisdiction. These facilities and populations are also important to identify for the purpose of determining hazard mitigation priorities. Knowing who is most vulnerable during a hazard event and what facilities are most important during and immediately after a hazard event is extremely valuable.

Critical facilities are defined as facilities that are extremely important to the health, safety, and welfare of the people of each jurisdiction. These facilities are especially important following hazard events. Examples of critical facilities include but are not limited to:

- Shelters
- Police, fire, ambulance stations
- City Hall
- Hospitals, medical clinics, nursing facilities
- Emergency operation centers
- Transportation facilities like roads, bridges, airports, etc.
- Infrastructure for water, wastewater, power, communications, etc.
- Power generation facilities
- Schools
- Businesses that provide necessities like food, fuel, hardware, and money

Every Hardin County jurisdiction is unique, so the critical facilities identified for one jurisdiction may be very different from others. Jurisdictions may rely on critical facilities from another jurisdiction (such as a grocery store or gas station); those were identified, also. These facilities may not be located in the identifying jurisdiction, but residents depend on that grocery store or gas station for their basic needs, and it is therefore critical to the identifying jurisdiction.

Those who may require special assistance or medical care are considered a vulnerable population. These people need to be identified so their needs can be met in the event of a disaster. Examples of vulnerable populations include but are not limited to:

- Elderly in their homes, assisted living, or nursing facility
- Disabled in their homes, assisted living, or nursing facility
- Young children in school or daycare

Elderly and disabled people may not be able to cope with a disaster as well as others. These people may require help getting to a shelter, boarding up windows, buying groceries, or contacting their family (among other possible needs).

Ackley

It is important to identify community assets, which may be infrastructure, buildings, activities, or institutions, because it helps residents decide what to protect from the harmful impacts of hazard events. The assets identified for Ackley are below:

1. Ackley Medical Center
2. AGWSR Schools
3. Airport
4. Athletic complex
5. Beaver Creek
6. City parks
7. Cougar's Den Daycare
8. Dental Office (Ackley Family Dental)
9. Heritage Center
10. Nucara Pharmacy
11. Eichmeier Motors
12. German Band
13. Grocery Store
14. Hiking/Biking Trails
15. Country Club – Ackley Recreation Club
16. NRP – Dog Food Plant
17. Pine Lakes LLC
18. Pocket Wetlands
19. Pool
20. Prairie Bridges campground
21. Prairie Settlement Site
22. Prairie land
23. Prairie Restoration
24. Grand Jivante
25. Railroads
26. Heritage Motors
27. Sunset Distributing
28. Triple T Meats
29. Water Main Replacement
30. Cougar Fitness
31. Sky Kone

The critical facilities for the community were also identified. These are the facilities in the community that are important to maintain the health, safety, and welfare of the residents and visitors of the Ackley community. The critical facilities identified for Ackley are below:

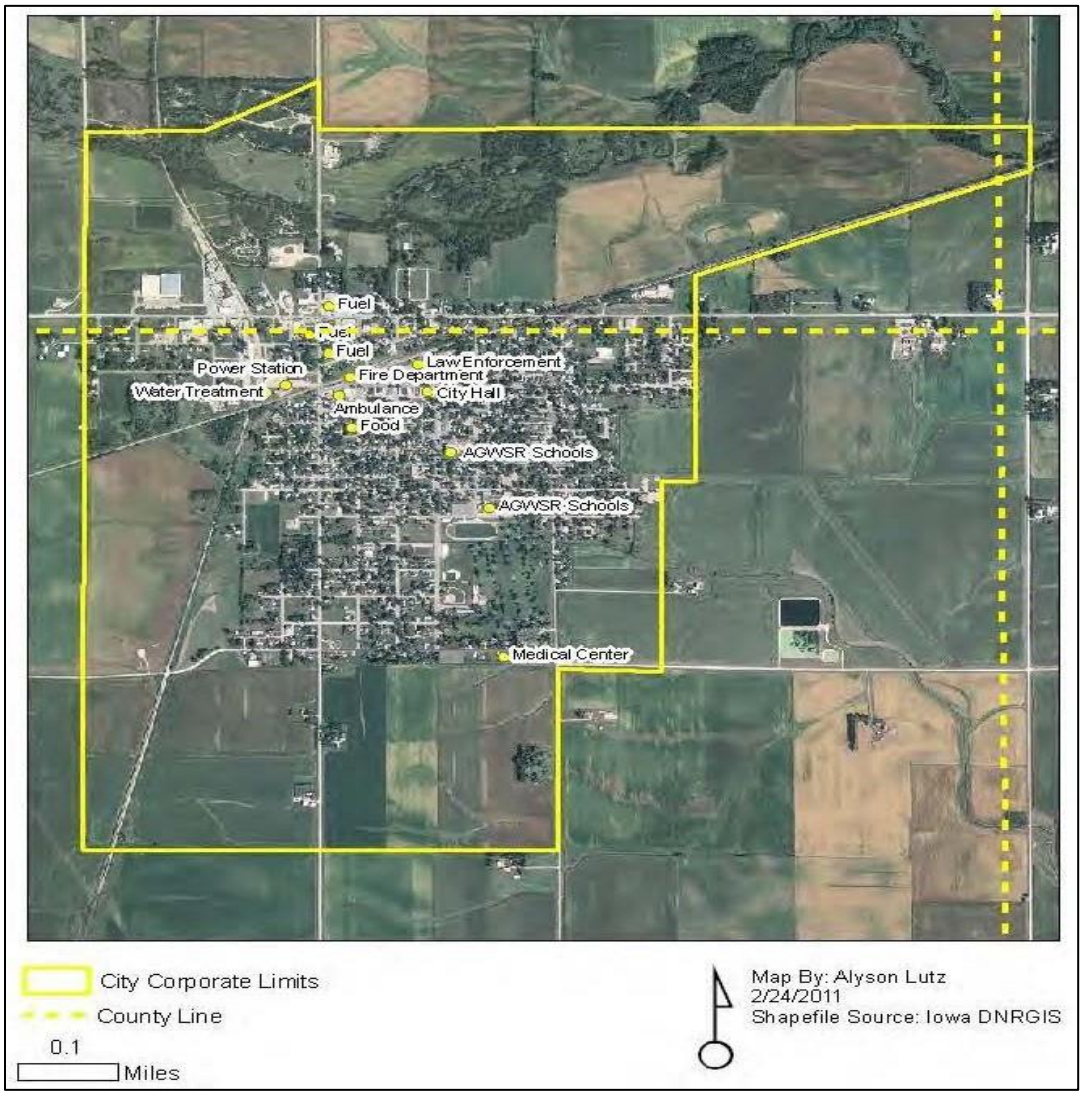
1. City Hall
2. AGWSR Schools
3. Fire Department
4. Ambulance
5. Law Enforcement
6. Medical Center
7. Power Station
8. Water Treatment
9. Fuel
10. Food

These ten facilities were identified for several reasons. The city hall serves as the city command post during disaster events. The medical clinic can help serve those injured in the hazard before, during and following the event. The power station is vital during hazard events, so it is pertinent to protect it. Refer to Figure 52 for each facility's location in Ackley.

The vulnerable populations living in Ackley were also identified. These are the people in the community who may require special assistance or medical care. Vulnerable populations are identified so their needs can be made a priority in the event of a disaster. The vulnerable populations living in the City of Ackley are identified below.

1. Grand Jivante
2. Cougars Den Day Care
3. Those using Prairie Bridges Park facilities
4. Those using athletic fields and pools
5. Other private day cares
6. County Maintenance Shed (Storage Only)

Figure 52: Ackley's Critical Facilities



Alden

Alden's assets were identified by the Planning Team members who volunteered to represent the city. The assets were identified through asset mapping activity at the first countywide hazard mitigation meeting. For this activity, three major asset areas were considered: environment, economy, and social. Alden's assets are listed below.

1. Affordable Housing/Living
2. Ag Services
3. Ag-based employment
4. Alden Days
5. Available housing
6. Churches
7. City parks
8. Elevator
9. Farm Service
10. Gift Shop
11. Good in-town roads
12. Iowa Limestone
13. Iowa River
14. Iowa Select
15. Library
16. Limestone
17. Liquor Store
18. Mid-Iowa Fabrication /Central Iowa Fabrication
19. Restaurants
20. Safe Community
21. School Athletic fields
22. School District
23. School Grounds
24. Small Town Values
25. Summit Forums
26. Alden Diesel & Tractor Repair

The city's critical facilities were also identified at this meeting but in a separate activity. A couple of the city's assets were also considered critical facilities. The facilities that need to function immediately following a hazard event are listed below.

1. Hilltop Housing
2. Alden Elevator
3. Alden Elementary School
4. Alden Fire Department/City Hall
5. Alden Library
6. Iowa Limestone
7. Martin –Marietta

9. Alden Water Plant
10. Alden Pump Station/Waste Water
11. County Maintenance Shed

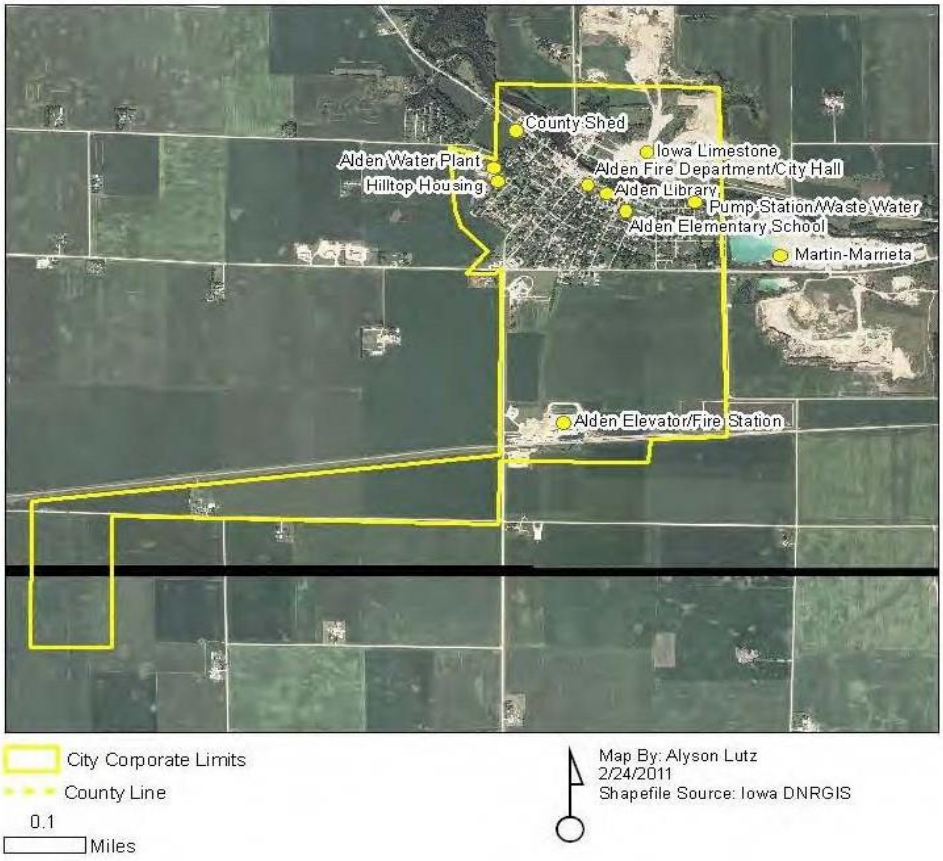
All of these facilities are extremely important to Alden during and after a hazard event. These ten facilities were chosen for many reasons of which some are very obvious. The Fire Department/City Hall is a command post for City operations and protect important equipment that will most likely be needed immediately following a hazard event. The water plant and pump station are important to help process water during hazard events to ensure the city has a clean water supply. For the location of Alden's critical facilities, refer to Figure 53.

Alden's representative also identified vulnerable populations. These are the people in the community who may need immediate assistance after a hazard event due to special circumstances. The vulnerable populations identified in Alden are listed below.

1. School Children at Alden Elementary
2. Hilltop Housing
3. Daycare Center

Alden representatives expressed concern for the elderly and disabled who live in the retirement homes in town. These people may not have the mobility needed to respond quickly to hazard events.

Figure 53: Alden's Critical Facilities



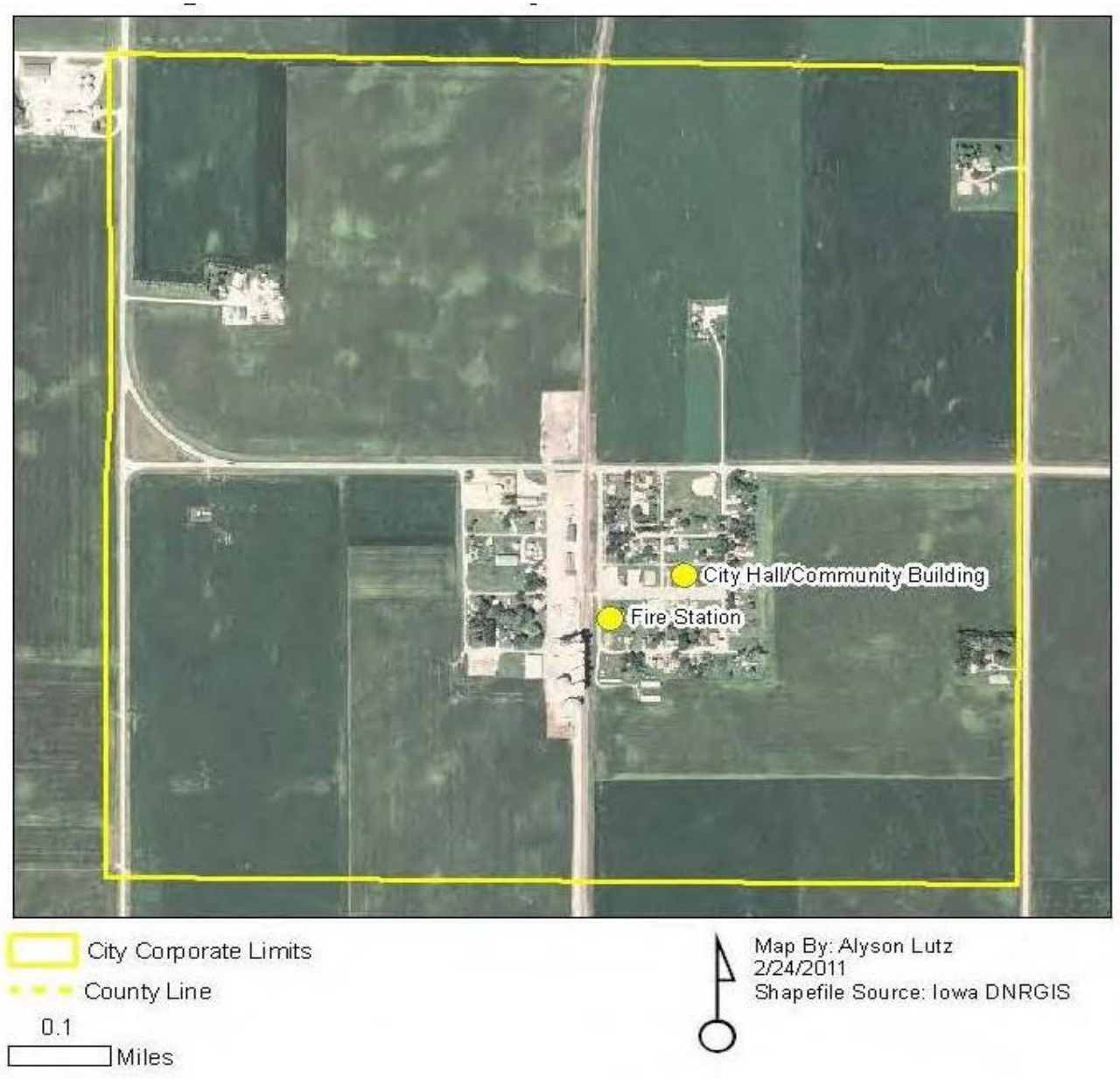
Buckeye

Buckeye's assets were identified by the Planning Team members who volunteered to represent the city. The assets were identified through asset mapping activity. For this activity, three major asset areas were considered: environment, economy, and social. Buckeye's assets are listed below.

1. June 25th Celebration
2. Saw and Tool Sharpening
3. Co-op Elevator
4. Lutheran Church
5. City Park
6. Shelter House
7. Basketball Court
8. Baseball Diamond
9. Low Property Tax
10. South Fork - IA River
11. Community Building
12. City Hall
13. Fire Station
14. Own Wells
15. Paved Road
16. Highway 20
17. I-35
18. Underground Tiles
19. Alden Library
20. Sand Volleyball Court
21. Feed Mill

Just a few of the commonly identified critical facilities are located in Buckeye, for it is a very small jurisdiction. Their critical facilities include a Fire Station, County Maintenance Shed and a Community Building/City Hall. Refer to Figure 54 for the location of critical facilities actually located in Buckeye. The only vulnerable population identified for Buckeye is elderly in homes. These individuals may require priority assistance during and immediately following a hazard event.

Figure 54: Buckeye's Critical Facilities



Eldora

Eldora's assets were identified by the Planning Team members who volunteered to represent the city. The assets were identified through asset mapping activity at the first countywide hazard mitigation meeting. For this activity, three major asset areas were considered: environment, economy, and social. Eldora's assets are listed below.

1. Ambulance
2. Aquatic Center
3. Ball Fields
4. Biking/Walking
5. Bowling
6. Churches
7. Close Proximity to I-80
8. Daycare
9. Dorothy's Senior Center
10. Down Town Area
11. Farm Museum
12. Fishing
13. Golf Course
14. Great Farmland
15. Green Housing
16. Grocery Stores
17. Historic Courthouse
18. Industrial Park
19. Pine Lake
20. Iowa Highway 175
21. Iowa River
22. Legion
23. Library
24. Meals on Wheels
25. Waste and Storm Water facilities
26. Nursing Homes
27. Parks
28. Peoplerides
29. Race Track
30. Rail Service
31. Reception Center
32. Schools
33. Shopping
34. Theater
35. Various manufacturing companies
36. Wildlife
37. Wind Energy
38. Residential properties rebuilt after hail storm

The critical facilities for the community were also identified. These are the facilities in the community that are important to maintain the health, safety, and welfare of the residents and visitors of the Eldora community. The critical facilities identified for Eldora are below.

1. Fire Department
2. Sheriff's Office
3. Police Station
4. Clinic
5. Emergency Unit
6. Water Plant
7. Fairgrounds Shelter
8. City Hall/Courthouse
9. High Bridge
10. High school/Elementary school
11. County Maintenance Sheds

For the most part, Eldora has critical facilities that cannot be found in many other jurisdictions in the county. The water plant is prominent as a critical facility that is very important after such events as flash flooding and river flooding. The locations of Eldora's critical facilities can be viewed in Figure 55.

Vulnerable populations have also been identified for Eldora and are somewhat different than other jurisdictions in Hardin County. Not all cities in the county have aquatic centers or trailer parks that are in immediate danger when outdoor disasters strike. The vulnerable populations living in the City of Eldora are identified below.

1. Nursing Homes
2. Assisted Living
3. Day Care
4. Aquatic Center
5. Trailer Park

Figure 55: Eldora's Critical Facilities

Hubbard

Hubbard's representatives identified 43 major assets in the community. Some assets include agricultural assets, natural features, and social groups so there are not just physical assets but also social assets in this community. The complete list of assets from the asset mapping activity is below.

1. Arboretum
2. Bank
3. Bar
4. Beauty Shops
5. Bridge Group
6. C.I.P.C. Manufacturing
7. Car Dealerships
8. Car Wash
9. Care Center
10. Casey's
11. City Park
12. Co-op
13. Fishing pond
14. Golf Course
15. Grocery Store
16. Lawn Service
17. Lumber Yard
18. Main street
19. Medical Clinic
20. Meier Pond and Pool
21. Lagoons
22. Library
23. Water Tower
24. Water Treatment System
25. Newspaper
26. Peoplerides
27. Phelps
28. Phone/cable/internet
29. Pool
30. Post Office
31. Prairie Land
32. Restaurant
33. School
34. Seed Dealer
35. Social service organizations

37. Tennis and basketball courts
38. Tree service
39. Veterinarian
40. Zoning and Building Codes

Since Hubbard is one of the larger communities in Hardin County, basic services like a grocery store are all located in the city. The critical facilities Hubbard identified are listed below. Refer to Figure 56 for the location of the critical facilities in Hubbard.

1. Fire Station/EMS Station
2. Church
3. Hubbard Medical Clinic
4. Water Treatment Facility/Water Tower
5. Lagoon
6. Alliant Transmission
7. School
8. Grocery Store
9. County Maintenance Shed

Of all the types of critical facilities that may be needed the quickest after a hazard event, fire rescue is much more time sensitive than grocery or banking needs.

The vulnerable populations identified in Hubbard are the Hubbard Care Center, and the C. Dove In- Home Daycare. These are commonly identified groups of people in Hardin County. Most cities have older residents and children in care centers. They do not have the mobility to respond quickly during a hazard event.

Figure 56: Hubbard's Critical Facilities

Iowa Falls

Forty-two major assets were identified in Iowa Falls. These assets include both structural and social assets. The full list of identified assets is below:

1. All infrastructure services maintained locally
2. Aquatic Center
3. Boat Club Recreation
4. CN&UP
5. Ellsworth Community School
6. Equine Center
7. Greenbelt Community
8. Highway 20
9. Historic District
10. Historical Society
11. Hansen Family Hospital
12. Barlow Library
13. Extensive Trail System (Land and Water)
14. Pat Clark Art Collection
15. Peoplerides
16. River recreation
17. Iowa Falls Community Schools
18. High Retail Pull
19. Diverse Manufacturing Base
20. Iowa Falls Municipal Airport
21. Twenty (20) Parks

22. Two (2) Golf Courses

The vulnerable populations living in Iowa Falls were also identified. These are the people in the community who may require special assistance or medical care immediately following a hazard event. Vulnerable populations are identified so their needs can be made a priority in the event of a disaster. The vulnerable populations living in Iowa Falls are varied more than most other communities in Hardin County.

1. Scenic Manor
2. Heritage Care
3. Hansen Family Hospital
4. Schools
5. Low Income Housing (mainly on Pierce Street)

New Providence

A large number of assets were identified in the New Providence jurisdiction. Assets include mostly infrastructure and buildings, but they also include social assets like the Honey Creek Friends Church and supply stores.

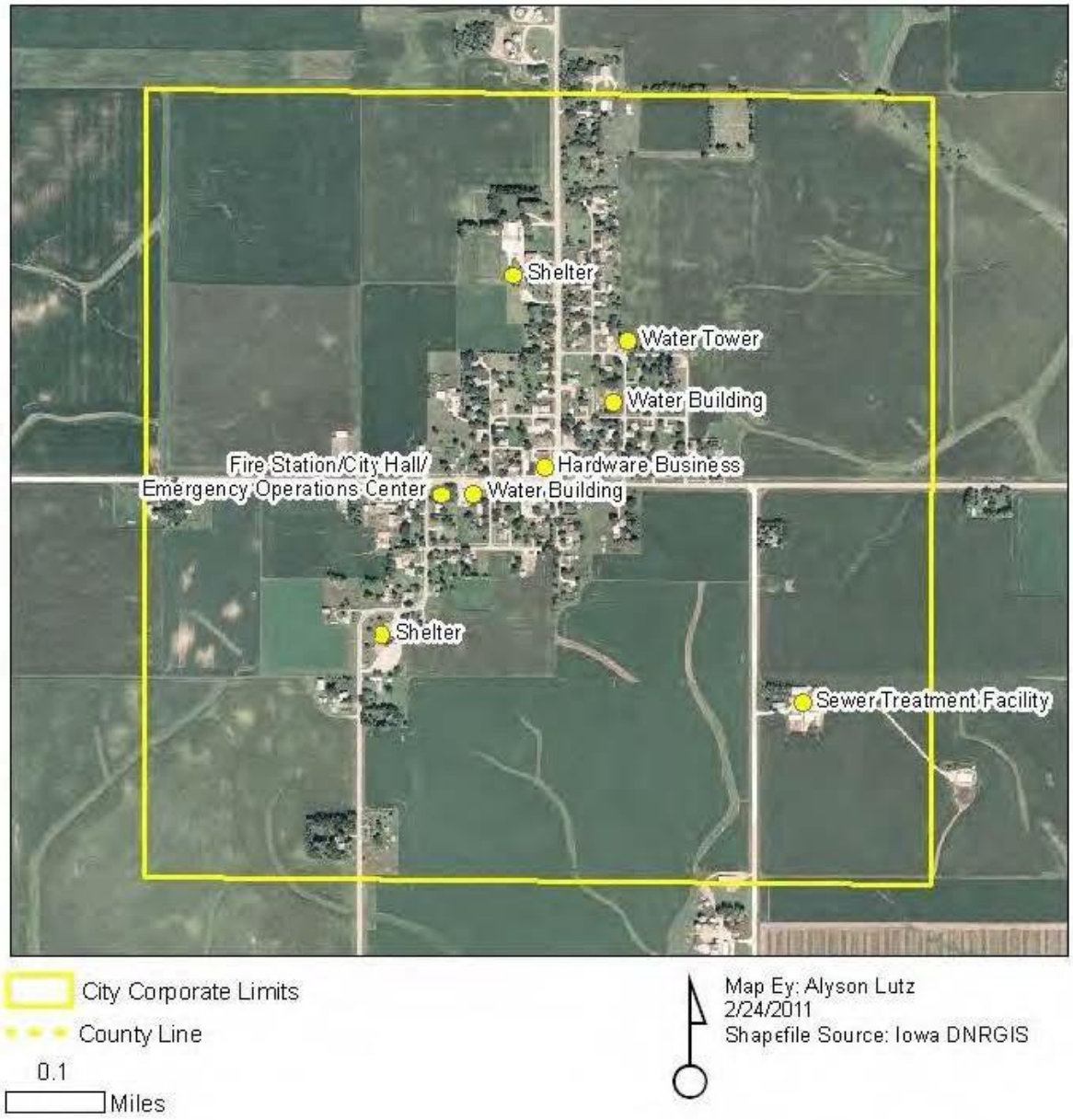
1. City Park
2. Community organizations and club
3. Country Roads
4. Excellent Ag Land
5. Warning siren
6. Hardware store
7. Honey Creek
8. Honey Creek Friends Church
9. Lots of green space
10. Main street development and appearance
11. Paved streets
12. Post Office
13. Primary Economic Factor (Ag)
14. Q-dale
15. Quaker Historical
16. Roundhouse
17. Roundhouse park
18. School bus system
19. Small manufacturing and businesses
20. Volunteer Fire Department
21. Innovative Ag Services – Lawn Hill

Other assets include critical facilities. All of the critical facilities that were identified by New Providence Planning Team representatives are below. Refer to Figure 57 for facility locations in New Providence.

1. Shelter
2. Fire Station
3. City Hall
4. Emergency Operations Center
5. Water Building
6. Water Tower
7. Sewer Treatment Facility
8. Hardware Store
9. County Maintenance Shed

The vulnerable populations living in New Providence were also identified. These populations are identified so their needs can be made a priority in the event of a disaster. The only vulnerable population identified in New Providence was elderly in their homes. Being scattered throughout the community, it may be a challenge to reach all of them and meet their immediate needs during a hazard.

Figure 57: New Providence's Critical Facilities



Radcliffe

Radcliffe's assets were identified by the Planning Team members who volunteered to represent the city. The assets were identified through asset mapping activity at the first countywide hazard mitigation meeting. For this activity, three major asset areas were considered: environment, economy, and social. Radcliffe's assets are listed below.

1. Apartments
2. Bank
3. Bar
4. City park
5. Co-op
6. Golf course
7. Good existing commercial
8. Good existing drinking water
9. Good existing residential
10. Good existing water system
11. Library
12. Matchie Auto
13. Mirenco Manufacturing
14. Museum
15. Pearson Metal Art
16. Pedestrian/bike trail
17. Rad Ag
18. School
19. Summerfest
20. Telephone
21. Trails
22. Vet
23. Waste water and storm water system
24. It's All Good, Restaurant Gift Shop
25. Babe's Steakhouse

All basic services are represented through the critical facilities in Radcliffe. Their critical facilities include an airport, bank, water plant, and city service buildings. There is no grocery store in the community, however, there is a Co-mart with a limited selection of goods. The full list of critical facilities is below. Refer to Figure 58 for the location of critical facilities actually located in Radcliffe.

1. Ambulance/Fire Station
2. City Hall
3. Emergency Operations Center
4. Airport
5. Water Plant
6. School
7. Comart
8. Bank
9. Co-op
10. County Maintenance Shed

The Sunrise Housing (for elderly) and the Radcliffe-Hubbard Schools were identified as this jurisdiction's vulnerable population. These individuals may require priority assistance during and immediately following a hazard event.

Figure 58: Radcliffe's Critical Facilities

Steamboat Rock

It is important to identify community assets, which may be infrastructure, buildings, activities, or institutions, because it helps residents decide what to protect from the harmful impacts of hazard events. The assets identified for Steamboat Rock are below:

1. Bank
2. Big Trail
3. Café
4. Camp sites
5. Canoeing on river
6. CPA
7. Grain Elevator
8. Low rent apartment complex
9. Quick Trip
10. School
11. Sac Fox Overlook
12. School is a designated safety shelter
13. Travel Agency
14. Tubing on River
15. Well and Water Tower

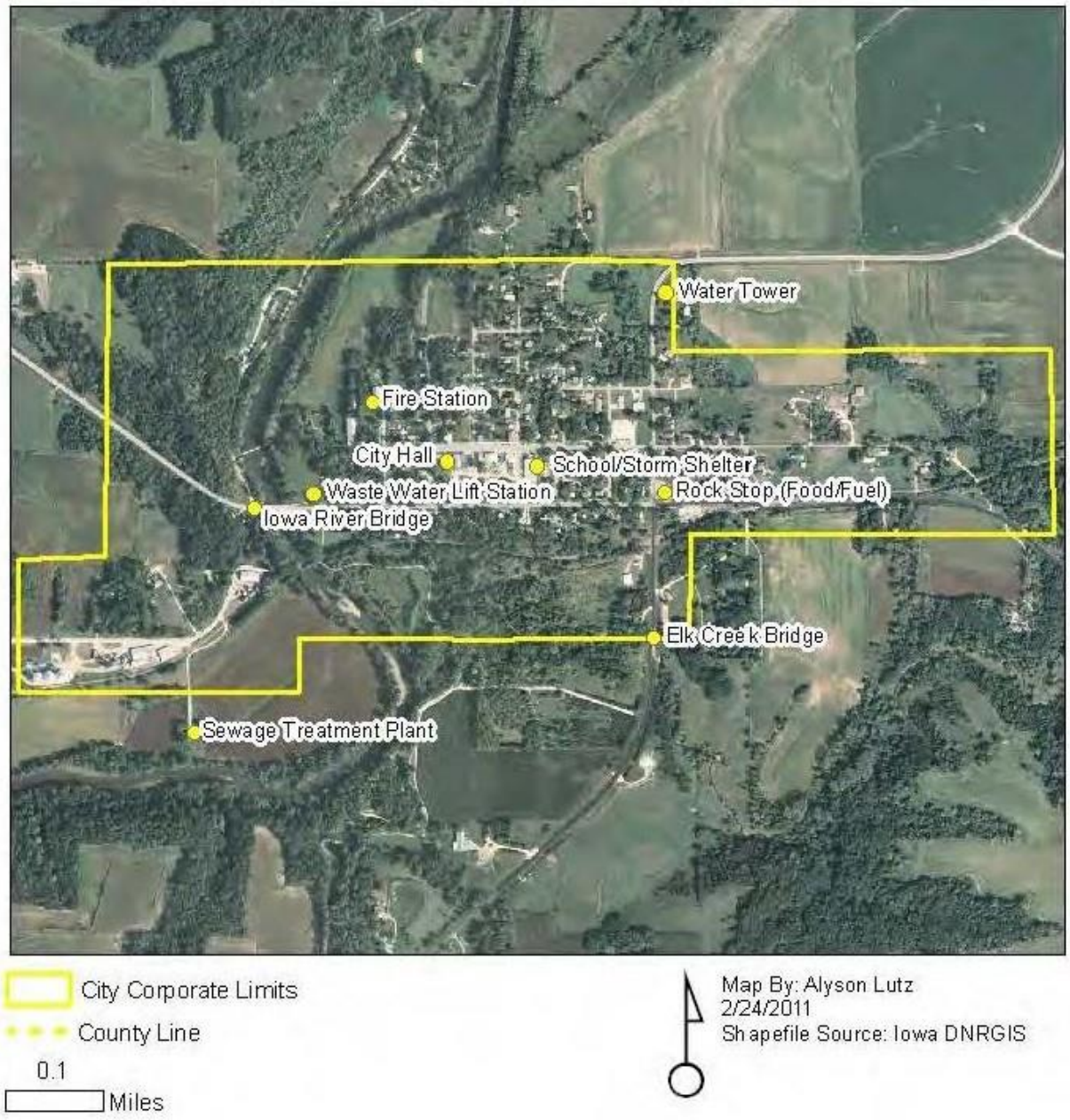
The critical facilities for the community were also identified. These are the facilities in the community that are important to maintain the health, safety, and welfare of the residents and visitors of the Steamboat Rock community. The critical facilities identified for Steamboat Rock are below:

1. School House/Storm Shelter
2. City Hall
3. Fire Station
4. Iowa River Bridge and Elk Creek Bridge
5. Water Tower
6. Waste Water Lift Station
7. Sewage Treatment Plant
8. Rock Stop (Food/Fuel)

These eight facilities were identified for several reasons. The city hall serves as the city command post during disaster events. The school house/storm shelter provides shelter for a vulnerable population before, during and following the event. The water treatment facilities are vital during hazard events, so it is pertinent to protect them. Refer to Figure 59 for each facility's location in Steamboat Rock.

The vulnerable populations living in Steamboat Rock were also identified. These are the people in the community who may require special assistance or medical care. Vulnerable populations are identified so their needs can be made a priority in the event of a disaster. The only vulnerable population identified for Steamboat Rock are those living in low rent housing; the buildings may not be up to code and are vulnerable to intense weather hazards.

Figure 59: Steamboat Rock's Critical Facilities



Union

Union's assets were identified by the Planning Team member who volunteered to represent the city. The assets were identified through asset mapping activity at the first countywide hazard mitigation meeting. For this activity, three major asset areas were considered: environment, economy, and social. Union's assets are listed below.

1. 4H Club
2. Auto Dealer
3. Water Tower
4. Camping Facilities
5. Churches
6. Co-op
7. County Parks
8. Daycare
9. Farmer's Market
10. Fire Department
11. General Store
12. Golf Course
13. Lagoon System
14. Library
15. Low-rent Housing
16. Outreach Africa
17. Pool
18. Restaurants
19. School System
20. Tractor Repair Shop
21. Treatment Facility
22. City Park
23. Vet
24. Welding and Fabrication

The city's critical facilities were also identified at the second countywide meeting. The facilities that need to function immediately following a hazard event are listed below.

1. City Hall
2. Fire Department/Ambulance
3. Northwell Pumphouse
4. Southwell Pumphouse
5. Lagoon
6. School
7. Bank
8. Gingersnap Store
9. Library
10. Emergency Shelter
11. County Maintenance Shed (Storage Only)

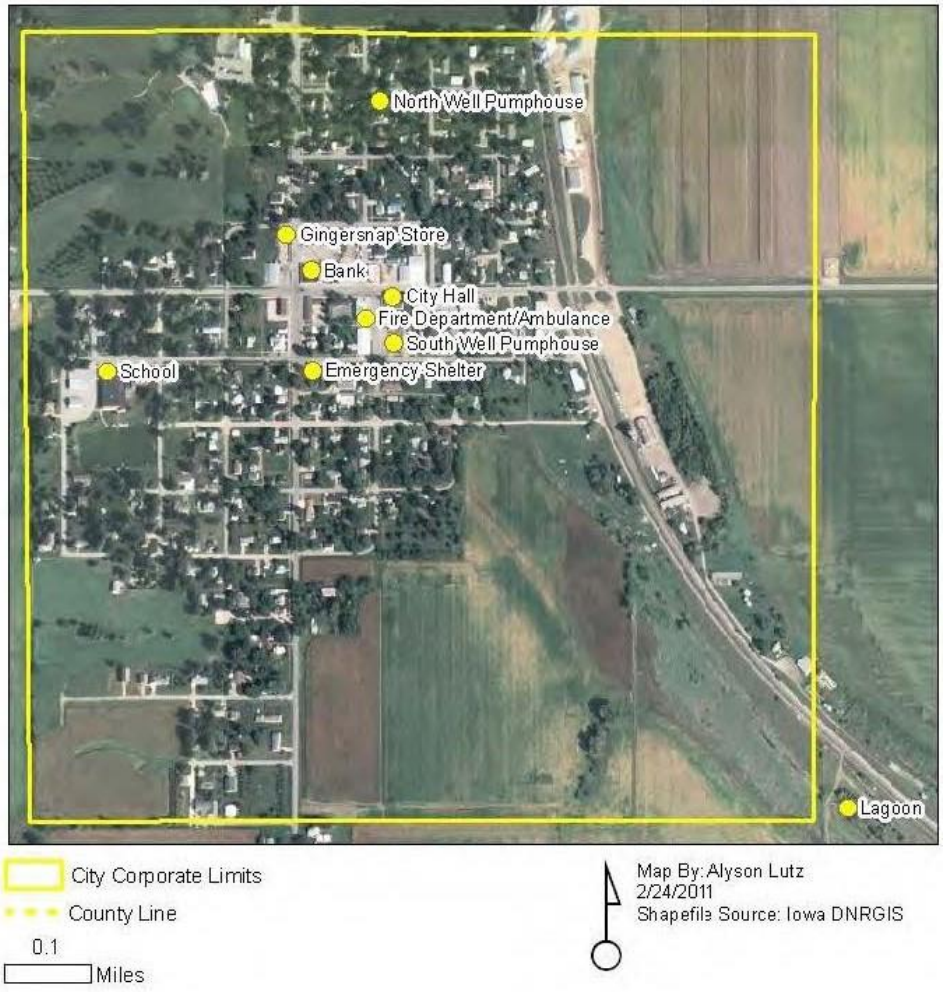
All of these facilities are extremely important to Union during and after a hazard event. These ten facilities were chosen for many reasons. The Fire Station and City Hall are command posts for city operations and protect important equipment that will most likely be needed immediately following a hazard event. The Emergency Shelter is a sheltered space, and the Gingersnap Store is a source for supplies. For the location of Union's critical facilities, refer to Figure 60.

Union's representative also identified vulnerable populations. These are the people in the community who may need immediate assistance after a hazard event due to special circumstances. The vulnerable populations identified in Union are listed below.

1. Schools
2. Day Care
3. Elderly

These people may not have the mobility needed to respond quickly to hazard events and this is of more concern considering the great number of people at each facility who would need assistance in an event.

Figure 60: Union's Critical Facilities



Whitten

Whitten's assets were identified by the Planning Team members who volunteered to represent the city. The assets were identified through asset mapping activity at the first countywide hazard mitigation meeting. For this activity, three major asset areas were considered: environment, economy, and social. Whitten's assets are listed below.

1. Bar
2. Baseball Fields
3. Church
4. City Park
5. Fire Department
6. Good drinking water
7. Good Waste and Storm water
8. Harvest Festival
9. Main Street development and appearance
10. School bus system
11. Whitten celebration
12. Zoning

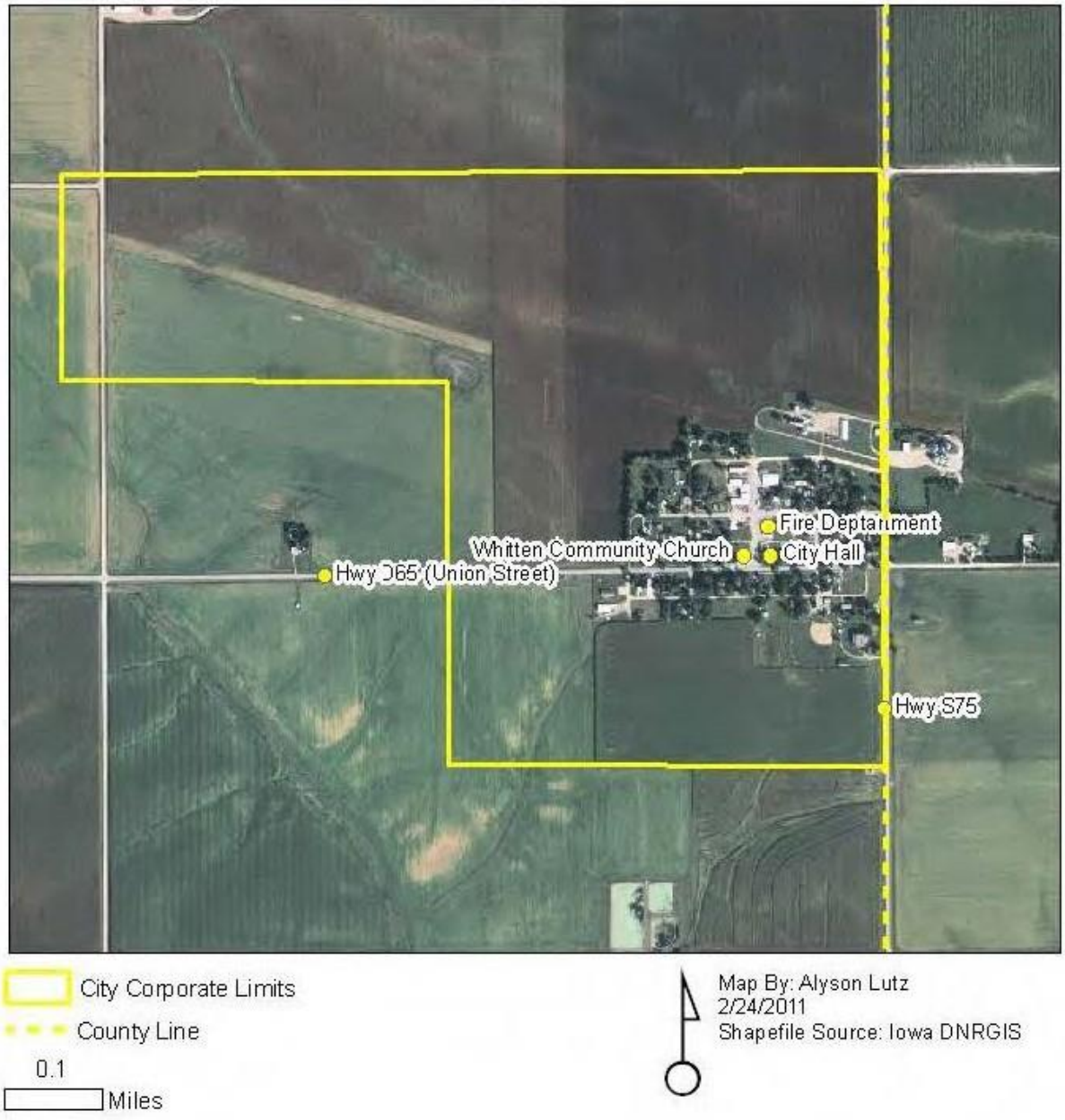
The critical facilities for the community were also identified. These are the facilities in the community that are important to maintain the health, safety, and welfare of the residents and visitors of the Whitten community. The critical facilities identified for Whitten are below.

1. Fire Department
2. City Hall
3. Whitten Community Church
4. Hwy D65 (Union St)
5. Hwy S75

For the most part, Whitten has critical facilities that cannot be found in many other jurisdictions in the county. The roadways identified are a critical facility that is very important during and after such events as flash flooding and river flooding for they are the only ways in and out of town for supplies. The locations of Whitten's critical facilities can be viewed in Figure 61.

Vulnerable populations have also been identified for Whitten. The only vulnerable population identified for the City of Whitten is elderly in private homes.

Figure 61: Whitten's Critical Facilities



Unincorporated Hardin County

The representatives for Hardin County identified thirty-two assets in the county, and there are more than likely dozens more. Refer to the list below for the assets identified in Hardin County.

1. 28E Agreement partnership
2. Ag soils
3. Ambulance
4. CLG
5. Climate for Ag
6. County Landfill
7. County Parks
8. County State Road System
9. Development Alliance
10. Enterprise Zones for Businesses
11. Fire
12. Greenbelt
13. HAZMAT
14. Iowa River
15. Lending Institutions
16. Low Cost and Senior Housing
17. Pedestrian/Bicycle Trails
18. Peoplerides
19. Pine Lakes
20. Cemeteries
21. Law Enforcement
22. Rail
23. Recycling Center
24. Water Drainage
25. Wind Energy
26. Zoning Ordinance

Hardin County has an extensive network of critical facilities that includes several types of infrastructure, businesses, and structures. These are the facilities in the community that are important to maintain the health, safety, and welfare of the residents and visitors of Hardin County so they are especially important during and immediately following a hazard event. A list of Hardin County's critical facilities is below.

- County government facilities, equipment, and vehicles (courthouse, administration offices and vehicles, sheriff's office, jail, emergency operations center, record storage, vehicle and equipment storage, etc.)
- Transportation facilities (bridges, major highways, county roads, etc.)

- Communication infrastructure (county radio towers, cell towers, telephone lines, etc.)
- Potable water infrastructure (water towers, mains, pumps, wells, treatment facilities, etc.)
- Major pipelines
- Electrical infrastructure (power lines, sub stations, etc.)
- Grocery stores
- Hardware stores and businesses with disaster supplies
- Facilities at Pine Lake State Park

These facilities are located throughout Hardin County in both incorporated and unincorporated areas. The condition of these facilities is maintained by their respective operator or whoever is appointed by the county.

Vulnerable populations in unincorporated Hardin County include campers at Pine Lake State Park who may not have immediate access to a shelter in the event of a hazard, elderly in the Quakerdale Home and the unincorporated towns of Gifford and Garden City.

4.4.3 Repetitive Loss Properties

44 CFR Requirement §201.6(c)(2)(ii): *[The risk assessment in all] plans approved after October 1, 2008 must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods.*

Flooding is a not a major concern in Hardin County. The county does not have any severe repetitive loss properties, as identified by Iowa Homeland Security. Four out of eleven jurisdictions in Hardin County are participating in NFIP. Amongst them, there are 24 policies with a total of $3,336,500 worth of insurance in force, as of 07/31/2017. There have been total paid losses worth $1,613, all together.

Table 69: Policies In-Force

	Policies In-Force	Insurance In-Force Whole Dollars	Written Premium In-Force
Hardin	3	271,300	1,799
Alden	5	1,082,800	3,055
Hubbard	1	126,800	1,183
Iowa Falls	4	720,000	2,951
Steamboat Rock	2	523,000	2,142
Union	9	612,600	6,823
Total	**24**	**3,336,500**	**17,953**

Source: FEMA 1/1/1978 to 7/31/2017

Table 70: Total Paid Losses

Name of Community	Total Losses	Closed Losses	Open Losses	CWOP Losses	Total Payments
Hardin County	1	0	0	1	0
Alden	1	0	0	1	0
Steamboat Rock	1	0	0	1	0
Union	5	3	0	2	1,613.51

Source: FEMA 1/1/1978 to 7/31/2017

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Chapter 5: Mitigation Strategy

Goals, Mitigation Actions, and Evaluation

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

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

The Steering Committee developed goals to provide direction for reducing hazard-related losses in Hardin County. These were based on the results of the risk assessment and review of mitigation goals from other state and local plans, specifically the 2013 Iowa Hazard Mitigation Plan and past hazard mitigation plans for Hardin County and certain communities in the county. The review was to ensure that this plan's mitigation strategy was integrated and aligned with existing plans and policies.

Initially, five goals were created to serve as a baseline. With these goals, Steering Committee members either edited them to fit their jurisdiction's specific needs or disregarded them to form completely different goals that served their jurisdiction's needs. The five basic goals are:

Hardin County Hazard Mitigation Goals

1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.

- Implement programs and projects that assist in protecting lives by making homes, businesses, essential facilities, critical infrastructure, and other property more resistant to losses from all hazards.
- Improve hazard assessment information to make recommendations for discouraging new development and encouraging preventive measures for existing development in areas vulnerable to natural hazards.
- Protect life and property by implementing state-of-the-art standards, codes and construction procedures.

2. Protect the health and safety of Hardin County residents and visitors.

3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.

- Increase public awareness of existing threats and the means to reduce these threats by conducting educational and outreach programs to all the various community groups in the County.

4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.

5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.

- Continue providing County and City emergency services with training and equipment to address all identified hazards.

Hardin County Hazard Mitigation Strategies

At the municipal and public hazard mitigation meeting/workshop, the public and municipal stakeholders were given the chance to voice their concerns and propose potential mitigation ideas for any hazard. Also, at the risk assessment meeting, Planning Team members shared mitigation ideas for each hazard that can affect their respective jurisdiction. The mitigation ideas from the meetings were compiled into a full list that could be used as a reference when choosing mitigation actions that fulfilled their jurisdiction's goals. This list complemented the results of the risk assessment, allowed idea sharing, and made sure that their community's ideas were considered.

Six types of mitigation actions were considered for this plan. The definition for mitigation action types is based on the definitions provided in the Local Mitigation Planning Guide and other FEMA-related resources. The six types of mitigation actions are:

1. **Prevention.** Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and storm water management regulations.
2. **Property Protection.** Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
3. **Public Education and Awareness.** Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.
4. **Natural Resource Protection.** Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
5. **Emergency Services.** Actions that protect people and property during and immediately after a disaster or hazard event. Services include warning systems, emergency response services, and protection of critical facilities.
6. **Structural Projects.** Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, levees, seawalls, retaining walls, and safe rooms.

Mitigation Strategy & Initiatives

The heart of the mitigation plan is the mitigation strategy, which serves as the long-term blueprint for reducing the potential losses identified in the risk assessment. The mitigation strategy describes how the community will accomplish the overall purpose, or mission, of the planning process. In this section, mitigation actions/projects were updated/amended, identified, evaluated, and prioritized. This section is organized as follows:

- New Mitigation Actions - New actions identified during this 2017 update process
- Ongoing Mitigation Actions - Ongoing actions with no definitive end. During the 2017 update, these "ongoing" mitigation actions and projects were modified and/or amended, as needed.
- Completed Mitigation Actions - Completed actions since 2011

Mitigation Prioritization

Planning members were presented with the task of prioritizing mitigation activities using the FEMA evaluation criteria. The evaluation criteria (STAPLE+E) involved the following categories and questions.

Social:

- Will the proposed action adversely affect one segment of the population?
- Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?

Technical:

- How effective is the action in avoiding or reducing future losses?
- Will it create more problems than it solves?
- Does it solve the problem or only a symptom?
- Does the mitigation strategy address continued compliance with the NFIP?

Administrative:

- Does the jurisdiction have the capability (staff, technical experts, and/or funding) to implement the action, or can it be readily obtained?
- Can the community provide the necessary maintenance?
- Can it be accomplished in a timely manner?

Political:

- Is there political support to implement and maintain this action?
- Is there a local champion willing to help see the action to completion?
- Is there enough public support to ensure the success of the action?
- How can the mitigation objectives be accomplished at the lowest cost to the public?

Legal:

- Does the community have the authority to implement the proposed action?
- Are the proper laws, ordinances, and resolution in place to implement the action?

- Are there any potential legal consequences?
- Is there any potential community liability?
- Is the action likely to be challenged by those who may be negatively affected?
- Does the mitigation strategy address continued compliance with the NFIP?

Economic:

- Are there currently sources of funds that can be used to implement the action?
- What benefits will the action provide?
- Does the cost seem reasonable for the size of the problem and likely benefits?
- What burden will be placed on the tax base or local economy to implement this action?
- Does the action contribute to other community economic goals such as capital improvements or economic development?
- What proposed actions should be considered but be “tabled” for implementation until outside sources of funding are available?

Environmental:

- How will this action affect the environment (land, water, endangered species)?
- Will this action comply with local, state, and federal environmental laws and regulations?
- Is the action consistent with community environmental goals?

Scoring and prioritization was based on the following:

- STAPLEE Score 0-7 = Low
- STAPLEE Score 8-15 = Medium
- STAPLEE Score 16-23 = High

Implementation of the mitigation plan is critical to the overall success of the mitigation planning process. The first step is to decide, based upon many factors, which action will be undertaken first. In order to pursue the top priority first, an analysis and prioritization of the actions is important. Some actions may occur before the top priority due to financial, engineering, environmental, permitting, and site control issues. Public awareness and input of these mitigation actions can increase knowledge to capitalize on funding opportunities and monitoring the progress of an action.

Ackley

Ackley New Mitigation Actions

1. **Mitigation Action:** Conduct outreach activities to increase public awareness of hail dangers (STAPLEE Score: 5)
2. **Mitigation Action:** Enhance Structural Awareness of Older Properties (STAPLEE Score: 3)

Enhance Structural Awareness of Older Properties

Mitigation Action	Enhance structural properties of older properties in the city (3)
Year Initiated	2017
Applicable Jurisdiction	City of Ackley
Lead agency/Organization	City of Ackley and Fire Department
Supporting Agencies/Organizations	Police Department
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	Local Funds
Estimated Cost	$2,500
Benefits (loss avoided)	Enhance the structural awareness of the older properties within city limits.
Projected Completion Date	2019
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Bring a structural engineer to a work shop to discuss potential problems that older properties face within the community.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Conduct outreach activities to increase public awareness of severe weather and hail dangers

Mitigation Action	Conduct outreach activities to increase public awareness of severe weather and hail dangers (5)
Year Initiated	2017
Applicable Jurisdiction	City of Ackley
Lead agency/Organization	City of Ackley
Supporting Agencies/Organizations	Fire Department
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	Local Funds
Estimated Cost	$500
Benefits (loss avoided)	Public Awareness
Projected Completion Date	2021
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Mailing safety brochures with monthly city utility bills. Posting warning signs at local parks and the city pool. Educating children about the dangers of severe weather and how to take precautionary actions.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Ackley Ongoing Mitigation Actions

Ackley Mitigation Action Prioritization

1. **Mitigation Action:** Add lift station (STAPLEE Score: 18)
2. **Mitigation Action:** Emergency equipment upgrades (STAPLEE Score: 14)
3. **Mitigation Action:** Purchase warning siren with battery powered back up (STAPLEE Score: 13)
4. **Mitigation Action:** Construct a safe room at Prairie Bridges Park (STAPLEE Score: 11)
5. **Mitigation Action:** Alert Radio System for Schools and Presbyterian Village (STAPLEE Score: 10)
6. **Mitigation Action:** Purchase generators (STAPLEE Score: 10)
7. **Mitigation Action:** Purchase new communication equipment (STAPLEE Score: 10)
8. **Mitigation Action:** Create detention basins (STAPLEE Score: 10)
9. **Mitigation Action:** Public education program (STAPLEE Score: 10)
10. **Mitigation Action:** Distribute NOAA All-Hazard Radios to all Ackley residents (STAPLEE Score: 10)
11. **Mitigation Action:** Construct safe rooms at Presbyterian Village (STAPLEE Score: 8)

Construct a safe room at Prairie Bridges Park

Mitigation Action	Construct a safe room at Prairie Bridges Park (11)
Year Initiated	2011
Applicable Jurisdiction	City of Ackley
Lead agency/Organization	City of Ackley
Supporting Agencies/Organizations	Community of Ackley, Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	FEMA HMGP and PDM, CDBG, and others to be identified
Estimated Cost	Costs are variable depending on the size of the safe room and whether or not it is a retrofit of newly constructed safe room. For a small safe room in a house the minimum cost is approximately $2,500-$6000. For a large community shelter, the cost usually ranges from $250,000 to over $1 million depending on the size.
Benefits (loss avoided)	Life safety for residents and visitors to Prairie Bridges Park
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Add a safe room at the Prairie Bridges Park in Ackley

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase warning siren with battery powered back up

Mitigation Action	Purchase warning siren with battery powered back up (13)
Year Initiated	2011
Applicable Jurisdiction	City of Ackley
Lead agency/Organization	City of Ackley
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Ackley, FEMA HMGP, and others to be identified
Estimated Cost	Sirens can cost up to $25,000, used sirens are sometimes available for purchase, which helps reduce the cost
Benefits (loss avoided)	Life safety of Ackley residents and visitors
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase and install a battery-operated warning siren

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Construct safe rooms at Presbyterian Village

Mitigation Action	Construct safe rooms at Presbyterian Village (8)
Year Initiated	2011
Applicable Jurisdiction	City of Ackley
Lead agency/Organization	City of Ackley
Supporting Agencies/Organizations	Community of Ackley, Presbyterian Village, Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	CDBG, and others to be identified
Estimated Cost	Costs are variable depending on the size of the safe room and whether or not it is a retrofit or newly constructed safe room. For a small safe room in a house the minimum cost is approximately $2,500-$6,000. For a large community shelter, the cost usually ranges from $250,000 to over $1 million depending on the size.
Benefits (loss avoided)	Life safety for vulnerable residents and visitors to Presbyterian Village
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Add safe rooms at the Presbyterian Village Retirement Community

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Alert Radio System for Schools and Presbyterian Village

Mitigation Action	Radio System for Schools and Presbyterian Village (10)
Year Initiated	2011
Applicable Jurisdiction	City of Ackley
Lead agency/Organization	City of Ackley
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Ackley, AGWSR Schools, Presbyterian Village, Hardin County, Iowa Homeland Security, others to be identified
Estimated Cost	Unknown, depends on how much is spent on the radios or if they are only subsidized to encourage residents to purchase one
Benefits (loss avoided)	Ackley's Vulnerable populations will be informed of approaching hazards and updates throughout a hazard event
Projected Completion Date	1 year from when funds are secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program or secure funding to provide NOAA All-Hazard Radios to AGWSR Schools and Presbyterian Village Retirement Comm.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase generators

Mitigation Action	Purchase generators (10)
Year Initiated	2011
Applicable Jurisdiction	City of Ackley
Lead agency/Organization	City of Ackley
Supporting Agencies/Organizations	AGWSR Schools, Emergency Services, Others to be Identified
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	City of Ackley, FEMA HMGP, and others to be identified
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 plus wiring and switch installation costs also standby requires a permanent fuel source
Benefits (loss avoided)	Power generation to maintain the function of critical facilities
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase portable generators for Ackley's 10 identified critical facilities

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase new communication equipment

Mitigation Action	Purchase new communication equipment (10)
Year Initiated	2011
Applicable Jurisdiction	City of Ackley
Lead agency/Organization	City of Ackley
Supporting Agencies/Organizations	Local fire and EMS, Others to be identified
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	City of Ackley, others to be identified
Estimated Cost	Unknown until equipment is assessed and new equipment is priced
Benefits (loss avoided)	Ackley City personnel will have reliable communication capabilities
Projected Completion Date	Possibly ongoing of 1 year from when funds are secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Update or replace substandard communication equipment in all City departments

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Create detention basins

Mitigation Action	Create detention basins (10)
Year Initiated	2011
Applicable Jurisdiction	City of Ackley
Lead agency/Organization	City of Ackley
Supporting Agencies/Organizations	Region 6 Planning Commission
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	FEMA HMPG
Estimated Cost	Unknown until areas are assessed for feasibility of project
Benefits (loss avoided)	Mitigating the flooding of city infrastructure during and immediately following a hazard event
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create pocket wetlands east of Butler/south of the Otter Creek, south of Tenth Avenue, and west of Blue Earth Street.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Add lift station

Mitigation Action	Add lift station (18)
Year Initiated	2011
Applicable Jurisdiction	City of Ackley
Lead agency/Organization	City of Ackley
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	FEMA HMGP, City of Ackley, and others to be identified
Estimated Cost	Depending on the type and capacity of the lift station, approximately $120,000 to $500,000 plus operation and maintenance cost over the lift station's useful life
Benefits (loss avoided)	Eliminate potential sanitary sewer backups into structures
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Add a lift station to the City's sanitary sewer when and where it is needed.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Emergency equipment upgrades

Mitigation Action	Emergency equipment upgrades (14)
Year Initiated	2011
Applicable Jurisdiction	City of Ackley
Lead agency/Organization	City of Ackley
Supporting Agencies/Organizations	Local fire and EMS, Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Ackley, Local fire and EMS, others to be identified
Estimated Cost	Unknown until equipment is assessed and new equipment is priced
Benefits (loss avoided)	Emergency personnel will have reliable communication capabilities
Projected Completion Date	Possibly ongoing or 1 year from when funds are secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Update or replace substandard emergency equipment in emergency departments

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Public education program

Mitigation Action	Public education program (10)
Year Initiated	2011
Applicable Jurisdiction	City of Ackley
Lead agency/Organization	City of Ackley
Supporting Agencies/Organizations	To be identified, possibly other Hardin County jurisdictions
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	City of Ackley and others to be identified
Estimated Cost	Unknown, this project may be of little cost depending on the medium used
Benefits (loss avoided)	Life safety of Ackley residents and visitors
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program to educate Ackley residents about the dangers of hazard and how to prepare through informational flyers, meetings, or other interactive media like drills and workshops

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Distribute NOAA All-Hazard Radios to all Ackley residents

Mitigation Action	Distribute NOAA All-Hazard Radios to all Ackley residents (10)
Year Initiated	2011
Applicable Jurisdiction	City of Ackley
Lead agency/Organization	City of Ackley
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Ackley, Hardin County, Iowa Homeland Security, others to be identified
Estimated Cost	Unknown, depends on how much is spent on the radios or if they are only subsidized to encourage residents to purchase one
Benefits (loss avoided)	Ackley residents will be informed of approaching hazards and updates throughout a hazard event
Projected Completion Date	1 year from when funds are secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program or secure funding to provide NOAA All-Hazard Radios to all Ackley residents

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Ackley Completed Mitigation Actions

All mitigation actions are either new or ongoing.

Alden

Alden New Mitigation Actions

Alden New Mitigation Action Prioritization

1. **Mitigation Action:** Procure trash pumps (STAPLEE Score: 9)
2. **Mitigation Action:** Generator and electrical fixtures for school (STAPLEE Score: 8)
3. **Mitigation Action:** Generator for Senior Center (STAPLEE Score: 8)
4. **Mitigation Action:** Enhance greenspace by the river and ensure adequate safety measure are included to address periodic flooding (STAPLEE Score: 5)
5. **Mitigation Action:** Ensure Senior Citizen Centers have NOAA weather radios because sirens cannot be heard there (STAPLEE Score: 3)
6. **Mitigation Action:** New water well to increase capacity for the city (STAPLEE Score: 1)

Procure Trash Pumps

Mitigation Action	Procure Trash Pumps (9)
Year Initiated	2017
Applicable Jurisdiction	City of Alden
Lead agency/Organization	City of Alden
Supporting Agencies/Organizations	N/A
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	Grants, Local Funds
Estimated Cost	TBD
Benefits (loss avoided)	
Projected Completion Date	
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Generator and electrical fixtures for school

Mitigation Action	Generator and electrical fixtures for school (8)
Year Initiated	2017
Applicable Jurisdiction	City of Alden
Lead agency/Organization	City of Alden
Supporting Agencies/Organizations	
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors. Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	Grants
Estimated Cost	TBD
Benefits (loss avoided)	
Projected Completion Date	
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Generator for Senior Center

Mitigation Action	Generator for Senior Center (8)
Year Initiated	2017
Applicable Jurisdiction	City of Alden
Lead agency/Organization	City of Alden
Supporting Agencies/Organizations	
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	Grants
Estimated Cost	TBD
Benefits (loss avoided)	
Projected Completion Date	
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

New water well to increase capacity for the city

Mitigation Action	New water well to increase capacity for the city (1)
Year Initiated	2017
Applicable Jurisdiction	City of Alden
Lead agency/Organization	City of Alden
Supporting Agencies/Organizations	
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	Grants
Estimated Cost	TBD
Benefits (loss avoided)	
Projected Completion Date	
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Enhance greenspace by the river and ensure adequate safety measures are included to address periodic flooding

Mitigation Action	Enhance greenspace by the river and ensure adequate safety measures are included to address periodic flooding (5)
Year Initiated	2017
Applicable Jurisdiction	City of Alden
Lead agency/Organization	City of Alden
Supporting Agencies/Organizations	
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	Grants
Estimated Cost	TBD
Benefits (loss avoided)	
Projected Completion Date	
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Ensure Senior Citizen Centers have NOAA weather radios because sirens cannot be heard there

Mitigation Action	Ensure Senior Citizen Centers have NOAA weather radios because sirens cannot be heard there (3)
Year Initiated	2017
Applicable Jurisdiction	City of Alden
Lead agency/Organization	City of Alden
Supporting Agencies/Organizations	
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	Grants
Estimated Cost	TBD
Benefits (loss avoided)	
Projected Completion Date	
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Alden Ongoing Mitigation Actions

Alden Mitigation Action Prioritization

1. **Mitigation Action:** Write an emergency plan for city departments' use (STAPLEE Score: 23)
2. **Mitigation Action:** Purchase generators (STAPLEE Score: 14)
3. **Mitigation Action:** Distribute NOAA All-Hazard Radios to all Alden residents (STAPLEE Score: 14)
4. **Mitigation Action:** Purchase extra warning siren (STAPLEE Score: 14)
5. **Mitigation Action:** Public fire prevention education program (STAPLEE Score: 13)
6. **Mitigation Action:** Education and training for emergency responders (STAPLEE Score: 13)

Purchase generators

Mitigation Action	Purchase generators (14)
Year Initiated	2011
Applicable Jurisdiction	City of Alden
Lead agency/Organization	City of Alden
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 1: Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	FEMA HMGP, and others to be identified
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 plus wiring and switch installation costs also standby requires a permanent fuel source
Benefits (loss avoided)	Power generation to maintain the function of critical facilities
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase a generator for city use in critical facilities

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Next summer
2018		
2019		
2020		
2021		

Distribute NOAA All-Hazard Radios to all Alden residents

Mitigation Action	Distribute NOAA All-Hazard Radios to all Alden residents (14)
Year Initiated	2011
Applicable Jurisdiction	City of Alden
Lead agency/Organization	City of Alden
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 2: Protect the health and safety of Alden residents and visitors.
Potential Funding Source	City of Alden, Hardin County, Iowa Homeland Security, others to be identified
Estimated Cost	Unknown, depends on how much is spent on the radios or if they are only subsidized to encourage residents to purchase one
Benefits (loss avoided)	Alden residents will be informed of approaching hazards and updates throughout a hazard event
Projected Completion Date	1 year from when funds are secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program or secure funding to provide NOAA All-Hazard Radios to all Alden residents

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	Pending funding. Currently in schools and city hall
2018		
2019		
2020		
2021		

Purchase extra warning siren

Mitigation Action	Purchase extra warning siren (14)
Year Initiated	2011
Applicable Jurisdiction	City of Alden
Lead agency/Organization	City of Alden
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2: Protect the health and safety of Alden residents and visitors.
Potential Funding Source	City of Alden, FEMA HMGP, and others to be identified
Estimated Cost	Sirens can cost up to $25,000, used sirens are sometimes available for purchase, which helps reduce the cost
Benefits (loss avoided)	Life safety of Alden residents and visitors
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase and install extra warning siren

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Get one farther west near the senior citizen center. They have trouble hearing it.
2018		
2019		
2020		
2021		

Public fire prevention education program

Mitigation Action	Public fire prevention education program (13)
Year Initiated	2011
Applicable Jurisdiction	City of Alden
Lead agency/Organization	City of Alden
Supporting Agencies/Organizations	Local emergency responders, possibly other Hardin County jurisdictions
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	City of Alden, and others to be identified
Estimated Cost	Unknown, this project may be of little cost depending on the medium used
Benefits (loss avoided)	Life safety of Alden residents and visitors
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program to educate Alden residents about the dangers of fire hazards and how to prepare through informational meetings, and interactive media like drills and workshops

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Currently two workshops are held each year. One for the schools and another that is available to the public.
2018		
2019		
2020		
2021		

Education and training for emergency responders

Mitigation Action	Education and training for emergency responders (13)
Year Initiated	2011
Applicable Jurisdiction	City of Alden
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Local emergency responders, Others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	Hardin County, others to be identified
Estimated Cost	This may be of little cost since it is an information session
Benefits (loss avoided)	Personnel will serve better in events with proper training
Projected Completion Date	Ongoing starting when a course can be formulated, and possible funding secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Hold session to train emergency personnel to identify weather-related hazards and proper response

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Write an emergency plan for city departments' use

Mitigation Action	Write an emergency plan for city departments' use (23)
Year Initiated	2011
Applicable Jurisdiction	City of Alden
Lead Agency/Organization	City of Alden
Supporting Agencies/Organizations	Hardin County Emergency Management, local fire, law enforcement, and emergency response personnel
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County. Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	City of Alden, others to be identified
Estimated Cost	This may be of little cost besides printing
Benefits (loss avoided)	A crisis plan will be set in place, so the city offices will be prepared for crises and regain control of city operations as soon as possible
Projected Completion Date	At such time the plan is complete, possible ongoing updates
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Complete a plan for use if the city's functions are disabled

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Improve existing Continuity of Operations Plan
2018		
2019		
2020		
2021		

Alden Completed Mitigation Actions

Create and store sandbags

Mitigation Action	Create and store sandbags (14)
Year Initiated	2011
Applicable Jurisdiction	City of Alden
Lead agency/Organization	City of Alden
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 1: Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of Alden, and others to be identified
Estimated Cost	To be determined once supplies are priced and needs assessed
Benefits (loss avoided)	Supplies on hand to mitigate flooding
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create and store sandbags for use during flood situations

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Completed	
2018		
2019		
2020		
2021		

Portable radios for city use

Mitigation Action	Portable radios for city use (14)
Year Initiated	2011
Applicable Jurisdiction	City of Alden
Lead agency/Organization	City of Alden
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 2: Protect the health and safety of Alden residents and visitors.
Potential Funding Source	City of Alden, Hardin County, Iowa Homeland Security, others to be identified
Estimated Cost	Unknown, depends on how much is spent on the radios
Benefits (loss avoided)	Alden employees will be able to communicate during a hazard
Projected Completion Date	1 year from when funds are secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program or secure funding to provide portable radios to city departments and employees

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Complete	City Employees use cell phones and that has been working well. Fire Department uses portable radios. Just received 8 new radios for the Fire Department and Ambulance
2018		
2019		
2020		
2021		

Buckeye

Buckeye New Mitigation Actions

Buckeye New Mitigation Action Prioritization

1. **Mitigation Action:** Generator for Community Building (storm shelter) (STAPLEE Score: 16)

Generator for Community Building (storm Shelter)

Mitigation Action	Generator for Community Building (storm Shelter) (16)
Year Initiated	2017
Applicable Jurisdiction	City of Buckeye
Lead Agency/Organization	City of Buckeye Fire Department
Supporting Agencies/Organizations	
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City, Grants or Donations
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 - plus wiring and switch installation costs. Also, standby requires a permanent fuel source.
Benefits (loss avoided)	
Projected Completion Date	
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Buckeye Ongoing Mitigation Actions

Buckeye Mitigation Action Prioritization

1. **Mitigation Action:** Retrofit fire station, as a community shelter (STAPLEE Score: 8)
2. **Mitigation Action:** Demolition of abandoned residential properties (STAPLEE Score: 6)
3. **Mitigation Action:** Individual Leach Fields (STAPLEE Score: 5)
4. **Mitigation Action:** Sewer improvements (STAPLEE Score: 5)
5. **Mitigation Action:** Upgrade to rural water (STAPLEE Score: 5)

Retrofit fire station, as a community shelter

Mitigation Action	Retrofit fire station, as a community shelter (8)
Year Initiated	2011
Applicable Jurisdiction	City of Buckeye
Lead Agency/Organization	City of Buckeye
Supporting Agencies/Organizations	City of Buckeye, Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	FEMA HMGP and PDM, City of Buckeye, CDBG, and Assistance to Firefighters Grants
Estimated Cost	Costs are variable depending on the size of the shelter and whether or not it is a retrofit or newly constructed shelter.
Benefits (loss avoided)	Life safety of Buckeye residents and visitors
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Maintain structural integrity of fire station/shelter for the public (heat and cool events)

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	filled-cemented basement, retrofitted bathrooms, block bldg
2018		
2019		
2020		
2021		

Demolition of abandoned residential properties

Mitigation Action	Demolition of abandoned residential properties (6)
Year Initiated	2011
Applicable Jurisdiction	City of Buckeye
Lead Agency/Organization	City of Buckeye
Supporting Agencies/Organizations	Region 6 Planning Commission, Others to be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of Buckeye, FEMA HMGP, Neighborhood Stabilization Program
Estimated Cost	To be determined
Benefits (loss avoided)	Remove unsafe structures and blight from the community
Projected Completion Date	1 year from when funds are secured
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Demolition of abandoned buildings

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	3- abandoned properties, 1-completely abandoned, 1-possibly livable
2018		
2019		
2020		
2021		

Individual Leach Fields

Mitigation Action	Individual Leach Fields (5)
Year Initiated	2011
Applicable Jurisdiction	City of Buckeye
Lead Agency/Organization	City of Buckeye
Supporting Agencies/Organizations	To be identified - rural development
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of Buckeye, FEMA HMGP, others to be identified
Estimated Cost	Unknown
Benefits (loss avoided)	Prevent damages due to possible sewer issues
Projected Completion Date	One year from when funds are secured or within time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create individual leach fields for sewage

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Rural water - 2018
2018		
2019		
2020		
2021		

Sewer improvements

Mitigation Action	Sewer improvements (5)
Year Initiated	2011
Applicable Jurisdiction	City of Buckeye
Lead Agency/Organization	City of Buckeye
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of Buckeye, FEMA HMGP, others to be identified
Estimated Cost	Unknown
Benefits (loss avoided)	Prevent damages due to possible sewer issues
Projected Completion Date	
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Improve existing storm & sanitary sewer/ Collection system improvements. Increase capacity.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Remove?	no sewer system, strictly water
2018		
2019		
2020		
2021		

Upgrade to rural water

Mitigation Action	Upgrade to rural water (5)
Year Initiated	2011
Applicable Jurisdiction	City of Buckeye
Lead Agency/Organization	City of Buckeye
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of Buckeye, Hardin County, others to be identified
Estimated Cost	Unknown, depends on how much is spent on the upgrades or if they are only subsidized to help residents upgrade
Benefits (loss avoided)	Buckeye residents will have safe rural water and will reduce the risk of drinking water being affected by flooding hazards
Projected Completion Date	1 year from when funds are secured
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program or secure funding to help upgrade individual resident's systems

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	ongoing	$150k grant rural development
2018		
2019		
2020		
2021		

Buckeye Completed Mitigation Actions

Demolition of a former county shed

Mitigation Action	Demolition of a former county shed (6)
Year Initiated	2011
Applicable Jurisdiction	City of Buckeye
Lead Agency/Organization	City of Buckeye
Supporting Agencies/Organizations	Region 6 Planning Commission, Others to be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of Buckeye, FEMA HMGP, others to be identified
Estimated Cost	To be determined
Benefits (loss avoided)	Remove unsafe structures from the community
Projected Completion Date	1 year from when funds are secured
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Demolition of former county shed in the City

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Completed	
2018		
2019		
2020		
2021		

Eldora

Eldora New Mitigation Actions

Eldora New Mitigation Action Prioritization

1. **Mitigation Action:** Develop new EOP for City of Eldora (STAPLEE Score: 7)
2. **Mitigation Action:** Build new emergency medical service facility (STAPLEE Score: 6)
3. **Mitigation Action:** Eliminate blighted structures and residences (STAPLEE Score: 2)

Develop New EOP

Mitigation Action	Develop a New Emergency Operations Plan for the City of Eldora (7)
Year Initiated	2017
Applicable Jurisdiction	City of Eldora
Lead agency/Organization	City of Eldora
Supporting Agencies/Organizations	
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County. Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	
Estimated Cost	This may be of little cost besides printing
Benefits (loss avoided)	
Projected Completion Date	
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Build New Emergency Medical Service Facility

Mitigation Action	Build a new Emergency Medical Service Facility (6)
Year Initiated	2017
Applicable Jurisdiction	City of Eldora
Lead agency/Organization	City of Eldora
Supporting Agencies/Organizations	
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	Grants
Estimated Cost	Total Cost Est: $4,000,000. Cost Per Square Foot: $255
Benefits (loss avoided)	
Projected Completion Date	
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Build a new Emergency Medical Service Facility to house increased number of ambulances. Ambulances do not fit in the existing structures. Build quarters to house personnel while on duty at the station during varied shifts, and to have space to provide training sessions.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Eliminate Blighted Structures and Residences

Mitigation Action	Project to pursue a plan to eliminate blighted structures and residences within the city (2)
Year Initiated	2017
Applicable Jurisdiction	City of Eldora
Lead agency/Organization	
Supporting Agencies/Organizations	
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	
Estimated Cost	$18,000 per house
Benefits (loss avoided)	
Projected Completion Date	
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Project to pursue a plan to eliminate blighted structures and residences within the city, to address the public health hazards of private owned structures who cannot control pest infestations.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Eldora Ongoing Mitigation Actions

Eldora Mitigation Action Prioritization

1. **Mitigation Action:** Storm drainage improvements (STAPLEE Score: 17)
2. **Mitigation Action:** Create informative hazard literature or use FEMA's free literature (STAPLEE Score: 16)
3. **Mitigation Action:** Distribute Portable NOAA All-Hazard Radios to Eldora residents (STAPLEE Score: 14)
4. **Mitigation Action:** Update communication system, purchase back-up system (STAPLEE Score: 13)
5. **Mitigation Action:** Construct a new fire station, retrofitted as a community shelter (STAPLEE Score: 8)
6. **Mitigation Action:** Update fire rescue equipment (STAPLEE Score: 8)
7. **Mitigation Action:** Purchase debris removal equipment (STAPLEE Score: -7)

Storm drainage improvements

Mitigation Action	Storm drainage improvements (17)
Year Initiated	2011
Applicable Jurisdiction	City of Eldora
Lead Agency/Organization	City of Eldora
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of Eldora, others to be identified
Estimated Cost	Unknown
Benefits (loss avoided)	Prevent flash flooding
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Complete storm drainage improvements

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Eldora City Council advised that this mitigation action is ongoing. Some street and storm sewer updates were completed in 2017, but more is needed. There are more sections that are targeted when funding becomes available.
2018		
2019		
2020		
2021		

Create informative hazard literature or use FEMA's free literature

Mitigation Action	Create informative hazard literature or use FEMA's free literature (16)
Year Initiated	2011
Applicable Jurisdiction	City of Eldora
Lead Agency/Organization	City of Eldora
Supporting Agencies/Organizations	Hardin County Emergency Management
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	City of Eldora and others to be identified
Estimated Cost	Depends on printing costs
Benefits (loss avoided)	Life safety of Eldora residents and visitors
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Educate Eldora residents about the dangers of hazard and how to prepare through informational literature

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	Eldora City Council advised this is ongoing
2018		
2019		
2020		
2021		

Distribute Portable NOAA All-Hazard Radios to Eldora residents

Mitigation Action	Distribute Portable NOAA All-Hazard Radios to Eldora residents (14)
Year Initiated	2011
Applicable Jurisdiction	City of Eldora
Lead Agency/Organization	City of Eldora
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Eldora, Hardin County, Iowa Homeland Security, others to be identified
Estimated Cost	Unknown, depends on how much is spent on the radios or if they are only subsidized to encourage residents to purchase one
Benefits (loss avoided)	Eldora residents will be informed of approaching hazards and updates throughout a hazard event
Projected Completion Date	1 year from when funds are secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program or secure funding to provide portable NOAA All- Hazard Radios to all Eldora residents

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	This is ongoing if Federal grants become available for this specific project.
2018		
2019		
2020		
2021		

Update communication system, purchase back-up system

Mitigation Action	Update communication system, purchase back-up system (13)
Year Initiated	2011
Applicable Jurisdiction	City of Eldora
Lead Agency/Organization	City of Eldora
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors. Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	City of Eldora, and others to be identified
Estimated Cost	Unknown until updates and new equipment are priced
Benefits (loss avoided)	Life safety of Eldora residents and visitors
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Update communication system, purchase back-up system

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	City of Eldora Council advised this is ongoing.
2018		
2019		
2020		
2021		

Construct a new fire station, retrofitted as a community shelter

Mitigation Action	Construct a new fire station, retrofitted as a community shelter (8)
Year Initiated	2011
Applicable Jurisdiction	City of Eldora
Lead Agency/Organization	City of Eldora
Supporting Agencies/Organizations	City of Eldora, Hardin Conservation, others to be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	FEMA HMGP and PDM, Eldora, CDBG, and Assistance to Firefighters Grants
Estimated Cost	Costs are variable depending on the size of the shelter and whether or not it is a retrofit or newly constructed shelter.
Benefits (loss avoided)	Life safety of Eldora residents and visitors
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	New fire station/shelter for the public (heat and cool events)

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	Recent movement in the past 2 months was purchase of a vacant building to be retrofitted to house the Eldora Volunteer Fire Department.
2018		
2019		
2020		
2021		

Update fire rescue equipment

Mitigation Action	Update fire rescue equipment (8)
Year Initiated	2011
Applicable Jurisdiction	City of Eldora
Lead Agency/Organization	City of Eldora
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Eldora, Fire Department, and Assistance to Firefighters Grants
Estimated Cost	Unknown until needs are assessed and equipment purchased
Benefits (loss avoided)	Up-to-date equipment for fire department in Eldora
Projected Completion Date	Ongoing, starting 1 year from when funds are secured or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase new and update equipment as needed for fire department

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	City of Eldora advised this is ongoing as funding becomes available.
2018		
2019		
2020		
2021		

Purchase debris removal equipment

Mitigation Action	Purchase debris removal equipment (-7)
Year Initiated	2011
Applicable Jurisdiction	City of Eldora
Lead Agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County Sanitarian
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors. Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	City of Eldora
Estimated Cost	Unknown until needs are assessed and equipment purchased
Benefits (loss avoided)	Restore safety of city infrastructure immediately following a hazard event
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase debris removal equipment

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Eldora Completed Mitigation Actions

Purchase emergency watercrafts

Mitigation Action	Purchase emergency watercrafts (8)
Year Initiated	2011
Applicable Jurisdiction	City of Eldora
Lead Agency/Organization	City of Eldora
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Eldora, Emergency Departments, others to be identified
Estimated Cost	Unknown until needs are assessed and equipment purchased
Benefits (loss avoided)	Equipment for unique hazards
Projected Completion Date	Ongoing, starting 1 year from when funds are secured or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Completed	
2018		
2019		
2020		
2021		

Hubbard

Hubbard New Mitigation Actions

Hubbard New Mitigation Action Prioritization

1. **Mitigation Action:** Identify community shelter and resources (STAPLEE Score: 21)
2. **Mitigation Action:** 6-inch water transfer pump (STAPLEE Score: 21)
3. **Mitigation Action:** Repair storm sewer system (STAPLEE Score: 21)
4. **Mitigation Action:** Repair sanitary sewer system (STAPLEE Score: 21)

Identify Community Shelter and Resources

Mitigation Action	Identify Community Shelter and Resources (21)
Year Initiated	2017
Applicable Jurisdiction	City of Hubbard
Lead Agency/Organization	City of Hubbard
Supporting Agencies/Organizations	
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	
Estimated Cost	Low cost
Benefits (loss avoided)	
Projected Completion Date	
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Stranded motorist cots and bedding

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

6-inch Water Transfer Pump

Mitigation Action	6-inch Water Transfer Pump (21)
Year Initiated	2017
Applicable Jurisdiction	City of Hubbard
Lead Agency/Organization	City of Hubbard
Supporting Agencies/Organizations	
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	
Estimated Cost	$3,000
Benefits (loss avoided)	
Projected Completion Date	
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Repair Storm Sewer System

Mitigation Action	Repair Storm Sewer System (21)
Year Initiated	2017
Applicable Jurisdiction	City of Hubbard
Lead Agency/Organization	City of Hubbard
Supporting Agencies/Organizations	
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	
Estimated Cost	Unknown
Benefits (loss avoided)	
Projected Completion Date	
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Repair Sanitary Sewer System

Mitigation Action	Repair Sanitary Sewer System (21)
Year Initiated	2017
Applicable Jurisdiction	City of Hubbard
Lead Agency/Organization	City of Hubbard
Supporting Agencies/Organizations	
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	CDBG grants
Estimated Cost	1.8 million
Benefits (loss avoided)	Prevent basement flooding from sewer system
Projected Completion Date	
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Hubbard Ongoing Mitigation Actions

Hubbard Goal Prioritization

1. **Mitigation Action:** Public education program (STAPLEE Score: 14)
2. **Mitigation Action:** Utilize alternate methods of educating citizens on hazard safety (STAPLEE Score: 14)
3. **Mitigation Action:** Purchase generators (STAPLEE Score: 14)
4. **Mitigation Action:** Purchase new warning siren (STAPLEE Score: 13)

Public education program

Mitigation Action	Public education program (14)
Year Initiated	2011
Applicable Jurisdiction	City of Hubbard
Lead Agency/Organization	City of Hubbard
Supporting Agencies/Organizations	To be identified, possibly other Hardin County jurisdictions
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	City of Hubbard and others to be identified
Estimated Cost	Unknown, this project may be of little cost depending on the medium used
Benefits (loss avoided)	Life safety of Hubbard residents and visitors
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program to educate Hubbard residents about the dangers of hazard and how to prepare through informational flyers, meetings, or other interactive media like drills and workshops

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Utilize alternate methods of educating citizens on hazard safety

Mitigation Action	Utilize alternate methods of educating citizens on hazard safety (14)
Year Initiated	2011
Applicable Jurisdiction	City of Hubbard
Lead Agency/Organization	City of Hubbard
Supporting Agencies/Organizations	Local Cable Channel, Possibly other Hardin County jurisdictions
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	City of Hubbard and others to be identified
Estimated Cost	Unknown, this project may be costly due to the mediums used
Benefits (loss avoided)	Life safety of Hubbard residents and visitors and education of some rare hazards
Projected Completion Date	Ongoing, 1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Utilize local cable TV channel to educate citizens

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase generators

Mitigation Action	Purchase generators (14)
Year Initiated	2011
Applicable Jurisdiction	City of Hubbard
Lead Agency/Organization	City of Hubbard
Supporting Agencies/Organizations	Hubbard-Radcliffe Schools, Emergency Services, Others to be Identified
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	City of Hubbard, FEMA HMGP, and others to be identified
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 plus wiring and switch installation costs also standby requires a permanent fuel source
Benefits (loss avoided)	Power generation to maintain the function of critical facilities
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase portable generators for Hubbard's identified critical facilities

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017		Got on for water treatment plant
2018		
2019		
2020		
2021		

Purchase new warning siren

Mitigation Action	Purchase new warning siren (13)
Year Initiated	2011
Applicable Jurisdiction	City of Hubbard
Lead Agency/Organization	City of Hubbard
Supporting Agencies/Organizations	Hardin County Emergency Management
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Hubbard, FEMA HMGP, and others to be identified
Estimated Cost	Sirens can cost up to $25,000, used sirens are sometimes available for purchase, which helps reduce the cost
Benefits (loss avoided)	Life safety of Hubbard residents and visitors
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase and install warning siren

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Hubbard Completed Mitigation Actions

Retrofit City Hall to double as a shelter

Mitigation Action	Retrofit City Hall to double as a shelter (18)
Year Initiated	2011
Applicable Jurisdiction	City of Hubbard
Lead Agency/Organization	City of Hubbard
Supporting Agencies/Organizations	City of Hubbard, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	FEMA HMGP and PDM, Hubbard, CDBG, and others to be identified
Estimated Cost	Costs are variable depending on the size of the shelter and whether or not it is a retrofit or newly constructed shelter.
Benefits (loss avoided)	Life safety of Hubbard residents and visitors
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Retrofit City Hall to double as a shelter

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Complete	
2018		
2019		
2020		
2021		

Purchase infrared scope for Fire Department

Mitigation Action	Purchase infrared scope for Fire Department (16)
Year Initiated	2011
Applicable Jurisdiction	City of Hubbard
Lead Agency/Organization	City of Hubbard
Supporting Agency/Organization	Hardin County Emergency Management
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Hubbard, Assistance to Firefighters Grants
Estimated Cost	Unknown until equipment is priced
Benefits (loss avoided)	Assist the fire department in emergency situations
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase infrared scope for Fire Department

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Completed	
2018		
2019		
2020		
2021		

Iowa Falls

Iowa Falls New Mitigation Actions

Iowa Falls New Mitigation Action Prioritization

1. **Mitigation Action:** Repair or replace River St and River Road bridges (STAPLEE Score: 4)
2. **Mitigation Action:** Investigate new technology to keep citizens better informed (STAPLEE Score: 4)
3. **Mitigation Action:** Add backup city government operation facility (STAPLEE Score: 0)

Add Backup City Government Operation Facility

Mitigation Action	Add Backup City Government Operation Facility (0)
Year Initiated	2017
Applicable Jurisdiction	City of Iowa Falls
Lead Agency/Organization	City Council
Supporting Agencies/Organizations	
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	Bonds, Grants, City Funds
Estimated Cost	Unknown
Benefits (loss avoided)	Maintain Government Services
Projected Completion Date	Next 3-5 years
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Would add this to our next city building

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Repair or Replace River St. and River Road Bridges

Mitigation Action	Repair or Replace River St. and River Road Bridges (4)
Year Initiated	2017
Applicable Jurisdiction	City of Iowa Falls
Lead Agency/Organization	City Council
Supporting Agencies/Organizations	
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	Grants, Local Funds, Bonds
Estimated Cost	River St. $250,000 and River Rd $500,000
Benefits (loss avoided)	Some as good
Projected Completion Date	2-4 yrs. (Both)
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	These two bridges have been identified as needing repair or replacement

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Investigate New Technology to Keep Citizens Better Informed

Mitigation Action	Investigate New Technology to Keep Citizens Better Informed (4)
Year Initiated	2017
Applicable Jurisdiction	City of Iowa Falls
Lead Agency/Organization	City Council
Supporting Agencies/Organizations	
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	local funds, grants
Estimated Cost	unknown
Benefits (loss avoided)	Better communication
Projected Completion Date	1-2 years after funding occurred
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Investigate cutting edge communications for city and its residents

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Iowa Falls Ongoing Mitigation Actions

Iowa Falls Mitigation Action Prioritization

1. **Mitigation Action:** Training for emergency responders (STAPLEE Score: 14)
2. **Mitigation Action:** Install Emergency Pumps to Sewer System (STAPLEE Score: 9)
3. **Mitigation Action:** Create storm detention basins (STAPLEE Score: 9)
4. **Mitigation Action:** Sewer improvements (STAPLEE Score: 7)
5. **Mitigation Action:** Public education program (STAPLEE Score: 7)
6. **Mitigation Action:** Expand warning system programs (STAPLEE Score: 5)
7. **Mitigation Action:** Improve and update emergency operations center (STAPLEE Score: 3)

Training for emergency responders

Mitigation Action	Training for emergency responders (14)
Year Initiated	2011
Applicable Jurisdiction	Iowa Falls
Lead Agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Local emergency responders, Others to be identified
Potential Funding Source	Hardin County, others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Estimated Cost	This may be of little cost since it is an information session
Benefits (loss avoided)	Personnel will serve better in events with proper training
Projected Completion Date	Ongoing starting when a course can be formulated, and possible funding secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Hold session to train emergency personnel to identify hazards and proper response

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Participate in state and local training
2018		
2019		
2020		

2021		

Install Emergency Pumps to Sewer System

Mitigation Action	**Install Emergency Pumps to Sewer System (9)**
Year Initiated	2011
Applicable Jurisdiction	City of Iowa Falls
Lead Agency/Organization	City of Iowa Falls
Supporting Agencies/Organizations	Hardin County Sanitarian, Others to be identified
Applicable Goal	Goal 1: Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of Iowa Falls, FEMA HMGP, others to be identified
Estimated Cost	Unknown
Benefits (loss avoided)	Prevent damages due to possible sewer issues
Projected Completion Date	One year from when funds are secured or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Install Emergency Pumps to redirect overflow

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Completed lining and replacing on some
2018		
2019		
2020		
2021		

Create Storm Detention Basins

Mitigation Action	Create storm water detention basins (9)
Year Initiated	2011
Applicable Jurisdiction	City of Iowa Falls
Lead Agency/Organization	City of Iowa Falls
Supporting Agencies/Organizations	Region 6 Planning Commission
Applicable Goal	Goal 1: Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of Ackley, FEMA HMPG, others to be identified
Estimated Cost	Unknown until areas are assessed for feasibility of project
Benefits (loss avoided)	Mitigating the flooding of city infrastructure during and immediately following a hazard event
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create storm water detention basins

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Sewer improvements

Mitigation Action	Sewer improvements (7)
Year Initiated	2011
Applicable Jurisdiction	City of Iowa Falls
Lead Agency/Organization	City of Iowa Falls
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 1: Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of Iowa Falls, FEMA HMGP, others to be identified
Estimated Cost	Unknown
Benefits (loss avoided)	Prevent damages due to possible sewer issues
Projected Completion Date	One year from when funds are secured or within time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Improve existing storm & sanitary sewer/ Collection system improvements. Increase capacity.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Council ordered facility study for new wastewater treatment plant
2018		
2019		
2020		
2021		

Public education program

Mitigation Action	Public education program (7)
Year Initiated	2011
Applicable Jurisdiction	City of Iowa Falls
Lead Agency/Organization	City of Iowa Falls
Supporting Agencies/Organizations	To be identified, possibly other Hardin County jurisdictions
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	City of Iowa Falls and others to be identified
Estimated Cost	Unknown, this project may be of little cost depending on the medium used
Benefits (loss avoided)	Life safety of Iowa Falls residents and visitors
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program to educate Iowa Falls residents about the dangers of hazards and how to prepare through informational flyers, meetings, or other interactive media like drills and workshops

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Police department has a Facebook page
2018		
2019		
2020		
2021		

Expand warning system programs

Mitigation Action	Expand warning system programs (5)
Year Initiated	2011
Applicable Jurisdiction	City of Iowa Falls
Lead Agency/Organization	City of Iowa Falls
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Iowa Falls, FEMA HMGP and PDM, others to be identified
Estimated Cost	New sirens can cost up to $25,000, used sirens are sometimes available for purchase, which helps reduce the cost. Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 plus wiring and switch installation costs - standby requires a permanent fuel source
Benefits (loss avoided)	Life safety of Iowa Falls residents and visitors, use of siren even if there is a power outage
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase an additional warning siren with backup power capability

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Continue to maintain and update system
2018		
2019		
2020		
2021		

Improve and update emergency operations center

Mitigation Action	Improve and update emergency operations center (3)
Year Initiated	2011
Applicable Jurisdiction	City of Iowa Falls
Lead Agency/Organization	City of Iowa Falls
Supporting Agencies/Organizations	Hardin County Emergency Management, Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Iowa Falls, Hardin County, others to be identified
Estimated Cost	Unknown until new center is assessed
Benefits (loss avoided)	City personnel will have reliable equipment and systems in place for a hazard event
Projected Completion Date	Possibly ongoing or 1 year from when funds are secured
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Improve and update emergency operations center

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Continue to update equipment
2018		
2019		
2020		
2021		

Iowa Falls Completed Mitigation Actions

Update Railroad Crossings

Mitigation Action	Update Railroad Crossings (14)
Year Initiated	2011
Applicable Jurisdiction	City of Iowa Falls
Lead Agency/Organization	City of Iowa Falls
Supporting Agencies/Organizations	Hardin County Engineer, Rail line owners, Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Iowa Falls, others to be identified
Estimated Cost	Unknown
Benefits (loss avoided)	Crossings will be safer for residents and visitors
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Update the run-down railroad crossings in town

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Completed	Have completed – some work remaining
2018		
2019		
2020		
2021		

Purchase generators

Mitigation Action	Purchase generators (6)
Year Initiated	2011
Applicable Jurisdiction	City of Iowa Falls
Lead Agency/Organization	City of Iowa Falls
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	FEMA HMGP, City of Iowa Falls, and others to be identified
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 plus wiring and switch installation costs also standby requires a permanent fuel source
Benefits (loss avoided)	Power generation to maintain the function of critical facilities
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase a generator for city use in critical facilities

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Completed	Do yearly maintenance
2018		
2019		
2020		
2021		

Write an emergency communications plan for city departments' use

Mitigation Action	Write an emergency communications plan for city departments' use (4)
Year Initiated	2011
Applicable Jurisdiction	City of Iowa Falls
Lead Agency/Organization	City of Iowa Falls
Supporting Agencies/Organizations	Hardin County Emergency Management, local fire, law enforcement, and emergency response personnel
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	City of Iowa Falls, others to be identified
Estimated Cost	Staff time and printing costs
Benefits (loss avoided)	A communication plan will be set in place so the city offices will be prepared for crises and regain control of city communications as soon as possible
Completion Date	At such time the plan is complete, possible ongoing updates
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Complete a plan for use if the city's communication functions are disabled

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Completed	Updated radios and transmission
2018		
2019		
2020		
2021		

Improve communication systems

Mitigation Action	Improve communication systems (3)
Year Initiated	2011
Applicable Jurisdiction	City of Iowa Falls
Lead Agency/Organization	City of Iowa Falls
Supporting Agencies/Organizations	Local fire and EMS, Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Iowa Falls, others to be identified
Estimated Cost	Unknown until equipment is assessed and new equipment is priced
Benefits (loss avoided)	Iowa Falls City personnel will have reliable communication capabilities
Projected Completion Date	Possibly ongoing or 1 year from when funds are secured
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Update or replace substandard communication equipment in all City departments

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Completed	Updated communications between IFPD and Hardin County
2018		
2019		
2020		
2021		

Distribute NOAA All-Hazard Radios to all Iowa Falls residents

Mitigation Action	Distribute NOAA All-Hazard Radios to all Iowa Falls residents (3)
Year Initiated	2011
Application Jurisdiction	City of Iowa Falls
Lead Agency/Organization	City of Iowa Falls
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Iowa Falls, Hardin County, Iowa Homeland Security, others to be identified
Estimated Cost	Unknown, depends on how much is spent on the radios or if they are only subsidized to encourage residents to purchase one
Benefits (loss avoided)	Iowa Falls residents will be informed of approaching hazards and updates throughout a hazard event
Projected Completion Date	1 year from when funds are secured
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program or secure funding to provide NOAA All-Hazard Radios to all Iowa Falls residents

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Completed	May need to look at updating and replacing as time goes on
2018		
2019		
2020		
2021		

Offsite computer backup systems

Mitigation Action	Offsite computer backup systems (2)
Year Initiated	2011
Applicable Jurisdiction	City of Iowa Falls
Lead Agency/Organization	City of Iowa Falls
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	City of Iowa Falls, others to be identified
Estimated Cost	Unknown until new equipment is priced
Benefits (loss avoided)	City personnel will have reliable communication capabilities in case the main system goes down during a hazard
Projected Completion Date	Possibly ongoing or 1 year from when funds are secured
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Establish an offsite backup computer system for the city.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Completed	IF & Hardin Co have built in redundancies
2018		
2019		
2020		
2021		

New Providence

New Mitigation Actions

New Providence New Mitigation Action Prioritization

1. **Mitigation Action:** Portable generator for fire dept. (STAPLEE Score: 18)
2. **Mitigation Action:** Mitigate failure of lagoon system (structure, natural disaster, etc.) (STAPLEE Score: 12)
3. **Mitigation Action:** Acquisition of washer/dryer (heavy duty) for fire dept. apparel (STAPLEE Score: 10)
4. **Mitigation Action:** Education/training regarding terrorism/bomb threat/shootings (STAPLEE Score: 10)
5. **Mitigation Action:** Water tower backup/maintenance (STAPLEE Score: 9)
6. **Mitigation Action:** Procure generator(s) to run water pump at water tower (STAPLEE Score: 9)
7. **Mitigation Action:** Veterans Memorial preservation (lighting, vandalism, maintenance) (STAPLEE Score: 8)
8. **Mitigation Action:** Preservation/maintenance of Historical Round House (STAPLEE Score: 8)
9. **Mitigation Action:** Larger/new fire dept. building (STAPLEE Score: 5)
10. **Mitigation Action:** Acquire communications equip for fire dept. (STAPLEE Score: 4)

Portable Generator for Fire Department

Mitigation Action	Portable Generator for Fire Department (18)
Year Initiated	2017
Applicable Jurisdiction	New Providence
Lead Agency/Organization	New Providence Fire Dept.
Supporting Agencies/Organizations	
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	
Estimated Cost	$500 - $2,000
Benefits (loss avoided)	
Projected Completion Date	
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Acquisition Washer/Dryer Heavy Duty for Fire Dept. Apparel

Mitigation Action	Acquisition Washer/Dryer Heavy Duty for Fire Dept. Apparel (10)
Year Initiated	2017
Applicable Jurisdiction	New Providence
Lead agency/Organization	New Providence Fire Dept.
Supporting Agencies/Organizations	
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	
Estimated Cost	$3,000
Benefits (loss avoided)	
Projected Completion Date	
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Larger/New Fire Dept. Building

Mitigation Action	Larger/New Fire Dept. Building (5)
Year Initiated	2017
Applicable Jurisdiction	New Providence
Lead agency/Organization	New Providence Fire Dept.
Supporting Agencies/Organizations	
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	
Estimated Cost	$2,000,000 total
Benefits (loss avoided)	
Projected Completion Date	Ongoing
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Veterans Memorial Preservation (lighting, vandalism, maintenance etc.)

Mitigation Action	Veterans Memorial Preservation (lighting, vandalism, maintenance etc.) (8)
Year Initiated	2017
Applicable Jurisdiction	New Providence
Lead agency/Organization	New Providence
Supporting Agencies/Organizations	
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	
Estimated Cost	Unknown
Benefits (loss avoided)	
Projected Completion Date	
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Preservation/Maintenance of Historical Round House

Mitigation Action	Preservation/Maintenance of Historical Round House (8)
Year Initiated	2017
Applicable Jurisdiction	New Providence
Lead agency/Organization	New Providence
Supporting Agencies/Organizations	
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	
Estimated Cost	Unknown
Benefits (loss avoided)	
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Water Tower Backup/Maintenance

Mitigation Action	Water Tower Backup/Maintenance (9)
Year Initiated	2017
Applicable Jurisdiction	New Providence
Lead agency/Organization	New Providence
Supporting Agencies/Organizations	
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	
Estimated Cost	Unknown
Benefits (loss avoided)	
Projected Completion Date	
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Failure of Lagoon System (structure, natural disaster etc.) Excessive Rain Unknown Cause?

Mitigation Action	Mitigate Failure of Lagoon System (structure, natural disaster etc.) due to Excessive Rain, Unknown Cause (12)
Year Initiated	2017
Applicable Jurisdiction	New Providence
Lead agency/Organization	New Providence
Supporting Agencies/Organizations	As needed
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	
Estimated Cost	TBD
Benefits (loss avoided)	
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Dredge/clean out Backup meter Culverts Bigger/updated/new Sewer lines inspected/repair/updated Blueprint upgrade/maintained

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Education/Training Regarding Terrorism/Bomb Threat/Shootings

Mitigation Action	Education/Training Regarding Terrorism/Bomb Threat/Shootings (10)
Year Initiated	2017
Applicable Jurisdiction	City of New Providence
Lead Agency/Organization	City of New Providence
Supporting Agencies/Organizations	Fire/Law/other as needed
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	
Estimated Cost	unknown
Benefits (loss avoided)	
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Hold meeting for those interested - training

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Need for Generator(s) to Run Water Pump at Water Tower

Mitigation Action	Need for Generator(s) to Run Water Pump at Water Tower (9)
Year Initiated	2017
Applicable Jurisdiction	New Providence
Lead Agency/Organization	New Providence
Supporting Agencies/Organizations	
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors. Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	
Estimated Cost	$70,000 per generator (Industrial Grade)
Benefits (loss avoided)	Avoid contamination water
Projected Completion Date	
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Acquire Communications (computer/printer/internet) for Fire Dept.

Mitigation Action	Acquire Communications (computer/printer/internet) for Fire Dept. (4)
Year Initiated	2017
Applicable Jurisdiction	New Providence
Lead agency/Organization	New Providence
Supporting Agencies/Organizations	
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	
Estimated Cost	$1,500
Benefits (loss avoided)	
Projected Completion Date	
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

New Providence Ongoing Mitigation Actions

New Providence Mitigation Action Prioritization

1. **Mitigation Action:** Create an emergency phone tree. (STAPLEE Score: 9)
2. **Mitigation Action:** Create a community website. (STAPLEE Score: 9)
3. **Mitigation Action:** Purchase generator for new community shelter (STAPLEE Score: 2)
4. **Mitigation Action:** Fire-proof homes and businesses (STAPLEE Score: 2)
5. **Mitigation Action:** Hazard-proof homes and businesses to withstand hailstorms/tornados (STAPLEE Score: 2)

Create an emergency phone tree

Mitigation Action	Create an emergency phone tree. (9)
Year Initiated	2011
Applicable Jurisdiction	City of New Providence
Lead Agency/Organization	City of New Providence
Supporting Agencies/Organizations	All City Departments, Hardin County Emergency Management, and others to be identified
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	City of New Providence, other to be identified
Estimated Cost	Staff time and Printing cost
Benefits (loss avoided)	Ensuring all vulnerable populations and citizens will be notified and taken care of in an event. Regular updates will be needed.
Projected Completion Date	Ongoing from the publication of the call tree
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Hold a meeting for all those who wish to be included on the phone tree, especially the elderly and those with small children

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Create a community website

Mitigation Action	Create a community website. (9)
Year Initiated	2011
Applicable Jurisdiction	City of New Providence
Lead Agency/Organization	City of New Providence
Supporting Agencies/Organizations	All City Departments, and others to be identified
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	City of New Providence, others to be identified
Estimated Cost	Purchasing a web address and maintaining the site will be of some cost.
Benefits (loss avoided)	Hazard information/alert source for those who own a computer
Projected Completion Date	Ongoing from the publication of the website
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a city website for general city use as well as a portion designated for hazard information and alerts

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase generator for new community shelter

Mitigation Action	Purchase generator for new community shelter (2)
Year Initiated	2011
Applicable Jurisdiction	City of New Providence
Lead Agency/Organization	City of New Providence
Supporting Agencies/Organizations	Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of New Providence, FEMA HMGP, others to be identified
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 plus wiring and switch installation costs - standby requires a permanent fuel source
Benefits (loss avoided)	Continuation of shelter functions during a power outage
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase a generator to use in the community shelter during power outages, generator hook up capabilities need to be installed

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Fire-proof homes and businesses

Mitigation Action	Fire-proof homes and businesses (2)
Year Initiated	2011
Applicable Jurisdiction	City of New Providence
Lead Agency/Organization	City of New Providence
Supporting Agencies/Organizations	Local volunteer fire department
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of New Providence
Estimated Cost	Unknown until needs are assessed and materials priced
Benefits (loss avoided)	Reduce damage to homes and businesses during fire events
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase materials to protect homes and businesses during fire hazard events

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Hazard-proof homes and businesses to withstand hailstorms/tornados

Mitigation Action	Hazard-proof homes and businesses to withstand hailstorms/tornados (2)
Year Initiated	2011
Applicable Jurisdiction	City of New Providence
Lead Agency/Organization	City of New Providence
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of New Providence
Estimated Cost	Unknown until needs are assessed and materials priced
Benefits (loss avoided)	Reduce damage to homes and businesses during storm events
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase materials to protect homes and businesses (such as storm shutters) during hazard events

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

New Providence Completed Mitigation Actions

Construct a community shelter with basic services

Mitigation Action	Construct community shelters with basic services (2)
Year Initiated	2011
Applicable Jurisdiction	City of New Providence
Lead Agency/Organization	City of New Providence
Supporting Agencies/Organizations	City of New Providence, Hardin Conservation, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of New Providence, CDBG, and others to be identified
Estimated Cost	Unknown
Benefits (loss avoided)	Life safety of New Providence residents and visitors
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Assess where needed most, construct a shelter to serve the community and one for those in recreational areas

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Complete	Historic Roundhouse, church
2018		
2019		
2020		
2021		

Radcliffe

Radcliffe New Mitigation Actions

Radcliffe New Mitigation Action Prioritization

1. **Mitigation Score:** Backup water plan (STAPLEE Score: 23)

Backup Water Plan

Mitigation Action	Backup Water Plan (23)
Year Initiated	2017
Applicable Jurisdiction	Radcliffe
Lead Agency/Organization	Radcliffe
Supporting Agencies/Organizations	Rural Iowa Water Association
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	Grant
Estimated Cost	$10,000-50,000
Benefits (loss avoided)	Emergency transport of water
Projected Completion Date	3 yr.
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	A. Generator B. Hook in to rural water C. Drill 2nd well

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	Emergency access to plentiful water
2018		
2019		
2020		
2021		

Radcliffe Ongoing Mitigation Actions

Radcliffe Mitigation Action Prioritization

1. **Mitigation Action:** Create disaster preparation and cleanup plan (STAPLEE Score: 19)
2. **Mitigation Action:** Create a public information session and conservation (water) program for Radcliffe (STAPLEE Score: 16)
3. **Mitigation Action:** Create a public information session about insurance coverage and regulations (STAPLEE Score: 13)
4. **Mitigation Action:** Purchase/ update snow removal equipment (STAPLEE Score: 12)
5. **Mitigation Action:** Purchase generators for critical facilities (STAPLEE Score: 11)
6. **Mitigation Action:** Create a communication strategy (STAPLEE Score: 10)
7. **Mitigation Action:** Construct a safe room (STAPLEE Score: 9)

Create disaster preparation and cleanup plan

Mitigation Action	Create disaster preparation and cleanup plan (19)
Year Initiated	2011
Applicable Jurisdiction	City of Radcliffe
Lead Agency/Organization	City of Radcliffe
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	City of Radcliffe, others to be identified
Estimated Cost	May be of little cost besides printing and staff time
Benefits (loss avoided)	Prepare city efficiently for a disaster and restore safety of city infrastructure immediately following a hazard event
Projection Completion Date	Ongoing
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a plan for pre-disaster preparation (sandbags) and post disaster clean up

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Create a public information session and conservation (water) program for Radcliffe

Mitigation Action	Create a public information session and conservation (water) program for Radcliffe (16)
Year Initiated	2011
Applicable Jurisdiction	City of Radcliffe
Lead Agency/Organization	City of Radcliffe
Supporting Agencies/Organizations	Hardin County Conservation, Others to be identified
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	City of Radcliffe
Estimated Cost	Unknown, this project may be of little cost besides a water stockpile
Benefits (loss avoided)	Giving information about drought hazards and being prepared with the necessary supplies in case of an event
Projected Completion Date	1 year from when political and public support is leveraged
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a public information and conservation (water) program

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Create a public information session about insurance coverage and regulations

Mitigation Action	Create a public information session about insurance coverage and regulations (13)
Year Initiated	2011
Applicable Jurisdiction	City of Radcliffe
Lead Agency/Organization	City of Radcliffe
Supporting Agencies/Organization	Region 6 Planning Commission, Others to be identified
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	City of Radcliffe
Estimated Cost	Unknown, this project may be of little cost
Benefits (loss avoided)	Giving information about ways to protect themselves and their property
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a public information session to inform citizens of ways to protect themselves and their property

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase/ update snow removal equipment

Mitigation Action	Purchase /update snow removal equipment (12)
Year Initiated	2011
Applicable Jurisdiction	City of Radcliffe
Lead Agency/Organization	City of Radcliffe
Supporting Agencies/Organizations	Hardin County Emergency Management, Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Radcliffe, others to be identified
Estimated Cost	Unknown until equipment is assessed and new equipment priced
Benefits (loss avoided)	Restore safety of city infrastructure immediately following a hazard event, as well as ensuring efficiency of equipment
Projection Completion Date	Ongoing or 1 year from when funds are secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase/update snow removal equipment for use following a severe winter storm

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase generators for critical facilities

Mitigation Action	Purchase generators for critical facilities (11)
Year Initiated	2011
Application Jurisdiction	City of Radcliffe
Lead Agency/Organization	City of Radcliffe
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors. Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	City of Radcliffe, FEMA HMGP, others to be identified
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 plus wiring and switch installation costs - standby requires a permanent fuel source
Benefits (loss avoided)	The ability to power critical facilities, shelters, and warning devices during a power outage
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase generators for use in critical facilities

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Create a communication strategy

Mitigation Action	Create a communication strategy (10)
Year Initiated	2011
Applicable Jurisdiction	City of Radcliffe
Lead Agency/Organization	City of Radcliffe
Supporting Agencies/Organizations	Hardin County Emergency Management, Others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	City of Radcliffe
Estimated Cost	To be determined, may be of little cost
Benefits (loss avoided)	Citizens will be informed before, during and after hazard events
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a communication strategy between city and citizens.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Construct a safe room

Mitigation Action	Construct a safe room (9)
Year Initiated	2011
Applicable Jurisdiction	City of Radcliffe
Lead Agency/Organization	City of Radcliffe
Supporting Agencies/Organizations	Hardin County Emergency Management, Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Radcliffe, FEMA HMGP and PDM, CDBG, others to be identified
Estimated Cost	Costs are variable depending on the size of the safe room and whether or not it is a retrofit or newly constructed safe room. For a small safe room in a house the minimum cost is approximately $2,500-$6,000. For a large community shelter, the cost usually ranges from $250,000 to over $1 million depending on the size.
Benefits (loss avoided)	Life safety of Radcliffe residents and visitors
Projection Completion Date	1 year from funding or within the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Construct a safe room

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Radcliffe Completed Mitigation Actions

Sewer improvements

Mitigation Action	Sewer improvements (13)
Year Initiated	2011
Applicable Jurisdiction	City of Radcliffe
Lead Agency/Organization	City of Radcliffe
Supporting Agencies/Organizations	County Sanitarian, Others to be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of Radcliffe, FEMA HMGP, CDBG, others to be identified
Estimated Cost	Unknown until project is priced
Benefits (loss avoided)	Prevent damages due to sewer backup
Projected Completion Date	One year from when funds are secured or within time allotted by funding source
Year Initiated	2011
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	New sewer lines

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Completed	Completed November 2016
2018		
2019		
2020		
2021		

Demolition of abandoned buildings

Mitigation Action	Demolition of abandoned buildings (9)
Year Initiated	2011
Applicable Jurisdiction	City of Radcliffe
Lead Agency/Organization	City of Radcliffe
Supporting Agencies/Organizations	Region 6 Planning Commission, Others to be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of Radcliffe, FEMA HMGP, NSP, others to be identified
Estimated Cost	To be determined
Benefits (loss avoided)	Remove unsafe structures from the community
Projection Completion Date	1 year from when funds are secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Demolition of abandoned buildings

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Completed	Completed 2016
2018		
2019		
2020		
2021		

Acquisition and elevation of structures

Mitigation Action	Acquisition and elevation of structures (2)
Year Initiated	2011
Applicable Jurisdiction	City of Radcliffe
Lead Agency/Organization	City of Radcliffe
Supporting Agencies/Organizations	Hardin County Emergency Management
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	FEMA HMGP and PDM, CDBG, City of Radcliffe, others to be identified
Estimated Cost	Unknown until structures can be evaluated
Benefits (loss avoided)	Life safety for Radcliffe residents and visitors
Projected Completion Date	1 year from when funds are secured, or time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Acquisition and elevation of structures in flood plains and flood-prone areas

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Completed	Was due to storm sewer which was updated 2016
2018		
2019		
2020		
2021		

Steamboat Rock

Steamboat Rock New Mitigation Actions

Steamboat Rock New Mitigation Action Prioritization

1. **Mitigation Action:** Add culvert to county road (STAPLEE Score: 9)
2. **Mitigation Action:** Procure and place backup generator at the City's lift station (STAPLEE Score: 8)
3. **Mitigation Action:** New generator for the community building (STAPLEE Score: 8)

Backup Generator for Lift Station

Mitigation Action	Place backup generator at the City's lift station (8)
Year Initiated	2017
Applicable Jurisdiction	Steamboat Rock
Lead Agency/Organization	City of Steamboat Rock
Supporting Agencies/Organizations	
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	PDM, HMGP
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 - plus wiring and switch installation costs. Also, standby requires a permanent fuel source. It can be over $75,000 for heavy duty, industrial grade generators.
Benefits (loss avoided)	Flooding
Projected Completion Date	
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Construct Culvert

Mitigation Action	Add culvert to county road (9)
Year Initiated	2017
Applicable Jurisdiction	City of Steamboat Rock
Lead Agency/Organization	City of Steamboat Rock
Supporting Agencies/Organizations	
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	PDM, HMGP
Estimated Cost	Cost can vary depending on a variety of factors.
Benefits (loss avoided)	
Projected Completion Date	
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Add culvert to road county road in the 3200 mile of 200 St. to allow water to drain under the road

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Generator for Community Building/Shelter

Mitigation Action	New Generator for the Community Building (8)
Year Initiated	2017
Applicable Jurisdiction	City of Steamboat Rock
Lead Agency/Organization	City of Steamboat Rock
Supporting Agencies/Organizations	
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	HMGP
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 - plus wiring and switch installation costs. Also, standby requires a permanent fuel source.
Benefits (loss avoided)	Backup power for the city's shelter
Projected Completion Date	
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase and install new generator for the Community building/ Shelter

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Steamboat Rock Ongoing Mitigation Actions

Steamboat Rock Mitigation Action Prioritization

1. **Mitigation Action:** Add lift station (STAPLEE Score: 7)
2. **Mitigation Action:** Update sewer treatment plant (STAPLEE Score: 6)

Add lift station

Mitigation Action	Add lift station (7)
Year Initiated	2011
Applicable Jurisdiction	City of Steamboat Rock
Lead Agency/Organization	City of Steamboat Rock
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	FEMA HMGP, City of Steamboat Rock, and others to be identified
Estimated Cost	Depending on the type and capacity of the lift station, approximately $120,000 to $500,000 plus operation and maintenance cost over the lift station's useful life
Benefits (loss avoided)	Eliminate potential sanitary sewer backups into structures
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Add a lift station to the City's sanitary sewer when and where it is needed.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Need funding to implement
2018		
2019		
2020		
2021		

Update sewer treatment plant

Mitigation Action	Update sewer treatment plant (6)
Year Initiated	2011
Applicable Jurisdiction	City of Steamboat Rock
Lead Agency/Organization	City of Steamboat Rock
Supporting Agencies/Organizations	
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of Steamboat Rock, FEMA HMGP, others to be identified
Estimated Cost	Unknown until updates can be priced
Benefits (loss avoided)	Prevent damages due to sewer backup
Completion Date	One year from when funds are secured or within time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Improve existing storm & sanitary sewer/ collection system improvements. Increase capacity.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing (significant modifications)	Improve sewer line or replace it. This was built in the 1960s and there are lots of leaking and issues. Storage tank has limited capacity. Would like to increase the storage capacity. Build an underground piping station that would transport the material from the storage tank to the dry bed area. Currently, they have to pump it out and release it to the dry bed. Would like to have a structure over the dry bed so it has a chance to filter through the system.
2018		
2019		
2020		
2021		

Steamboat Rock Completed Mitigation Actions

Water tower modification

Mitigation Action	Water tower modification (-1)
Year Initiated	2011
Applicable Jurisdiction	City of Steamboat Rock
Lead Agency/Organization	City of Steamboat Rock
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Steamboat Rock, others to be identified
Estimated Cost	Unknown until structure can be evaluated
Benefits (loss avoided)	Ensure efficiency of tower and cleanliness of water from the tower
Projected Completion Date	1 year from when funds are secured, or time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Water tower modifications to ensure efficiency and working order for during emergencies where safe water is needed, like flooding

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Complete	Cleaned it, was inspected, and added the cage around the ladder. Completed in 2016
2018		
2019		
2020		
2021		

Union

New Mitigation Actions

Union New Mitigation Action Prioritization

1. **Mitigation Action:** Sanitary sewer and lagoon rehabilitation (STAPLEE Score: 12)
2. **Mitigation Action:** Evacuation plan (STAPLEE Score: 8)

Sanitary Sewer and Lagoon Rehabilitation

Mitigation Action	Sanitary Sewer and Lagoon Rehabilitation (12)
Year Initiated	2017
Applicable Jurisdiction	City of Union
Lead Agency/Organization	
Supporting Agencies/Organizations	
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	Bonds - IA finance authority - grant
Estimated Cost	$250,000
Benefits (loss avoided)	
Projected Completion Date	2018
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	1. Identify and refurbish or replace sewer manholes and to reline sewer lines with an epoxy product that will seal and strengthen existing sewer lines 2. Structural repairs to the lagoon and the lift station - instill generator for operation

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Evacuation Plan

Mitigation Action	Evacuation Plan (8)
Year Initiated	2017
Applicable Jurisdiction	City of Union and BCLUW Middle School
Lead Agency/Organization	City of Union - Union Fire Dept.
Supporting Agencies/Organizations	BCLUW School - Hardin Co Law Enforcement
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	City of Union - FEMA
Estimated Cost	Likely of low cost. Full cost is unknown.
Benefits (loss avoided)	
Projected Completion Date	2019
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Move with the fire dept. - the school - Union ambulance service - Hardin Co Law Enforcement

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Union Ongoing Mitigation Actions

Union Mitigation Action Prioritization

1. **Mitigation Action:** Create an emergency phone tree. (STAPLEE Score: 3)
2. **Mitigation Action:** Public education program (STAPLEE Score: 0)
3. **Mitigation Action:** Coordinate city public awareness and emergency plan (STAPLEE Score: -1)
4. **Mitigation Action:** Distribute NOAA All-Hazard Radios to all Union residents (STAPLEE Score: -2)
5. **Mitigation Action:** Construct a safe room (STAPLEE Score: -8)

Create an emergency phone tree

Mitigation Action	Create an emergency phone tree. (3)
Year Initiated	2011
Applicable Jurisdiction	City of Union
Lead Agency/Organization	City of Union
Supporting Agencies/Organizations	All City Departments, Hardin County Emergency Management, and others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	City of Union, other to be identified
Estimated Cost	Printing will be of some cost, as well as staff time
Benefits (loss avoided)	Ensuring all vulnerable populations and citizens will be notified and taken care of in an event. Regular updates will be needed.
Projected Completion Date	Ongoing from the publication of the call tree
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Hold a meeting for all those who wish to be included on the phone tree, especially the elderly and those with small children

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Has been improved but not complete
2018		
2019		
2020		
2021		

Public education program

Mitigation Action	Public education program (0)
Year Initiated	2011
Applicable Jurisdiction	City of Union
Lead Agency/Organization	City of Union
Supporting Agencies/Organizations	To be identified, possibly other Hardin County jurisdictions
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	City of Union and others to be identified
Estimated Cost	Unknown, this project may be of little cost depending on the medium used
Benefits (loss avoided)	Life safety of Union residents and visitors
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program to educate Union residents about the dangers of hazards and how to prepare through informational flyers, meetings, or other interactive media like drills and workshops

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Pending funding
2018		
2019		
2020		
2021		

Coordinate city public awareness and emergency plan

Mitigation Action	Coordinate city public awareness and emergency plan (-1)
Year Initiated	2011
Applicable Jurisdiction	City of Union
Lead Agency/Organization	City of Union
Supporting Agencies/Organizations	Hardin County Emergency Management, Others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	City of Union
Estimated Cost	To be determined, may be of little cost
Benefits (loss avoided)	Citizens will be informed before, during and after hazard events
Projected Completion Date	Ongoing
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a communication strategy between city and citizens.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Needs to be updated	Code Red is no longer used in the County
2018		
2019		
2020		
2021		

Distribute NOAA All-Hazard Radios to all Union residents

Mitigation Action	Distribute NOAA All-Hazard Radios to all Union residents (-2)
Year Initiated	2011
Applicable Jurisdiction	City of Union
Lead Agency/Organization	City of Union
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Union, Hardin County, Iowa Homeland Security, others to be identified
Estimated Cost	Unknown, depends on how much is spent on the radios or if they are only subsidized to encourage residents to purchase one
Benefits (loss avoided)	Union residents will be informed of approaching hazards and updates throughout a hazard event
Projected Completion Date	1 year from when funds are secured
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program or secure funding to provide NOAA All-Hazard Radios to all Union residents

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	Pending funding
2018		
2019		
2020		
2021		

Construct a safe room

Mitigation Action	Construct a safe room (-8)
Year Initiated	2011
Applicable Jurisdiction	City of Union
Lead Agency/Organization	City of Union
Supporting Agencies/Organizations	Hardin County Emergency Management, Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Union, FEMA HMGP and PDM, CDBG, others to be identified
Estimated Cost	Costs are variable depending on the size of the safe room and whether or not it is a retrofit or newly constructed safe room. For a small safe room in a house the minimum cost is approximately $2,500-$6,000. For a large community shelter, the cost usually ranges from $250,000 to over $1 million depending on the size.
Benefits (loss avoided)	Life safety of Union residents and visitors
Projected Completion Date	1 year from funding or within the time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Construct a safe room

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Coordinated with the local church to designate it as a Red Cross Shelter
2018		
2019		
2020		
2021		

Union Completed Mitigation Actions

Purchase new fire truck

Mitigation Action	Purchase new fire truck (8)
Year Initiated	2011
Applicable Jurisdiction	City of Union
Lead Agency/Organization	City of Union
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Union, Assistance to Firefighters Grants, others to be identified
Estimated Cost	Unknown
Benefits (loss avoided)	Ensure the city has a proper vehicle and equipment to fight fires
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase new fire truck

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Complete	2013 – Purchased a pumper
2018		
2019		
2020		
2021		

Purchase generators for critical facilities

Mitigation Action	Purchase generators for critical facilities (-1)
Year Initiated	2011
Applicable Jurisdiction	City of Union
Lead Agency/Organization	City of Union
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors. Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	City of Union, FEMA HMGP, others to be identified
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 plus wiring and switch installation costs - standby requires a permanent fuel source
Benefits (loss avoided)	The ability to power critical facilities, shelters, and warning devices during a power outage
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase generators for use in critical facilities

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Complete	Getting new generator at the Lagoon
2018		
2019		
2020		
2021		

Whitten

Whitten New Mitigation Actions

No New Actions were identified.

Whitten Ongoing Mitigation Actions

Whitten Mitigation Action Prioritization

1. **Mitigation Action:** Acquisition and elevation of structures (STAPLEE Score: 17)
2. **Mitigation Action:** Purchase generators for critical facilities (STAPLEE Score: 17)
3. **Mitigation Action:** Create fuel storage in city (STAPLEE Score: 15)
4. **Mitigation Action:** Plant windbreaks (STAPLEE Score: 14)
5. **Mitigation Action:** Construct a safe room (STAPLEE Score: 14)
6. **Mitigation Action:** Portable generators for vulnerable population residents and structures (STAPLEE Score: 14)
7. **Mitigation Action:** Construct a community shelter (STAPLEE Score: 14)
8. **Mitigation Action:** Identify back up communication equipment to be purchased for a communications failure (STAPLEE Score: 14)
9. **Mitigation Action:** Start community food, water, and clothing shelf (STAPLEE Score: 9)
10. **Mitigation Action:** Filtration equipment and first aid (STAPLEE Score: 9)
11. **Mitigation Action:** Distribute NOAA All-Hazard Radios to all Whitten residents (STAPLEE Score: 6)
12. **Mitigation Action:** Promote home disaster preparedness (STAPLEE Score: 6)
13. **Mitigation Action:** Create an emergency, strategic plan of action for disasters i.e. announce shelter, food, and water locations. (STAPLEE Score: 6)
14. **Mitigation Action:** NOAA radios for city buildings (STAPLEE Score: 6)

Acquisition and elevation of structures

Mitigation Action	Acquisition and elevation of structures (17)
Year Initiated	2011
Applicable Jurisdiction	City of Whitten
Lead Agency/Organization	City of Whitten
Supporting Agencies/Organizations	Region 6 Planning Commission
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	FEMA HMPG
Estimated Cost	Over $100,000
Benefits (loss avoided)	Reduce flood damage
Projected Completion Date	Unknown until structures are assessed
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Acquire or elevate structures that are damaged by flooding

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase generators for critical facilities

Mitigation Action	Purchase generators for critical facilities (17)
Year Initiated	2011
Applicable Jurisdiction	City of Whitten
Lead Agency/Organization	City of Whitten
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors. Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	City of Whitten, FEMA HMGP, others to be identified
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 plus wiring and switch installation costs - standby requires a permanent fuel source
Benefits (loss avoided)	The ability to power critical facilities, shelters, and warning devices during a power outage
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase generators for use in critical facilities

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Create fuel storage in city

Mitigation Action	Create fuel storage in city (15)
Year Initiated	2011
Applicable Organization	City of Whitten
Lead Agency/Organization	City of Whitten
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	City of Whitten, others to be identified
Estimated Cost	Unknown until storage units are priced
Benefits (loss avoided)	Larger fuel supply available for city residents during/after an event
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Install fuel storage facility in city

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Plant windbreaks

Mitigation Action	Plant windbreaks (14)
Year Initiated	2011
Applicable Jurisdiction	City of Whitten
Lead Agency/Organization	City of Whitten
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	City of Whitten, others to be identified
Estimated Cost	Unknown till area can be assessed
Benefits (loss avoided)	Protect town from excess wind and snow from surrounding fields
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Plant windbreaks around town

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Construct a safe room

Mitigation Action	Construct a safe room (14)
Year Initiated	2011
Applicable Jurisdiction	City of Whitten
Lead Agency/Organization	City of Whitten
Supporting Agencies/Organizations	Hardin County Emergency Management, Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Whitten, FEMA HMGP and PDM, CDBG, others to be identified
Estimated Cost	Costs are variable depending on the size of the safe room and whether or not it is a retrofit or newly constructed safe room. For a small safe room in a house the minimum cost is approximately $2,500-$6,000. For a large community shelter, the cost usually ranges from $250,000 to over $1 million depending on the size.
Benefits (loss avoided)	Life safety of Whitten residents and visitors
Projected Completion Date	1 year from funding or within the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Construct a safe room

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Portable generators for vulnerable population residents and structures

Mitigation Action	Portable generators for vulnerable population residents and structures (14)
Year Initiated	2011
Applicable Jurisdiction	City of Whitten
Lead Agency/Organization	City of Whitten
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Whitten, FEMA HMGP, others to be identified
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 plus wiring and switch installation costs - standby requires a permanent fuel source
Benefits (loss avoided)	The ability to power homes of elderly or disabled when impossible to get them to a shelter or safe room during a power outage
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase generators for use in vulnerable population homes and structures

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Construct a community shelter

Mitigation Action	Construct a community shelter (14)
Year Initiated	2011
Applicable Jurisdiction	City of Whitten
Lead Agency/Organization	City of Whitten
Supporting Agencies/Organizations	Hardin County Emergency Management, Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Whitten, FEMA HMGP and PDM, CDBG, others to be identified
Estimated Cost	Unknown
Benefits (loss avoided)	Life safety of Whitten residents and visitors
Projected Completion Date	1 year from funding or within the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Construct a community shelter

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Identify back up communication equipment to be purchased for a communications failure

Mitigation Action	Identify back up communication equipment to be purchased for a communications failure (14)
Year Initiated	2011
Applicable Jurisdiction	City of Whitten
Lead Agency/Organization	City of Whitten
Supporting Agencies/Organizations	Hardin County Emergency Management
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors. Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	City of Whitten, others to be identified
Estimated Cost	To be determined once an assessment of equipment can be finalized
Benefits (loss avoided)	Ensure a redundant system so no communication is lost during a failure
Projected Completion Date	1 year from when funds are secured, and the system is established or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Identify back up communication equipment to be purchased for widespread breakdown or disruption of normal communication system capabilities including loss of or long-term interruption of local government radio facilities and major telephone outages due to mechanical failure, traffic accidents, power failure, line severance, and weather.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Start community food, water, and clothing shelf

Mitigation Action	Start community food, water, and clothing shelf (9)
Year Initiated	2011
Applicable Jurisdiction	City of Whitten
Lead Agency/Organization	City of Whitten
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors. Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	City of Whitten, local businesses and others to be identified
Estimated Cost	May be of little cost if donations are provided for shelter contents
Benefits (loss avoided)	Citizens will have a source of basic needs in the event that a hazard effects people's homes or critical supply facilities like grocery stores
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Start community shelf to provide essentials in hazard events

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Filtration equipment and first aid

Mitigation Action	Filtration equipment and first aid (9)
Year Initiated	2011
Applicable Jurisdiction	City of Whitten
Lead Agency/Organization	City of Whitten
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	City of Whitten
Estimated Cost	Unknown
Benefits (loss avoided)	Equipment for producing potable drinking water can purify water collected from the rain or from some other source, independent from the main water system. First aid supplies would be available and some citizens with expertise present in the City.
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase a Berkey water filtration system. Purchase and store first aid equipment at fire station and enroll one fireman and one City council member or resident in a class on first aid.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Distribute NOAA All-Hazard Radios to all Whitten residents

Mitigation Action	Distribute NOAA All-Hazard Radios to all Whitten residents (6)
Year Initiated	2011
Applicable jurisdiction	City of Whitten
Lead Agency/Organization	City of Whitten
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Whitten, Hardin County, Iowa Homeland Security, others to be identified
Estimated Cost	Unknown, depends on how much is spent on the radios or if they are only subsidized to encourage residents to purchase one
Benefits (loss avoided)	Whitten residents will be informed of approaching hazards and updates throughout a hazard event
Projected Completion Date	1 year from when funds are secured
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program or secure funding to provide NOAA All-Hazard Radios to all Whitten residents

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Promote home disaster preparedness

Mitigation Action	Promote home disaster preparedness (6)
ear Initiated	2011
Applicable Jurisdiction	City of Whitten
Lead Agency/Organization	City of Whitten
Supporting Agencies/Organizations	To be identified, possibly other Hardin County jurisdictions
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	City of Whitten and others to be identified
Estimated Cost	Unknown, this project may be of little cost depending on the medium used
Benefits (loss avoided)	Life safety of Whitten residents and visitors
Projected Completion Date	Ongoing
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program to educate Whitten residents about the dangers of hazards and how to prepare through informational flyers, meetings, or other interactive media like drills and workshops

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Create an emergency, strategic plan of action for disasters i.e. announce shelter, food, and water locations

Mitigation Action	Create an emergency, strategic plan of action for disasters i.e. announce shelter, food, and water locations. (6)
Year Initiated	2011
Applicable Jurisdiction	City of Whitten
Lead Agency/Organization	City of Whitten
Supporting Agencies/Organizations	All City Departments, Hardin County Emergency Management, and others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	City of Whitten, other to be identified
Estimated Cost	Unknown, planning may be at little to no cost
Benefits (loss avoided)	No time lost in opening a shelter, residents will have access as soon as possible if the shelter is needed
Projected Completion Date	To be identified
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a plan of action for disasters to announce shelter, food and water locations

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

NOAA radios for city buildings

Mitigation Action	NOAA radios for city buildings (6)
Year Initiated	2011
Applicable Jurisdiction	City of Whitten
Lead Agency/Organization	City of Whitten
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	City of Whitten, all city departments, Hardin County, Iowa Homeland Security, others to be identified
Estimated Cost	Unknown, depends on how much is spent on the radios or if they are only subsidized
Benefits (loss avoided)	Whitten's city workers will be informed of approaching hazards and updates throughout a hazard event and be able to help citizens
Projected Completion Date:	1 year from when funds are secured
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program or secure funding to provide NOAA All-Hazard Radios to city buildings

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Whitten Completed Mitigation Actions

No completed actions.

Unincorporated Hardin County

Hardin County New Mitigation Actions

Unincorporated Hardin County New Mitigation Action Prioritization

1. **Mitigation Action:** Mitigate storm water sewage backups (STAPLEE Score: 12)
2. **Mitigation Action:** Tourism and natural resource preservation of trails (STAPLEE Score: 12)
3. **Mitigation Action:** Erosion control along highways, conservation, and bridges (STAPLEE Score: 11)
4. **Mitigation Action:** Create and implement a PIO program for county wide events (STAPLEE Score: 10)
5. **Mitigation Action:** Business continuity plan for business training (STAPLEE Score: 8)
6. **Mitigation Action:** Special needs population sheltering plan (STAPLEE Score: 6)
7. **Mitigation Action:** Provide livestock containment in the event of MVAS (STAPLEE Score: 4)

Erosion Control Along Highways, Conservation, and Bridges

Mitigation Action	Erosion Control Along Highways, Conservation, and Bridges (11)
Year Initiated	2017
Applicable Jurisdiction	Hardin County
Lead Agency/Organization	Drainage Trustees
Supporting Agencies/Organizations	County, drainage districts, secondary road
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	
Estimated Cost	Unknown
Benefits (loss avoided)	
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Identify infrastructure that is susceptible to erosion the could damage infrastructure

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Provide Livestock Containment in the Event of MVAS

Mitigation Action	Provide Livestock Containment in the Event of MVAS (4)
Year Initiated	2017
Applicable Jurisdiction	Law Enforcement/ Fire
Lead Agency/Organization	Law Enforcement
Supporting Agencies/Organizations	Towing companies/veterinarians/saddle clubs
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	Local Funds
Estimated Cost	$13,000
Benefits (loss avoided)	Livestock life pres./ancillary accidents/crop damage
Projected Completion Date	2021
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Investigate current methods of containing livestock following a MVA. Purchase gates 3 trailer (port. corrals)

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Mitigate Stormwater and Sewage Backups Following High Volume, Low Time Rain Falls

Mitigation Action	Mitigate Stormwater and Sewage Backups Following High Volume, Low Time Rain Falls (12)
Year Initiated	2017
Applicable Jurisdiction	County Sanitarian, Local Public Works
Lead Agency/Organization	Local Public Works
Supporting Agencies/Organizations	Public Health
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	State/Fed funding
Estimated Cost	Unknown
Benefits (loss avoided)	Reduce frequency of loss
Projected Completion Date	
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Televise locations with a history of basement flooding not attributed to riverine or stream flooding.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Create and Implement a PIO program for County Wide Events

Mitigation Action	Create and Implement a PIO program for County Wide Events (10)
Year Initiated	2017
Applicable Jurisdiction	Hardin County and All Participating Jurisdictions
Lead Agency/Organization	TBD
Supporting Agencies/Organizations	All Agencies, Media
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	FEMA
Estimated Cost	FREE
Benefits (loss avoided)	Reduce Confusion
Projected Completion Date	Early 2018
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Identify 2-3 people to train and educate them. Provide L.E. those people's info so they can be funneled PIO requests.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Special Needs Population Sheltering Plan

Mitigation Action	Special Needs Population Sheltering Plan (6)
Year Initiated	2017
Applicable Jurisdiction	Hardin County and All Participating Jurisdictions
Lead Agency/Organization	EMA/Public Health
Supporting Agencies/Organizations	Fire/EMS/Law Enforcement
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	
Estimated Cost	Transportation/Staffing
Benefits (loss avoided)	Life and Health Issues
Projected Completion Date	Spring 2018
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Find locations, locate transportation methods, and arrange volunteer staffing.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Business Continuity Planning for Business Training

Mitigation Action	Business Continuity Planning for Business Training (8)
Year Initiated	2017
Applicable Jurisdiction	Hardin County and All Participating Jurisdictions
Lead Agency/Organization	
Supporting Agencies/Organizations	
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	
Estimated Cost	Can vary depending on software needed.
Benefits (loss avoided)	
Projected Completion Date	
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Tourism and Natural Resource Preservation of Trails

Mitigation Action	Tourism and Natural Resource Preservation of Trails (12)
Year Initiated	2017
Applicable Jurisdiction	Hardin County and All Participating Jurisdictions
Lead agency/Organization	
Supporting Agencies/Organizations	
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	
Estimated Cost	Unknown
Benefits (loss avoided)	
Projected Completion Date	
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Hardin County Ongoing Mitigation Actions

Unincorporated Hardin County Mitigation Action Prioritization

1. **Mitigation Action:** Create a water use ordinance (STAPLEE Score: 23)
2. **Mitigation Action:** Identify back up communication equipment to be purchased for a communications failure (STAPLEE Score: 23)
3. **Mitigation Action:** Laminated glass for use during hailstorms (STAPLEE Score: 23)
4. **Mitigation Action:** Ground water protection (STAPLEE Score: 23)
5. **Mitigation Action:** Evacuation Planning (STAPLEE Score: 23)
6. **Mitigation Action:** Public warnings of dam failures (STAPLEE Score: 23)
7. **Mitigation Action:** Animal and Human Disease Epidemic planning and training (STAPLEE Score: 23)
8. **Mitigation Action:** Protect and clean up county parks (STAPLEE Score: 23)
9. **Mitigation Action:** Uniform building codes (STAPLEE Score: 23)
10. **Mitigation Action:** Train fire departments for grass fires and maintain needed equipment (STAPLEE Score: 23)
11. **Mitigation Action:** Identify pipelines and inform and educate land owners (STAPLEE Score: 23)
12. **Mitigation Action:** Create hazardous materials removal plan (STAPLEE Score: 23)
13. **Mitigation Action:** Public education program on structural fires (STAPLEE Score: 23)
14. **Mitigation Action:** Provide specialized training for fire department and maintain needed equipment (STAPLEE Score: 23)
15. **Mitigation Action:** Public education program on hail storms STAPLEE Score: (23)
16. **Mitigation Action:** Identify alternate advance warning systems for storms (STAPLEE Score: 23)
17. **Mitigation Action:** Repair roads and bridges (STAPLEE Score: 20)
18. **Mitigation Action:** Elevate roads (STAPLEE Score: 20)
19. **Mitigation Action:** Establish emergency operations center (STAPLEE Score: 19)
20. **Mitigation Action:** Work on communications network (STAPLEE Score: 19)
21. **Mitigation Action:** Purchase generator system for courthouse (STAPLEE Score: 19)
22. **Mitigation Action:** Construct safe rooms in critical facilities (STAPLEE Score: 19)
23. **Mitigation Action:** Create and store sandbags (STAPLEE Score: 19)
24. **Mitigation Action:** NOAA All-Hazard Radios for county use (STAPLEE Score: 19)
25. **Mitigation Action:** Public education program (STAPLEE Score: 19)
26. **Mitigation Action:** Update zoning codes (STAPLEE Score: 17)
27. **Mitigation Action:** Create a drainage district (STAPLEE Score: 15)
28. **Mitigation Action:** Public information session on Agricultural practices (STAPLEE Score: 9)

Create a water use ordinance

Mitigation Action	Create a water use ordinance (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead Agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County Conservation, Iowa DNR, cities in Hardin County
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	Hardin County
Estimated Cost	Unknown, this project may be of little cost besides
Benefits (loss avoided)	Monitoring the county's conservation and giving information about drought hazards
Projected Completion Date	1 year from when political and public support is leveraged
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a water use ordinance and hold an information session on conservation

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Identify back up communication equipment to be purchased for a communications failure

Mitigation Action	Identify back up communication equipment to be purchased for a communications failure (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead Agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	FEMA HMGP, Hardin County, others to be identified
Estimated Cost	To be determined once an assessment of equipment can be finalized
Benefits (loss avoided)	Ensure a redundant system so no communication is lost during a failure
Projected Completion Date:	N/A
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Identify back up communication equipment to be purchased for widespread breakdown or disruption of normal communication system capabilities including loss of or long-term interruption of local government radio facilities and major telephone outages due to mechanical failure, traffic accidents, power failure, line severance, and weather.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Laminated glass for use during hailstorms

Mitigation Action	Laminated glass for use during hailstorms (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead Agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County, Region 6 Planning Commission, others to be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	Hardin County, Others to be identified
Estimated Cost	Unknown until needs are assessed and product priced
Benefits (loss avoided)	All county buildings will be properly protected during a hailstorm
Projected Completion Date	1 year from when funds are secured
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Secure funding to put up laminated glass to protect county buildings during hailstorms

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Ground water protection

Mitigation Action	Ground water protection (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead Agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County, Hardin County Conservation, Others to be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	Hardin County, Others to be identified
Estimated Cost	Unknown
Benefits (loss avoided)	Prevent damages due to sink hole hazards
Projected Completion Date	One year from when funds are secured or within time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Facilitate ground water protection measures to avoid damages due to sink holes

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Evacuation Planning

Mitigation Action	Evacuation Planning (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead Agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County Sherriff's Department, local emergency responders, National Guard, others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	Hardin County, Others to be identified
Estimated Cost	This may be of little cost depending on whether staff or a consultant prepare the plan
Benefits (loss avoided)	Quick response during flash flood and other severe or unexpected hazard events
Projected Completion Date	Ongoing with plan updates
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a master evacuation plan for use in a severe hazard event

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Public warnings of dam failures

Mitigation Action	Public warnings of dam failures (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead Agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County Sherriff's Department, local emergency responders, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	Hardin County, Others to be identified
Estimated Cost	Unknown, this project may be of little cost depending on the medium used
Benefits (loss avoided)	Immediate warning for residents downstream of dams and other vulnerable areas of the county
Projected Completion Date	Ongoing starting after residents are identified
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Communicate to residents using different media to warn of an imminent dam failure

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Animal and Human Disease Epidemic planning and training

Mitigation Action	Animal and Human Disease Epidemic planning and training (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead Agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Local emergency responders, County Veterinarian, Others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	Hardin County, others to be identified
Estimated Cost	This may be of little cost since it is an information session and document
Benefits (loss avoided)	Personnel will serve better in events with proper training and instruction
Projected Completion Date	Ongoing starting when a course can be formulated, possible funding secured, and plan written, may require updates
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Hold session to train emergency personnel to identify animal/crop/plant disease and human epidemic disease outbreaks and proper response. Create county plan to deal with outbreaks.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Protect and clean up county parks

Mitigation Action	Protect and clean up county parks (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead Agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County Conservation Board, others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	Hardin County, and others to be identified
Estimated Cost	Unknown, may be of little cost
Benefits (loss avoided)	Consistency of protection and cleanliness of county parks
Projected Completion Date	Ongoing with updates
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a plan to determine protection measures and clean up procedures for county parks

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Uniform building codes

Mitigation Action	Uniform building codes (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead Agency/Organization	Hardin County Planning and Zoning
Supporting Agencies/Organizations	Hardin County Emergency Management, Hardin County Supervisors
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	Hardin County
Estimated Cost	Unknown, this project may be of little cost
Benefits (loss avoided)	Prevent unnecessary damage to new buildings during hazard events
Projected Completion Date	1 year from when political and public support is leveraged
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Modify all jurisdictions' building codes by adding requirements that may help to reduce the adverse effects hazards may have on new buildings

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Train fire departments for grass fires and maintain needed equipment

Mitigation Action	Train fire departments for grass fires and maintain needed equipment (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead Agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County Sherriff's Department, city fire departments, others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	Assistance to Firefighters Grant, others to be identified
Estimated Cost	Unknown
Benefits (loss avoided)	Quick and proper response in grass fire situations
Projected Completion Date	1 year from when funding is secured or within time allotted by funding
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program or incentives for firemen to be trained for grass fires and purchase or maintain the needed equipment

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Identify pipelines and inform and educate land owners

Mitigation Action	Identify pipelines and inform and educate land owners (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Emergency Departments
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	Hardin County, local fire departments, others to be identified
Estimated Cost	Unknown, project may be of little cost
Benefits (loss avoided)	Land owners are aware of risks and possible incidents
Projected Completion Date	Ongoing
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Locate pipelines in Hardin County and hold information session for landowners to educate on dangers and actions to prevent possible incidents

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Create hazardous materials removal plan

Mitigation Action	Create hazardous materials removal plan (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	Hardin County, Others to be identified
Estimated Cost	Unknown, may be of little cost
Benefits (loss avoided)	Restore safety of county during a hazardous materials incident
Projected Completion Date	Ongoing with updates
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Develop a plan to remove hazardous materials efficiently from a hazard event site

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Public Education Program on Structural Fires

Mitigation Action	Public education program on structural fires (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County
Supporting Agencies/Organizations	Hardin County Emergency Management, Hardin County Sheriff's Department, City Fire Departments
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	Hardin County, Others to be identified
Estimated Cost	Unknown, this project may be of little cost depending on the medium used
Benefits (loss avoided)	Life safety of Hardin County residents and visitors
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program to educate Hardin County residents about the dangers of structural fires and how to prepare through informational flyers, meetings, or other interactive media like drills and workshops

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Provide specialized training for fire department and maintain needed equipment

Mitigation Action	Provide specialized training for fire department and maintain needed equipment (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County Sherriff's Department, city fire departments, others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	Assistance to Firefighters Grant, others to be identified
Estimated Cost	Unknown
Benefits (loss avoided)	Quick and proper response in unusual situations
Projected Completion Date	1 year from when funding is secured or within time allotted by funding
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program or incentives for firemen to be trained for rare and specialized situations and purchase or maintain the needed equipment

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Public education program on hail storms

Mitigation Action	Public education program on hail storms (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County
Supporting Agencies/Organizations	Hardin County Emergency Management
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	Hardin County, Others to be identified
Estimated Cost	Unknown, this project may be of little cost depending on the medium used
Benefits (loss avoided)	Life safety of Hardin County residents and visitors
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program to educate Hardin County residents about the dangers of hail storms and how to prepare through informational flyers, meetings, or other interactive media like drills and workshops

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Identify alternate advance warning systems for storms

Mitigation Action	Identify alternate advance warning systems for storms (23)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	FEMA HMGP, Hardin County, others to be identified
Estimated Cost	Sirens can cost up to $25,000, used sirens are sometimes available for purchase, which helps reduce the cost
Benefits (loss avoided)	Life safety of residents and visitors by ensuring a redundant warning system
Projected Completion Date	1 year from when funds are secured, and the system is established or within time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Identify alternate systems such as radios or backup sirens

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Repair Roads and Bridges

Mitigation Action	Repair roads and bridges (20)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County Engineer, Others to be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	Hardin County, DOT funds through Region 6, others to be identified
Estimated Cost	Unknown until situation is assessed
Benefits (loss avoided)	Prevent excess damage to infrastructure, caused by flooding
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Repair roads and bridges in need throughout the county

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Elevate Roads

Mitigation Action	Elevate roads (20)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Iowa Department of Transportation, Hardin County Engineer, others to be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	FEMA HMGP, Hardin County, and others to be identified
Estimated Cost	Unknown, most likely very expensive, need an engineering report to determine cost
Benefits (loss avoided)	Prevent road and vehicle damage and preserve the mobility of County residents during and immediately following a flood event
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Elevate all County roads or those that are identified as problematic or critical during and immediately following flood events

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Establish Emergency Operations Center

Mitigation Action	Establish emergency operations center (19)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors. Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	Hardin County, others to be identified
Estimated Cost	Unknown until needs are assessed
Benefits (loss avoided)	All county emergency response will have a hub that's well equipped
Projected Completion Date	1 year from when funds are secured, and the system is established or within time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Establish emergency operations center for the county

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Communications Network Interoperability

Mitigation Action	Work on communications network (19)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	FEMA HMGP, Hardin County, others to be identified
Estimated Cost	To be determined once the project status is known
Benefits (loss avoided)	Ensure an interoperable network be present in hazard events
Projected Completion Date	N/A
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Continue work on communication network's interoperability

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase Generator System for Courthouse

Mitigation Action	Purchase generator system for courthouse (19)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Other Hardin County departments
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	FEMA HMPG, Hardin County, others to be identified
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 plus wiring and switch installation costs also standby requires a permanent fuel source.
Benefits (loss avoided)	Avoid loss of critical facilities' function and prevent damages to critical facilities and other structures associated with an extended power outage and heating failure due to electrical stoppage causing burst water pipes
Projected Completion Date	1 year from when funding is secured or within time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase generator system to be used in courthouse during an extended power outage

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Construct Safe Rooms in Critical Facilities

Mitigation Action	Construct safe rooms in critical facilities (19)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County Conservation Board
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	FEMA HMGP and PDM, CDBG, and others to be identified
Estimated Cost	Costs are variable depending on the size of the safe room/shelter and whether or not it is a retrofit or newly constructed safe room/shelter. For a small safe room in a house the minimum cost is approximately $2,500-$6,000. For a large community shelter, the cost usually ranges from $250,000 to over $1 million depending on the size.
Benefits (loss avoided)	Life safety of residents and visitors
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Construct safe rooms in critical facilities and in outdoor parks with campsites

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Create and Store Sandbags

Mitigation Action	Create and store sandbags (19)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	Hardin County, and others to be identified
Estimated Cost	To be determined once supplies are priced and needs assessed
Benefits (loss avoided)	Supplies on hand to protect people and buildings from flooding
Projected Completion Date	Ongoing
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create and store sandbags for use during flood situations

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

NOAA All-Hazard Radios for county use

Mitigation Action	NOAA All-Hazard Radios for county use (19)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County, Region 6 Planning Commission, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	Hardin County, Iowa Homeland Security, others to be identified
Estimated Cost	Unknown, depends on how much is spent on the radios
Benefits (loss avoided)	All county departments will be informed of approaching hazards and updates throughout a hazard event and help residents accordingly
Projected Completion Date	1 year from when funds are secured
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Secure funding to provide NOAA All-Hazard Radios to all county buildings

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Public Education Program

Mitigation Action	Public education program (19)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County Emergency personnel, others to be identified
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	Hardin County and others to be identified
Estimated Cost	Unknown, this project may be of little cost depending on the medium used
Benefits (loss avoided)	Life safety of County residents and visitors
Projected Completion Date	Ongoing from when program is created
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program to educate County residents about the dangers of hazard and how to prepare through informational flyers, meetings, or other interactive media like drills and workshops

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Update Zoning Codes

Mitigation Action	Update zoning codes (17)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	Hardin County
Estimated Cost	Unknown, this project may be of little cost
Benefits (loss avoided)	Prevent undesirable land uses that can lead to unnecessary damages, increased runoff, etc.
Projected Completion Date	1 year from when political and public support is leveraged
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Update zoning in critical areas of the county i.e. discouraging development in floodplain or flood-prone areas, ensure proper development near critical facilities, etc.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Create a Drainage District

Mitigation Action	Create a drainage district (15)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County Sanitarian, Others to be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	Hardin County, others to be identified
Estimated Cost	Unknown until situation is assessed
Benefits (loss avoided)	Prevent flash flooding
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Complete storm drainage district for the county

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Public information session on Agricultural practices

Mitigation Action	Public information session on Agricultural practices (9)
Year Initiated	2011
Applicable Jurisdiction	Unincorporated Hardin County
Lead agency/Organization	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County Conservation, Others to be identified
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	Hardin County
Estimated Cost	Unknown, this project may be of little cost
Benefits (loss avoided)	Responsible ag practices to help prevent flash flooding
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Hold information session to inform local farmers about agriculture practices to reduce risk of flash floods in the county

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Hardin County Completed Mitigation Actions

Maintain Code Red Participation

Mitigation Action	Maintain Code Red Participation (19)
Plan for Implementation and Administration:	Renew subscription and maintain participation in the program to encourage all county and city residents to register and keep their contact information up to date
Lead Agency:	Hardin County Emergency Management
Supporting Agencies/Organizations	Hardin County, All cities in the county
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source:	Hardin County, All cities in the county
Total Cost:	Approximately $717 each year, rate is $0.55 per capita
Benefits (loss avoided)	County and city residents can be kept up-to-date on hazards and other dangerous situations
Completion Date	Complete - Hardin County no longer contracts with this vendor.

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Complete/No longer applicable	Hardin County no longer contracts with this vendor.
2018		
2019		
2020		
2021		

AGWSR Community School District

AGWSR Schools New Mitigation Actions

No new actions were identified.

AGWSR Schools Ongoing Mitigation Actions

AGWSR Mitigation Action Prioritization

1. **Mitigation Action:** Complete required hazard drills every year (STAPLEE Score: 19)
2. **Mitigation Action:** Create debris removal plan (STAPLEE Score: 15)
3. **Mitigation Action:** Create hazardous materials removal plan (STAPLEE Score: 15)
4. **Mitigation Action:** Update schools with fire marshal recommendations (STAPLEE Score: 15)
5. **Mitigation Action:** Promote home disaster preparedness (STAPLEE Score: 13)
6. **Mitigation Action:** Identify back up communication equipment to be purchased for a communications failure (STAPLEE Score: 12)
7. **Mitigation Action:** Purchase generators for school buildings (STAPLEE Score: 11)
8. **Mitigation Action:** Review of safety drill procedures (STAPLEE Score: 10)
9. **Mitigation Action:** Advanced alert system (STAPLEE Score: 7)
10. **Mitigation Action:** Construct a safe room in the high school and middle school (STAPLEE Score: 4)

Complete Required Hazard Drills Every Year

Mitigation Action	Complete required hazard drills every year (19)
Year Initiated	2011
Applicable Jurisdiction	AGWSR Community School District
Lead agency/Organization	AGWSR Community School District
Supporting Agencies/Organizations	Hardin County Emergency Management, local fire, law enforcement, and emergency response personnel
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	AGWSR Community School District, others to be identified
Estimated Cost	Unknown, may be of little cost
Benefits (loss avoided)	Students will know proper procedures and exits during a hazard
Projected Completion Date	Ongoing
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Complete required practice drills for the school district, including: bus evacuation, tornado, and fire drills

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Create Debris Removal Plan

Mitigation Action	Create debris removal plan (15)
Year Initiated	2011
Applicable Jurisdiction	AGWSR Community School District
Lead agency/Organization	AGWSR Schools
Supporting Agencies/Organizations	Hardin County Emergency Management
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	AGWSR Schools, Others to be identified
Estimated Cost	Unknown, may be of little cost
Benefits (loss avoided)	Restore safety of school grounds and infrastructure immediately following a hazard event
Projected Completion Date	Ongoing with updates
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Develop a plan to remove debris and obstructions from school grounds immediately following a hazard event

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Create Hazardous Materials Removal Plan

Mitigation Action	Create hazardous materials removal plan (15)
Year Initiated	2011
Applicable Jurisdiction	AGWSR Community School District
Lead agency/Organization	AGWSR Schools
Supporting Agencies/Organizations	Northeast Iowa Response Group
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	AGWSR Schools, Others to be identified
Estimated Cost	Unknown, may be of little cost
Benefits (loss avoided)	Restore safety of school grounds during a hazardous materials incident
Projected Completion Date	Ongoing with updates
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Develop a plan to remove hazardous materials from school grounds during an event

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Update Schools with Fire Marshal Recommendations

Mitigation Action	Update schools with fire marshal recommendations (15)
Year Initiated	2011
Applicable Jurisdiction	AGWSR Community School District
Lead agency/Organization	AGWSR Schools
Supporting Agencies/Organizations	Hardin County Fire Marshal
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	AGWSR Schools, Others to be identified
Estimated Cost	Unknown until recommendations are assessed and projects picked.
Benefits (loss avoided)	Ensure safety of school against fires
Projected Completion Date	Ongoing, 1 year from funding allotment
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Install fire marshal recommendations for school upgrades like fire doors

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Promote Home Disaster Preparedness

Mitigation Action	Promote home disaster preparedness (13)
Year Initiated	2011
Applicable Jurisdiction	AGWSR Community School District
Lead agency/Organization	AGWSR Schools
Supporting Agencies/Organizations	To be identified, possibly other Hardin County jurisdictions
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	AGWSR Schools and others to be identified
Estimated Cost	Unknown, this project may be of little cost depending on the medium used
Benefits (loss avoided)	Life safety of AGWSR students and parents
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program to educate AGWSR students and parents about the dangers of hazards and how to prepare through informational flyers, meetings, or other interactive media like drills and workshops

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Identify back up communication equipment to be purchased for a communications failure

Mitigation Action	Identify back up communication equipment to be purchased for a communications failure (12)
Year Initiated	2011
Applicable Jurisdiction	AGWSR Community School District
Lead agency/Organization	AGWSR Schools
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	AGWSR Schools, FEMA HMGP, Hardin County, others to be identified
Estimated Cost	To be determined once an assessment of equipment can be finalized
Benefits (loss avoided)	Ensure a redundant system so no communication is lost during a failure
Projected Completion Date	1 year from when funds are secured, and the system is established or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Identify back up communication equipment to be purchased for widespread breakdown or disruption of normal communication system capabilities including loss of or long-term interruption of local government radio facilities and major telephone outages due to mechanical failure, traffic accidents, power failure, line severance, and weather.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase generators for school buildings

Mitigation Action	Purchase generators for school buildings (11)
Year Initiated	2011
Applicable Jurisdiction	AGWSR Community School District
Lead agency/Organization	AGWSR Schools
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	AGWSR Schools, FEMA HMGP, others to be identified
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 plus wiring and switch installation costs - standby requires a permanent fuel source
Benefits (loss avoided)	The ability to power school buildings and offices in a hazard event
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase generators (one portable) for use in school buildings and offices

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Review of Safety Drill Procedures

Mitigation Action	Review of safety drill procedures (10)
Year Initiated	2011
Applicable Jurisdiction	AGWSR Community School District
Lead agency/Organization	AGWSR Schools
Supporting Agencies/Organizations	Hardin County Emergency Response, others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	AGWSR Schools, others to be identified
Estimated Cost	May not be of much cost except any possible re-printing
Benefits (loss avoided)	AGWSR students will be moved more efficiently in the event of a hazard
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Review and possibly update the current safety drills at the AGWSR schools

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Advanced Alert System

Mitigation Action	Advanced alert system (7)
Year Initiated	2011
Applicable Jurisdiction	AGWSR Community School District
Lead agency/Organization	AGWSR Schools
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	AGWSR Schools, others to be identified
Estimated Cost	Unknown until systems are researched
Benefits (loss avoided)	AGWSR students and staff will be alerted quickly in event of a hazard
Projected Completion Date	1 year from funding or within the time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Install an advanced alert system at all AGWSR schools

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Construct a safe room in the high school and middle school

Mitigation Action	Construct a safe room in the high school and middle school (4)
Year Initiated	2011
Applicable Jurisdiction	AGWSR Community School District
Lead agency/Organization	AGWSR Schools
Supporting Agencies/Organizations	Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	AGWSR Schools, FEMA HMGP and PDM, CDBG, others to be identified
Estimated Cost	Costs are variable depending on the size of the safe room and whether or not it is a retrofit or newly constructed safe room. For a small safe room in a house the minimum cost is approximately $2,500-$6,000. For a large community shelter, the cost usually ranges from $250,000 to over $1 million depending on the size.
Benefits (loss avoided)	Life safety of AGWSR Schools students and visitors
Projected Completion Date	1 year from funding or within the time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Construct a safe room for students and visitors to use during severe weather

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Completed in new Ackley Elementary, ongoing in other buildings.
2018		
2019		
2020		
2021		

AGWSR Schools Completed Mitigation Actions

No completed actions.

Alden Community School District

Alden Schools New Mitigation Actions

Alden Community School District New Mitigation Action Prioritization

1. **Mitigation Action:** Elevate and/or relocate the boiler and heat/ventilation control system at Alden Community Schools (STAPLEE Score: 10)
2. **Mitigation Action:** Install device on classroom doors to prevent unwanted entry (STAPLEE Score: 7)

Protection of Damage to Boiler and Heat/Ventilation Control System

Mitigation Action	Elevate and/or relocate the boiler and heat/ventilation control system at Alden Community Schools (10)
Year Initiated	2017
Applicable Jurisdiction	Alden Community School District
Lead agency/Organization	Alden Community School District
Supporting Agencies/Organizations	Hardin County Emergency Mgt
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	Unknown
Estimated Cost	Unknown
Benefits (loss avoided)	Loss of district property and operations
Projected Completion Date	TBD - pending funding
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Elevate and/or relocate the boiler and heat/ventilation control system at Alden Community Schools, as applicable.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Active Shooter Containment

Mitigation Action	Install device on classroom doors to prevent unwanted entry (7)
Year Initiated	2017
Applicable Jurisdiction	Alden Community School District
Lead agency/Organization	Alden Community School District
Supporting Agencies/Organizations	Hardin County Emergency Mgt
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	Grants
Estimated Cost	Approximately $100 - $150 per unit, depending on the specific product.
Benefits (loss avoided)	Safety of students, employees and visitors
Projected Completion Date	TBD
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Find and install a device to every classroom door that would prevent an active shooter from bursting through the door and harming the people in the classroom.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Alden Schools Ongoing Mitigation Actions

Alden Community School District Mitigation Action Prioritization

1. **Mitigation Action:** Install air conditioning in school building (STAPLEE Score: 12)
2. **Mitigation Action:** Develop/build a safe room in school building (STAPLEE Score: 9)

Install Air Conditioning in School Building

Mitigation Action	Install air conditioning in school building (12)
Year Initiated	2011
Applicable Jurisdiction	Alden Community School District
Lead agency/Organization	Alden Community School District
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2: Minimize losses to buildings, equipment, motorized vehicles, and outdoor facilities.
Potential Funding Source	FEMA HMGP, Alden Community School District
Estimated Cost	TBD
Benefits (loss avoided)	Protect students, staff, and equipment from heat related injuries
Projected Completion Date	Ongoing, starting when funding is secured and unit(s) are installed
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Add air conditioning to elementary school building for year-round use

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Develop/Build Safe Room in School Buildings

Mitigation Action	Develop/build a safe room in school building (9)
Year Initiated	2011
Applicable Jurisdiction	Alden Community School District
Lead agency/Organization	Alden Community School District
Supporting Agencies/Organizations	Alden Schools, City of Alden, and Hardin County
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	FEMA HMPG and PDM, Alden Community School District, city, county, CDBG, and others to be identified
Estimated Cost	Costs are variable depending on the size of the safe room and whether or not it is a retrofit or newly constructed safe room. For a small safe room in a house the minimum cost is approximately $2,500-$6,000. For a large community shelter, the cost usually ranges from $250,000 to over $1 million depending on the size.
Benefits (loss avoided)	Life safety of students, staff, and community
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Build a safe room for students, staff, and community members in the elementary school

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Alden Schools Completed Mitigation Actions

Purchase Updated Snow Removal Equipment

Mitigation Action	Purchase updated snow removal equipment (14)
Year Initiated	2011
Applicable Jurisdiction	Alden Community School District
Lead agency/Organization	Alden Community School District
Supporting Agencies/Organizations	Hardin County Emergency Management, Others to be identified
Applicable Goal	Goal 1: Protect the health and safety of students, employees, and visitors to district buildings and outdoor facilities.
Potential Funding Source	Alden Schools, others to be identified
Estimated Cost	Unknown until equipment is priced
Benefits (loss avoided)	Restore safety of schools' infrastructure immediately following a hazard event, as well as ensuring efficiency of equipment
Projected Completion Date	Ongoing or 1 year from when funds are secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase updated snow removal equipment

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Complete	
2018		
2019		
2020		
2021		

Purchase and Install Security Cameras at School Building

Mitigation Action	Purchase and install security cameras at school building (12)
Year Initiated	2011
Applicable Jurisdiction	Alden Community School District
Lead agency/Organization	Alden Community School District
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	Alden Schools, Hardin County, others to be identified
Estimated Cost	Complete
Benefits (loss avoided)	Catch suspicious activity near schools and protect property
Projected Completion Date	1 year from when funds are secured, and the system is established or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase and install security cameras at main and other prominent entrances of school buildings

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Complete	
2018		
2019		
2020		
2021		

BCLUW Community School District

BCLUW Schools New Mitigation Actions

No new actions were identified.

Ongoing Mitigation Actions

BCLUW Mitigation Action Prioritization

1. **Mitigation Action:** Structural inspections of school buildings (STAPLEE Score: 21)
2. **Mitigation Action:** Construct a safe room in all school buildings (STAPLEE Score: 16)
3. **Mitigation Action:** NOAA All-Hazard Radios in all BCLUW buildings (STAPLEE Score: 16)
4. **Mitigation Action:** Alert Radio System for Schools (STAPLEE Score: 16)
5. **Mitigation Action:** Recruit storm spotters and encourage storm spotter training (STAPLEE Score: 14)
6. **Mitigation Action:** Purchase generators for district buildings (STAPLEE Score: 12)
7. **Mitigation Action:** Create an emergency, strategic plan of action for disasters i.e. determine who opens the shelters, when should the shelters be opened, etc. (STAPLEE Score: 12)
8. **Mitigation Action:** Identify back up communication equipment to be purchased for a communications failure between school buildings (STAPLEE Score: 10)
9. **Mitigation Action:** Create an emergency phone tree for all parents and families associated with the school. (STAPLEE Score: 7)

Structural Inspections of School Buildings

Mitigation Action	Structural inspections of school buildings (21)
Year Initiated	2011
Applicable Jurisdiction	BCLUW Community School District
Lead agency/Organization	BCLUW Schools
Supporting Agencies/Organizations	Engineering Companies, County Engineer, Others to be identified
Applicable Goal	Goal 2: Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	FEMA HMGP, others to be identified
Estimated Cost	Unknown till consultants are profiled and their services priced
Benefits (loss avoided)	Problems with the critical structures in town will be identified
Projected Completion Date	Within the time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Hire a consultant to complete a structural study to survey the state of the structures in the school district

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Construct a Safe Room in all School Buildings

Mitigation Action	Construct a safe room in all school buildings (16)
Year Initiated	2011
Applicable Jurisdiction	BCLUW Community School District
Lead agency/Organization	BCLUW Schools
Supporting Agencies/Organizations	Engineering Companies, County Engineer, Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	BCLUW Schools, FEMA HMGP and PDM, CDBG, others to be identified
Estimated Cost	Costs are variable depending on the size of the safe room and whether or not it is a retrofit or newly constructed safe room. For a small safe room in a house the minimum cost is approximately $2,500-$6,000. For a large community shelter, the cost usually ranges from $250,000 to over $1 million depending on the size.
Benefits (loss avoided)	Life safety of BCLUW Schools students and visitors
Projected Completion Date	1 year from funding or within the time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Construct safe rooms in all school buildings for students and visitors to use during severe weather

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

NOAA All-Hazard Radios in all BCLUW Buildings

Mitigation Action	NOAA All-Hazard Radios in all BCLUW buildings (16)
Year Initiated	2011
Applicable Jurisdiction	BCLUW Community School District
Lead agency/Organization	BCLUW Schools
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 3: Educate BCLUW students, employees, and visitors about the dangers of hazards and how they can be prepared.
Potential Funding Source	BCLUW Schools, Hardin County, Iowa Homeland Security, others to be identified
Estimated Cost	Unknown, depends on how much is spent on the radios
Benefits (loss avoided)	BCLUW administration will be informed of approaching hazards and updates throughout a hazard event and help the students accordingly
Projected Completion Date	1 year from when funds are secured
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Secure funding to provide NOAA All-Hazard Radios to all BCLUW school and district buildings

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Alert Radio System for Schools

Mitigation Action 4.1	Alert Radio System for Schools (16)
Year Initiated	2011
Applicable Jurisdiction	BCLUW Community School District
Lead agency/Organization	BCLUW Schools
Supporting Agencies/Organizations	Hardin County Emergency Management, others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	BCLUW Schools, Hardin County, Iowa Homeland Security, others to be identified
Estimated Cost	Unknown, depends on how much is spent on the radios or if they are only subsidized to encourage residents to purchase one
Benefits (loss avoided)	School personnel will be informed of approaching hazards and updates throughout a hazard event
Projected Completion Date	1 year from when funds are secured
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program or secure funding to provide NOAA All-Hazard Radios to BCLUW Schools

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Recruit Storm Spotters and Encourage Storm Spotter Training

Mitigation Action	Recruit storm spotters and encourage storm spotter training (14)
Year Initiated	2011
Applicable Jurisdiction	BCLUW Community School District
Lead agency/Organization	BCLUW Community School District
Supporting Agencies/Organizations	Hardin County Emergency Management, and others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors. Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	BCLUW Schools, other to be identified
Estimated Cost	Unknown, may be of little cost depending on the training
Benefits (loss avoided)	More ways to warn citizens of impending storms
Projected Completion Date	1 year from when funding is secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Recruit storm spotters and encourage storm spotter training as another warning system

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase Generators for District Buildings

Mitigation Action	Purchase generators for district buildings (12)
Year Initiated	2011
Applicable Jurisdiction	BCLUW Community School District
Lead agency/Organization	BCLUW Schools
Supporting Agencies/Organizations	BCLUW Schools, Others to be identified
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	BCLUW Schools, FEMA HMGP, and others to be identified
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 plus wiring and switch installation costs also standby requires a permanent fuel source
Benefits (loss avoided)	Power generation to maintain the function of school facilities
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase generators for all district buildings

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Create an emergency, strategic plan of action for disasters i.e. determine who opens the shelters, when should the shelters be opened, etc.

Mitigation Action	Create an emergency, strategic plan of action for disasters i.e. determine who opens the shelters, when should the shelters be opened, etc. (12)
Year Initiated	2011
Applicable Jurisdiction	BCLUW Community School District
Lead agency/Organization	BCLUW Community School District
Supporting Agencies/Organizations	Hardin County Emergency Management, and others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	BCLUW Schools, other to be identified
Estimated Cost	Unknown, planning may be at little to no cost
Benefits (loss avoided)	No time lost in opening a shelter, students, employees and visitors will have access as soon as possible if the shelter is needed
Projected Completion Date	To be identified
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a plan of action for disasters determining who opens the shelter, when should the shelter be opened, etc.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Identify Backup Communication Equipment to be Purchased for a Communications Failure between School Buildings

Mitigation Action	Identify back up communication equipment to be purchased for communications failure between school buildings (10)
Year Initiated	2011
Applicable Jurisdiction	BCLUW Community School District
Lead agency/Organization	BCLUW Community School District
Supporting Agencies/Organizations	Hardin County Emergency Management
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	BCLUW Schools, FEMA HMGP, Hardin County, others to be identified
Estimated Cost	To be determined once an assessment of equipment can be finalized
Benefits (loss avoided)	Ensure a redundant system so no communication is lost during a failure
Projected Completion Date	1 year from when funds are secured, and the system is established or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Identify back up communication equipment to be purchased for widespread breakdown or disruption of normal communication system capabilities including loss of or long-term interruption of local government radio facilities and major telephone outages due to mechanical failure, traffic accidents, power failure, line severance, and weather.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Create an emergency phone tree for all parents and families associated with the school

Mitigation Action	Create an emergency phone tree for all parents and families associated with the school. (7)
Year Initiated	2011
Applicable Jurisdiction	BCLUW Community School District
Lead agency/Organization	BCLUW Schools
Supporting Agencies/Organizations	School Board, Hardin County Emergency Management, and others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	BCLUW Schools, other to be identified
Estimated Cost	Printing will be of some cost.
Benefits (loss avoided)	Ensuring students' families will be notified that their children taken care of in an event. Regular updates will be needed.
Projected Completion Date	Ongoing from the publication of the call tree
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Hold a meeting for all those who wish to be included on the phone tree

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

BCLUW Schools Completed Mitigation Actions

No completed actions.

Eldora-New Providence Community School District

Eldora-New Providence Schools New Mitigation Actions

Eldora-New Providence Community School District New Mitigation Action Prioritization

1. **Mitigation Action:** Purchase generators and hookups for use in school buildings and offices (STAPLEE Score: 22)
2. **Mitigation Action:** Find and install a device to every classroom door that would prevent an active shooter from bursting through the door and harming the people in the classroom. Conduct active shooter training (STAPLEE Score: 20)
3. **Mitigation Action:** Elevate and/or relocate the boiler and heat/ventilation control system in schools/facilities where the boilers and controls are currently located in the basements (STAPLEE Score: 16)

Protection of Damage to Boiler and Heat/Ventilation Control System

Mitigation Action	Elevate and/or relocate the boiler and heat/ventilation control system (16)
Year Initiated	2017
Applicable Jurisdiction	Eldora-New Providence Community School District
Lead agency/Organization	Eldora-New Providence Community School District
Supporting Agencies/Organizations	Hardin County Emergency Mgt
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	Unknown
Estimated Cost	Unknown
Benefits (loss avoided)	Loss of district property and operations
Projected Completion Date	TBD - pending funding
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Elevate and/or relocate the boiler and heat/ventilation control system in schools/facilities where the boilers and controls are currently located in the basements.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Purchase generators for school buildings

Mitigation Action	Purchase generators for school buildings (22)
Year Initiated	2017
Applicable Jurisdiction	Eldora-New Providence Community School District
Lead agency/Organization	Eldora-New Providence Community School District
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	Eldora-New Providence Community School District, FEMA HMGP, others to be identified
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 plus wiring and switch installation costs - standby requires a permanent fuel source
Benefits (loss avoided)	The ability to power school buildings and offices in a hazard event
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase generators and hookups for use in school buildings and offices

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	New	
2018		
2019		
2020		
2021		

Active Shooter Containment and Training

Mitigation Action	Install device on classroom doors to prevent unwanted entry. Conduct Active Shooter Training (20)
Year Initiated	2017
Applicable Jurisdiction	Eldora-New Providence Community School District
Lead agency/Organization	Eldora-New Providence Community School District
Supporting Agencies/Organizations	Hardin County Emergency Mgt
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	Grants
Estimated Cost	Approximately $100 - $150 per unit, depending on the specific product.
Benefits (loss avoided)	Safety of students, employees and visitors
Projected Completion Date	TBD
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Find and install a device to every classroom door that would prevent an active shooter from bursting through the door and harming the people in the classroom. Conduct Active Shooter Training

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Eldora-New Providence Schools Ongoing Mitigation Actions

Eldora-New Providence Mitigation Action Prioritization

1. **Mitigation Action:** Provide facilities for hazard education (STAPLEE Score: 18)
2. **Mitigation Action:** Plant windbreaks (STAPLEE Score: 13)
3. **Mitigation Action:** Storm drainage improvements (STAPLEE Score: 12)
4. **Mitigation Action:** Demolition of abandoned buildings (STAPLEE Score: 12)
5. **Mitigation Action:** Establish uniform communication protocols (STAPLEE Score: 12)
6. **Mitigation Action:** Improve shelter areas in all school buildings (STAPLEE Score: 6)
7. **Mitigation Action:** Purchase hand held radios (STAPLEE Score: 6)
8. **Mitigation Action:** Participate in hazard mitigation drills (STAPLEE Score: 2)

Provide facilities for hazard education

Mitigation Action	Provide facilities for hazard education (18)
Year Initiated	2011
Applicable Jurisdiction	Eldora-New Providence Community School District
Lead agency/Organization	E-NP Schools
Supporting Agencies/Organizations	Hardin County Emergency Management, Local emergency responders, Others to be identified
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	E-NP Schools, others to be identified
Estimated Cost	May be of little cost
Benefits (loss avoided)	Provide an adequate meeting space to accommodate large audiences
Projected Completion Date	Ongoing
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Make school facilities available for hazard presentations to community and students

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	We have held a number of ALiCE trainings and an emergency drill at our football field.
2018		
2019		
2020		
2021		

Plant Windbreaks

Mitigation Action	Plant Windbreaks (13)
Year Initiated	2011
Applicable Jurisdiction	Eldora-New Providence Community School District
Lead agency/Organization	E-NP Schools
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	E-NP Schools, others to be identified
Estimated Cost	Unknown till areas can be assessed
Benefits (loss avoided)	Protect schools from excess wind and blowing snow
Projected Completion Date	Ongoing
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Replacement of trees as shelter/wind barrier at the Elementary School Campus to replace trees that were damaged by August 9, 2009 hail and wind storm

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Ongoing. We have replaced several of the trees and had stumps removed.
2018		
2019		
2020		
2021		

Storm Drainage Improvements

Mitigation Action	Storm Drainage Improvements (12)
Year Initiated	2011
Applicable Jurisdiction	Eldora-New Providence Community School District
Lead agency/Organization	E-NP Schools
Supporting Agencies/Organizations	Hardin County Sanitarian, Others to be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	E-NP Schools, others to be identified
Estimated Cost	Unknown until situation is assessed
Benefits (loss avoided)	Prevent flash flooding at schools
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Complete storm drainage improvements at both High School and Elementary campuses

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Ongoing due to the cost involved.
2018		
2019		
2020		
2021		

Demolition of Abandoned Buildings

Mitigation Action	Demolition of abandoned buildings (12)
Year Initiated	2011
Applicable Jurisdiction	Eldora-New Providence Community School District
Lead agency/Organization	E-NP Schools
Supporting Agencies/Organizations	Region 6 Planning Commission, Others to be identified
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	E-NP Schools, FEMA HMGP, others to be identified
Estimated Cost	To be determined
Benefits (loss avoided)	Remove unsafe structures from the community
Projected Completion Date	1 year from when funds are secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Demolition of 1916 abandoned building

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	The action is ongoing due to the cost of implementation.
2018		
2019		
2020		
2021		

Establish Uniform Communication Protocols

Mitigation Action	Establish uniform communication protocols (12)
Year Initiated	2011
Applicable Jurisdiction	Eldora-New Providence Community School District
Lead agency/Organization	E-NP Schools
Supporting Agencies/Organizations	Hardin County Emergency Management, Local emergency responders, Others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	E-NP Schools, others to be identified
Estimated Cost	This may be of little cost since it is a planning meeting
Benefits (loss avoided)	Schools and personnel will be better in sync during hazard events
Projected Completion Date	Ongoing starting when a protocol can be formulated, and possible funding secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Hold a meeting with Hardin County emergency agencies to create uniform communication protocol for hazard events

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	We need to continue this.
2018		
2019		
2020		
2021		

Improve Shelter Areas in all School Buildings

Mitigation Action	Improve designated shelter areas in all school buildings (6)
Year Initiated	2011
Applicable Jurisdiction	Eldora-New Providence Community School District
Lead agency/Organization	E-NP Schools
Supporting Agencies/Organizations	Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	E-NP Schools, others to be identified
Estimated Cost	Unknown
Benefits (loss avoided)	Life safety of E-NP Schools students and visitors
Projected Completion Date	1 year from funding or within the time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Study existing areas used for this purpose (tornado drill areas, etc.) and receive recommendations for improvements to provide improved shelter areas within buildings

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Currently seeking funding to support this project. - We have a safe room in the elementary building now that is very safe and secure. We also have a second command center at the high school in the case of an intruder.
2018		
2019		
2020		
2021		

Purchase Hand Held Radios

Mitigation Action	Purchase hand held radios (6)
Year Initiated	2011
Applicable Jurisdiction	Eldora-New Providence Community School District
Lead agency/Organization	E-NP Schools
Supporting Agencies/Organizations	Hardin County Emergency Management, Local emergency responders, Others to be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	E-NP Schools, FEMA HMGP, Hardin County, others to be identified
Estimated Cost	To be determined once a product is secured and need coordinated amongst emergency agencies
Benefits (loss avoided)	Coordination of relief effort during and after a hazard event
Projected Completion Date	1 year from when funds are secured, and the system is established or within time allotted by funding source
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase hand held radios capable of using a common frequency for use by multiple agencies

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Ongoing due to cost. We currently have 5 hand held radios. We could use about 5 more.
2018		
2019		
2020		
2021		

Participate in Hazard Mitigation Drills

Mitigation Action	Participate in hazard mitigation drills (2)
Year Initiated	2011
Applicable Jurisdiction	Eldora-New Providence Community School District
Lead agency/Organization	E-NP Schools
Supporting Agencies/Organizations	Hardin County Emergency Management, local fire, law enforcement, and emergency response personnel
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	E-NP Schools, others to be identified
Estimated Cost	May be of little cost
Benefits (loss avoided)	Students and staff will be prepared for crises and respond correctly and quickly
Projected Completion Date	At such time the plan is complete, possible ongoing updates
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Require practice drills based on hazard events for the school district

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Eldora-New Providence Schools Completed Mitigation Actions

1. **Mitigation Action:** Purchase and install security cameras at all schools (STAPLEE Score: 12)
2. **Mitigation Action:** Door security hardware (STAPLEE Score: 12)

Purchase and Install Security Cameras at all Schools

Mitigation Action	Purchase and install security cameras at all schools (12)
Year Initiated	2011
Applicable Jurisdiction	Eldora-New Providence Community School District
Lead agency/Organization	E-NP Schools
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	E-NP Schools, Hardin County, others to be identified
Estimated Cost	To be determined once cameras, equipment, and labor are priced
Benefits (loss avoided)	Catch suspicious activity and intruders near school buildings
Projected Completion Date	1 year from when funds are secured, and the system is established or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase and install security cameras at main and other entrances of the E-NP Schools

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Complete	
2018		
2019		
2020		
2021		

Door Security Hardware

Mitigation Action	Door security hardware (12)
Year Initiated	2011
Applicable Jurisdiction	Eldora-New Providence Community School District
Lead agency/Organization	E-NP Schools
Supporting Agencies/Organizations	Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	E-NP Schools, others to be identified
Estimated Cost	To be determined once doors are assessed and parts priced
Benefits (loss avoided)	Life safety of E-NP Schools students and visitors
Projected Completion Date	1 year from funding or within the time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Replace and upgrade door security (locking) hardware

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Complete	
2018		
2019		
2020		
2021		

Hubbard-Radcliffe Community School District

Hubbard-Radcliffe Schools New Mitigation Actions

No new actions were identified.

Hubbard-Radcliffe Schools Ongoing Mitigation Actions

Hubbard-Radcliffe Mitigation Action Prioritization

1. **Mitigation Action:** Create an information session for Hubbard-Radcliffe students and employees on the subject of drought and severe cold (STAPLEE Score: 23)
2. **Mitigation Action:** Adopt a facility safety plan (STAPLEE Score: 21)
3. **Mitigation Action:** Purchase generators for school buildings (STAPLEE Score: 21)
4. **Mitigation Action:** Inform students, employees and visitors of designated shelters (STAPLEE Score: 21)
5. **Mitigation Action:** Purchase/ update snow removal equipment (STAPLEE Score: 20)
6. **Mitigation Action:** Ensure safety of playground equipment during extreme heat events (STAPLEE Score: 20)
7. **Mitigation Action:** Create an information session for Hubbard-Radcliffe students and employees on the subject of severe winter storms (STAPLEE Score: 20)
8. **Mitigation Action:** Promote home disaster preparedness (STAPLEE Score: 20)
9. **Mitigation Action:** Purchase early warning system (STAPLEE Score: 20)
10. **Mitigation Action:** Construct a safe room in all schools (STAPLEE Score: 19)
11. **Mitigation Action:** Purchase carbon monoxide and fire detectors (STAPLEE Score: 19)
12. **Mitigation Action:** Purchase and install security cameras at all schools (STAPLEE Score: 17)

Create an information session for Hubbard-Radcliffe students and employees on the subject of drought and severe cold

Mitigation Action	Create an information session for Hubbard-Radcliffe students and employees on the subject of drought and severe cold (23)
Year Initiated	2011
Applicable Jurisdiction	Hubbard-Radcliffe Community School District
Lead agency/Organization	H-R Schools
Supporting Agencies/Organizations	Hardin County Conservation, Hardin County Emergency Management
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	H-R Schools
Estimated Cost	Unknown, this project may be of little cost
Benefits (loss avoided)	Giving information about drought hazards and extreme winter weather
Projected Completion Date	Ongoing
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Educate students and employees on water conservation and heat saving ideas

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Adopt a Facility Safety Plan

Mitigation Action	Adopt a facility safety plan (21)
Year Initiated	2011
Applicable Jurisdiction	Hubbard-Radcliffe Community School District
Lead agency/Organization	H-R Schools
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 5. To promote countywide coordination, planning, and training that avoids transferring the risk from one community to an adjacent community, where appropriate.
Potential Funding Source	H-R Schools
Estimated Cost	Unknown, this project may be of little cost
Benefits (loss avoided)	Staff will be trained to move children safely and efficiently in the event of a hazard and parents, officials, and the public would be aware of the school's plan.
Projected Completion Date	1 year from when program is established, and funding is secured.
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Write a facility safety plan to ensure the safety of students, faculty, and staff

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase Generators for School Buildings

Mitigation Action	Purchase generators for school buildings (21)
Year Initiated	2011
Applicable Jurisdiction	Hubbard-Radcliffe Community School District
Lead agency/Organization	H-R Schools
Supporting Agencies/Organizations	Cities of Hubbard and Radcliffe, Others to be identified
Applicable Goal	Goal 4. The continuity of county and local operations will not be significantly disrupted by disasters in Hardin County.
Potential Funding Source	H-R Schools, FEMA HMGP, and others to be identified
Estimated Cost	Depending on wattage, fuel source, and type—standby or portable—a generator may cost from $500 to $15,000 plus wiring and switch installation costs also standby requires a permanent fuel source.
Benefits (loss avoided)	Power generation to maintain the function of school facilities
Projected Completion Date	1 year after funds are secured or the time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase generators for each of the 3 school buildings

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Inform students, employees and visitors of designated shelters

Mitigation Action	Inform students, employees and visitors of designated shelters (21)
Year Initiated	2011
Applicable Jurisdiction	Hubbard-Radcliffe Community School District
Lead agency/Organization	H-R Schools
Supporting Agencies/Organizations	Hardin County Emergency Management
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	H-R Schools
Estimated Cost	None (printing costs may be an exception)
Benefits (loss avoided)	Order and quick response during and immediately following hazard events for a large vulnerable population
Projected Completion Date	Ongoing
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Inform via school assemblies, regular PA announcements, and informational sheets in classrooms and hallways

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase /update snow removal equipment

Mitigation Action	Purchase /update snow removal equipment (20)
Year Initiated	2011
Applicable Jurisdiction	Hubbard-Radcliffe Community School District
Lead agency/Organization	H-R Schools
Supporting Agencies/Organizations	Hardin County Emergency Management, Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	H-R Schools, others to be identified
Estimated Cost	Unknown until equipment is assessed and new equipment priced
Benefits (loss avoided)	Restore safety of city infrastructure immediately following a hazard event, as well as ensuring efficiency of equipment
Projected Completion Date	Ongoing or 1 year from when funds are secured
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase/update snow removal equipment for use following a severe winter storm

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Ensure safety of playground equipment during extreme heat events

Mitigation Action	Ensure safety of playground equipment during extreme heat events (20)
Year Initiated	2011
Applicable Jurisdiction	Hubbard-Radcliffe Community School District
Lead agency/Organization	H-R Schools
Supporting Agencies/Organizations	Hardin County
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	H-R Schools, Others to be identified
Estimated Cost	Unknown, may be of little cost
Benefits (loss avoided)	Life safety of students on recess during hot days
Projected Completion Date	
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Conduct safety evaluations of the playground equipment on hot days

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Create an information session for Hubbard-Radcliffe students and employees on the subject of severe winter storms

Mitigation Action	Create an information session for Hubbard-Radcliffe students and employees on the subject of severe winter storms (20)
Year Initiated	2011
Applicable Jurisdiction	Hubbard-Radcliffe Community School District
Lead agency/Organization	H-R Schools
Supporting Agencies/Organizations	Hardin County Emergency Management
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	H-R Schools
Estimated Cost	Unknown, this project may be of little cost
Benefits (loss avoided)	Giving information about severe winter storms
Projected Completion Date	Ongoing
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Educate students and employees on what to do in the event of a severe winter storm

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Promote Home Disaster Preparedness

Mitigation Action	Promote Home Disaster Preparedness (20)
Year Initiated	2011
Applicable Jurisdiction	Hubbard-Radcliffe Community School District
Lead agency/Organization	H-R Schools
Supporting Agencies/Organizations	Hardin County Emergency Management, Local emergency response
Applicable Goal	Goal 3. Educate Hardin County citizens about the dangers of hazards and how they can be prepared.
Potential Funding Source	H-R Schools
Estimated Cost	Unknown, this project may be of little cost depending on the medium used
Benefits (loss avoided)	Life safety and education of H-R students and employees
Projected Completion Date	Ongoing
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Create a program to educate H-R students and employees about the dangers of hazards and how to prepare during assemblies through interactive media like drills and workshops.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase Early Warning System

Mitigation Action	Purchase early warning system (20)
Year Initiated	2011
Applicable Jurisdiction	Hubbard-Radcliffe Community School District
Lead agency/Organization	H-R Schools
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	FEMA HMGP, Hardin County, others to be identified
Estimated Cost	Sirens can cost up to $25,000, used sirens are sometimes available for purchase, which helps reduce the cost
Benefits (loss avoided)	Life safety of students and employees by ensuring a redundant warning system
Projected Completion Date	1 year from when funds are secured, and the system is established or within time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase a better early warning system

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	
2018		
2019		
2020		
2021		

Construct a Safe Room in all Schools

Mitigation Action	Construct a safe room in all schools (19)
Year Initiated	2011
Applicable Jurisdiction	Hubbard Radcliffe Community School District
Lead agency/Organization	H-R Schools
Supporting Agencies/Organizations	Hardin County
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	FEMA HMPG and PDM, H-R Schools, Hardin County, CDBG, and others to be identified
Estimated Cost	Costs are variable depending on the size of the safe room and whether or not it is a retrofit or newly constructed safe room. For a small safe room in a house the minimum cost is approximately $2,500-$6,000. For a large community shelter, the cost usually ranges from $250,000 to over $1 million depending on the size.
Benefits (loss avoided)	Life safety of students, employees and visitors during hazard events
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Construct a safe room at each of the 3 schools in the district

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase Carbon Monoxide and Fire Detectors

Mitigation Action	Purchase carbon monoxide and fire detectors (19)
Year Initiated	2011
Applicable Jurisdiction	Hubbard-Radcliffe Community School District
Lead agency/Organization	H-R Schools
Supporting Agencies/Organizations	Hardin County
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	H-R Schools, Others to be identified
Estimated Cost	Unknown until need is assessed and detectors priced
Benefits (loss avoided)	Life safety of students, employees and visitors during hazard events
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase carbon monoxide and fire detectors for each of the 3 schools in the district

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Purchase and Install Security Cameras at all Schools

Mitigation Action	Purchase and install security cameras at all schools (17)
Year Initiated	2011
Applicable Jurisdiction	Hubbard-Radcliffe Community School District
Lead agency/Organization	H-R Schools
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	H-R Schools, Hardin County, others to be identified
Estimated Cost	To be determined once cameras, equipment, and labor are priced
Benefits (loss avoided)	Catch suspicious activity and intruders near school buildings
Projected Completion Date	1 year from when funds are secured, and the system is established or within time allotted by funding source
Priority	High

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase and install security cameras at main and other entrances of the H-R Schools

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	Ongoing	
2018		
2019		
2020		
2021		

Hubbard-Radcliffe Schools Completed Mitigation Actions

No completed actions.

Iowa Falls Community School District

Iowa Falls Schools New Mitigation Actions

Iowa Falls Community School District New Mitigation Action Prioritization

1. **Mitigation Action:** Elevate and/or relocate the boiler and heat/ventilation control system at Rock Run and Pineview Elementary Schools (STAPLEE Score: 10)
2. **Mitigation Action:** Install device on classroom doors to prevent unwanted entry (STAPLEE Score: 7)

Protection of Damage to Boiler and Heat/Ventilation Control System

Mitigation Action	Elevate and/or relocate the boiler and heat/ventilation control system at Rock Run and Pineview Elementary Schools (10)
Year Initiated	2017
Applicable Jurisdiction	Iowa Falls Community School District
Lead agency/Organization	Iowa Falls Community School District
Supporting Agencies/Organizations	Hardin County Emergency Mgt
Applicable Goal	Goal 1. Minimize losses to existing and future structures within hazard areas. Critical facilities and identified assets are high priority structures.
Potential Funding Source	Unknown
Estimated Cost	Unknown
Benefits (loss avoided)	Loss of district property and operations
Projected Completion Date	TBD - pending funding
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Elevate and/or relocate the boiler and heat/ventilation control system at Rock Run and Pineview Elementary Schools. The boilers and controls are currently located in the basements of the school buildings.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Active Shooter Containment

Mitigation Action	Install device on classroom doors to prevent unwanted entry (7)
Year Initiated	2017
Applicable Jurisdiction	Iowa Falls Community School District
Lead agency/Organization	Iowa Falls Community School District
Supporting Agencies/Organizations	Hardin County Emergency Mgt
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	Grants
Estimated Cost	Approximately $100 - $150 per unit, depending on the specific product.
Benefits (loss avoided)	Safety of students, employees and visitors
Projected Completion Date	TBD
Priority	Low

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Find and install a device to every classroom door that would prevent an active shooter from bursting through the door and harming the people in the classroom.

Mitigation Action and Project Maintenance		
Year	Status	Comments
2017	New	
2018		
2019		
2020		
2021		

Iowa Falls Schools Ongoing Mitigation Actions

Iowa Falls Community School District Mitigation Action Prioritization

1. **Mitigation Action:** Purchase updated snow removal equipment (STAPLEE Score: 14)
2. **Mitigation Action:** Air conditioning (STAPLEE Score: 12)
3. **Mitigation Action:** Develop/build a safe room in all school buildings (STAPLEE Score: 9)

Purchase Updated Snow Removal Equipment

Mitigation Action	Purchase updated snow removal equipment (14)
Year Initiated	2011
Applicable Jurisdiction	Iowa Falls Community School District
Lead agency/Organization	Iowa Falls Community School District
Supporting Agencies/Organizations	Hardin County Emergency Management, Others to be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	IAF Schools, others to be identified
Estimated Cost	Unknown until equipment is priced
Benefits (loss avoided)	Restore safety of schools' infrastructure immediately following a hazard event, as well as ensuring efficiency of equipment
Projected Completion Date	Ongoing or 1 year from when funds are secured
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase updated snow removal equipment

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Estimated cost $80,000 ($20,000 per school building)
2018		
2019		
2020		
2021		

Air Conditioning

Mitigation Action	Air conditioning (12)
Year Initiated	2011
Applicable Jurisdiction	Iowa Falls Community School District
Lead agency/Organization	Iowa Falls Community School District
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	FEMA HMGP, Iowa Falls Community School District
Estimated Cost	Unknown –includes unit(s)
Benefits (loss avoided)	Prevent loss of instructional time during extreme heat events, as well as technological damage
Projected Completion Date	Ongoing, starting when funding is secured and unit(s) are installed
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Add air conditioning to school buildings for year-round use

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Estimated cost=$12 million, loss of instructional time due to early dismissals; loss of quality learning environments; health issues for people with heat sensitive medical issues; and preventative care of digital devices (computers) that are suspect to heat damage
2018		
2019		
2020		
2021		

Develop/Build a Safe Room in all School Buildings

Mitigation Action	Develop/build a safe room in all school buildings (9)
Year Initiated	2011
Applicable Jurisdiction	Iowa Falls Community School District
Lead agency/Organization	Iowa Falls Community School District
Supporting Agencies/Organizations	IAF Schools, City of Iowa Falls, City of Alden, and Hardin County
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	FEMA HMPG and PDM, Iowa Falls Community School District, city, county, CDBG, and others to be identified
Estimated Cost	Costs are variable depending on the size of the safe room and whether or not it is a retrofit or newly constructed safe room. For a small safe room in a house the minimum cost is approximately $2,500-$6,000. For a large community shelter, the cost usually ranges from $250,000 to over $1 million depending on the size.
Benefits (loss avoided)	Life safety of students, staff, and community
Projected Completion Date	1 year from when funds are secured or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Build a safe room for students, staff, and visitors in the Iowa Falls Schools

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Ongoing	Architect plans developed and approved for construction if funding ever becomes available. Estimated cost is $1.25 million. Estimated cost at the other three school buildings would be approx. $2 million each.
2018		
2019		
2020		
2021		

Iowa Falls Schools Completed Mitigation Actions

Purchase and Install Security Cameras at School Buildings

Mitigation Action	Purchase and install security cameras at school buildings (12)
Year Initiated	2011
Applicable Jurisdiction	Iowa Falls Community School District
Lead agency/Organization	Iowa Falls Community School District
Supporting Agencies/Organizations	To be identified
Applicable Goal	Goal 2. Protect the health and safety of Hardin County residents and visitors.
Potential Funding Source	IAF Schools, Hardin County, others to be identified
Estimated Cost	To be determined once cameras, equipment, and labor are priced
Benefits (loss avoided)	Catch suspicious activity near schools and protect property
Projected Completion Date	1 year from when funds are secured, and the system is established or within time allotted by funding source
Priority	Medium

Recommended Mitigation Action/Implementation Plan and Project Description	
Action/Implementation Plan and Project Description:	Purchase and install security cameras at main and other prominent entrances of school buildings

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017	Completed	Remove from mitigation plan
2018		
2019		
2020		
2021		

Chapter 6: Plan Maintenance Process

This section of the plan provides an overview of the general strategy for plan maintenance and outlines the method and schedule for monitoring, updating, and evaluating the plan. The section also discusses incorporating the plan into existing planning mechanisms and how to address continued public involvement.

Monitoring, Evaluation, and Updating the Plan

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

With the adoption of this plan, the Steering Committee agrees to monitor, evaluate, and maintain the plan. The Steering Committee will meet once each year to monitor and evaluate the plan. The Hardin County Emergency Manager will coordinate the meeting time and place and notify other members. Other organizations may be of some assistance in this process. The participating jurisdictions and agencies, led by Hardin County Emergency Management, will do the following:

- Meet annually to monitor and evaluate the implementation of the plan
- Reassess the Plan in light of any major hazard event. The Steering Committee will convene within 45 days of any major event to review all applicable data and to consider the risk assessment, plan goals, objectives, and action items given the impact of the hazard event
- Act as a forum for hazard mitigation issues
- Disseminate hazard mitigation ideas and activities
- Pursue the implementation of high priority and low or no cost mitigation actions
- Maintain vigilant monitoring of multi-objective, cost-share, and other funding opportunities to help the county and other jurisdictions implement the plans mitigation actions for which no current funding exists
- Monitor and assist in implementation and updating of this plan
- Keep the concept of mitigation in the forefront of community decision making by identifying plan recommendations when other community goals, plans, and activities overlap, influence, or directly affect increased community vulnerability to disasters
- Report on plan progress and recommend changes to the Hardin County Board of Supervisors and governing bodies of participating jurisdictions
- Inform and solicit input from the public

The primary duty of the Steering Committee is to see that the plan is successfully carried out and to report to the governing boards and the public on the status of plan implementation and mitigation opportunities. Other duties include reviewing and promoting mitigation proposals, hearing stakeholder concerns, and passing concerns on to appropriate entities.

Evaluation of progress can be achieved by monitoring changes and vulnerabilities identified in the plan. Changes in vulnerability can be identified by noting:

- Decreased vulnerability as a result of implementing recommended actions
- Increased vulnerability as a result of failed or ineffective mitigation actions
- Increased vulnerability as a result of new development or annexation

Updates to the plan will:

- Consider changes in vulnerability due to action implementation
- Document success stories where mitigation efforts have proven effective
- Document areas where mitigation actions were not effective
- Document any new hazards that may arise or were previously overlooked
- Incorporate new data or studies on hazards and risks such as Digital Flood Insurance Rate Maps
- Incorporate new capabilities or changes in capabilities
- Incorporate growth and development-related changes to inventories
- Incorporate new action recommendations or changes in action prioritization

In order to best evaluate any changes in vulnerability as a result of plan implementation, the participating jurisdictions will undergo the following process:

- A representative from the jurisdiction will be responsible for tracking and reporting annually on mitigation action status. The representative will also provide input on whether the action as implemented meets the defined objectives and is likely to be successful in reducing vulnerabilities.
- If the action does not meet identified objectives, the jurisdictional lead will determine what additional measures may be implemented, and an assigned individual will be responsible for defining action scope, implementing the action, monitoring success of the action, and making any required modifications to the plan.

Changes will be made to the plan to accommodate actions that have failed or are not considered feasible after a review of their adherence to established criteria, time frame, community priorities, and/or funding resources. Actions that were not ranked high but were identified as potential mitigation activities will be reviewed during the monitoring and update of this plan to determine feasibility of future implementation. Updating of the plan, every five years at a minimum, will be enacted through written changes and submissions, as Hardin County Emergency Management deems appropriate and necessary, and as approved by the Hardin County Board of Supervisors or the governing board of the participating jurisdictions.

The Five-Year Action Plan

This section outlines the implementation agenda that the Steering Committee should follow five years following adoption of this plan, and then every five years thereafter. The Steering Committee led by Hardin County Emergency Management, is responsible to ensure the Plan is updated every five years.

The Steering Committee will consider the following an action plan for the first 5-year planning cycle. It should be noted that the schedule below can be modified as necessary and does not include any meetings and/or activities that would be necessary following a disaster event (which would include reconvening the Steering Committee within 45 days of a disaster or emergency to determine what mitigation projects should be prioritized during the community recovery). If an emergency meeting of the Steering Committee occurs, this proposed schedule may be altered to fit any new needs.

Year 0:

- **2017:** Update Hazard Mitigation Plan, including a series of Steering Committee meetings & Public meetings. Submit Hazard Mitigation Plan for FEMA approval.
- **January 2018 – July 2018:** Work on Mitigation Actions, Hardin County Emergency Management to stay in contact with lead departments/municipalities to keep tabs on project status.

Year 1:

- **June – July 2018:** Prepare for and promote first annual Plan Review and Public meetings.
- **August 2018:** Reconvene Committee for first annual Steering Committee meeting. Introduce the concept of Mitigation Plan Integration with other planning documents. Host first annual Public meeting.
- **September 2018 – July 2019:** Work on Mitigation Actions, Hardin County Emergency Management to stay in contact with lead departments/municipalities to keep tabs on project status. Encourage plan integration efforts.

Year 2:

- **June – July 2019:** Prepare for and promote second annual Plan Review and Public meetings.
- **August 2019:** Reconvene Committee for second annual Steering Committee meeting. Review plan integration efforts. Host second annual Public meeting.
- **September 2019 – July 2020:** Work on Mitigation Actions, Hardin County Emergency Management to stay in contact with lead departments/municipalities to keep tabs on project status. Encourage plan integration efforts.

Year 3:

- **June – July 2020:** Prepare for and promote third annual Plan Review and Public meetings.
- **August 2020:** Reconvene Committee for third annual Steering Committee meeting. Review plan integration efforts. Host second annual Public meeting.
- **September 2020 – July 2021:** Work on Mitigation Actions, Hardin County Emergency Management to stay in contact with lead departments/municipalities to keep tabs on project status. Encourage plan integration efforts.

Year 4:

- **June – July 2021:** Prepare for and promote fourth annual Plan Review and Public meetings.
- **August 2021:** Reconvene Committee for fourth annual Steering Committee meeting. Review plan integration efforts. Host fourth annual Public meeting.
- **September 2021 – July 2022:** Work on Mitigation Actions, Hardin County Emergency Management to stay in contact with lead departments/municipalities to keep tabs on project status. Encourage plan integration efforts.

Year 5:

- **January - December 2022:** Update 2017 Hazard Mitigation Plan, including a series of Steering Committee meetings & Public meetings.

- **January 2023:** Submit 2023 Hazards Mitigation Plan for FEMA approval. Repeat.

Annual Mitigation Steering Committee Meetings

During each annual Steering Committee meeting, the Steering Committee will be responsible for a brief evaluation of the 2017 Hazard Mitigation Plan and to review the progress on Mitigation Actions.

Plan Evaluation

To evaluate the plan, the Steering Committee should answer the following questions:

- Are the goals and objectives still relevant?
- Is the risk assessment still appropriate, or has the nature of the hazard and/or vulnerability changed over time?
- Are current resources appropriate for implementing this plan?
- Have lead agencies participated as originally proposed?
- Has the public been adequately involved in the process? Are their comments being heard?
- Have departments/municipalities been integrating mitigation into their planning documents?

If the answer to each of the above questions is “yes,” the plan evaluation is complete. If any questions are answered with a “no,” the identified gap must be addressed.

Review of Mitigation Actions

Once the plan evaluation is complete, the Steering Committee must review the status of the Mitigation Actions. To do so, the Steering Committee should answer the following questions:

- Have the Mitigation Actions been implemented as planned?
- Have outcomes been adequate?
- What problems have occurred in the implementation process?

The current plan, specifically the new and ongoing mitigation actions, is organized in a way to easily facilitate the annual maintenance and progress of each mitigation action. Each action has a corresponding table that each jurisdiction will maintain on an annual basis.

Mitigation Action and Project Maintenance		
Year	**Status**	**Comments**
2017		
2018		
2019		
2020		
2021		

Meeting Documentation

Each annual Steering Committee meeting must be documented, including the plan evaluation and review of Mitigation Actions. Mitigation Actions have been formatted to facilitate the annual review process.

Incorporation into Existing Planning Mechanisms

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

Where possible, plan participants will use existing plans and/or programs to implement hazard mitigation actions. This plan builds upon the some of the previous related efforts and recommends implementing actions, where possible, through the following means:

- General or related plans of participating jurisdictions
- Ordinances of participating jurisdictions
- Building codes
- Capital improvements plans and budgets
- School district facilities plans
- Mutual aid agreements
- Other community plans within the county either in existence or developed in the future such as water conservation plans, storm water management plans, and parks and recreation plans

The governing bodies of the jurisdictions adopting this plan will encourage all other relevant planning mechanisms under their authority to consult this plan to ensure minimization of risk to natural and manmade hazards as well as coordination of activities.

The Steering Committee involved in the plan update will be responsible for encouraging the integration of the findings actions of the mitigation plan as appropriate. The Steering Committee is also responsible for monitoring this integration and incorporating the appropriate information into the five-year update of the plan.

Continued Public Involvement

44 CFR Requirement §201.6(c)(4)(iii): *[The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.*

Hardin County is dedicated to involving the public directly in the review and updates of the Plan. The public will have the opportunity to provide input into Plan revisions and updates. Copies of the Plan will be kept by appropriate County departments, municipalities, school districts, and outside agencies, as appropriate.

The update process provides an opportunity to publicize success stories from the plan's implementation and seek additional public comment. Information will be published in the local newspaper concerning projects, including a public invitation to the annual hazard mitigation meeting. The public will be invited to attend the annual hazard mitigation meeting where the Steering Committee will meet to monitor and evaluate the plan. The public will have a chance to participate and interact with their respective jurisdiction representative in order to have a stake in the outcome of plan implementation and the annual update process. Steering Committee members will be invited by invitation to the annual meeting and the public will be invited through a public notice in the local newspapers and flyer(s) posted in their jurisdiction by the City and/or County.

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Appendices

Appendix A: Notice of Endorsement and Adoption

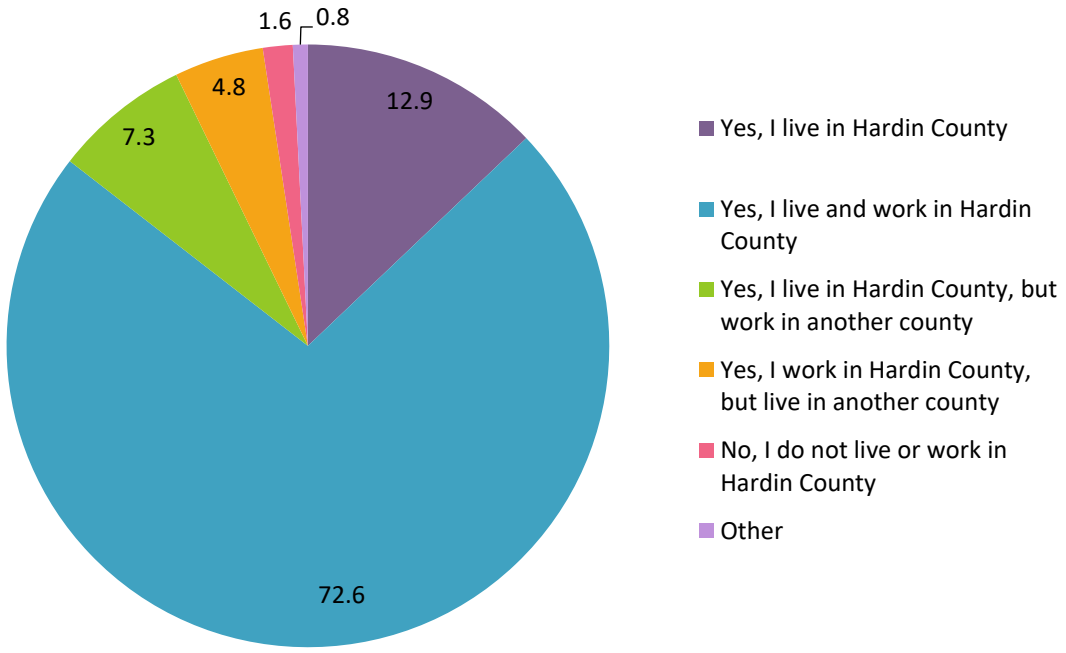
Appendix B: Public Outreach and Participation

Questionnaire and Key Findings

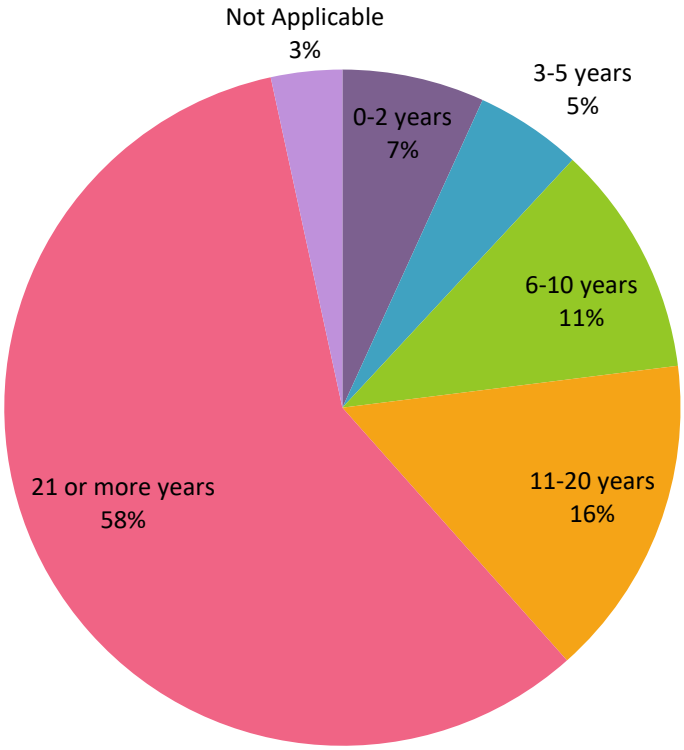
Report for Hardin County Hazard Mitigation Plan
Hardin County Hazard Mitigation Plan

N = 100 participants

Do you live and/or work in Hardin County? Please select the best answer that applies to your current situation.



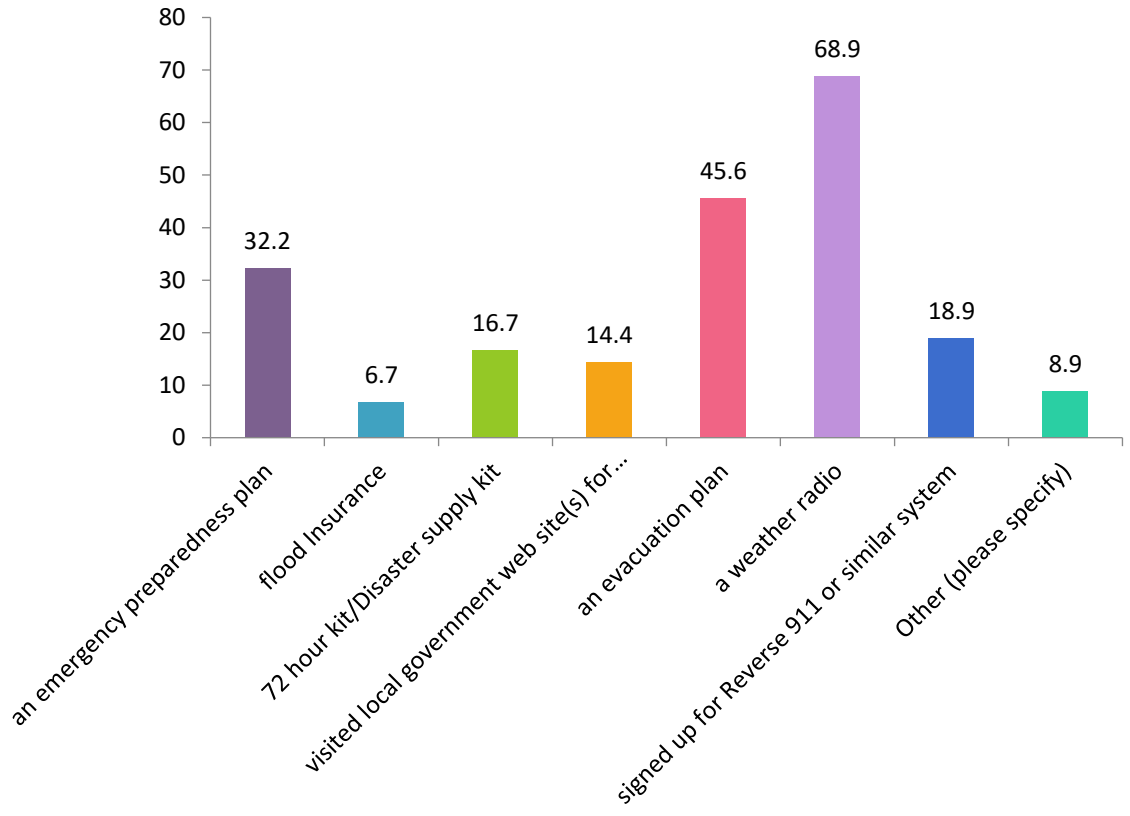
Approximately how many years have you lived or worked (if you are not a resident) in Hardin County, Iowa?



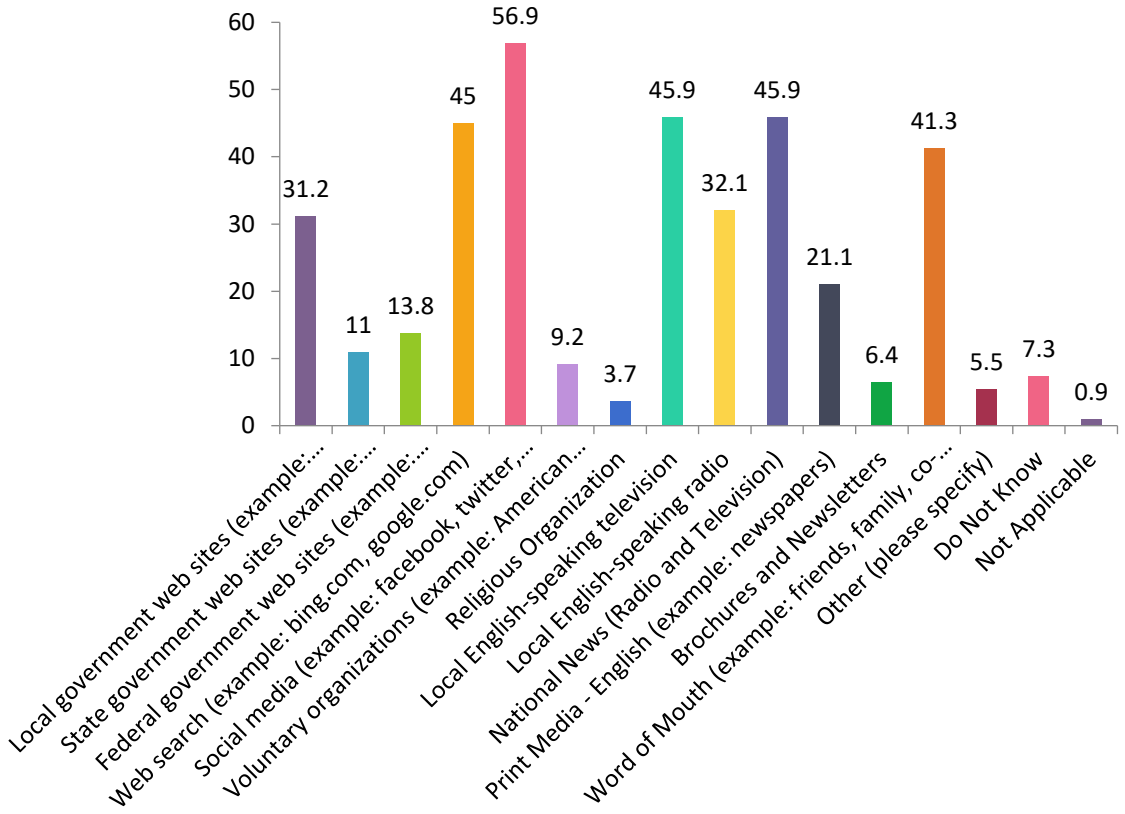
Please indicate the jurisdiction that best represents the location of your home address/place of residence.

	Percent
Ackley	8.3%
Alden	0.8%
Buckeye	2.5%
Eldora	19.8%
Hubbard	7.4%
Iowa Falls	44.6%
New Providence	3.3%
Owasa	0.8%
Radcliffe	1.7%
Steamboat Rock	1.7%
Union	0.8%
Whitten	1.7%
Other location inside Hardin County	1.7%
Outside of Hardin County	5.0%

Please indicate those activities you have done to prepare for emergencies and disasters. Please select ALL that apply. I have…



Please indicate where you go to obtain emergency and disaster related information? Please select ALL that apply.

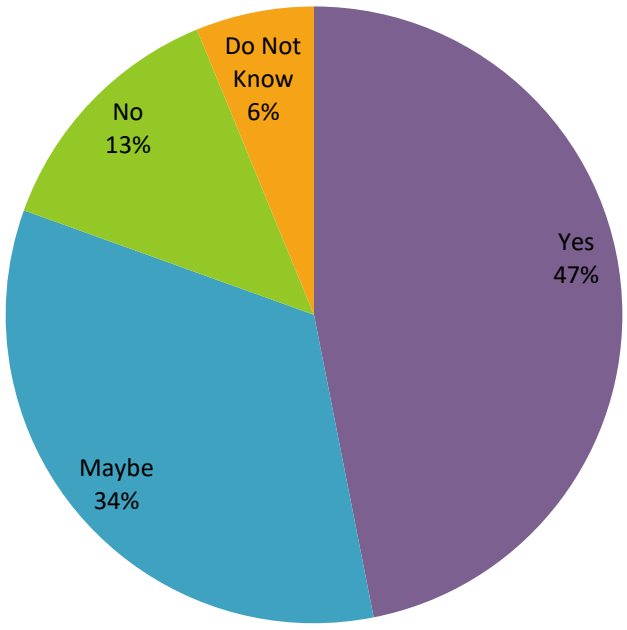


	Percent
Local government web sites (example: http://www.hardincountyia.gov)	31.2%
State government web sites (example: http://www.homelandsecurity.iowa.gov/)	11.0%
Federal government web sites (example: www.fema.gov)	13.8%
Web search (example: bing.com, google.com)	45.0%
Social media (example: facebook, twitter, google+, etc.)	56.9%
Voluntary organizations (example: American Red Cross, Salvation Army, etc.)	9.2%
Religious Organization	3.7%
Local English-speaking television	45.9%
Local English-speaking radio	32.1%
National News (Radio and Television)	45.9%
Print Media - English (example: newspapers)	21.1%
Brochures and Newsletters	6.4%
Word of Mouth (example: friends, family, co-workers)	41.3%
Other (please specify)	5.5%
Do Not Know	7.3%
Not Applicable	0.9%

Would you agree or disagree with the following statements?

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Do Not Know
Hardin County is providing the services necessary to prepare me for a disaster.	3%	35%	29%	7%	5%	21%
I am familiar with Hardin County's web site (http://www.hardincountyia.gov) and can easily obtain information about emergencies and disasters.	5%	40%	26%	13%	5%	11%
During times of emergency, information is provided in a language or format I can understand.	33%	44%	14%	0%	1%	8%
I can easily obtain emergency information in times of crisis.	14%	46%	20%	10%	0%	10%

If a disaster (i.e., a snow storm) impacted Hardin County and knocked out electricity and running water, would your household be able to manage on its own for at least three (3) days?



Do you believe that your household and/or place of business might ever be threatened by the following hazards? Please rate what hazards present the greatest risk.

Low Risk = Low impact on threat to life and property damage
Medium Risk = Medium impact on threat to life and property damage
High Risk = High impact on threat to life and property damage

	Low Risk	Medium Risk	High Risk	Not Applicable
Extreme Heat	48%	38%	14%	1%
Earthquake	80%	5%	5%	10%
Severe Winter Storm	9%	34%	57%	0%
Tornado	1%	44%	55%	0%
Grass or Wildland fire	65%	24%	6%	5%
Thunderstorms and Lightning	11%	44%	45%	0%
Drought	50%	31%	16%	3%
Flash Flood	58%	26%	13%	3%
Dam Failure	78%	8%	4%	10%
Hailstorm	5%	50%	46%	0%
River Flood	68%	18%	10%	4%
Sinkholes	70%	21%	3%	6%
Windstorm	10%	47%	44%	0%

Do you believe that your household and/or place of business might ever be threatened by the following hazards? Please rate what hazards present the greatest risk.

Low Risk = Low impact on threat to life and property damage
Medium Risk = Medium impact on threat to life and property damage
High Risk = High impact on threat to life and property damage

	Low Risk	Medium Risk	High Risk	Not Applicable
Animal/Crop/Plant Disease	43%	21%	20%	16%
Communications Failure	22%	51%	28%	0%
Energy Failure	21%	53%	27%	0%
Hazardous Materials Incident	48%	31%	17%	4%
Highway Transportation Incident	50%	33%	11%	6%
Pipeline Transportation Incident	62%	21%	6%	11%
Railway Transportation Incident	55%	22%	14%	10%
Structural Failure	48%	34%	14%	5%
Structural Fire	33%	44%	23%	0%

Please select the answer that best describes your experience.

	Percent
I have never experienced property damage or loss from a disaster(s)	20.0%
I have experienced minor property damage and loss from a disaster(s)	53.0%
I have experienced major property damage and loss from a disaster(s)	23.0%
I have experienced catastrophic property damage and loss from a disaster(s)	4.0%

Based on YOUR PERCEPTION of Hardin County's risk, what priority would you expect the County to place on mitigation efforts for the following hazards?

Mitigation definition: The purpose of mitigation planning is to identify policies and actions that can be implemented over the long term to reduce risk and future losses. Mitigation forms the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage.

No Mitigation Needed = No mitigation on this hazard is expected or needed
Low Priority = This hazard should be mitigated, but is not a high priority compared to other hazards
Medium Priority = It is important to mitigate this hazard
High Priority = It is a high priority to emphasize mitigation for this hazard

	No Mitigation Needed	Low Priority	Medium Priority	High Priority
Drought	25%	38%	28%	9%
Dam Failure	27%	41%	19%	14%
Earthquake	55%	33%	8%	4%
Flash Flood	7%	30%	40%	22%
Grass or Wildland Fire	8%	42%	40%	9%
Hailstorm	1%	24%	49%	27%
River Flood	8%	19%	46%	27%
Severe Winter Storm	2%	6%	35%	57%
Sinkholes	32%	52%	14%	2%
Thunderstorms and Lightning	5%	27%	41%	26%
Tornado	1%	8%	31%	60%
Windstorm	2%	23%	41%	33%
Extreme Heat	2%	38%	45%	15%

Based on YOUR PERCEPTION of Hardin County's risk, what priority would you expect the County to place on mitigation efforts for the following hazards?

Mitigation definition: The purpose of mitigation planning is to identify policies and actions that can be implemented over the long term to reduce risk and future losses. Mitigation forms the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage.

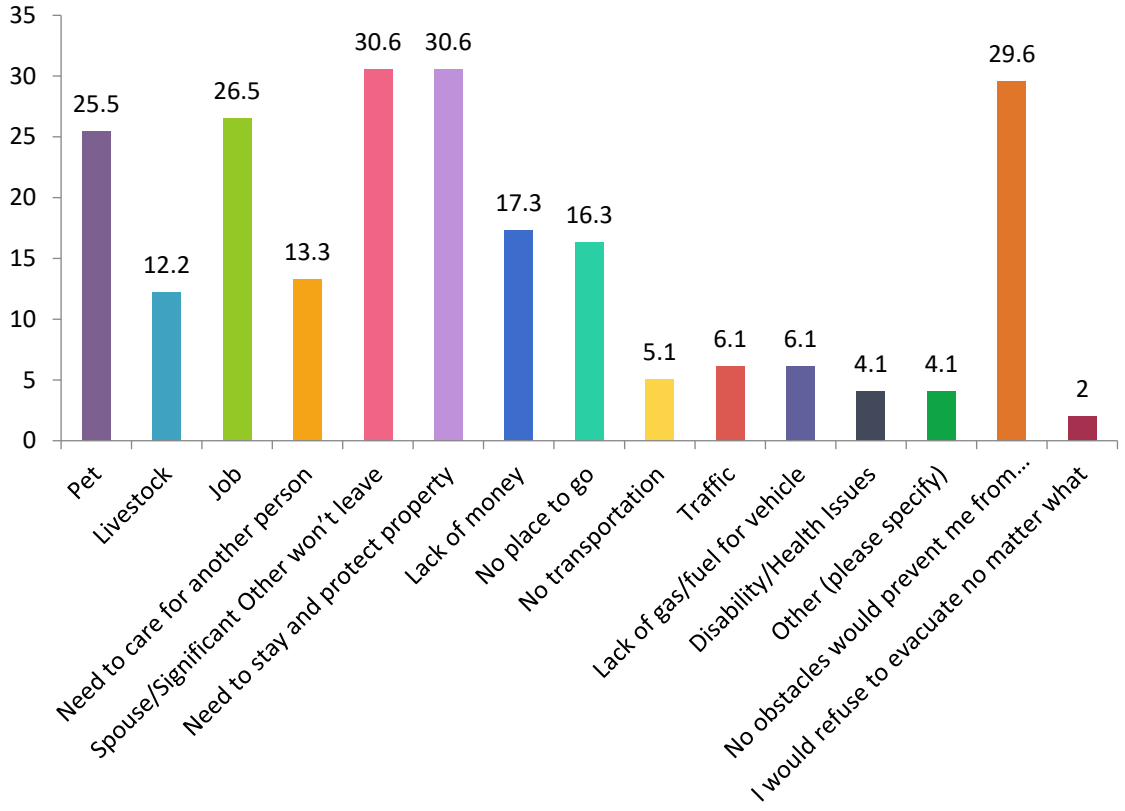
No Mitigation Needed = No mitigation on this hazard is expected or needed
Low Priority = This hazard should be mitigated, but is not a high priority compared to other hazards
Medium Priority = It is important to mitigate this hazard
High Priority = It is a high priority to emphasize mitigation for this hazard

	No Mitigation Needed	Low Priority	Medium Priority	High Priority
Animal/Crop/Plant Disease	3%	40%	35%	22%
Communications Failure	1%	17%	38%	43%
Energy Failure	0%	17%	37%	46%
Hazardous Materials Incident	3%	30%	29%	37%
Highway Transportation Incident	2%	30%	49%	19%
Pipeline Transportation Incident	9%	36%	37%	17%
Railway Transportation Incident	6%	35%	38%	20%
Structural Failure	5%	31%	47%	17%
Structural Fire	3%	28%	38%	30%

If an evacuation was ordered for your area, please indicate how likely you would be to do the following.

	Very Likely	Somewhat Likely	Not Very Likely	Not Likely at All	Do Not Know	Not Applicable
Immediately evacuate as instructed.	41%	40%	14%	3%	3%	0%
I would first consult with family and friends outside my household before making a decision to evacuate.	34%	37%	11%	13%	3%	1%
Wait and see how bad the situation is going to be before deciding to evacuate.	15%	38%	29%	12%	5%	0%
Refuse to evacuate no matter what.	0%	8%	27%	56%	5%	4%

What might prevent you from leaving your place of residence if there was an evacuation order? Please select ALL that apply.



	Percent
Pet	25.5%
Livestock	12.2%
Job	26.5%
Need to care for another person	13.3%
Spouse/Significant Other won't leave	30.6%
Need to stay and protect property	30.6%
Lack of money	17.3%
No place to go	16.3%
No transportation	5.1%
Traffic	6.1%
Lack of gas/fuel for vehicle	6.1%
Disability/Health Issues	4.1%
Other (please specify)	4.1%
No obstacles would prevent me from evacuating	29.6%
I would refuse to evacuate no matter what	2.0%

What type of structure do you live in?

	Percent
Detached single family home	86.7%
Multi-family building – 2 stories or more (apartment/condo)	4.1%
Mobile home	1.0%
Manufactured home	7.1%
Other (please specify)	1.0%

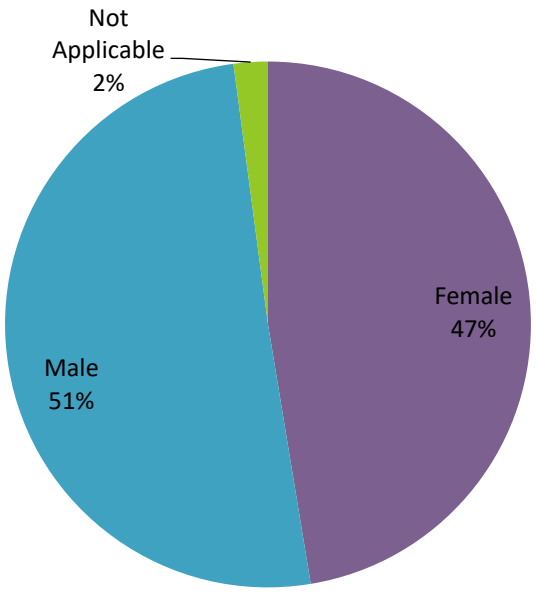
Which of the following best describes your race/ethnicity? Please select ALL that apply.

	Percent
American Indian or Alaska Native	2.1%
Hispanic or Latino	2.1%
White	97.9%
Other (please specify)	1.0%

Please indicate the language(s) spoken in your household. Please select ALL that apply.

	Percent
English	99.0%
Spanish	1.0%
Other Indo-European language	1.0%
Other (please specify)	3.1%

Please indicate your sex.



Online Planning System

Sample of Comments made on the Online Planning System.

Mitigation Action	Generator and appropriate hookup for schools	Observation	Marty Jimmerson	11/13/2017 14:04
Mitigation Action	Elevate boiler system in schools	Observation	Marty Jimmerson	11/13/2017 14:03
Procure Trash Pumps	generator and electrical fixtures for school	Observation	Jeff Fiscus	11/01/2017 15:11
Procure Trash Pumps	generator for senior center.	Observation	Jeff Fiscus	11/01/2017 15:10
Procure Trash Pumps	procure additional trash pumps to address future flooding issues in the city.	Observation	Jeff Fiscus	11/01/2017 15:09
Procure Trash Pumps	New water well to increase capacity for the city.	Observation	Jeff Fiscus	11/01/2017 15:05
Procure Trash Pumps	Enhance greenspace by the river and ensure adequate safety measures are included to address periodic flooding.	Observation	Jeff Fiscus	11/01/2017 15:01
Procure Trash Pumps	Ensure Senior Citizen Centers have NOAA weather radios because sirens cannot be heard there.	Observation	Jeff Fiscus	11/01/2017 14:51
Update sewer treatment plant	Storage tank has limited capacity. Would like to increase the storage capacity. Build an underground piping station that would transport the material from the storage tank to the dry bed area. Currently, they have to pump it out and release it to the dry bed. Would like to have a structure over the dry bed so it has a chance to filter through the system.	Observation	Marvin Veld	09/21/2017 15:30
Update sewer treatment plant	Improve sewer line or replace. Built in the 60s. Lots of leaking and issues.	Observation	Marvin Veld	09/21/2017 15:25
Ongoing Mitigation Actions	Water tower modification complete in 2016	Observation	Roxane Warnell	09/21/2017 13:15
Ongoing Mitigation Actions	Mitigation Action: Update sewer treatment plant. Ongoing, Increase capacity of holding tank, new underground piping system to transport holding tank waste to dry beds. Construct a covered structure over the dry beds.	Observation	Roxane Warnell	09/21/2017 13:14
Ongoing Mitigation Actions	Mitigation Action: Add lift Station; Ongoing the need is still there, Challenge is finding funding.	Observation	Roxane Warnell	09/21/2017 13:10
Construct a safe room in the high school and mi...	Completed in new Ackley Elementary, ongoing in other buildings.	Observation	Marty Jimmerson	09/14/2017 07:42
Advanced alert system	Ongoing	Observation	Marty Jimmerson	09/14/2017 07:42

Review of safety drill procedures	Ongoing	Observation	Marty Jimmerson	09/14/2017 07:41
Purchase generators for school buildings	Ongoing	Observation	Marty Jimmerson	09/14/2017 07:41
Identify back up communication equipment to be ...	Ongoing	Observation	Marty Jimmerson	09/14/2017 07:41
Promote home disaster preparedness	Ongoing	Observation	Marty Jimmerson	09/14/2017 07:40
Update schools with fire marshal recommendations	Ongoing	Observation	Marty Jimmerson	09/14/2017 07:40
Create hazardous materials removal plan	Ongoing	Observation	Marty Jimmerson	09/14/2017 07:40
Create debris removal plan	Ongoing	Observation	Marty Jimmerson	09/14/2017 07:39
New Mitigation Action	Project to pursue a plan to eliminate blighted structures and residences within the city, to address the public health hazards of private owned structures who cannot control pest infestations.	Feedback	Roxane Warnell	08/11/2017 11:13
New Mitigation Action	City of Eldora build a new Emergency Medical Service Facility to house increased number of ambulances, and increased size of ambulances do not fit in the existing structure. Also to have quarters to house personnel while on duty at the station during varied shifts, and to have space to provide training sessions.	Feedback	Roxane Warnell	08/11/2017 11:09
New Mitigation Action	Develop a new Emergency Operations Plan for the City of Eldora, Priority Med.	Feedback	Roxane Warnell	08/11/2017 11:06
Purchase debris removal equipment	This is ongoing.	Feedback	Roxane Warnell	08/11/2017 11:04
Purchase emergency watercrafts	Completed.	Feedback	Roxane Warnell	08/11/2017 11:04
Update fire rescue equipment	City of Eldora advised this is on going as funding becomes available.	Feedback	Roxane Warnell	08/11/2017 11:03
Construct a new fire station, retrofitted as a ...	This is ongoing, recent movement in the past 2 months was purchase of a vacant building to be retrofitted to house the Eldora Volunteer Fire Department.	Feedback	Roxane Warnell	08/11/2017 11:02
Update communication system, purchase back-up s...	City of Eldora Council advised this is ongoing.	Feedback	Roxane Warnell	08/11/2017 11:01

Distribute Portable NOAA All-Hazard Radios to E...	This is ongoing if Federal grants become available for this specific project.	Feedback	Roxane Warnell	08/11/2017 10:59
Create informative hazard literature or use FEM...	Eldora City Council advised this is ongoing.	Feedback	Roxane Warnell	08/11/2017 10:58
Storm drainage improvements	Eldora City Council advised that this mitigation action is ongoing and there has been movement and sections of street and storm sewer updates were completed in 2017. There is more sections that are targeted when funding becomes available. Roxane	Feedback	Roxane Warnell	08/11/2017 10:58
City of Eldora	Delete the statement regarding any alert system for the City of Eldora by message sent to phone or text.	Feedback	Roxane Warnell	08/11/2017 10:53
Planning Area Profile	Transportation, specific Trails project, see information on the following website www.hardincountytrails.com, this project has seen a large movement in the past 4 years and is combining efforts with Marshall County to expand this walking, biking trail. Contact Me with any questions. Roxane	Feedback	Roxane Warnell	08/11/2017 10:48
Unincorporated Hardin County	Need to review the list of Fuel stations for accuracy.	Observation	Roxane Warnell	07/17/2017 09:20
Unincorporated Hardin County	Need to review the list of Grocery Stores for accuracy.	Observation	Roxane Warnell	07/17/2017 09:19
Unincorporated Hardin County	Add Radcliffe Volunteer Ambulance Service to Emergency Medical Services	Observation	Roxane Warnell	07/17/2017 09:18
Unincorporated Hardin County	The name of the Community Hospital in Iowa Falls was changed from Ellsworth Community Hospital to Hansen Family Hospital.	Observation	Roxane Warnell	07/17/2017 09:15
Unincorporated Hardin County	Delete any reference to the Code Red Alert System.	Feedback	Roxane Warnell	07/17/2017 09:14
Unincorporated Hardin County	Under Government Boards and Commissions insert Hardin County Emergency Management Commission. (This body appoints the Emergency Management Coordinator)	Feedback	Roxane Warnell	07/17/2017 09:13
Unincorporated Hardin County	New address Hardin County Website is www.hardincountyia.gov	Feedback	Roxane Warnell	07/17/2017 09:10
Prerequisites	Contact Hardin County GIS department for updated maps to insert in the 2017 plan.	Feedback	Roxane Warnell	07/17/2017 09:02
Maintain Code Red Participation	Per Roxane Hardin County no longer contracts with the vendor for this alert system. Remove from plan.	Observation	Roxane Warnell	06/21/2017 13:19

Improve shelter areas in all school buildings	This would still be a wise thing to do if there was funding.	Observation	Jay Mathis	06/21/2017 08:52
Demolition of abandoned buildings	This is still a goal of the district but has not happened as it is an expensive endeavor.	Observation	Jay Mathis	06/21/2017 08:51
Hardin County School Districts	The information regarding the Eldora-New Providence School District is accurate with a couple exceptions. Please remove the parentheses with the name "South Hardin Community Schools." There is no South Hardin district. The buildings included in the E-NP district include the E-NP Elementary and South Hardin high school, not the middle school or the H-R elementary buildings. Those are located in the Hubbard-Radcliffe district. We are two distinct school districts engaged in a two-way whole-grade sharing agreement in which they send their 9-12 graders to E-NP and we send our 6-8 graders to them. The only use of the name South Hardin that should be used is for the name of the resulting blended middle and high school buildings. Again, there is no South Hardin school district.	Feedback	Jay Mathis	06/21/2017 08:48
Unincorporated Hardin County	Please contact Jessica Lara regarding the new updated insurance policies and valuations.	Observation	William Hoffman	06/20/2017 19:44

Meetings

Hazard Mitigation Plan Update 2017

Hardin County, Iowa

Agenda

Meeting Date: 2/16/2017

Introductions

Overview of Mitigation: Why Mitigate?
(5 minutes)

Mitigation Planning Process
(5 minutes)

Project Schedule
(5 minutes)

Risk Assessment Methodology
(5 minutes)

Hazards and Risk Assessment Discussion
(5 minutes)

Hardin County Knowledge Management System
(10 minutes)

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- *SIGN-IN SHEET:* Hazard Mitigation Plan Update -

Hazard Mitigation Plan Update
Hardin County, Iowa

Hazard Mitigation Planning Committee – Meeting 1 Date: 2/16/2017			
Name	**Organization**	**Phone**	**E-mail**
Jeff Fiscus	City of Alden	641-751-0852	jfiscus@ifacadets.net
ROBERT, JOHN	CITY ELDORA	641-848-0938	rdjohn2@Hotmail.com
Ron Kuhfus	City of Iowa Falls	641 648 6464	rkuhfus@cityofiowafalls.com
Gordon Kotterman	City of Buckeye	515-855-4293	Kotterman@IATELECOM.NET
BJ Hoffman	HARDIN COUNTY	515 939 8220	BHOFFMAN@HARDINCOUNTYIA.GOV
P Heinz	Hubbard-Radcliffe	515-899-2111	pheinz@hubrad.k12.ia.us
Chuck Baska	City of Radcliffe	641 751 5743	chuckmaska@yahoo.com
Randy Smack	City of Hubbard	515-460-4315	big.rig82@Hotmail.com
Tom PIEPER	City of UNION	641-750-5286	tmpieper@heartofiowa.net
Jay Mathis	Eldora-NP school	641-939-5631	jmathis@eldoranp.org
John Robbins	Iowa Falls CSD & Alden	641-648-3400	jrobbins@ifacadets.net
Roxane Warnell	Emerg Mgt	641-939-8132	rwarnell@hardincountyia.gov
Dan Martin	Integrated Solutions Con.	847.477.6542	dan.martin@i-s-consulting.com
Yuko Abe	ISC	208-380-2021	

- *SIGN-IN SHEET:* Hazard Mitigation Plan Update -

Hazard Mitigation Plan Update
Hardin County, Iowa

Hazard Mitigation Plan Update – Project Kickoff Meeting Date: 2/16/2017			
Name	**Organization**	**Phone**	**E-mail**
Daiko Abe	ISC	208-390-2021	daiko.abe@i-s-consulting.com
Roanel Varnell	EMA Hardin	641-939-8132	rvarnell@hardincountyia.gov
Daniel Martin	ISC	847.477.6542	dan.martin@i-s-consulting.com

Hazard Mitigation Plan Update 2017
Hardin County, Iowa

Agenda

Meeting Date: 6/20/2017

Location: Hardin County Engineer's Office
708 16th St. Eldora, Iowa.

Time: 6 p.m.

Introductions

Risk Summary/Risk Assessment Methodology

Hazard Summary Worksheet and Discussion

Hazard/Risk Ranking Process
(FEMA recommends we "prioritize" our hazards)

Next Steps: Goals and Objectives

Next Steps: Review Mitigation Actions/Projects

- *SIGN-IN SHEET:* Hazard Mitigation Plan Update -

Hazard Mitigation Plan Update
Hardin County, IA

Hazard Mitigation Planning Committee – Hazards and Risks Date: 6/20/2017			
Name	**Organization**	**Phone**	**E-mail**
Randy Smuck	Hubbard city Council	515-460-4315	big.rig82@Hotmail.com
BJ Hoffman	Hardin County	~~515~~ 641 939 8220	bhoffman@hardincounty.ia.gov
Jody Anderson	City of Iowa Falls	641-373-1414	janderson@CityofIowaFalls.com
Gene Newgaard	Mayor City of Iowa Falls	641-373-0561	gnewgaard@mediacombb.net
Ron Kuhfus	Police Chief Iowa Falls	641 373 1609	rkuhfus@cityofiowafalls.com
John Robbins	Iowa Falls CSD	641-648-6400	jrobbins@iowacubs.net
Jay Mathis	Eldora-New Providence CSD	641-939-5631	jmathis@eldoranp.org
Thomas Pieper	Union	641-750-5262	Empiepen@heartofiowa.net
Brad Fjelland	Radcliffe City	515-291-7434	buylandonetins.net
Roxane Warnell	EMC. Hardin Co		

Hazard Mitigation Plan Update
Hardin County, IA

Agenda

Tuesday July 18th @ 7:00pm
Ellsworth Agriculture and Renewable Energy Center
707 Ellsworth Avenue, (Hwy 65 south of Iowa Falls)
Iowa Falls, IA

Introductions

Preliminary Survey Findings
(10 minutes)

Final Hazard Ranking Overview and Summary
(10 minutes)

Mitigation Goals and Objectives Update
(10 minutes)

Mitigation Strategies & Actions: Breakout Session
(45 minutes)

- *SIGN-IN SHEET:* Hazard Mitigation Plan Update -

Hazard Mitigation Planning Committee – Mitigation Actions and Strategies Date: 7/18/2017			
Name	**Organization**	**Phone**	**E-mail**
Yaiko Abe	ISC	208-390-2021	
Jody Anderson	City of Iowa Falls	641-648-2527	janderson@cityofiowafalls.com
Gene Newgaard	City of Iowa Falls	641-648-4149	gnewgaard@iowafallsmediacenter.org
Brad Fjelland	Radcliffe	515-291-7434	buyland@netins.net
Terry R. Beare	City of New Providence	641-497-5393	tjbeare@hotmail.com
Randy Smeck	city of Hubbard	515-460-4315	bigrig82@Hotmail.com
Ron Kuhfus	City of Iowa Falls	641 373 1609	rkuhfus@cityofiowafalls.com
Rich Gaston	IF	641-373-0283	rich@iowafallshousing.com
Debra Jaske	N. Prov.	641-497-5785	djaske@heartofiowa.net
Mark Jaske	N. Prov.	641-497-5785	" " "
Cindy Litwiller	City of Iowa Falls	641-373-3455	director@iowafallsdevelopment.com
Nathan Kotterman	City of Buckeye	515-855-4293	Kotterman@IowaTelecom.com
Jim Johnson	Eldora	641-485-9888	jjohnson@heartofiowa.net
[illegible]	Iowa Falls Schools	641-648-6400	jrobinson@iowafallsschools.net
Tom Pieper	UNION TA	641-750-5263	Empiep@heartofiowa.net
Bx Hoffman	Hardin County	641 939 8220	BHOFFMA@Hardincounty.gov

- *SIGN-IN SHEET:* Hazard Mitigation Plan Update -

Hazard Mitigation Plan Update
Hardin County, IA

Hazard Mitigation Planning Committee – Eldora Date: 8//8/2017			
Name	**Organization**	**Phone**	**E-mail**
Roxane Warnell	Emerg Mgt.	641-939-8132	rwarnell@hardincountyia.gov
DAVID MITCHELL	CITY COUNCIL	515-450-3163	dave.mitchellcpm@gmail.com
Melody Hoy	City Council	641-939-5604	mthoy82@gmail.com
ROBERT JOHN	CITY COUNCIL	641-849-0938	rdjohn2@hotmail.com
BOB JOSKE	MAYOR	641-858-5858	CJOSKE@HUNTOFIOWA.COM
Chandra Kyte	Deputy Clerk	641-849-0004	ckyte@eldoraiowa.com
Cindy Johns	City Council	641-858-6563	chmfam@gmail.com

- *SIGN-IN SHEET:* Hazard Mitigation Plan Update -

Hazard Mitigation Plan Update
Hardin County, IA

Hazard Mitigation Planning Committee – Hazards and Risks Date: 8//8/2017			
Name	**Organization**	**Phone**	**E-mail**
Corey Larson	City of Eldora EMS	641-939-9119	clarson@eldoraiowa.com
JULIE TAUNE	Greenbelt Home Care	641-939-8444	jtaune@greenbelthomecare.com
Rocky Reents	Greenbelt Home Care	" "	areents@greenbelthomecare.com
Bob Jones	City of Eldora	641-939-3944	rvjones@heartofiowa.net
Kelly Haskin	City of Eldora	641-939-2393	khaskin@eldoraiowa.com
Scott Kosanke	City of Eldora Fire Dept	641-939-7480	Kosankehdw@heartofiowa.net
Dave Lloyd	Eldora Fire Dept	641-939-7096	efd@heartofiowa.net
Gary Van Den Boom	Private citizen	641-939-3803	garyvandenboom@yahoo.com
Aaron Budwag	Bud's Corner Hardware	410-703-9486	budwega@hotmail.com

Hazard Mitigation Plan Update
Hardin County, IA

Agenda

Meeting Date: 11/15/2017
5:30 p.m.

Location:
Hardin County Engineers Office Building at 708 16th Street, Eldora, IA

Introductions

Review Municipal and School District sections

Provide final validation and feedback on new and ongoing mitigation actions/projects

Mitigation Strategy and Action Prioritization

Plan Implementation and Maintenance

Discuss the Plan Submittal Process and Next Steps

- *SIGN-IN SHEET:* Hazard Mitigation Plan Update -

Hazard Mitigation Plan Update
Hardin County, IA

Hazard Mitigation Planning Committee – Mitigation Prioritization and Final Review Meeting Date: 11/15/2017			
Name	**Organization**	**Phone**	**E-mail**
Bill Hittle	Buckeye	712-898-1713	wmhittle@Gmail.com
Gordon Kokemoor	Buckeye	515-855-4293	Kokemoor@iowatelecom.net
Erik Graham	Ackley	319 231-1574	erikt_graham@hotmail.com
Randy Smack	Hubbard	515-460-4315	bigerig82@Hotmail.com
Ron Reece	New Prov.	641-497-5439	—
Lou Schuler	New Prov.	641-497-5451	louschuler@heartofiowa.net
DUSTIN INGRAM	ACKLEY, IA	641-373-0114	ACKLEYDEVELOPMENT@GMAIL.COM
Tayler Roll	Radcliffe, IA	515-851-5566	troll@hardincountyia.gov
Chuck Raska	" "	641 751 5743	chuckraska@yahoo.com
Jay Mathis	Eldora New Prov School	641 939 5631	jmathis@eldoranp.org
Cindy Litwiller	Iowa Falls	641-373-3455	director@iowafalls development.com
Jerry R Beare	New Providence	641-497-5393	tjbeare@hotmail.com

Press Releases and Meeting Notices

For Immediate Release

Contact:
Roxane Warnell
Emergency Management Coordinator
P: (641) 939-8132
E: RWarnell@hardincountyia.gov

HARDIN COUNTY RESIDENTS INVITED TO PARTICIPATE IN COMMUNITY PREPAREDNESS STUDY

Hardin County, IA – Hardin County is conducting a study to better understand the preparedness needs and risk perceptions of its residents as part of the County's Hazard Mitigation Plan update process. To do so, a Community Preparedness questionnaire has been distributed throughout the county.

This survey questionnaire provides an opportunity for residents to share their opinions and participate in the hazard mitigation planning process, which is a requirement of the Federal Emergency Management Agency (FEMA). All residents in Hardin County are invited to participate. To access the online version of the questionnaire, please go to:

http://hardin.disastersurvey.sgizmo.com/s3/

For a hard copy version of the plan, please contact Hardin County Emergency Management at (641) 939-8132.

The questionnaire should only take about 10 minutes to complete. All responses will be kept confidential, and participation is strictly voluntary.

"Residents' input and feedback will enable our office to better serve the County before, during, and after an emergency or disaster," said Roxane Warnell, Hardin County Emergency Management Coordinator. "We want to know what hazards is a concern for residents, and identify the services the community needs during a disaster."

Residents are asked to complete the survey by July 20th, 2017.

For questions, please contact: Roxane Warnell, Hardin County Emergency Management Coordinator, (641) 939-8132.

The purpose of hazard mitigation planning is to identify policies and actions that can be implemented over the long term to reduce risk and future losses. Mitigation forms the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage.

For Immediate Release

Contact:
Roxane Warnell
Emergency Management Coordinator
P: (641) 939-8132
E: RWarnell@hardincountyia.gov

PUBLIC MEETING TO PROVIDE INPUT INTO THE HARDIN COUNTY HAZARD MITIGATION PLAN

Hardin County, IA – Hardin County will be hosting a public information and planning session at 7 p.m. on Tuesday, July 18, 2017 to gather input from Hardin County residents regarding the All-Hazard Mitigation Plan, which is undergoing a mandatory 5-year update. The public meeting will be held at the Ellsworth College Agriculture & Renewable Energy Center, located on Highway 65 just south of Iowa Falls (Address: 707 Ellsworth Avenue, Iowa Falls, IA). The meeting will be held in Room AR110.

The meeting will give residents an opportunity to review the potential hazards that could occur within the County, and will request input for the various mitigation measures intended to eliminate or reduce the negative impact of those hazards.

The U.S. Federal government requires local and state governments to have a FEMA-Approved Multi-Hazard Mitigation Plan as established by the Disaster Mitigation Act of 2000 in order to qualify for Pre-Disaster Mitigation (PDM) and Hazard Mitigation Grant Program (HMGP) project grant dollars. These programs are critical sources of Federal funding, especially for a community that wants to proactively initiate mitigation projects using PDM dollars, or for a community that needs HMGP funding following a presidentially declared disaster.

For more information about this plan and meeting, please contact Roxane Warnell, Emergency Management Coordinator, (641) 939-8132.

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Hazard survey under way

(continued from page 1)

feedback will enable our office to better serve the County before, during, and after an emergency or disaster," said Roxanne Warnell, Hardin County Emergency Management Coordinator. "We want to know what hazards is a concern for residents, and identify the services the community needs during a disaster."

Residents are asked to complete the survey by July 20th, 2017.

For questions, please contact: Roxane Warnell, Hardin County Emergency Management Coordinator, (641) 939-8132.

The purpose of hazard mitigation planning is to identify policies and actions that can be implemented over the long term to reduce risk and future losses. Mitigation forms the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage.

Hardin County will ALSO be hosting a public information and planning session at 7 p.m. on Tuesday, July 18, 2017 to gather input from Hardin County residents regarding the All-Hazard Mitigation Plan, which is undergoing a mandatory 5-year update. The public meeting will be held at the Ellsworth College Agriculture & Renewable Energy Center, located on Highway 65 just south of Iowa Falls (Address: 707 Ellsworth Avenue, Iowa Falls, IA). The meeting will be held in Room AR110.

The meeting will give residents an opportunity to review the potential hazards that could occur within the County, and will request input for the various mitigation measures intended to eliminate or reduce the negative impact of those hazards.

The U.S. Federal government requires local and state governments to have a FEMA-Approved Multi-Hazard Mitigation Plan as established by the Disaster Mitigation Act of 2000 in order to qualify for Pre-Disaster Mitigation (PDM) and Hazard Mitigation Grant Program (HMGP) project grant dollars. These programs are critical sources of Federal funding, especially for a community that wants to proactively initiate mitigation projects using PDM dollars, or for a community that needs HMGP funding following a presidentially declared disaster. For more information about this plan and meeting, please contact Roxanne Warnell.

Hazard survey under way

by Rick Patrie
News Editor

HARDIN COUNTY – Hardin County is holding a special meeting and also conducting a study to better understand the preparedness needs and risk perceptions of its residents. It is part of the County's Hazard Mitigation Plan update process. Already, a Community Preparedness questionnaire is being distributed throughout the county.

This survey questionnaire provides an opportunity for residents to share their opinions and participate in the hazard mitigation planning process, which is a requirement of the Federal Emergency Management Agency (FEMA). All residents in Hardin County are invited to participate. To access the online version of the questionnaire, please go to:

http://hardin.disastersurvey.sgizmo.com/s3/

For a hard copy version of the plan, please contact Hardin County Emergency Management at (641) 939-8132.

The questionnaire should only take about 10 minutes to complete. All responses will be kept confidential, and participation is strictly voluntary.

"Residents' input and

(continued on page 3)

EMERGENCY MANAGEMENT
Hardin County Iowa

1031 Edgington Ave P.O. Box 557, Eldora Iowa 50627
(641) 939-8132 | | rwarnell@hardincountyia.gov

Community Stakeholders,

My Name is Roxane Warnell. I serve as the Local Emergency Management Coordinator for Hardin County. The Emergency Management Commission is working on an update to the current Hardin County Mitigation Plan that was adopted in 2011. This plan will help the County determine important strategies to reduce or eliminate the loss of life and property damages resulting from natural and human-caused hazards.

As part of the planning process, Hardin County is conducting an important study to better understand the emergency preparedness needs and risk perceptions of its residents and stakeholders, and to ensure we receive comment and feedback from the whole community in order to create a plan that addresses the needs of our County and the concerns of our valued residents and private/public partners. In our efforts to look to the future and engage in meaningful planning before disasters strike, we are enlisting the help of neighborhood groups, non-profits, public officials, local businesses, development organizations, academic institutions, and volunteers to assist us in distributing the Hardin County Emergency Preparedness Questionnaire with the end goal of making our community safer, healthier, and more economically resilient.

As one of Hardin County's major employers, I was hoping your organization could assist me in distributing this questionnaire amongst your employees. By assisting us, we will provide your business/organization with a custom report about the preparedness needs and perceptions of your employees. You can help us promote the questionnaire by sharing the provided link via your internal listserv or by attaching/sending the provided letter with other employee-related correspondence. You can also post the provided letter on bulletin boards.

The questionnaire can be taken online, and can be completed in less than 10 minutes. If you choose to participate, please use this custom web link, which has been created specifically for your organization:

Serving the communities of; Ackley, Alden, Buckeye, Eldora, Hubbard, Iowa Falls, New Providence, Radcliffe, Owasa, Steamboat Rock, Union & Whitten.

LINK to Questionnaire: [INSERT CUSTOM LINK]

The provided Link/URL enables me to offer you a custom report about your business/organization.

I have also included a sample letter/message that you can modify and distribute to your employees by e-mail or hardcopy, as convenient. This "Sample" message provides the necessary background and rationale for this study and solicits your employees' participation in this important initiative. If you have any questions, please do not hesitate to call me. I thank you for your consideration and assistance with this task.

Respectfully,
Roxane Warnell

Note: The County is utilizing the services of Integrated Solutions Consulting to support us in developing the Hazard Mitigation Plan, and will be assisting the County in promoting this questionnaire. If you receive correspondence from Integrated Solutions Consulting, please know that they are supporting the County in this effort.

EMERGENCY MANAGEMENT
Hardin County Iowa

1031 Edgington Ave P.O. Box 557, Eldora Iowa 50627
(641) 939-8132 | | rwarnell@hardincountyia.gov

Community Stakeholders,

My Name is Roxane Warnell. I serve as the Local Emergency Management Coordinator for Hardin County. The Emergency Management Agency is working on an update to the current Hardin County Mitigation Plan that was adopted in 2011. This plan will help the County determine important strategies to reduce or eliminate the loss of life and property damages resulting from natural and human-caused hazards.

As part of the planning process, Hardin County is conducting an important study to better understand the emergency preparedness needs and risk perceptions of its residents and stakeholders, and to ensure we receive comment and feedback from the whole community in order to create a plan that addresses the needs of our County and the concerns of our valued residents and private/public partners. In our efforts to look to the future and engage in meaningful planning before disasters strike, we are enlisting the help of all residents (those who live and/or work in Hardin County) to take the Hardin County Emergency Preparedness Questionnaire with the end goal of making our communities safer, healthier, and more economically resilient.

You have been invited to complete this short 10-minute online questionnaire. The questionnaire is voluntary and completely anonymous. Please be honest and we encourage you to provide any additional comments and/or feedback.

Please use and/or click the following link to access the questionnaire:

Respectfully,
Roxane Warnell

Serving the communities of; Ackley, Alden, Buckeye, Eldora, Hubbard, Iowa Falls, New Providence, Radcliffe, Owasa, Steamboat Rock, Union & Whitten.

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Appendix C: STAPLEE Evaluations

The following is a sampling of the STAPLEE evaluations that were conducted as part of the 2017 update effort.

STAPLEE ACTION EVALUATION TABLE: Ackley

STAPLEE Criteria Considerations

\+ Favorable - Less favorable N Not Applicable

Alternative Actions	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)				
	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws
Hail Awareness	+		+			+	+	+	+	+	+		+		+	+	+					+	+
Structual Failure	+	+	+					+	+	+	+		+		+		+				+	+	+

STAPLEE ACTION EVALUATION TABLE: City of Alden

STAPLEE Criteria Considerations

+ Favorable - Less favorable N Not Applicable

Alternative Actions	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)				
	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws
Procure Trash Pumps	+	+	+	−	+	+	+	−	+	+	+	N	N	N	N	+	N	N	N	N	N	N	+
Generator and electrical fixtures for school	+	+	+	+	+	N	−	−	+	+	+	+	+	N	+	−	N	−	N	N	N	N	+
Generator for Senior Center	+	+	+	+	+	N	−	−	+	+	+	+	+	N	+	−	N	−	N	N	N	N	+
New water well to increase capacity for the city	+	+	−	+	+	−	−	−	+	+	+	N	N	N	+	−	+	−	−	N	−	N	N
Enhance greenspace by the river and ensure adequate safety measures are included to address periodic flooding	−	−	+	+	+	−	−	−	+	+	N	+	+	−	+	−	N	−	+	+	+	+	+
Ensure Senior Citizen Centers have NOAA weather radios because sirens cannot be heard there	+	+	+	+	+	N	−	N	N	N	+	N	N	N	N	—	N	−	N	N	N	N	N

Buc Keye

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STAPLEE ACTION EVALUATION TABLE: City of Buckeye

Alternative Actions	STAPLEE Criteria Considerations (+ Favorable - Less favorable N Not Applicable)																						
	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)				
	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws
Generator for Community Building (storm shelter)	+	+	+	K	L	+	K	+	+	NA	+	NA	NA	NA	L	K	+	+	NA	NA	NA	+	+

STAPLEE ACTION EVALUATION TABLE: City of Eldora

STAPLEE Criteria Considerations

+ Favorable - Less favorable N Not Applicable

Alternative Actions	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)				
	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws
Develop new EOP for City of Eldora	+	+	+	+	+	−	−	−	+	+	+	+	+	+	+	−	N	−	N	N	N	N	N
Build new emergency medical service facility	+	+	−	+	+	−	−	−	+	+	+	+	+	+	+	−	+	−	N	N	N	N	N
Eliminate blighted structures and residences	+	N	−	+	+	−	−	N	+	+	N	+	+	+	+	−	+	−	−	N	−	N	+

STAPLEE ACTION EVALUATION TABLE: City of Hubbard

STAPLEE Criteria Considerations

+ Favorable - Less favorable N Not Applicable

Alternative Actions	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)				
	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws
Identify community shelter and resources	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	N	+	+
6 inch water transfer pump	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	N	+	+
Repair storm sewer system	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	N	+	+
Repair sanitary sewer system	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	N	+	+

STAPLEE ACTION EVALUATION TABLE: City of Iowa Falls

STAPLEE Criteria Considerations

+ Favorable - Less favorable N Not Applicable

Alternative Actions	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)				
	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws
Add backup city government operation facility	+	-	+	+	-	-	+	-	+	-	+	-	+	-	+	-	+	-	N	N	N	N	N
Repair or replace River St and River Road Bridges	+	+	+	+	-	-	+	-	+	+	+	-	+	-	+	-	+	-	N	N	N	N	N
Investigate new technology to keep citizens better informed	+	+	-	+	-	-	+	+	+	-	+	-	+	-	+	-	+	+	N	N	N	N	N

STAPLEE ACTION EVALUATION TABLE: City of New Providence

STAPLEE Criteria Considerations

+ Favorable - Less favorable N Not Applicable

Alternative Actions	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)				
	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws
Portable generator for fire dept	+	+	+	+	N	+	+	+	+	+	+	+	+	+	+	+	+	+	N	N	N	N	+
Acquisition of washer/dryer (heavy duty) for fire dept. apparel	+	+	+	N	+	N	+	+	+	+	+	N	N	+	N	+	−	−	N	N	N	N	+
Larger/new fire dept. building	+	+	N	+	N	N	−	−	N	+	N	+	+	+	+	−	N	−	N	N	N	N	+
Veterans Memorial Preservation (lighting, vandalism, maintenance)	+	+	+	N	N	+	−	−	+	+	+	N	N	N	+	+	−	+	N	N	N	N	+
Preservation/maintenance of Historical Round House	+	+	+	N	+	−	−	−	+	+	+	+	+	+	+	−	+	−	N	N	N	N	+
Water tower backup/maintenance	+	+	+	+	+	−	−	−	+	+	+	+	+	+	+	−	+	−	N	N	N	N	+
Mitigate failure of lagoon system (structure, natural disaster etc.)	+	+	+	+	+	−	−	−	+	+	+	+	+	+	+	−	+	−	+	N	+	+	+
Education/training regarding terrorism/bomb threat/shootings	+	+	+	+	+	−	−	N	+	+	+	+	+	N	N	+	N	+	N	N	N	N	N
Procure generator(s) to run water pump at water tower	+	+	+	+	+	N	−	−	+	+	+	+	+	N	+	−	+	−	N	N	N	N	+
Acquire communications equip. for fire dept.	+	+	+	+	+	N	−	−	+	+	N	N	N	N	N	−	N	−	N	N	N	N	+

STAPLEE ACTION EVALUATION TABLE: City of Radcliffe

Alternative Actions	STAPLEE Criteria Considerations + Favorable - Less favorable N Not Applicable																						
	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)				
	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws
Backup water plan	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

STAPLEE ACTION EVALUATION TABLE: City of Steamboat Rock

STAPLEE Criteria Considerations

\+ Favorable - Less favorable N Not Applicable

Alternative Actions	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)				
	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws
Procure and place backup generator at the City's lift station	+	+	+	+	+	−	−	−	+	+	+	+	+	+	+	−	N	−	N	N	N	N	+
Add culvert to county road	+	+	+	+	+	−	−	−	+	+	+	+	+	+	+	−	+	−	N	N	N	N	+
New generator for the community building	+	+	+	+	+	−	−	−	+	+	+	+	+	+	+	−	N	−	N	N	N	N	+

STAPLEE ACTION EVALUATION TABLE: City of Union

Alternative Actions	STAPLEE Criteria Considerations + Favorable - Less favorable N Not Applicable																								
	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)					
	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws	
Sanitary sewer and lagoon rehabilitation	+	+	+	+	+	-	-	-	+	+	+	+	+	+	+	-	+	-	+	N	+	+	+	
Evacuation plan	+	+	+	+	+	-	-	-	+	+	+	+	+	+	+	-	+	-	N	N	N	N	N	

STAPLEE ACTION EVALUATION TABLE: Unincorporated Hardin County

STAPLEE Criteria Considerations

\+ Favorable - Less favorable N Not Applicable

Alternative Actions	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)				
	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws
Erosion control along highways, conservation, and bridges	+	+	+	+	+	-	-	-	+	+	+	+	+	+	+	-	N	N	+	N	N	+	+
Provide livestock containment in the event of MVAS	+	N	+	N	N	-	-	-	+	+	+	+	+	+	+	-	N	-	N	N	N	N	N
Mitigate stormwater and sewage backups	+	+	+	+	+	-	-	-	+	+	+	+	+	+	+	-	+	-	+	N	+	+	+
Create and implement a PIO program for county wide events	+	+	+	+	+	-	N	N	+	+	+	+	+	+	N	N	N	N	N	N	N	N	N
Special needs population sheltering plan	+	+	+	+	+	-	-	-	+	+	+	+	+	+	N	-	N	-	N	N	N	N	N
Business continuity plan for business training	+	+	+	+	+	-	-	-	+	+	+	+	+	+	+	-	+	-	N	N	N	N	N
Tourism and natural resource preservation of trails	+	+	+	+	+	-	-	-	+	+	+	+	+	+	+	-	+	-	+	+	N	+	+

STAPLEE ACTION EVALUATION TABLE: Alden Community School District

Alternative Actions	STAPLEE Criteria Considerations (+ Favorable - Less favorable N Not Applicable)																						
	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)				
	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws
Elevate and/or relocate the boiler and heat/ventilation control system at Alden Community Schools	+	+	+	+	+	+	-	-	+	+	+	+	+	+	+	-	N	-	N	N	N	N	+
Install device on classroom doors to prevent unwanted entry	+	+	+	+	+	N	-	N	+	+	+	+	+	-	+	-	N	-	N	N	N	N	N

STAPLEE ACTION EVALUATION TABLE: ENP Community Schools

STAPLEE Criteria Considerations

\+ Favorable - Less favorable N Not Applicable

Alternative Actions	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)				
	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws
Elevate and/or relocate the boiler and heat/ventilation control system in schools/facilities where the boilers and controls are currently located in the basements.	+	N	−	+	+	+	−	+	+	+	+	+	+	+	N	+	+	+	+	+	N	+	+
Purchase generators and hookups for use in school buildings and offices	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+	+
Find and install a device to every classroom door that would prevent an active shooter from bursting through the door and harming the people in the classroom. Conduct Active Shooter Training	+	+	+	+	+	−	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+	+

STAPLEE ACTION EVALUATION TABLE: Iowa Falls Community School District

STAPLEE Criteria Considerations

\+ Favorable - Less favorable N Not Applicable

Alternative Actions	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)				
	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/ Water	Effect on Endangered Species	Effect on HAZMAT/ Waste Sites	Consistent with Community Environmental Goals	Consistent with Federal Laws
Elevate and/or relocate the boiler and heat/ventilation control system at Rock Run and Pineview Elementary Schools	+	+	+	+	+	+	−	−	+	+	+	+	+	+	+	−	N	−	N	N	N	N	+
Install device on classroom doors to prevent unwanted entry	+	+	+	+	+	N	−	N	+	+	+	+	+	+	+	−	N	−	N	N	N	N	N

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Appendix D: Acronyms and Definitions

ADA American Disabilities Act
ASFPM Association of State Floodplain Managers
BCA Benefit Cost Analysis
BCR Benefit Cost Ratio
BMPs Best Management Practices
CBP Customs and Border Protection
CDBG Community Development Block Grant
CFR Code of Federal Regulations
CRS Community Rating System
CTP Cooperating Technical Partners
DFO Disaster Field Office
DMA2K Disaster Mitigation Act of 2000
DNR Department of Natural Resources
DOT Department of Transportation
EA Environmental Assessment
EMPG Emergency Management Performance Grant
EOC Emergency Operations Center
EPA Environmental Protection Agency
EWP Emergency Watershed Protection
FCO Federal Coordinating Officer
FEMA Federal Emergency Management Agency
FIA Flood Insurance Administration
FIRM Flood Insurance Rate Map
FIS Flood Insurance Study
FMA Flood Mitigation Assistance
FP&S Fire Prevention and Safety
GIS Geographic Information System
HAZUS
HMPG Hazard Mitigation Grant Program
HMTAP Hazard Mitigation Technical Assistance Program
HSGP Homeland Security Grant Program
HUD Housing and Urban Development
IA Individual Assistance
IAP Incident Action Plan
IBC International Building Code
ICC Increased Cost of Compliance
ICS Incident Command System
LCA Local Capability Assessment
MOU Memorandum of Understanding
NEPA National Environmental Policy Act
NFIP National Flood Insurance Program
NFIRA National Flood Insurance Reform Act
NRCS Natural Resources Conservation Service

OMB Office of Management and Budget
PA Public Assistance
PDA Preliminary Damage Assessment
PDM Pre-Disaster Mitigation
RFC Repetitive Flood Claims
RL Repetitive Loss
RLP Repetitive Loss Property
RLR Repetitive Loss Report
SFHA Special Flood Hazard Area
SHMO State Hazard Mitigation Officer
SHMP State Hazard Mitigation Plan
SHS State Historical Society
SHSP State Homeland Security Program
SRL Severe Repetitive Loss
THIRA Threat and Hazard Identification and Risk Assessment
UASI Urban Areas Security Initiative
UDC Uniform Dwelling Code
USDA U. S. Department of Agriculture

Appendix E: Benefit-Cost Analysis Guidance

Benefit-Cost Analysis is an important mechanism used among local, state, tribal, and federal governments in evaluating hazard mitigation projects. It is a critical part of the hazard mitigation planning process for project development. As part of mitigation project development, strategies in the All Hazard Mitigation Plan should be assessed using a FEMA/DHS approved benefit cost method. This should be done for all projects including ones not intended to be funded by FEMA/DHS grants. This is critical to ensure that all funds, regardless of their source, are appropriately considered. The County does have funds available for mitigation projects, but they are not unlimited, and projects must demonstrate that the benefit is worth the cost.

Benefit-cost analysis compares the benefits and costs of a proposed hazard mitigation project. For example, the benefit of a tornado shelter is the reduction of injury and loss of life. This benefit is monetized using Federal guidelines for injury and loss of life. The costs considered are those necessary to implement and maintain the specific mitigation project under evaluation. The two, benefit and cost, can then be compared.

Costs are generally well determined for specific projects for which engineering design studies have been completed. Benefits, however, must be estimated probabilistically because they depend on the improved performance of the building or facility to future hazard events, the timing and severity of which are random variables. The benefits calculated by the program are expected annual benefits, which are estimated over the useful lifetime of the mitigation project. To account for the time value of money, a net present value calculation must be performed. This calculation is done automatically in the program, using the discount rate and project useful lifetime entered by the user. Results of benefit-cost calculations are presented two ways: first, the benefit-cost ratio (benefits divided by costs) and second, the net benefits (benefits minus costs).

To estimate future damages (and the benefits of avoiding them), the probabilities of future events must be considered. This profoundly affects whether or not a proposed hazard mitigation project is cost effective. Mitigation may not be cost-effective even though a particular facility experienced great damage in a past event due to an event with a low probability of occurrence (i.e., a 500- or 1000-year event). Conversely, mitigation may be cost effective even though the particular facility experienced little or no damage in a past event, due to a higher probability of occurrence.

Technical guidelines developed by FEMA for performing an approved Benefit-Cost Analysis are provided in the June, 2009 FEMA publication “Final BCA Reference Guide”, which can be found online at https://www.fema.gov/media-library/assets/documents/18870. An outline is available below:

FEMA’s Benefit-Cost Analysis (BCA) program

FEMA’s Benefit-Cost Analysis (BCA) program is a key mechanism for evaluating certain hazard mitigation projects to determine eligibility and assist in Federal funding decisions. The FEMA BCA program is comprised of methodologies and software for a range of major natural hazards.

To be eligible for Federal funding assistance, a BCA should show that the project is cost effective and will reduce future damages and losses from natural disasters. Mitigation projects can include: construction projects, education programs, publications or videos, building code enhancements, and mitigation planning activities. A reduction in losses or prevention of future damages is the benefit of the project.

Cost, as it relates to mitigation, is the price to develop and maintain a mitigation project. The project cost estimate, as used in the FEMA mitigation grant guidance, includes all costs associated with the proposed mitigation project, and represents the best estimated costs for the activity.

Estimates are required for the following cost item categories:

- Anticipated cash and in-kind Federal match
- Equipment
- Labor
- Materials
- Subcontract costs

Other costs are those that do not fall neatly into one of these categories, but must be delineated in the BCA if applicable to the project. The FEMA BCA tool utilizes a six-step cost-estimating methodology:

- Step 1: develop an estimate of pre-construction or non-construction costs
- Step 2: develop an estimate of construction costs
- Step 3: develop an estimate of ancillary costs
- Step 4: develop an estimate of annual maintenance costs
- Step 5: adjust the estimate to account for project timing and whether the data is current
- Step 6: review and confirm the cost estimate

The following descriptions cover each hazard type and potential mitigation projects associated with each.

Damage Frequency Approach (DFA)

This module is applicable to any natural hazard as long as a relationship can be established between how often natural hazard events occur and how much damage and losses occur as a result of the events. The advantage of the DFA module is its flexibility—it can be used for a wide range of hazards including flood, landslides, snow/ice storms, and earthquake mitigation for utility projects. The module requires historical damage data for two or more events and typically provides results that are less accurate than those from the Full Data BCA modules.

Tornado

A tornado is a violent, rotating, funnel-shaped cloud that extends from a thunderstorm to the ground, with winds that can reach 300 miles per hour. A tornado is among the most destructive forces of nature.

A tornado is classified by the Enhanced Fujita (EF) Scale, which not only correlates wind speeds with damage, but also takes into account the quality and type of structure that has been damaged to estimate wind speeds. The EF Scale is from EF0 (weakest) to EF5 (strongest).

The Tornado Safe Room module is used for projects providing safe room mitigation for high-wind events, and is used only to evaluate the life safety benefits of the mitigation project. Safe room projects are for tornadoes only.

Wildfire

The Wildland/Urban Interface (WUI) module takes into account LANDFIRE data, timber costs, fire suppression costs, and project effectiveness. WUI fires are essentially wildfires with additional fuel load from structures.

Possible projects include:

- Defensible Space Activities
    - Clearing out all combustibles
    - Minimizing the volume of vegetation
    - Replacing flammable vegetation with less-flammable species
- Hazardous Fuels Reduction Activities
    - Vegetation thinning or reduction of flammable vegetative materials for the protection of life and property
        - Slash removal
        - Vegetation clearing or thinning
        - Vegetation management
        - Vegetation removal
        - Vertical clearance of tree branches
- Ignition-Resistant Construction Activities
    - Involves the use of non-combustible materials and technologies on new and existing structures

Flood

A flood is a partial or complete inundation of normally dry land areas from:

- Overland flow of a lake, river, stream, creek, slough, ditch, or the ocean
- The unusual and rapid accumulation of rainfall runoff or snowmelt
- Mudflows or the collapse of shoreline land

Floods are the most common and most costly of all natural disasters. In fact, most communities throughout the United States will experience some flooding. The Flood module utilizes Flood Insurance Study (FIS) data to establish risk, while providing the most accurate BCA results. This module takes into account probabilities of flooding; building type and associated damages; and the costs of contents, displacement, and loss of function.

Possible projects include:

- Acquisition/ Demolition
- Acquisition/ Relocation
- Dry floodproofing
- Elevation
- Minor localized flood reduction projects including culverts, floodgates, minor floodwall systems, and stormwater management activities.
- Mitigation reconstruction

FEMA will only consider a subapplication for an ignition-resistant construction project when the property owner has previously created defensible space and agreed to maintain the space, or the subapplication includes both the defensible space and ignition-resistant construction project as part of the same project subapplication.

Appendix F: Federal Funding Sources and Programs

Many local governments are in a quandary to implement measures to secure and protect property with today's economic constraints. Many programs, including FEMA's Pre-Disaster Mitigation Program and the Hazard Mitigation Grant Program, are the victims of budget cuts. DHS' 2006 Emergency Management Performance Grants – Program Guidance and Application Kit states that "emergency managers at all levels should leverage all available funding and resources from multiple sources wherever possible…(and)…should not restrict their activities to only Federal funding to achieve the goals outlined within their strategies. Rather, special attention should be given to leveraging relevant funding sources and resources that support"… mitigation activities. [1] In addition to federal programs, the State homeland security and preparedness programs and resources may be available to meet the objectives outlined in the All-Hazard Mitigation Plan. This section outlines potential funding sources.

FEDERAL PROGRAMS AND FUNDING

DHS: FEMA

Hazard Mitigation Grant Program

The Hazard Mitigation Grant Program (HMGP) administered by the Federal Emergency Management Agency (FEMA) provides grants to State, tribal, and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the program is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster.

Pre-Disaster Mitigation Program

Funding for the Pre-Disaster Mitigation (PDM) program is provided through the National Pre-Disaster Mitigation Fund to assist State, tribal, territorial and local governments in implementing cost-effective hazard mitigation activities that complement a comprehensive mitigation program. The PDM program was allocated $30,000,000 in FY 2015. Project priorities are:

Mitigation planning and project sub-applications

Flood Mitigation Assistance Grant Program

The Flood Mitigation Assistance (FMA) Grant Program provides funding to assist States and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the National Flood Insurance Program (NFIP). According to the FY 2015 Flood Mitigation Assistance (FMA) Grant Program Fact Sheet, $150,000,000 is available to States, Tribal, Territorial, and local governments. FEMA will prioritize eligible planning and project sub-applications as follows:

Mitigation planning sub-applications consistent with 44 CFR Part 201 up to a maximum of $100,000 federal share per applicant.

Projects that mitigate at least 50 percent of structures that meet definition part (b)(ii) of a Severe Repetitive Loss (SRL) property: At least 2 separate NFIP claim payments have been made with the cumulative amount of such claims exceeding the market value of the insured structure.

Project sub-applications that mitigate at least 50 percent of structures that meet the definition of a Repetitive Loss (RL) property: Have incurred flood-related damage on 2 occasions, in which the cost of the repair, on the average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event.

Projects that mitigate at least 50 percent of structures meet definition part (b)(i) of a SRL property: 4 or more separate NFIP claims payments have been made with the amount of each claim exceeding $5,000, and with the cumulative amount of claims payments exceeding $20,000.

Projects that will reduce the risk profile in communities through mitigation of the largest number of contiguous NFIP-insured properties.

Repetitive Flood Claims and Severe Repetitive Loss Grant Program

The Repetitive Flood Claims (RFC) and Severe Repetitive Loss (SRL) grant programs were authorized by the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004 (P.L. 108–264), which amended the National Flood Insurance Act (NFIA) of 1968 (42 U.S.C. 4001, et al). According to FEMA, “The SRL Grant Program makes funding available for a variety of flood mitigation activities. Under this program, FEMA provides funds to state and local governments to make offers of assistance to NFIP-insured SRL residential property owners for mitigation projects that reduce future flood losses through:

Acquisition or relocation of at-risk structures and conversion of the property to open space;

Elevation of existing structures; or Dry floodproofing of historic properties.

SRL mitigation grants are provided to eligible applicant states/tribes/territories that, in turn, provide subgrants to local governments or communities. The applicant must have a FEMA-approved mitigation program in place that includes SRL properties” (Guidance for Severe Repetitive Loss Properties, 2011). According to FEMA, “RFC funds may only be used to mitigate structures that are located within a state or community that is participating in the NFIP that cannot meet the requirements of the Flood Mitigation Assistance (FMA) program because they cannot provide the non-federal cost share, or do not have the capacity to manage the activities” (fema.gov).

Mitigation Technical Assistance Program

There are three major mitigation technical assistance programs that provide technical support to state/local communities, FEMA Regional and Headquarters Mitigation staff in support of mitigation initiatives. These programs include the Hazard Mitigation Technical Assistance Program, the National Earthquake Technical Assistance Program, and the Wind and Water Technical Assistance Program.

They provide the technical support that is necessary to mitigate against potential loss of lives and minimize the amount of damage as a result of a natural disaster.

Staffing for Adequate Fire and Emergency Response Grant Program

The goal of the Staffing for Adequate Fire and Emergency Response (SAFER) Grant Program is to assist local fire departments with staffing and deployment capabilities in order to respond to emergencies, and assure that communities have adequate protection from fire and fire-related hazards. For FY 2015, an estimated $340,000,000 is set aside to assist fire departments in achieving the SAFER goal. There are two program priorities: to hire firefighters, and to recruit and retain volunteer firefighters.

Fire Prevention and Safety Grant Program

The Fire Prevention and Safety (FP&S) Grant Program had $34,000,000 available in FY 2014 in support of two activities: fire prevention and safety (including general education/awareness, code enforcement/awareness, fire & arson investigation, and national/state/regional programs and studies) and research and development (including clinical studies, technology and product development, database system development, dissemination and implementation research, and preliminary studies).

Homeland Security Grant Program

Comprised of three interconnected grant programs, the Homeland Security Grant Program (HSGP) seeks to support the building, sustainment, and delivery of core capabilities essential to achieving the National Preparedness Goal, which is “A secure a resilient nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that post the greatest risk.” The HSGP grant programs are the State Homeland Security Program (SHSP), the Urban Areas Security Initiative (UASI), and Operation Stonegarden (OPSG).

State Homeland Security Program

In FY 2015, $402,000,000 was allocated to the State Homeland Security Program (SHSP). Although only states and territories can apply for SHSP funds, the program is directed at supporting States, Tribes, and local governments to address high-priority preparedness gaps identified in the Threat and Hazard Identification and Risk Assessment (THIRA) with relation to terrorism. Award methodology is based on the minimum amounts as legislatively mandated (0.35% of total funds for states, Washington D.C., and Puerto Rico and 0.08% of total funds for American Samoa, Guam, the Northern Mariana Islands and the U.S. Virgin Islands), DHS’ risk methodology, and the anticipated effectiveness of proposed projects.

Operation Stonegarden

Operation Stonegarden (OPSG) is designed to support cooperation and coordination between Customs and Border Protection (CBP), the United States Border Patrol (USBP), and local, Tribal, territorial, State, and Federal law enforcement agencies. In FY 2015, $55,000,000 is allocated to this program. States and territories that border Canada, Mexico, or international waters are eligible. Counties and federally-recognized Tribal governments within those states are eligible to apply for funds through their State Administrative Agency (SAA).

Cooperating Technical Partners Program

The Cooperating Technical Partners (CTP) Program seeks to strengthen and increase the effectiveness of the National Flood Insurance Program (NFIP) through fostering relationships among all levels of government to reduce flood losses and promote community resiliency. The total funding for Region 4 in FY 2015 was $12,973,272. The main focus in FY 2015 for the CTP program is to support the mission and objectives of FEMA's Risk MAP (Mapping, Assessment, and Planning) program.

Emergency Management Performance Grant

In FY 2015, $350,100,000 was allocated to the Emergency Management Performance Grant (EMPG). This program is designed to assist state, local, territorial, and tribal governments to prepare for all hazards. The State Administrative Agency (SAA) or Emergency Management Agency (EMA) can apply for the funding. All 50 states, Washington D.C., and Puerto Rico will receive at least 0.75% of total funding. American Samoa, Guam Northern Mariana Island and the U.S. Virgin Island will each receive at least 0.25% of total funding. The balance will be distributed on a population-share basis.

Homeland Security National Training Program Continuing Training Grants Program

The Homeland Security National Training Program Continuing Training Grants Program (HSNTP/CTG) had $11,521,000 for FY 2015 to be used for training focused on cybersecurity, hazardous materials, countering violent extremism, and rural training. Eligible entities (including state, local, tribal, and territorial entities) must have existing programs or demonstrate expertise relevant to the focus areas.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Immunization Research, Demonstration, Public Information and Education Grants

The Immunization Research, Demonstration, Public Information and Education Grant program assists States, political subdivisions of States, and other public and private nonprofit entities to conduct research, demonstration projects, and provide public information on vaccine-preventable diseases and conditions. Project funds may be used for the costs associated with organizing and conducting these projects, and in certain circumstances, for purchasing vaccine.

Requests for direct assistance (i.e., "in lieu of cash") for personnel, vaccines, and other forms of direct assistance will be considered. Funds may not be used to supplant existing immunization program activities.

Immunization Grants

Immunization Grants assist States and communities in establishing and maintaining preventive health service programs to immunize individuals against vaccine-preventable diseases (including measles, rubella, poliomyelitis, diphtheria, pertussis, tetanus, hepatitis B, hepatitis A, varicella, mumps, haemophilus influenza type b, influenza, and pneumococcal pneumonia). Grant funds may be used for costs associated with planning, organizing, and conducting immunization programs directed toward vaccine-preventable diseases and for the purchase of vaccine; and for the implementation of other program elements, such as assessment of the problem; surveillance and outbreak control; information and education; adequate notification of the risks and benefits of immunization; compliance with compulsory school immunization laws; vaccine storage, supply, and delivery; citizen participation; and use of volunteers. Vaccine will be available "in lieu of cash" if requested by the applicants. Requests for personnel and other items "in lieu of cash" will also be considered. Vaccine purchased with grant funds may be provided to private practitioners who agree not to charge for vaccine. Grant funds may be used to supplement (not substitute for) existing immunization services and operations provided by a State or locality.

DEPARTMENT OF THE INTERIOR

River, Trail, and Conservation Assistance Program

The goal of this program is to work with community groups and local and State governments to conserve rivers, preserve open space, and develop trails and greenways; with the goal of helping communities achieve on-the-ground conservation successes for their projects.

ENVIRONMENTAL PROTECTION AGENCY

Wetland Program Development Grants

The Wetland Program Development Grants are designed to assist state, tribal, and local government agencies in building their wetland management programs. Grant funds can be used to develop new or refine existing wetland protection, management or restoration programs. The types of projects funded through this program are very diverse. In the past, states, tribes and local governments have pursued a wide range of activities from very broad policy or regulatory projects, to development of specific technical approaches/methods for wetland health or restoration.

Nonpoint Source Implementation Grants – 319 Program

Through its 319 program, EPA provides formula grants to the states and tribes to implement nonpoint source projects and programs in accordance with section 319 of the Clean Water Act (CWA). Nonpoint source pollution reduction projects can be used to protect source water areas and the general quality of water resources in a watershed. Examples of previously funded projects include installation of best management practices (BMPs) for animal waste; design and implementation of BMP systems for stream, lake, and estuary watersheds; basinwide landowner education programs; and lake projects previously funded under the CWA section 314 Clean Lakes Program. For FY 2014, tribal base grants were from $30,000 to $50,000, and competitive grant awards could be up to $100,000.

Watershed Organizations

EPA recognizes that strong and committed watershed organizations and local governments are necessary partners to achieve the goals of the Clean Water Act and improve our nation's water quality. To support these local efforts, the EPA is working to: build the capacity of watershed organizations to develop and implement sustainable funding plans to obtain achieve environmental results; and, build the capacity of private and public funders to channel their resources towards good watershed initiatives.

US DEPARTMENT OF AGRICULTURE

Emergency Watershed Protection Program

The USDA Natural Resources Conservation Service's (NRCS) Emergency Watershed Protection (EWP) Program helps protect lives and property threatened by natural disasters such as floods, hurricanes, tornadoes, droughts, and wildfires. There are two parts of the program: EWP - Recovery and EWP - Floodplain Easement (FPE).

EWP – Recovery: The EWP Program is a recovery effort program aimed at relieving imminent hazards to life and property caused by floods, fires, windstorms, and other natural occurrences. Public and private landowners are eligible for assistance, but must be represented by a project sponsor that must be a legal subdivision of the State, such as a city, county, township or conservation district, and Native American Tribes or Tribal governments. NRCS may pay up to 75 percent of the construction cost of emergency measures. The remaining 25 percent must come from local sources and can be in the form of cash or in-kind services.

EWP – Floodplain Easement: Privately-owned lands or lands owned by local and state governments may be eligible for participation in EWP-FPE. To be eligible, lands must meet one of the following criteria:

Lands that have been damaged by flooding at least once within the previous calendar year or have been subject to flood damage at least twice within the previous 10 years.

Other lands within the floodplain are eligible, provided the lands would contribute to the restoration of the flood storage and flow, provide for control of erosion, or that would improve the practical management of the floodplain easement Lands that would be inundated or adversely impacted as a result of a dam breach.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Community Development Block Grant Program

The Department of Housing and Urban Development sponsors this program, intended to develop viable communities by providing decent housing and a suitable living environment and by expanding economic opportunities primarily for persons of low and moderate income.

Recipients, which include principal cities of Metropolitan Statistical Areas (MSAs), other metropolitan cities with populations of at least 50,000, and qualified urban counties with populations of at least 200,000 (excluding the population of entitled cities), may initiate activities directed toward neighborhood revitalization, economic development, and provision of improved community facilities and services. Specific activities may include public services, acquisition of real property, relocation and demolition, rehabilitation of structures, and provision of public facilities and improvements, such as new or improved water and sewer facilities.

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[1] “The Subcommittee on Economic Development, Public Buildings, & Emergency Management Hearing on The National Preparedness System: What are we preparing for?” ; April 14, 2005. http://www.house.gov/transportation/pbed/04-14-05/04-14-05memo.html

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Appendix G: Mitigation Project Examples

Purpose: The following handout was provided to Steering Committee members, agency/organization representatives, and members of the public to solicit additional mitigation actions for the 2017 update.

Instructions: Please adapt the following examples to the mitigation needs of your jurisdiction and/or organization. These are only **examples**, and does not represent an all-inclusive list of potential actions.

Mitigation planning is best accomplished from a multi-hazard perspective. Reducing the level of risk involving one natural or technological hazard may increase the risk of damage from another hazard. Consequently, it is important to consider that some mitigation alternatives may not be viable given a particular set of hazard conditions.

ALL HAZARDS

MOUs and Agreements

Local governments should establish mutual aid agreements for utility and communications systems, including 9-1-1. Mutual aid or interagency agreements have value for preventing or responding to other hazard or emergency situations, as fire and police departments often do.

- Establish Mutual-Aid Memorandum of Understandings (MOUs) and agreements with key organizations [List the Organization]

Planning and Preparedness

- Continue to improve the County All Hazard Mitigation Plan through annual reviews and incorporation of incident lessons learned
- Conduct annual review of the County Emergency Operations Plan
- Perform Continuity of Operations planning to identify critical functions, essential personnel, vital resources, and critical infrastructure within the county that is necessary to maintain public safety and services
- Expand the community cross-section and membership of the Local Emergency Planning Committee and research methods to increase its role within the county emergency management program.

- Once a community is familiar with the location of its hazardous areas; it may adopt a land use plan, or modify an existing land use plan to:
    - Encourage greater development restrictions on the property.
    - Guide developments away from hazardous areas
    - Reduce density in the hazardous area
- Site Emergency Plans or Emergency Action Plans: Communities can encourage development and testing of internal emergency plans and procedures, including COOP planning, by businesses and other organizations. Communities should develop and test site emergency plans for schools, factories, office buildings, correctional facilities, recreation areas, and other similar facilities.
- Real estate disclosure: Real estate disclosure laws are important because they force a seller to advise a potential buyer about pre-existing conditions. This allows buyers to make more informed decisions about the potential risks involved in owning property, such as whether a property is located in a floodplain or if it had been previously damaged from flood water or any other type of hazard condition.
- Family Disaster Plans and Supply Kits: Communities can encourage residents to prepare themselves by stocking up with necessary items and planning for how family members should respond if any of a number of possible emergency or disaster events strike.

Warning, Public Information and Education

- Enhance awareness and preparedness of residents through CERT and facilitate community training requests for emergency preparedness education
- Continue to enhance emergency preparedness information available to citizens and visitors through the county website and community outreach opportunities
- Make available “new resident” packets to inform residents of potential hazards and threats, and to inform them of warning and outreach tools that are available in the County.
- Develop a multi-faceted public awareness campaign to increase citizen enrollment in the County Emergency Alert System.
- Continue to enhance the communication network related to the delay or closure of county facilities and roadways.
- Install electronic warning signage and permanent road closure barriers on key highways [List Highway or Road]
- Increase use of weather radio announcements to enhance the redundancy of public information delivery in severe weather situations throughout the county.
- Develop season-specific fliers to address hazards and ways each resident (or part-time residents) can mitigate their own risks and mail to residents with their water/utility bill.
- Update [insert community] Website with Emergency Information
- Communities can encourage the use of National Oceanic and Atmospheric Administration (NOAA) weather radios among their residents. NOAA Weather Radio continuously broadcasts National Weather Service forecasts, warnings and other crucial weather information. NOAA Weather Radio also provides direct warnings to the public for natural, man-made, or technological hazards, and it is the primary trigger for activating our country’s Emergency Alert System (EAS) on commercial radio, television, and cable systems.

NATURAL HAZARDS

Drought

- Support state and local tax credits for the installation of water-conserving plumbing and other devices as retrofits.
- Develop water conservation plans, preferably on a watershed basis, that includes emergency conservation measures or directives and the triggers for implementation of each measure or directive.

Severe Temperatures

- Ensure that local plans are in place to manage extreme heat/cold events, especially should power outages accompany the extreme temperature event.
- Ensure that local communities have adequate shelter facilities with properly trained coordinators and/or managers that can address the needs of at-risk populations such as the elderly, the homeless, the disabled and families.
- Ensure that local communities have an adequate monitoring system for housebound at-risk populations.
- Bury water/sewer lines deeper under the streets to prevent frozen main lines
- Install SCADA monitoring on City Water and Sewer Systems

Winter Storms

- Ensure local plans include preparation for and management of the response to winter storm events and especially long-term disruption of power supplies and transportation infrastructure.
- To the extent practical, utilities should be designed and built to resist damage and loss of service during winter storm events, such as placing line underground where appropriate.
- Improve the traffic control on rural roads that are subject to snow drifting and white-out driving conditions.
- Family and Traveler Emergency Preparedness: A local or state government can produce and distribute family and traveler emergency preparedness information relating to severe winter weather hazards.
- Driver Safety: Safety strategies for severe weather events can be included in driver education classes and materials.
- Animal Protection: Farmers and other animal custodians should plan for addressing livestock or other animal needs.
- Snow Fences: Using snow fences or “living snow fences” (rows of trees or other vegetation) can limit blowing and drifting of snow over critical roadway segments.

Tornado, Winds, Hail, Lightning and Severe Thunderstorms

- Identify hazard notification systems that are device-neutral or do not require a personal device to receive warnings.
- Obtain increased funding (or continued funding) for stand-alone safe rooms, safe rooms linked to schools and communities facilities, and community shelters to prevent the future loss of life.
- Require manufactured homes to use tie-downs with anchors [If applicable]
- Establish severe weather protective areas within county parks and open space.

- Develop a sign retrofitting or new sign program to decrease their vulnerability to wind hazards.
- Surge Protectors and Lightning Protection: Surge protection can be installed on critical electronic equipment. Lightning protection devices and methods, such as lightning rods and grounding, can be installed on a community's communications infrastructure and other critical facilities.
- Construction Standards and Techniques: To strengthen public and private structures against severe wind damage, communities can require or encourage wind engineering measures and construction techniques that may include structural bracing, straps and clips, anchor bolts, laminated or impact-resistant glass, reinforced pedestrian and garage doors, window shutters, waterproof adhesive sealing strips, or interlocking roof shingles. Also, architectural design can make roofs less susceptible to uplift.
- Temporary Debris Disposal: Temporary debris disposal sites can be protected by fencing and/or located away from populated areas.
- Tree Management: Tree pruning near power lines can reduce the potential for trees falling on and breaking power lines.

Flooding

Ninety percent of federal disaster declarations are for flood events. Response and recovery costs can be extremely high, so where risks are apparent it makes sense to take actions that prevent damage from occurring. If flood damage cannot be fully prevented, there may be mitigation techniques that lessen the damage. Flooding addressed in this section can be from high ground water, overland flooding from rivers or streams, or from a dam failure.

- Support the update of out-of-date flood insurance maps, if applicable.
- Support federal action to develop and disseminate maps that show flood hazards under future conditions such as increased impervious area upstream and potential effects of climate change. To the extent practicable, maps should predict the extent of flooding at least 50 years into the future.
- Consider additional stream gauges, especially in communities with repetitive flood events or repetitive (flood) loss structures.
- Relocate, elevate, and/or floodproof flood-prone property – especially those properties identified as historically or culturally significant to the community.
- Maintain dry-access roads by elevating them above the base flood elevation [if applicable]
- Roads are needed to get people and goods from place to place. In addition to planning for traffic control during floods, there are various construction and placement factors to consider when building roads. To maintain dry access, roads should be elevated above the base flood elevation. However, if a road creates a barrier it can cause water to pond. Where ponding is problematic, drainage and flow may be addressed by making changes to culvert size and placement. In situations where flood waters tend to wash roads out, construction, reconstruction, or repair can include not only attention to drainage but also stabilization or armoring of vulnerable shoulders or embankments.
- Develop an integrated strategic flood warning plan that addresses the repair, repositioning, or upgrade of existing flood warning systems.
- Conduct channel stabilization, improvement, and restoration in [insert] to allow greater drainage and water flow capacity.
- Provide a public education program to inform residents about mitigation measures and means for them to protect themselves and their property during a flood.

- Land with structures may be purchased by and titled in the name of a local governing body that can remove structures and enforce permanent restrictions on development.
- Zoning Ordinance Adoption or Amendments: Examples of zoning methods that affect flood hazard mitigation include: 1) adopting ordinances that limit development in the floodplain; 2) limiting the density of developments in the floodplain; and 3) requiring that floodplains be kept as open space.
- Subdivision Ordinances or Amendments: Subdivision design standards can require elevation data collection during the platting process. Lots may be required to have buildable space above the base flood elevation.
- Building Code Adoption or Amendments: Requirements for building design standards and enforcement include the following possibilities: 1) that a residential structure be elevated; and 2) that a non-residential structure be elevated or floodproofed.
- Conservation Easements: Conservation easements may be used to protect environmentally significant portions of parcels from development. They do not restrict all use of the land. Rather, they direct development to areas of land that are not environmentally significant.
- Purchase of Easement/Development Rights: Compensating an owner for partial rights, such as easement or development rights, can prevent a property from being developed contrary to a community's plan to maintain open space. This may apply to undeveloped land generally or to farmland in particular.
- Stormwater Management Ordinances or Amendments: Stormwater ordinances may regulate development in upland areas in order to reduce stormwater run-off. Examples of erosion control techniques that may be employed within a watershed area include proper bank stabilization with sloping or grading techniques, planting vegetation on slopes, terracing hillsides, or installing riprap boulders or geotextile fabric.
- Storm Drainage Systems: Flood mitigation can involve installing, re-routing, or increasing the capacity of a storm drainage system that may involve detention and retention ponds, drainage easements, or creeks and streams. It can include separation of storm and sanitary sewerage systems as well as higher engineering standards for drain and sewer capacity.
- Drainage System Maintenance: At most times, a drainage system will do its job and move water to intended areas. However, if a system is not maintained, erosion, material dumping, or deterioration of man-made reinforcement materials may reduce the carrying capacity of a stream. Therefore, regular maintenance, such as sediment and debris clearance, is needed so that the stream may carry out its design function. Also important is detection and prevention/discouragement of discharges into storm-water/sewer systems from home footing drains, downspouts or sump pumps.
- Multi-Jurisdiction Cooperation Within Watershed: Forming a regional watershed council helps bring together resources for comprehensive analysis, planning, decision-making, and cooperation.
- Post-Disaster Recovery Ordinance: A post-disaster recovery ordinance regulates repair activity, generally depending on property location. It prepares a community to respond to a disaster event in an orderly fashion by requiring citizens to: 1) obtain permits for repairs, 2) refrain from making repairs, or 3) make repairs using standard methods.

- Hazardous and Buoyant Material Protection: Containers of hazardous materials such as petroleum or chemicals should not be located in a flood hazard area. If such a location is necessary, hazardous material containers need to be anchored, because the contents can contaminate water and multiply the damaging effects of flooding by causing fires or explosions, or by otherwise making structures unusable. Also, buoyant materials should be anchored, because if they float downstream, they may cause additional damage to buildings or bridges or may plug a stream resulting in higher flood heights.
- Manufactured Homes: Manufactured or mobile homes should be elevated above the base flood elevation and anchored, or more preferably, kept out of the floodplain.
- Back-up Generators: A community may consider back-up generators for pumping and lift stations in sanitary sewer systems, along with other measures (e.g., alarms, meters, remote controls, and switchgear upgrades).
- Basement Backflow Prevention: Depending on its infrastructure capabilities, a community may encourage the use of check valves, sump pumps, and backflow prevention devices in homes and buildings.

Earthquakes

- Local mapping of fault zones and liquefaction areas as a part of larger all-hazards mapping efforts.
- Local retrofit programs that use best engineering standards for structures located in seismic zones.
- Recognize the potential of earthquake-induced landslides in land-use and development plans.
- Require that local plans and codes in seismically-active areas include identification of fault zones, fault setbacks and seismic construction standards that are specific to the seismic risks faced (e.g. liquefaction vs. bedrock movement.)
- Seek grant funding and tax incentives to encourage the appropriate buy-out or retrofit of unprotected structures in seismically-active areas.
- Improve the structural integrity of essential facilities [Identify the facility]
- School Survey Procedures: Schools are critical facilities not only because of the special population they accommodate, but also because they are often identified as shelter sites for a community. Due to this sheltering role, it is essential that these buildings function after a seismic event. A community can develop a survey procedure and guidance document to inventory structural and non-structural hazards in and near school buildings. Survey results can be used to determine mitigation priorities that can be incorporated into capital improvement plans.
- Buildings as Structural Hazards: Homeowners and businesses can take simple measures to strengthen their buildings before the next earthquake. Bracing walls and bolting sill plates to the foundation are examples. Non-reinforced masonry buildings and non-ductile concrete facilities are particularly vulnerable to ground shaking. These buildings should be strengthened and retrofitted against future seismic events.
- Non-Structural Hazards: Many injuries in earthquakes are caused by nonstructural hazards, such as attachments to buildings. These include lighting fixtures, windows (glass), pictures, tall bookcases, computers, ornamental decorations on the outside of the buildings (like parapets), gas lines, etc. Activities that can reduce the risk of injury and damage include: anchoring tall bookcases and file cabinets, installing latches on drawers and cabinet doors, restraining desktop computers and appliances, using flexible connections on gas and water lines, mounting framed pictures and mirrors securely, and anchoring and bracing propane tanks and gas cylinders.

- Bridge Strengthening: State and local highway departments should review construction plans for all bridges to determine their susceptibility to collapse. Problem bridges should be retrofitted.

Wildfires

- Continue to develop and require standards for homes and other structures in the wildland-urban interface—that emphasizes fire-safe construction.
- Recognize the importance and value of vegetation management ("defensible space") in the wildland-urban interface in rural and urbanizing areas and encourage the development of incentives for creating and maintaining defensible spaces around at-risk structures, such as using the Firewise Communities program.
- Require that planning include multiple and adequate ingress and egress routes to vulnerable areas.
- Increase the number of Fire Wise Communities in the County.
- Conduct forest mitigation procedures to reduce the amount of fuel loading especially in areas that have a high residential population.
- Improve rural roads to ensure that emergency vehicles can provide a quick response to keep Wildland Fires small.
- Roads and driveways should be kept accessible to emergency vehicles and fire equipment. Driveways should be relatively straight and flat, with at least some open spaces to turn. Bridges should be strong enough to support emergency vehicles, with clearance wide and high enough for two-way traffic and emergency vehicle access. Addresses should be visible from the road, and keys to gates around property should be provided to the local fire department.
- Spotters: Early detection of wildfires, while fires are smaller, can help make firefighting more successful. Detection can be accomplished by fire spotters who work from either towers or planes.
- Establish a large-scale evacuation plan of the wildland urban interface (WUI) including a mass sheltering plan for such an incident.
- Provide for public education forums to teach residents how to build "eye-pleasing" defensible space into their property.
- Conduct an analysis identifying areas in the county that may benefit from the installation of cisterns or hydrants to provide water delivery during firefighting operations.

MANMADE HAZARDS

Power/Utility Failure

Public utilities are critical infrastructure for any community. The potential for failure needs to be reviewed, and inadequacies need to be addressed.

- Obtain Generators for Critical Infrastructure: A community may consider burying electric and telephone lines, where possible, to resist damage from severe winds, lightning, ice, and other hazards.
- System Redundancies: One place where redundancies are recommended is in utility and communications systems, especially lifeline systems, e.g., essential public utilities. The intention is that if one system fails, the other shadow system can take over.
- Lightning Protection: Electrical and communications systems should be protected from lightning strikes.

- Tree Trimming: Tree trimming and maintenance is important for preventing limb breakage and for safeguarding nearby utility lines. A model measure would be to establish a community forestry program with a main goal of creating and maintaining a disaster-resistant landscape in public right-of-ways.
- Digging Hotlines: Most, if not all, states have a utility damage prevention hotline that people can call before digging.
- Vulnerable Populations: Communities can develop programs/networks for contacting and assisting elderly or homebound persons during periods of infrastructure failure.

Hazardous Materials Release (HAZMAT)

- Conduct a hazardous materials flow study for high volume road and rail ways within the county.
- Increase the number of personnel trained as HAZMAT technicians and specialists to elevate the County's response capability.
- Public Awareness and Worker Education: The Emergency Planning and Community Right-to-Know Act (EPCRA), also known as SARA Title III, provides an infrastructure at the state and local levels to plan for chemical emergencies. Facilities that store, use, or release certain chemicals may be subject to reporting requirements. Reported information is publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. Employers must also communicate the hazards of workplace chemicals and ensure that workers receive education and training.
- Industrial Site Buffering: Hazardous material exposure can be prevented or reduced by separation and buffering between industrial areas and other land uses. Industrial areas should be located away from schools, nursing homes, hospitals, and other facilities with large or vulnerable populations.

Appendix H: FEMA Mitigation Crosswalk