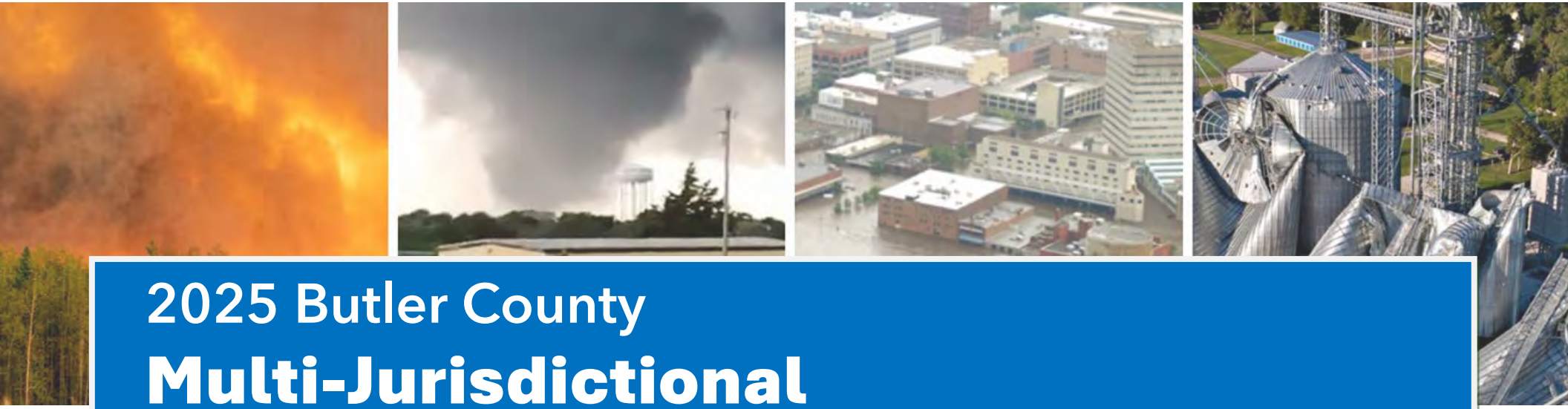

2025 Butler County
Multi-Jurisdictional Hazard Mitigation Plan
Butler County, Iowa

Adopted By: Butler County, Iowa (XX/XX/2025)

Including: City of Allison (XX/XX/2025), City of Aplington (XX/XX/2025), City of Aredale (XX/XX/2025), City of Bristow (XX/XX/2025), City of Clarksville (XX/XX/2025), City of Dumont (XX/XX/2025), City of Greene (XX/XX/2025), City of New Hartford (XX/XX/2025), City of Parkersburg (XX/XX/2025), City of Shell Rock (XX/XX/2025), Aplington-Parkersburg Community School District (XX/XX/2025), Clarksville Community School District (XX/XX/2025), Dike New Hartford Community School District (XX/XX/2025), North Butler Community School District (XX/XX/2025), and Waverly Shell Rock Community School District (XX/XX/2025)

Adopted By FEMA: Month, Date, 2025

Funded by:

Butler County
IOWA

Prepared by

INRCOG
Iowa Northland Regional
Council of Governments

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ACKNOWLEDGMENTS

BUTLER COUNTY HAZARD MITIGATION PLANNING COMMITTEE

Over the course of the planning process, many individuals donated their time and efforts toward providing information, attending meetings, and providing input for the successful completion of the plan. The following is a list of people who participated in the development of this Butler County Multi-Jurisdictional Hazard Mitigation Plan:

Butler County	Chris Showalter, Emergency Management Coordinator John Riherd, Engineer Jason Johnson, Sheriff Leslie Groan, Auditor
City of Allison	Schott Henrichs, Mayor
City of Aplington	Jason Mehmen, Mayor
City of Aredale	Deana Hanson, City Clerk
City of Bristow	Trisha Boos, City Clerk
City of Clarksville	Jerald Heuer, Mayor Matt Behrends, Fire Department Jennifer Kielman, City Council Member Jessi Reints, City Council Member
City of Dumont	Rhonda Schmidt, City Clerk
City of Greene	Cory Wiegmann, Public Works Director
City of New Hartford	Tim Woods, City Council Member Randy Johnson, City Council Member
City of Parkersburg	Tom Manifold, City Council Member Chris Luhring, City Administrator
City of Shell Rock	Jessica Meyer, City Clerk
Aplington-Parkersburg Community School District	Travis Fleshner, Superintendent
Clarksville Community School District	Bryan Boysen, Superintendent
Dike-New Hartford Community School District	Justin Stockdale, Superintendent
North Buter Community School District	Bryan Boysen, Superintendent
Waverly-Shell Rock Community School District	David Hill, Superintendent
Iowa Northland Regional Council of Governments (INRCOG)	Isaiah Corbin, Director of Development Vincent Ruggiere, Planner I Dan Schlichtmann, GIS Coordinator

Adopting Resolution by Butler County Board of Supervisors

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Section I: Introduction

About

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

This Plan is an update to the 2020 Butler County Multi-Jurisdictional Hazard Mitigation Plan. This Plan was written and developed to meet the requirements in FEMA's Local Mitigation Policy Guide updated in April 2023, Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), and the regulations in Title 44 CFR § 201.6 relating to Mitigation Planning.

What is Hazard Mitigation?

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

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

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

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

Figure 1: Emergency Management Cycle

Source: FEMA

Purposes of Hazard Mitigation Planning

The following list identifies reasons to conduct hazard mitigation planning:

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

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

A Multi-Jurisdictional Approach

This comprehensive document has components informed by the planning committee. Those include mitigation goals, selected mitigation activities/actions/programs, policies and regulations set by each jurisdiction, needs, fiscal level, and local planning implementation capacity. INRCOG served as the coordinator of this Plan by coordinating meetings with the planning committee, collecting information by each jurisdiction in order to assemble data gathering assignments into a strategic body with details, priorities, and funding sources called out for each associated action item.

The North Butler Community School District is a new participant in this update.

Benefits of Multi-Jurisdictional Mitigation Planning

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

See Table 2 for committee members and participation details.

The Planning Process

OUR APPROACH

1 Gathering Data and Getting Updates on Previous Hazard Mitigation Activities

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

Meetings were held between October 2024 to February 2024 at the Butler County Courthouse in Allison, Iowa. Public notices were published in the *Butler County Tribune-Journal*, the largest and most read local newspaper for the county.

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

Jurisdictions discussed and reviewed communities of people who were most at risk of hazards in their communities. Members of the task force provided outreach to organizations that locally serve those individuals in their community to discuss potential hazards, goals, and mitigation opportunities to be included in the plan.

The previous mitigation activities were drawn from the 2020 Butler County Multi Hazard Mitigation Plan. Communities used such goals to evaluate their progress and build new goals for this plan. The updates took place based upon the previous Plan and with input from plan participants. This focused on helping each jurisdiction be reflective of what they have achieved, what they have still yet to achieve, and what has not worked for better or worse.

Responses are located in Appendix Q.

2 HAZARD IDENTIFICATION & ASSESSMENTS

Identify Hazards

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

Assessing: Vulnerability, Capability, and Risk

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

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

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

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

ESTABLISH

3 **Mitigation Goals and New Activities**

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

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

ASSEMBLE

4 **Implementation Strategy**

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

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

When implemented appropriately, mitigation projects can save lives, reduce property damage, be cost-effective, and environmentally sound. This, in turn, can reduce the enormous cost of disasters to property owners and all levels of government. In addition to the approach from this plan, hazard mitigation can protect critical community facilities, ensure equitable outcomes, reduce exposure to liability, and minimize community disruption.

ADOPT

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

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

Planning Committee

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

Representatives from ten incorporated cities located in Butler County included: Allison, Aplington, Aredale, Bristow, Clarksville, Dumont, Greene, New Harford, Parkersburg, and Shell Rock. All the

cities that participated in the 2020 Butler County MJ-HMP participated in this 2025 plan update.

All school districts with areas within Butler County were invited to participate in the plan development process and serve on the committee. Those included Aplington-Parkersburg Community School District (CSD), Dike New-Hartford CSD, North Butler CSD, and Waverly-Shell Rock CSD. Each participated in the planning process by attending meetings and/or completing necessary data by meeting with plan coordinator to receive meeting materials. North Butler was new in participating in Butler's Hazard Mitigation Plan.

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

Committee Participation

Each respective jurisdiction had at least one representative attend the series of required planning meetings and completed all necessary information for this hazard mitigation plan. If jurisdiction participants were not able to make the meetings due to scheduling conflicts, they were given meeting materials and learned about hazard mitigation topics from our handouts that helped them form their local strategies. See Table 2 for a summary of each committee member's participation.

Data from the information gathering phase of the process included listing critical facilities/sites, local capabilities, identifying critical buildings, updating their 2020 strategies (if they were a previous participant), filled out worksheets with problem statements, and selected new mitigation activities/actions for their updated strategy.

During the risk assessment, committee participants scored factors that would calculate their community's overall risk to each hazard in their local hazard mitigation plans.

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

- Aplington-Parkersburg Community School District
- Dike-New Hartford Community School District
- North Butler Community School District
- Waverly-Shell Rock Community School District

Jurisdictions discussed and reviewed communities of people who were most at risk of hazards in their communities. Members of the task force provided outreach to organizations that locally serve those individuals in their community to discuss potential hazards, goals, and mitigation opportunities to be included in the plan.

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

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

Public Participation

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

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

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

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

Table 1: *Summary of All Public Meetings for the 2025 Butler County M-J HMP*

Mtg #	Date	Description of Meeting and Outcomes of Meetings
Meeting 1	Tuesday October 1, 2024	Review the scope of the planning process and schedule meetings for the next committee meetings. Complete worksheets to update community data. Completed worksheets to provide updates to previous mitigation activities.
Meeting 2	Tuesday October 22, 2024	Reviewed hazard profiles to be assessed in this planning process for Butler County's communities. Discussed additional hazards to consider. Completed a hazard assessment using a scoring rubric developed in the plan.
Meeting 3	Tuesday November 12, 2024	Complete vulnerability assessment and completed problem statement work sheet with new mitigation activities. Return previous work items if available.
Meeting 4	Tuesday December 10, 2024	Review drafts of their hazard mitigation plans and send out to boards for review before posting online and at city halls for public hearing.

Committee Meetings

Four public meetings were held at the Butler County Courthouse building at 428 6th Street, Allison, IA 50602. Each meeting was open to all. Attendance for each meeting was documented and can be found in Appendix R. Table 1 provides a list of the public meetings. Public notices were published in the main newspapers for meetings 2, 3, and 4. Notices for meetings #1 did not meet the newspaper notice deadline to publish in the biweekly newspapers.

Table 2: County MJ-HMP Planning Committee Members and Participation						
			Attended Meeting?			
Name	**Jurisdiction or Dept.**	**Position**	**#1**	**#2**	**#3**	**#4**
Chris Showalter	Butler County	Emergency Management Coordinator	X	X	X	X
Rhonda Schmidt	Dumont	City Clerk	X			
Deana Hanson	Aredale	City Clerk	X	X	X	
Jason Mehmen	Aplington	Mayor	X	X	X	
Jason Johnson	Butler County	Sheriff	X			
Tom Manifold	Parkersburg	City Council Member	X	X	X	
Matt Behrends	Clarksville	Fire Department	X			
Jerald Heuer	Clarksville	Mayor	X	X	X	
Jennifer Kielman	Clarksville	City Council Member	X			
John Riherd	Butler County	Engineer	X	X		
David Hill	Waverly-Shell Rock CSD	Superintendent	X			
Jessi Reints	Clarksville	City Council Member	X	X		
Leslie Groen	Butler County	Auditor	X			
Justin Stockdale	Dike-New Hartford CSD	Superintendent		X		
Trisha Boos	Bristow	City Clerk		X		
Scott Henrichs	Allison	Mayor		X		X
Jeff Kolb	Butler-Grundy Development Alliance	Executive Director		X		
Cory Wiegmann	Greene	Public Works Director			X	
Chris Luhring	Parkersburg	City Administrator			X	
Bryan Boysen	North Butler CSD & Clarksville CSD	Superintendent			X	X
Tim Woods	New Hartford	City Council Member				X
Randy Johnson	New Hartford	City Council Member				X
Jessica Meyer	Shell Rock	City Clerk				X

Current & Previous Planning Documents Used

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

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

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

In addition, this plan will be integrated with other jurisdictional plans through a coordinated and collaborative approach. This integration involves aligning goals, strategies, and actions of the hazard mitigation plan with other relevant plans including emergency operations plans of the County. The County is currently undergoing an update to their Comprehensive Plan and has included the Hazard Mitigation Plan as part of that update. Furthermore, the County will ensure that the plan is used in capital improvement plans as well as other necessary plans.

Other jurisdictions plan to follow suit while schools will integrate with their Emergency Operations Plans. Regionally, the plan will be considered alongside the Comprehensive Economic Development Strategy (CEDS). By embedding such principles into other planning processes, the overall resilience of the region will continue to be enhanced, leading to more effective risk reduction and streamlined responses to potential hazards in the future.

Section II: County Profile

Butler County, Iowa

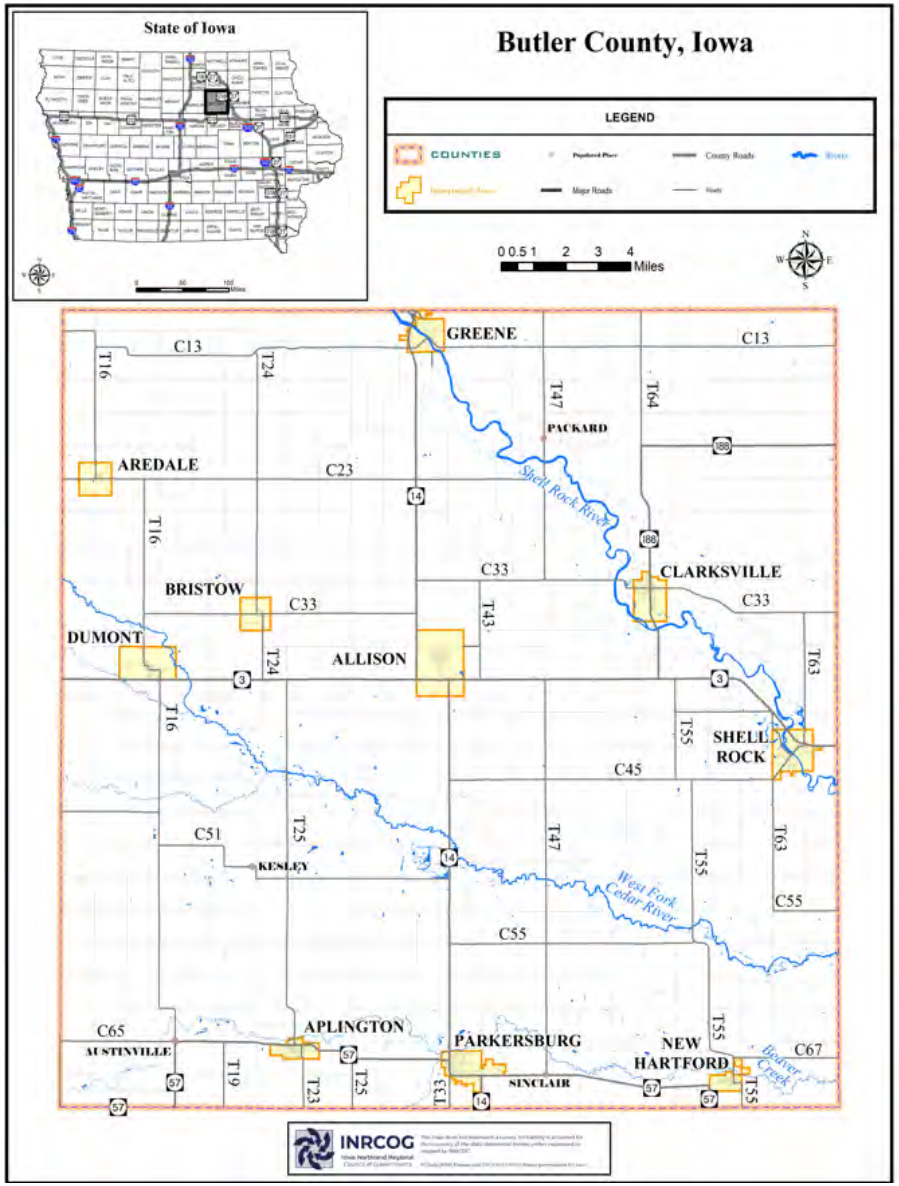
Established: 1851

Population (2020): 14,334

Area: 585 square miles

County Seat: City of Allison

Figure 2: Map and Location of Butler County



Location

Butler County is located in northeastern Iowa. The County is comprised of long, sloping terrain, several state and county parks, wetlands, vast stretches of prime agricultural landscapes that stretch into the distance and flourishing forested landscapes.

Located in the geographic center of the county, the city of Allison serves as the county seat. Based on 2020 Census data, Allison is had a population of 961 people. For this Plan, the communities are evaluated as a whole and not split at the county lines. The city of Aredale is the smallest town in the county with 62 residents while the largest jurisdiction is Parkersburg with 2,015 residents.

Ranking	City	Population (2020 Census)
1	Parkersburg	2,015
2	Clarksville	1,264
3	Shell Rock	1,258
4	Aplington	1,105
5	Greene	990
6	Allison	961
7	Dumont	632
8	New Hartford	572
9	Bristow	144
10	Aredale	88

Most drivers will access Butler County from State Highway 218 at the exit onto State Highway 3 that takes you to the City of Shell Rock, approximately 6.5 miles north of the U.S. Highway 20 corridor and 1 mile west of U.S. Highway 218. State highways 3 & 57 traverse Butler County to the east-west. State highway 14 traverse north-south of Butler County.

There are two main rivers that flow through the County. The first is the Shell Rock River located on the northeast side of the County. Next, the West Fork Cedar River flows directly through middle portion of the County.

Counties Floyd, Bremer, Black Hawk, Grundy, and Franklin lie adjacent to Butler County.

History

Butler County is in lands that were once occupied by the Sauk and Meskwaki (Sac and Fox) tribes, the Ioway tribes, and Sisseton-Wahpeton Oyate tribe (a Dakota Sioux band) (Library of Congress). In the late 1700s/1800s, early French settlers had established sparce hunting settlements in the region for fur trappings. In 1803, the Louisiana Purchase preemptively started westward expansion. In 1825, the Treaty of Prairie Du Chien acquired much land from the Sauk and Meskwaki (Sac and Fox tribes), Ioway, and bands of the Dakota Sioux.

Following the Black Hawk War of 1832, the U.S. relocated all tribes from the state region with the signing of several treaties including land document *Cessions #152* which covered most of Butler County.

Railroads began crossing the continent and brought in settlers who established Butler County in 1851. It was named in honor of General William Orlando Butler (1791-1880), a Kentucky statesman and officer in the Mexican War, and unsuccessful Democratic candidate for Vice President in 1848. In 1860, the population in Butler County was 3,724.

General William Orlando Butler

The county seat of Butler County has switched between multiple towns in its history. From 1854 to1860, Butler County's seat was in Clarksville. Beginning in 1860 to 1880, the now-nonexistent village of Butler Center was the county seat until residents found it too difficult to access the town simply because it was in the more rural parts of Butler County without any commercial businesses. The power struggle among Butler's towns to become the next county seat was settled by a new development sweeping across the country. In 1879, the Dubuque and Dakota Railroad Company built their railroad through Butler County and placed a station in the town of Allison, named for United States Senator William B. Allison (1829-1908). This settled the question of where Butler County's seat was to be located.

The people of Butler County decided to move the county seat to Allison in 1881 with the county records being moved to Allison on January 10, 1881. Allison grew due to its location being centrally located within the county and located along the newly established rail line. From 1880 to 1900, the population of Butler County grew from 14,293 to 17,955 people.

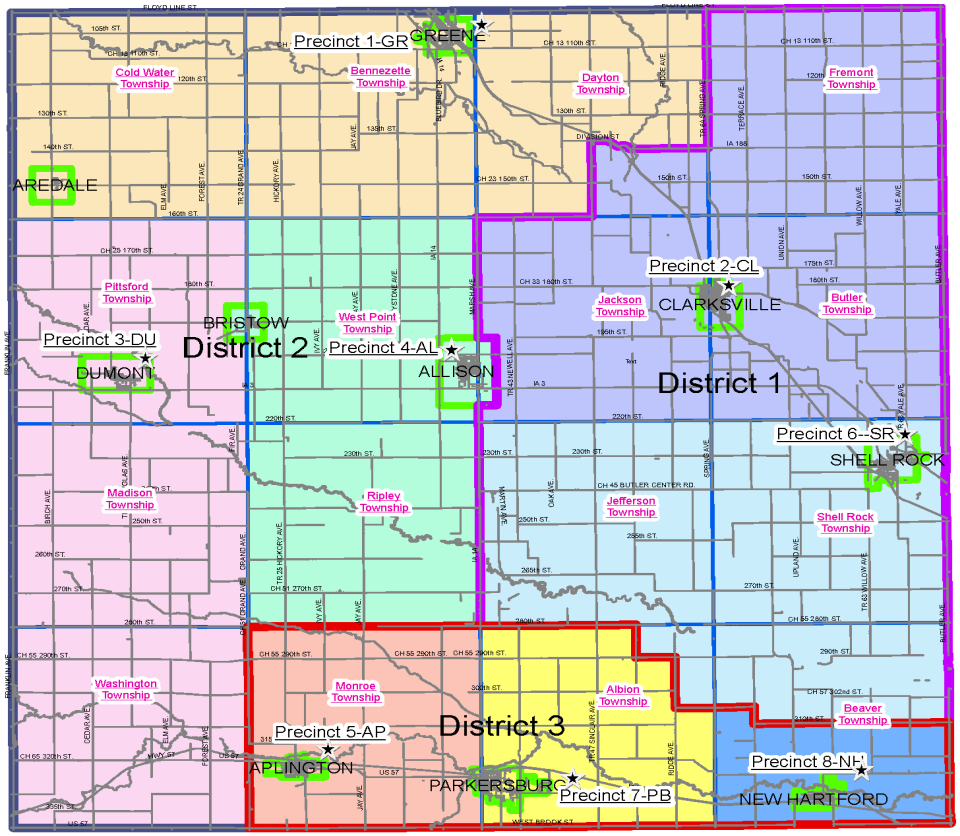
This population growth matched the peak and eventual decline of railway travel in Iowa. Between 1911 to 1917, the railroad industry reached its peak in Iowa, where it is estimated that approximately 10,500 miles of railroad track had been laid throughout the state. During the rest of the 20th century, railroad operators lost their advantage in mass transportation as the rise of automobiles started to shape the United States. Iowa's rail system experienced change and restructuring as many railroad companies went through buyouts, acquisitions, bankruptcy, and liquidation. The population in Butler County remained steadily above 17,500 people until 1970 when the population of Butler County dropped to 16,953.

In 1975, Butler County bid farewell to a symbol of their 'pioneer days' and moved into a new courthouse building. This new courthouse was built in the mid-century modern architectural style differing from the previous court house's Italian ornate architecture popular for public and government buildings during the 19th century. The older, then-derelict 94-year-old Butler County Courthouse was demolished the following year in 1976. The cupola, a round window structure topping the

building, was salvaged from the old courthouse and remains on the courthouse grounds as a nod to its storied history. The cupola sits above the Hall of Fame building celebrating notable people of Butler County.

Butler County Hall of Fame Building

Figure 3: County District Map



Source: Butler County Assessor and GIS Services

Government Structure

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

- District 1 Supervisor – Greg Barnett
- District 2 Supervisor – Wayne Dralle
- District 3 Supervisor – Rusty Eddy

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

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

Natural Environment

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

Soils

According to the Butler County Soil Survey, the soil composition reveals a remarkable and valuable natural to support a thriving agriculturally based economy. The soils in the County are grouped into eight (8) soils associations, each of which has different characteristics. The associations, including a brief description of each, are located in Figure 4.

Surface Water Systems

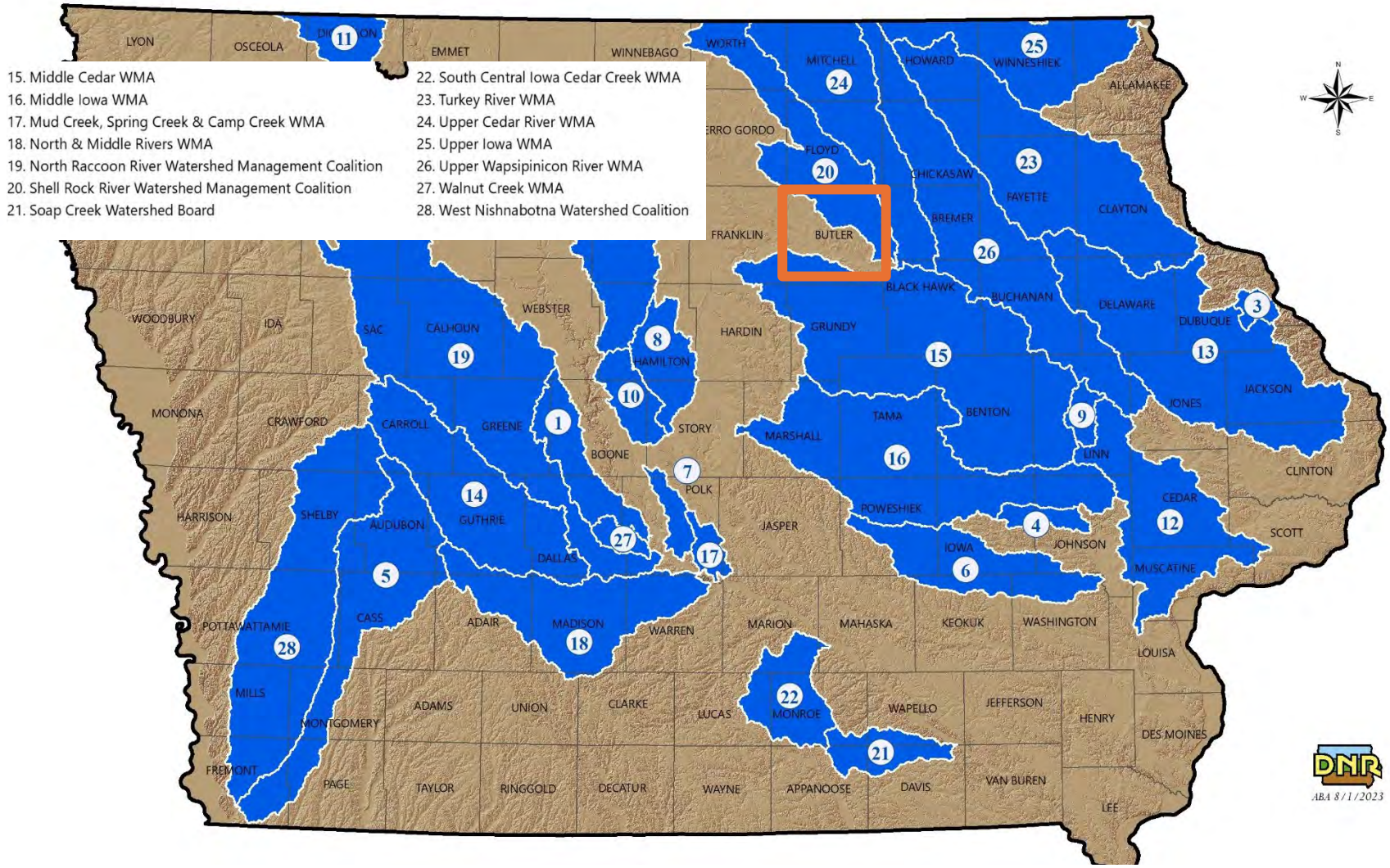
The County lies within the boundaries of two watersheds: #15-Middle Cedar Watershed Management Authority and #20 Shell Rock River Watershed Management Coalition. See the map of watershed management authorities in Figure 5.

The highest point in the county is located in the rural areas near Dumont and lies at approximately 1,190 feet above sea level. The lowest point in the county is located at the southeastern corner of the Shell Rock River and lies at approximately 890 feet above sea level.

Figure 4: Butler County Soil Associations

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

Figure 5: ***Map of Watershed Management Authorities in Iowa***



Source: Iowa DNR

Climate

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

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

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

30-year Average Monthly Temperatures and Annual Average (in degrees F)													
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	**Annual**
Max Temp.	27	32	45	60	72	81	85	83	75	62	45	31	**58**
Mean Temp.	18	23	35	49	61	70	74	72	64	51	36	23	**47**
Min. Temp.	9	13	24	37	50	59	63	61	51	40	27	15	**36**
Source: NOAA Online Weather Data (NOWData)													

30-year Average Monthly Precipitation and Snow Fall (in inches)													
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	**Annual**
Precipitation (in.)	0.88	0.94	1.93	3.23	4.31	4.83	4.36	4.24	3.32	2.36	1.56	1.02	**33.98**
													Seasonally
Snowfall (in.)	7.8	6.7	4.4	0.8	-	-	-	-	-	0.4	3.0	7.0	**30.1**
Source: NOAA Online Weather Data (NOWData)													

Forest and Vegetation

According to the Iowa Dept. of Natural Resources, Butler County has approximately 9,000 forested acres. This is nearly 6% of the county's land mass. Butler County ranks in the lower third among Iowa's counties in remaining forested areas. Butler County was a glaciated region. Glaciers once covered the region and scrapped up the earth as it melted and retreated northward during the thawing of the last Ice Age. Forests are sparse and this has been a good topography for agriculture.

The Butler County Conservation Board manages 16 areas including parks, boat launches, easements, and habitats.

Infrastructure

Butler County is served by Iowa Highway 3, which runs east-west through the middle of the county. It links the county with U.S. Highway 218 approximately three miles east of the county line. On the west side of the county, Highway 3 intersects U.S. Highway 65 eight miles past the county line. In addition, Highway 14 runs through the county in a north-south direction, joining U.S. Highway 20 on the southern edge of the county, at Parkersburg.

State Highways present in Butler County include: Iowa 3, 14, 57, and 346. In addition to the State Highway systems, the County maintains a total of 204 miles of paved roads, 735 miles of granular surfaced roads, 16 miles of unpaved roads, and 245 bridges greater than 20 feet long.

Due to the county's large road system, the current maintenance work plan consists of asphalt resurfacing 8-10 miles, rock surfacing on 350-400 miles of roads, and replacement of several culverts annually.

Air travel is an important form of transportation. The county has one airport, which is the Allison Municipal Airport. The airport provides services to private aircraft only. There are several airports with different service levels within one hour outside the county.

Railway throughout the county includes routes owned by the Chicago Northwestern Railroad and the Iowa Northern Railroad. The Chicago Northwestern route runs east and west through Aplington and New Hartford while the Chicago Northwestern route runs north to south through Clarksville and Shell Rock.

In Iowa, there are 13,033 miles of gas and liquid pipelines and 45 pipeline suppliers. Iowa's pipeline system provides the state with liquid petroleum, natural gas, and anhydrous ammonia. In Butler County, there are 275 miles of gas pipelines and 75 miles of liquid pipelines. The County also has the possibility

Roadway Lane Miles by Federal Functional Classification

Location	Road Type Classification Miles						Total
	Interstate	*Principle Arterial*	*Minor Arterial*	*Major Collector*	*Minor Collector*	*Local*	
Butler County	0	45	60	130	95	630	960

Source: Iowa DOT, Open Data Portal, Road Network Info

Secondary Road Centerline Mileage, by Surface Type

Location	Surface Type					Total
	Earth	*Gravel*	*Bituminous*	*Asphalt*	*PCC*	
Butler County	0	730	40	110	25	905

Source: Iowa DOT, Iowa Miles of Secondary Roads

of having a future CO2 pipeline that could be developed in its future.

There are no major commercial watercraft routes in Butler County. The Shell Rock and West Fork Cedar Rivers offer a location for recreational watercraft use by the public.

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

Utilities

Butler County is serviced by multiple utility providers. Table 3 on the next page shows the utility providers for each jurisdiction's utilities.

Potable Water Systems

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

There are 10 water towers in Butler County with known storage capacity. Typical storage capacities range from 50,00 to 500,000 gallons. In total, there is approximately 1.5 to 2 million gallons of total storage capacity within the County.

Wastewater Treatment Systems

In Butler County, there are 7 wastewater treatment facilities with lagoons. They are located in Allison, Clarksville, Greene, Shell Rock, Parkersburg, Aplington, and Dumont. In rural, unincorporated areas, the disposal of wastewater and sewage is done primarily through individual, on-site septic systems. Septic systems consist of tanks and septic fields. Butler County Environmental Health regulates on-site sewage systems through ordinances, inspections, and its Board of Health.

Table 3: Utility Providers							
Jurisdiction	*Electric*	*Natural Gas*	*Telephone/ Internet*	*Cable TV*	*Water Services*	*Sewer Services*	*Sanitation*
Allison	MidAmerican Energy	MidAmerican Energy	Dumont Telephone	Dumont Telephone	City of Allison	City of Allison	City of Allison
Aplington	City of Aplington	MidAmerican Energy	Windstream	Windstream	City of Aplington	City of Aplington	City Sanitary Service
Aredale	MidAmerican Energy	N/A	Rockwell Telephone	Rockwell Telephone	Individual Wells	Individual Septic	Jendro Sanitation
Bristow	MidAmerican Energy	MidAmerican Energy	Rockwell Telephone	Rockwell Telephone	City of Bristow	Individual Septic	City Sanitary Service
Clarksville	MidAmerican Energy	MidAmerican Energy	Butler-Bremer Communications	Butler-Bremer Communications	City of Clarksville	City of Clarksville	City of Clarksville
Dumont	MidAmerican Energy	MidAmerican Energy	Dumont Telephone	Dumont Telephone	City of Dumont	City of Dumont	Jendro Sanitation
Greene	Alliant Energy	Black Hills Energy	Omnitel & Windstream	Omnitel	City of Greene	City of Greene	Jendro Sanitation
New Hartford	MidAmerican Energy	MidAmerican Energy	Mediacom & Qwest	Mediacom	City of New Hartford	City of New Hartford	City Sanitary Service
Parkersburg	MidAmerican Energy	MidAmerican Energy	CenturyLink & Mediacom	CenturyLink & Mediacom	City of Parkersburg	City of Parkersburg	City Sanitary Service
Shell Rock	MidAmerican Energy	MidAmerican Energy	Butler-Bremer Communications	Mediacom & Butler-Bremer Communications	City of Shell Rock	City of Shell Rock	Jendro Sanitation
Unincorporated	Butler County REC, MidAmerican Energy, Alliant Energy	Black Hills Energy, MidAmerican Energy	All services listed above	All services listed above	Individual Wells, Iowa Regional Utilities Association	Individual Septic	Butler County Transfer Station

Demographics

Population

In the table below, population changes across the last decade from 2010 to 2020 are shown for Butler County and the county's municipalities. These population trends show a pattern of population decline across most cities. Overall, Butler County had a population loss of 3.6%. The city with the highest change in population was Clarksville with a population loss of 175 people. New Hartford and Parkersburg were the only cities that gained population from 2010 to 2020 (56, 145 respectively).

Table 4: Population Changes in Butler County

City	2010	2020	Change in Persons	% Change
Allison	1,029	961	-68	-6.6
Aplington	1,128	1,105	-23	-2.0
Aredale	74	62	-12	-16.2
Bristow	160	144	-16	-10.0
Clarksville	1,439	1,264	-175	-12.2
Dumont	637	632	-5	-0.8
Greene	1,130	990	-140	-12.4
New Hartford	516	572	56	10.9
Parkersburg	1,870	2,015	145	7.8
Shell Rock	1,296	1,258	-38	-2.9
Butler County	14,867	14,333	-534	-3.6

Source: U.S. Census Bureau

Table 5: Population Projections for Butler County, Iowa

Year	Butler County	State of Iowa
2030	13,896	3,328,308
2040	13,459	3,487,942

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

Historically, the population in Butler County has been on a steady decline over the last 50 years. In 1980, it peaked at over 15,400 people.

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

Year	Population	% Change from 10 years
1980	17,668	4.2%
1990	15,731	-11.0%
2000	15,305	-2.7%
2010	14,867	-2.9%
2020	14,333	-3.6%

Population Projections

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

Figure 6: Historical Population Trends in Butler County

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

Vulnerable populations

Some of the vulnerable populations are listed for the County in the Table 7. Nearly 7% of households in Butler County live below the poverty line. About 13% of households have at least 1 person with a disability. About 5% of households receive SNAP food benefits.

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

Households with 1 or more children under 18 make up 27% of occupied households. Nearly 14% of households have householders living alone that are 65 years and over. There are 123 mobile homes estimated in Butler County (1.9% of occupied households).

Table 7: Vulnerable Population Characteristics for Butler County

	Total	%
Total Households in Butler County	6,101	100%
Below poverty level	425	6.9%
1 or more persons with a disability	800	13.1%
Receiving SNAP food benefits	300	4.9%
Median household Income	$454,822	-
Population in group quarters	174	1.2%

Table 8: Housing Characteristics for Occupied Houses in Butler County (2022)		
	Value	**%**
Occupied housing units	6,545	100%
Average Household Size	2.34 persons	-
Owner Occupied Units	4,691	80.3%
Renter-Occupied Units	1,148	19.7%
UNITS IN STRUCTURE		
1, detached	5,793	88.5%
1, attached	35	0.5%
2 apartments	72	1.1%
3 or 4 apartments	241	3.7%
5 to 9 apartments	121	1.8%
10 or more apartments	160	2.4%
Mobile home or other type of housing	123	1.9%
VEHICLES AVAILABLE		
No vehicle available	196	3.4%
1 vehicle available	1,296	22.2%
2 vehicles available	2,200	37.7%
3 or more vehicles available	2,147	36.8%
HOUSE HEATING FUEL		
Utility gas	3,000	51.4%
Bottled, tank, or LP gas	1,203	20.6%
Electricity	1,339	22.9%
Fuel oil, kerosene, etc.	52	0.9%
Coal or coke	0	0.0%
All other fuels	228	3.9%
No fuel used	17	0.3%

Housing Trends

According to 2022 American Community Survey 5-year estimates, there are approximately 6,545 occupied housing units in Butler County. Of these housing units, 4,691 are owner-occupied and 1,148 are renter-occupied. The average household size for Butler County is 2.34 people.

About 89% of homes are single family type houses. There is very little multi-family housing (9%) in Butler County. About 2% of the housing stock in Butler County includes mobile homes (or other types of housing).

Table 9: Median Value of Owner-occupied Housing (2022 dollars)	
Jurisdiction	**Median Value of Homes (2022 dollars)**
City of Allison	$101,200
City of Aplington	$127,200
City of Aredale	$54,200
City of Bristow	$53,300
City of Clarksville	$118,800
City of Dumont	$64,500
City of Greene	$122,800
City of New Hartford	$93,800
City of Parkersburg	$190,600
City of Shell Rock	$159,100
Butler County	$146,300
State of Iowa	$181,600

The median value of homes in Butler County is estimated at $146,300 which is less than the average value of homes for the state of Iowa at $181,600. Parkersburg has the highest median value of homes at $190,600. Bristow has the lowest median value at $53,300.

Over the last decade from 2010 to 2020, Butler County's housing supply reduced by 137 units from 2010 to 2020. This trend follows the state of Iowa's decline in housing units for the same period. Almost all municipalities saw a loss in the number of housing units in their communities.

In 2020, most owner-occupied homes were valued at and above $100,000. About 22% (1,041) of homes in the county were between $50K and $99K.

Most of the county's housing stock are pre-war (WWII) structures. About 37.8% of houses were built before 1940. In the 60s and 70s, 23.7% of the housing stock was built. Since 2000, 13.2% of the housing stock has been built since then.

Table 10: Age of Butler County's Housing Supply

Year Built	Butler County 2022		Iowa 2022
	Number	Percent (%)	%
2020 or later	9	0.1	0.5%
2010-2019	243	3.7%	8.2%
2000-2009	614	9.4%	10.6%
1990- 1999	390	6.0%	10.3%
1980-1989	316	4.8%	7.2%
1970-1979	774	11.8%	14.2%
1960-1969	586	9.0%	9.8%
1950 1959	685	10.5%	9.9%
1940-1959	453	6.9%	4.8%
1939 or earlier	2,475	37.8%	24.5%
Total	6,545	100%	100%

Source: U.S. Census Bureau American Community Survey, 2022

Table 11: Historical Median Value of Owner-Occupied Units

Community	2000	2010	2022
City of Allison	$53,900	$86,800	$101,200
City of Aplington	$65,200	$97,400	$127,200
City of Aredale	$13,800	$22,500	$54,200
City of Bristow	$27,300	$36,500	$53,300
City of Clarksville	$52,200	$91,300	$118,800
City of Dumont	$33,300	$59,500	$64,500
City of Greene	$52,800	$76,700	$122,800
City of New Hartford	$50,000	$82,900	$93,800
City of Parkersburg	$71,500	$126,000	$190,600
City of Shell Rock	$73,300	$112,100	$159,100
Butler County	$62,200	$107,400	$146,300
State of Iowa	$82,500	$129,200	$181,600
Source: U.S. Census Bureau American Community Survey			

Economy

The median income for the county and its communities is listed in Table 12. The values in Table 12 are adjusted for inflation and shown in 2022 dollars. The median household income for the entire county, in 2022, was $54,822. The City of Parkersburg had the highest median income of $69,038; and the City of Aredale had the lowest median household income, $28,750.

Table 12: Median Income of Select Communities in 2022

Jurisdiction	Median income (dollars)
City of Allison	$61,458
City of Aplington	$66,625
City of Aredale	$28,750
City of Bristow	-
City of Clarksville	$58,523
City of Dumont	$49,625
City of Greene	$51,756
City of New Hartford	$64,583
City of Parkersburg	$69,038
City of Shell Rock	$68,125
Butler County (Total)	$54,822
State of Iowa	$69,588

A summary of 2022 data for employment for Butler County:

Table 13: Employment Data for Butler County (2022)

INDUSTRY	Workers	% of Workforce
Civilian employed population 16 years and over	6,831	100%
Agriculture, Forestry, Fishing, Hunting, and Mining	542	7.9%
Construction	1,089	15.9%
Manufacturing	242	3.5%
Wholesale Trade	743	10.9%
Retail Trade	360	5.3%
Transportation & Warehousing, and Utilities	79	1.2%
Information	306	4.5%
Finance, Insurance, Real Estate, and Rental & Leasing	338	4.9%
Professional, Scientific, Management, Administrative, and Waste Management Services	1,769	25.9%
Education, Health and Social Services	348	5.1%
Arts, Entertainment, Recreation, Accommodations and Food Services	358	5.2%
Other Services (except public administration)	179	2.6%
Public Administration	478	7.0%

The top three economic sectors with the largest share of the county's workforce are 1) professional services, 2) construction, and 3) wholesale trade.

Section III: Risk Assessment & Hazard Profiles

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

1. Hazard Identification

- Hazard selection process
- Disaster Declaration History

2. Hazard Profiles

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

3. Vulnerability Assessment

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

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

Hazard Identification

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

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

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

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

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

Disaster Declaration History

Table 14: Iowa Governor's Disaster Proclamation History for Butler County, Iowa		
Proclamation Date	**Incident**	**Proclamation #**
05/22/2024	Severe Weather	2024-13
12/16/2021	Severe Storm System	2021-18
03/14/2019	Flooding and Flash Flooding	2019-01
March 09. 2020-February 03, 2022	State Public Health Emergency Declaration for COVID-19 Virus	2020-01 & 2022-03

Table 15: Major Presidential Disaster Declarations for Butler County, Iowa		
Declaration Date	**Incident**	**Proclamation #**
July 1993	Great Midwest Flood	DR-996-IA
May 1999	Tornadoes and Severe Storms	DR-1277-IA
May 2004	Severe Storms and Flooding	DR-1518-IA
June 2008	Midwest Floods	DR-1763-IA
April 2013	Severe Storms and Flooding	DR-4126-IA
September 2016	Severe Storms, Flooding, and Tornadoes	DR-4289-IA
June 2018	Severe Storms and Tornadoes	DR-4386-IA
August 2020	Derecho	DR-4557-IA

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

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

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

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

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

Methodology of Hazard Risk Assessment

Factors of Hazard Risk

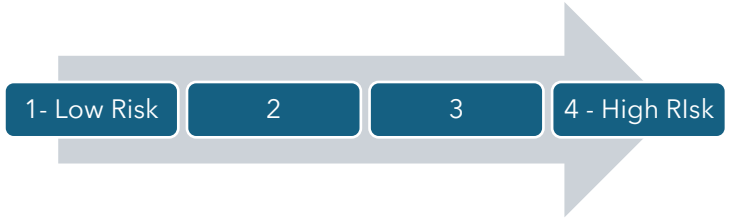
Risks to a hazard event may differ across geographical locations or even differ based on certain times of year. For example, tornado season in Iowa is usually in May and tornados have the highest risk during this time due to change in weather patterns from the western and central Gulf of Mexico causing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

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

Hazard Risk Score Formula

[Probability] **x 45%** + [Magnitude or Severity] **x 30%**
+ [Warning Time] **x 15%** + [Duration] **x 10%**
= Final Hazard Assessment [1 to 4]

What does a hazard risk score mean?



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

Probability

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

Table 16: Probability Score Definitions

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

Magnitude or Severity

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

Table 17: Magnitude or Severity Score Definitions

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

Duration

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

Table 18 displays rated risk scores for each associated hazard. This assessment was completed by the county.

Table 18: Duration Score Definitions

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

Warning Time

This should be taken as an anticipated warning time.

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

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

Table 19: Warning Time Score Definitions

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

Hazard Profiles

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

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

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

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

Natural Hazards:

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

Human-Caused Hazards:

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

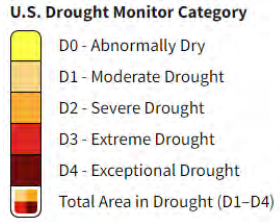
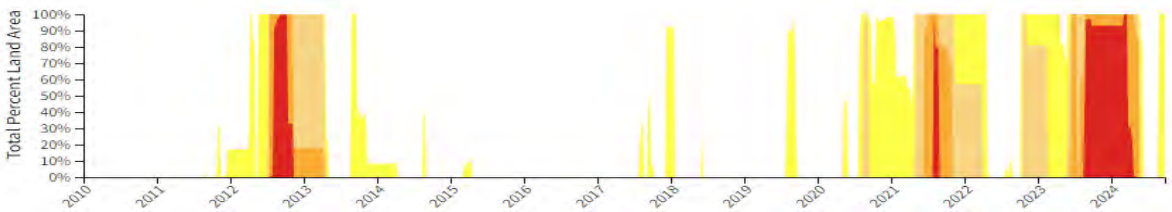
Table 20 **Drought**	**Definition:** a period of prolonged abnormally low precipitation producing severe dry conditions.
Historical Occurrences in Butler County	The last exceptional drought period in Butler County was 2024. The National Integrated Drought Information System reports no prolonged (> 6 month) drought event for Butler County (or even Iowa) within the last decade. The Drought.gov map depicts the intensity of drought in the county since 2010.  
Location	Droughts have the potential to occur throughout the county with the greatest impacts being realized on agricultural lands as well as on water supplies for cities within the county. The occurrence of a drought within the county would likely impact the entirety of the planning area.
Probability and Extent	It is probable to see moderate drought conditions within the next 5 years. It is also doubtful to see extreme drought conditions in Northeast Iowa. Droughts are observed by its impacts on agriculture, food production, energy production when there is a lack of soil moisture due to low precipitation levels. Butler County is not susceptible to severe drought that has had impacts on agriculture, response, or the local economy. Droughts directly affect agricultural crops, livestock, wildlife, and steam habitats (fish). Economic and environmental impacts are more critical for agricultural economies like Butler County's own. According to the U.S. Drought Monitor, the intensity of the drought is rated on a scale of D0 to D4 with DO being abnormally dry and D4 being exceptional drought conditions. The extent can range as indicated by the county's historical report from the last decade.
Duration	Droughts occur over prolonged, consecutive time periods (days, week, months).
Warning Time	Conditions predicting a drought are often not known. Most droughts are declared until a period of low precipitation has occurred, and the effects are significant on agriculture, wildlife, and farming economies. No warning time, but forecasts are tracked daily and often change by the day.

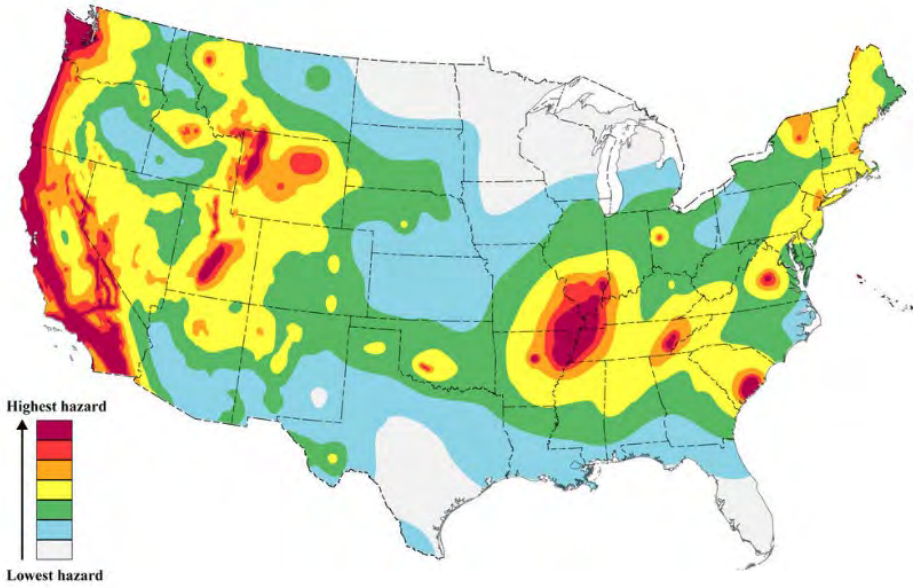
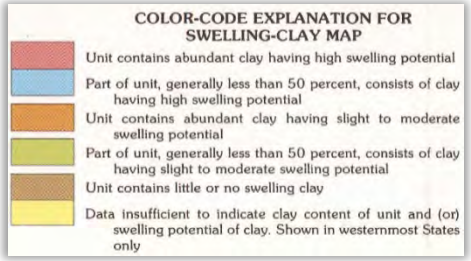
Table 21 **Earthquakes**	**Definition:** Sudden, rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. This shaking can cause buildings and bridges to collapse; disrupt gas, electric, and phone service; it sometimes triggers other hazards including landslides, flash floods, and fires. The three (3) general classes of earthquakes are tectonic, volcanic, and induced.
Historical Occurrences in Butler County	None in Butler County Iowa has experienced the effects of only three earthquakes in the past 175 years. The most recent occurrence was a 2.7 magnitude earthquake located east of Rembrandt, Iowa in June 2021.
Probability and Extent	There is minimal possibility of an earthquake occurring in Butler County within the next 50 years that could be of damaging magnitude. The Mercalli scale rates the intensity of earthquakes on a scale of I to X with I being not felt and X being extreme. In Iowa and Butler County, the extent is likely to be I or II if an earthquake were to occur.
	The National Seismic Hazard Map is a U.S. Geological Survey hazard planning tool. To the left is the probabilistic map which illustrates the probability of a damaging earthquake occurring in Iowa within the next 50 years.
Magntitude	Relatively low damage based on historical data. The entire county is likely to feel an earthquake.
Duration	A couple seconds to a minute. Smaller intensity aftershocks occur sparingly over the next few hours.
Warning Time	Minimal or no warning time

Table 22 **Expansive Soils**	**Definition:** Expansive clay soils, also known as shrink-swell soils or swelling clays, are types of soil that undergo significant changes in volume as their moisture content varies. They may cause damage to infrastructure, roadways, and create costly repairs.
Historical Occurrences in Butler County	No record keeping of this hazard in Butler County There have been no recorded disaster declarations or major incidences of this hazard occurring in Iowa. Expansive soils are still a significant concern, particularly in regions where clay-rich soils are prevalent. Expansive soils in Iowa pose challenges for construction, agriculture, and infrastructure development.
Probability and Extent	Expansive soils events are unlikely given their historical occurrence.
Based on part of a swelling clays map produced by the U.S. Geological Survey, most of Butler County has soils that have little or no swelling clay or soils with a composition of less than 50% with swelling potential.   	
Warning Time	Varies/Unknown Expansive soils occur on a geologic time scale. This means that the consistent duration to observe the effects of expansive soils occurring is unknown.
Duration	Varies, the specific duration required to observe the effects of expansive soils varies depending on various factors such as climate, soil composition, and geological conditions.

<table>
<tr><td>Table 23
Extreme Heat (Heat Wave)</td><td>Definition: Conditions for extreme heat are defined by summertime weather that is substantially hotter and/or more humid than average for a location at that time of year.</td></tr>
<tr><td>Historical Occurrences in Butler County</td><td>Butler County issued an excessive heat warning on August 22-24, 2023, for heat indices exceeding 100 degrees F each day. No deaths, injuries, or crop damages were reported. USDA's RMA data show $1.8 million in damages from heat from 1989 to 2022 while NCEI Storm events Database shows three excessive heat events since 1990.</td></tr>
<tr><td>Location</td><td>The occurrence of a heat wave would likely impact the entire planning area, especially individuals and agricultural livestock.</td></tr>
<tr><td>Probability and Extent</td><td>Based on historical occurrences, the probability of extreme heat occurring is likely. It will likely last for a few days. As occurrences have grown, people are becoming more familiar with heat exhaustion, heat stroke, and remaining hydrated/indoors, and its severity.</td></tr>
<tr><td colspan="2"> 

According to the Center for Climate Resilience and Decision Science's CLIMRR statistics, Butler County has a Maximum Average Temperature of 80.91 Degrees F. By the Mid Century, that is expected to rise to 85.33 and by the End-of-Century, it will be 95.56 Degrees F. Days with Max Heat Index over 115 Degrees F will increase from 0.13 historically to 3.57 and 7.96 days in the Mid-Century and End-of-Century, respectively.</td></tr>
<tr><td>Warning Time</td><td>The National Weather Service can issue a Heat Advisory or Excessive Heat Warning roughly 10-14 days in advance.</td></tr>
<tr><td>Duration</td><td>Multiple days; excessive heat events occur when the temperatures are over the 95th percentile of the region's historical weather data for at least 2 days.</td></tr>
</table>

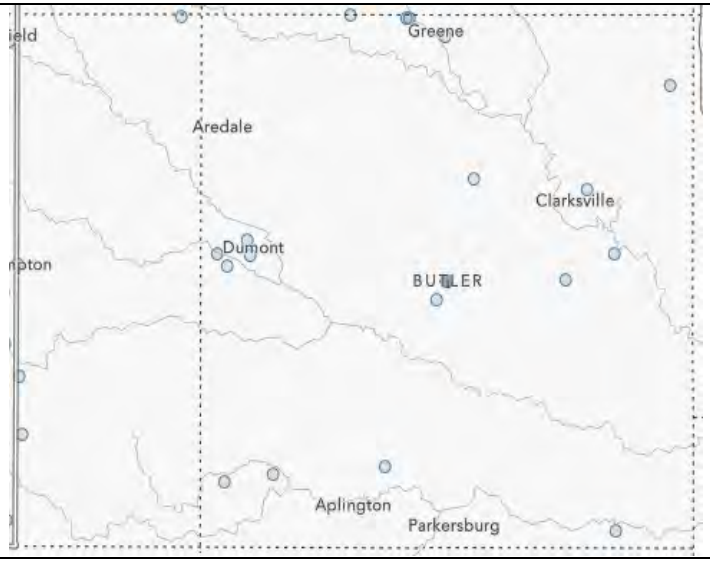
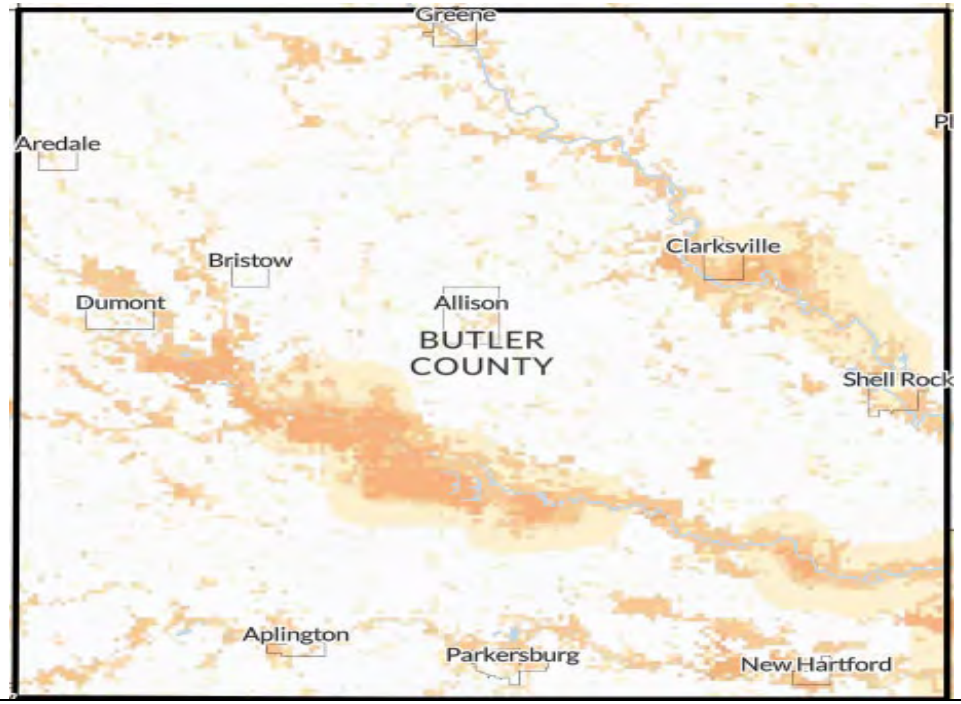
Table 24 **Flash Flooding**	**Definition:** A flash flood is an event that occurs with little or no warning where water levels rise at an extremely fast rate. Flash flooding results from intense rainfall over a brief period, sometimes combined with rapid snowmelt, ice jam release, frozen ground, saturated soil, or impermeable surfaces. Most flash flooding is caused by slow-moving thunderstorms or thunderstorms repeatedly moving over the same area.
Historical Occurrences of Flash Flooding in Butler County *Source: NOAA National Centers for Environmental Information*	 According to the NOAA Storm Events Database Explorer, there have been a total of 166 events between 1997 and 2021. The map includes the locations in which those events took place. As part of three watersheds (Middle Cedar, Upper Iowa, and Middle Iowa), areas adjacent to the rivers and creeks, and its main tributaries are at significantly higher risk. Flash flooding has the potential to occur throughout the planning area, especially in cities that lack sufficient infrastructure to handle heavy rain events. Allison, Aplington, Aredale, Bristow, Clarksville, Dumont, Greene, and Parkersburg are located next to rivers and streams are especially prone to flash flooding events
Probability and Extent	Flash flooding is likely to occur in the planning area with June being the most common month for flash floods, but they can occur from May through September.
Warning Time	Usually a sudden event during an unusually heavy rainfall. Warnings are issued from the National Weather Service, IAWAS, and local officials.
Duration	The duration of flash flooding events is dependent on the severity of the event with the duration likely being less than one day. However, cleanup from an event may take several days.

Table 25 **River Flooding**	**Definition:** Waterways such as streams and rivers exceed the capacity of their natural or constructed channels to accommodate a sudden increase in flow before the river overflows the banks, spilling out into adjacent low-lying, dry land.
Historical Occurrences in Butler County	 According to data from the National Climatic Data Center Storm Events Database, there have been 81 reported flood events in Butler County between 1996 and 2021. The image displays the location of each flood event that has occurred since 1996.
Probability and Extent	Based on historical data of the last 25 years, the probability of river flooding occurring is likely. The annualized frequency is 3.68 flooding events occurring each year given the historical recordings coming from multiple sources and more accurately capture the frequency of flooding within the planning area.
Warning Time	River flooding can be forecasted to allow for at least 24 hours or more notice.
Duration	The duration of a flooding event varies based on the severity and location of the flooding event. Duration can range from a few hours to several days or longer.
Butler County's Risk Index Score for Hazard:	22.09 out of 100 (Relatively Moderate)
Annualized Frequency of Hazard Occurring	3.68 events
Expected Annualized Loss:	$2,011,627 (Relatively High)
Source: FEMA Risk Index by County (2024)	

Table 26 **Grass/Wildland Fire**	**Definition:** A grass or wild-land fire is an uncontrolled fire that threatens life and property in a rural or a wooded area. Dry weather can also lead to a wildfire threat, especially in the spring before foliage has emerged (i.e. before green up) or in the fall after vegetation has started to die off.
Historical Occurrences in Butler County	A grass fire or wildland fire is an uncontrolled fire that threatens life and property in a rural or wooded area. This is not the same as a cropland fire. Damage to crops from fire is often covered by insurance and occurs in human-made environments. Wildland or grassfires occur in natural, wild areas.
	No deaths or injuries reported.
Probability and Extent	Wildland fires are more likely to occur when conditions are favorable, such as during periods of drought when natural vegetation is drier and more combustible.

Wildfire Hazard Potential - WHP
(Source: U.S. Forest Service)



WHP is an index that quantifies the relative potential for wildfire that may be difficult to control, used as a measure to help prioritize where fuel treatments may be needed.
The map indicates that given the conditions of vegetation in Butler County, the potential hazard of wildfires that are difficult to control is very low for the entire county. According to the Wildfire Risk To Communities database, Butler County has a low risk of wildfire – lower than 83% of counties in the U.S. There have been two recent wildfires in the county. One occurred in April 2015 northwest of Parkersburg and the other occurred April 2019 south of Aplington.
Source: https://datacentral.press-citizen.com/wildfire-history/?page=1&query=Iowa&anc=active#ftbl

Warning Time	The wildfire history map indicates that Iowa possesses few areas with significant wildfire potential, with the majority classified as "Non-burnable Lands," primarily agricultural fields. Furthermore, the vast majority of the state exhibits a "Very Low" wildfire hazard potential, indicating minimal risk of extreme fire behavior. Consequently, wildfires in Iowa tend to be limited in scope and severity due to the absence of areas conducive to significant fire spread or extreme behavior.	
Duration	Usually contained in a few hours. Less than 24 hours.	
Butler County's Risk Index Score for Hazard: **Expected Annualized Loss:** *Source: FEMA Risk Index by County (2024)*		2.33 out of 100 (Very Low) $1,357

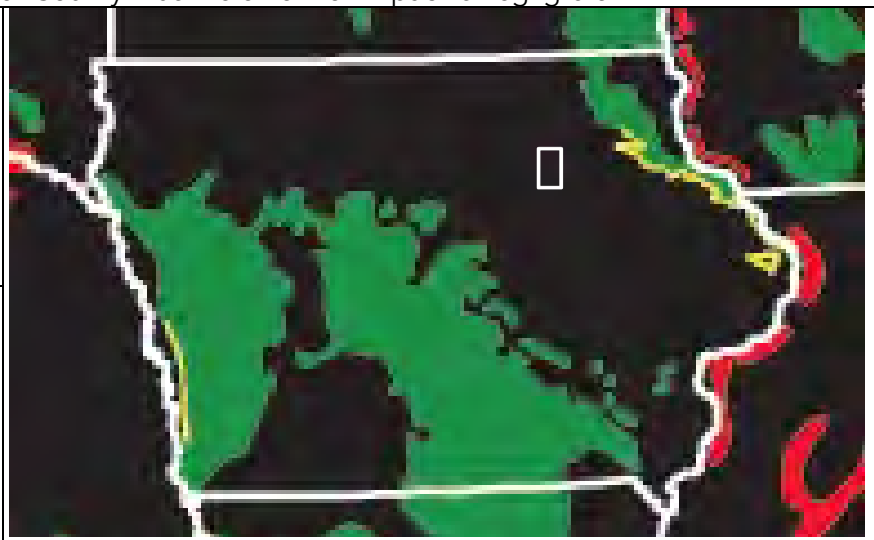
Table 27 **Hazardous Materials Incidents**	**Definition:** A HAZMAT (hazardous materials) incident is the accidental release of chemical substances or mixtures which presents a danger to the public health or safety during production or handling at a fixed facility. Fixed hazardous material incidents usually affect a localized area, and the use of planning and zoning can minimize the area of impact. This hazard includes fixed hazardous materials, pipeline transportation, and transportation of hazardous materials. A HAZMAT or Radiological Transportation Incident is the accidental release of chemical substances or mixtures that presents danger to the public health or safety during transportation. A hazardous substance is one that may cause damage to persons, property, or the environment when released to soil, water, or air. Chemicals that are manufactured and used in ever increasing types and quantities. As many as 500,000 products pose physical or health hazards and can be defined as "hazardous chemicals." Each year, over 1,000 new synthetic chemicals are introduced and transported across the country via semi-trucks and trains. Hazardous substances are categorized as toxic, corrosive, flammable, irritant, or explosive. A pipeline transportation incident occurs when a break in a pipeline creates the potential for an explosion or leak of a dangerous substance (oil, gas, etc.) possibly requiring evacuation. A pipeline incident can be caused by environmental disruption, accidental damage, or sabotage. Incidents can range from a small, slow leak to a large rupture where an explosion is possible. Inspection and maintenance of the pipeline system along with marked gas line locations and an early warning and response procedure can lessen the risk to those near the pipelines.
Historical Occurrences in Butler County	According to the Iowa Department of Natural Resources, there were 17 incidents of hazardous material spills in Butler County from 2017-2023 (see below for a list of occurrences). There are no known occurrences of transportation incidents involving radiological materials.
Probability and Extent	Large quantities of hazardous materials are transported daily throughout the county on various highways. Freight transportation transports hazardous materials across these roadways across the county. The U.S. Department of Transportation regulates U.S. routes and speed limits are used by carriers and monitors the types of hazardous materials crossing state lines. Despite increasing safeguards, more and more potentially hazardous materials are being used in commercial, agricultural, and domestic uses and are being transported on neighboring roads, highways, and railways. Based on the information, the likelihood of this occurring is more than 33% probability in any given year, making it highly likely.

Historical Occurrences of Hazardous Incidents that have caused occurred in Butler County from 2017-2023

Source: Iowa DNR Hazardous Material Release Database (10/08/2024)

Date	Incident Report #	Hazardous Substance	Amount	Responsible Party
01/04/14	052223-JDD-1817	Callisto Herbicide (mesotrione)	2 gal	Koopa,Steve
06/12/14	101022-CEB-1115	Atrazine	75 lbs	Cornbelt Power Cooperative
01/27/15	082822-JGK-0029	Ammonium sulfate	102 lbs	MidAmerican Energy
02/18/16	121621-DAK-1235	TripleFLEX Herbicide	20 gal	American Colloid Blending
09/01/16	121621-CEB-0520	Roundup Herbicide	20 gal	MidAmerican Energy
09/22/16	071521-DHB-0810	Diesel Fuel	Unknown	MidAmerican Energy
05/02/17	070321-DAK-1359	Transformer Oil (Non PCB)	1300 gal	Rambling Wheels M.C.
07/26/17	021021-DAK-1456	Transformer Oil (Non PCB)	153 gal	Flint Hills Resources
10/31/17	110619-CEB-0840	Hydraulic Oil	15 gal	Agvantage FS
01/12/18	042419-CEB-1724	Transformer oil (PCB)	81 gal	Agvantage FS
12/06/18	020719-JLC-0242	Transformer oil (PCB)	27 gal	Iowa Northern Railway Company
04/06/20	102718-CEB-1612	Hydraulic Fluid	2 gal	SJB
04/19/20	102618-CEB-1530	Ethanol (denatured alcohol)	20 gal	Tres M
05/24/20	092618-TRL-1136	N-Serve Nitrogen Stabilizer	25 gal	Iowa Select Farms
07/23/20	022118-SJW-1030	Urea Ammonium Nitrate (UAN)	200 gal	Kwik Star, Inc
04/16/21	111717-RMG-0920	Diesel Fuel	890 gal	Landus Cooperative
08/27/21	110317-DWW-2138	Manure	6200 gal	Jefferson Finisher

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

<table>
<tr><td>Table 28
Landslide</td><td colspan="2">Definition: Occur when susceptible rock, earth, or debris moves down a slope under the force of gravity and water. Landslides may be very small or very large and can move at slow to very high speeds. A natural phenomenon, landslides have been occurring in slide-prone areas of Iowa since long before the state was created. Landslides can occur due to rainstorms, fires, or human activities that modify slope and drainage</td></tr>
<tr><td rowspan="2">Historical Occurrences in Butler County</td><td colspan="2">There have been no occurrences of landslides in Butler County.</td></tr>
<tr><td colspan="2">No deaths or injuries reported.</td></tr>
<tr><td>Probability and Extent</td><td colspan="2">There are no large slopes in Butler County thus the extent of impact is negligible.</td></tr>
<tr><td colspan="2">Map of Landslide Potential
Red = Very High Potential;
Yellow = High Potential;
Green = Moderate Potential;
Black = Low Potential
Source: US Geological Survey</td><td rowspan="2">  </td></tr>
<tr><td>Warning Time</td><td>Great amounts of precipitation and moisture over time will greatly increase the warning time of a landslide event; however, there is no official warning system in place, thus the warning time would be short.</td></tr>
<tr><td>Duration</td><td colspan="2">Usually contained landslides are typically over within hours of occurring. Less than 24 hours.</td></tr>
<tr><td>Butler County's Risk Index Score for Hazard

Source: FEMA Risk Index</td><td colspan="2">17.93 out of 100 (Relatively Low)

Expected Annualized Loss: $69,987</td></tr>
</table>

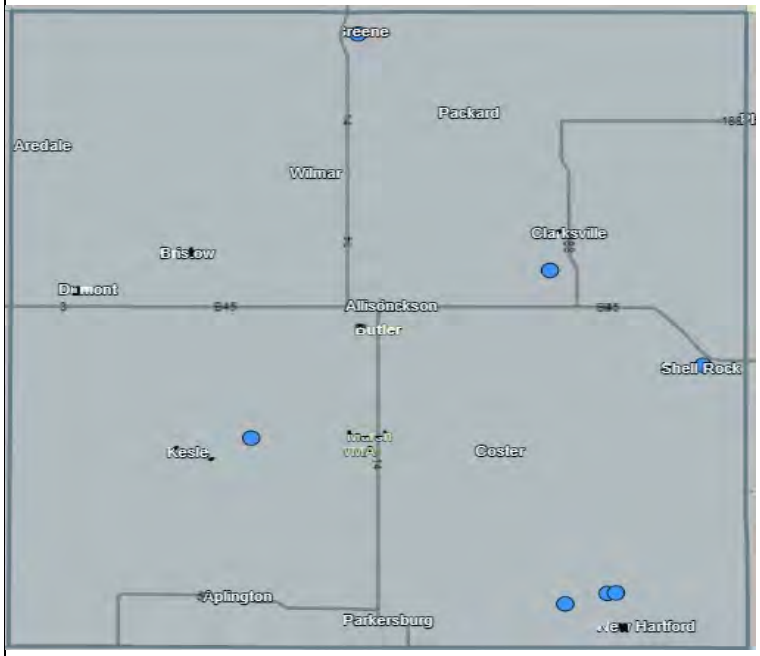
Table 29 **Levee/Dam Failure**	**Definition:** Dam/Levee failure is the uncontrolled release of water resulting from a structural failure in a dam, wall, dike, berm, or area of elevated soil that causes flooding. Possible causes of the breach could include flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation, poor construction, vandalism, terrorism, erosion, piping, saturation, or under seepage.
Historical Information on Butler County	 According to the National Inventory of Dams, there are 7 total dams in Butler County. They include the Koop, Winkowitsch, Holm, Wedeking, Hunemiller, Greene Mill, and Shell Rock Dams. Each dam is classified as a low hazard potential. The Greene Mill dam is used for hydroelectric purposes and the Shell Rock Dam is used for recreation purposes. The others are for fire protection, stock, or small fish pond usage. None of the dams require an emergency action plan. According to the National Levee Database, there are no federally registered levees.
Probability and Extent	The probability and extent of a dam failure due to a breach in the structural integrity of the system is also minimal. The hazard risk for the dams in unincorporated Butler County was removed due to no hazard dams or levees being in the county. The probability and extent of a catastrophic dam failure or other dam-related hazard was determined to be unlikely. If failure were to occur, the extent has is likely to be insignificant.
Warning Time and Duration	A sudden failure of a portion of the levee may send floodwaters gushing from this break within seconds. Normally, occupants of the floodplain can be warned about potential levee breaches or breaks when high water encroaches upon the levee. The length of time that a dam or levee failure would impact the surrounding area depends largely on the amount of water the specific dam or levee held back. The duration of a failure's impact could feasibly range from hours to months.

Table 30

Severe Winter Storm

Severe winter weather conditions that can affect day-to-day activities include blizzard conditions, heavy snow, blowing snow, freezing rain, heavy sleet, and extreme cold. Winter storms are common during the months of October through April in Iowa.

Historical Occurrences and Location

According to data from the National Climatic Data Center, there have been 28 reported winter storm events in Butler County between 2004 and 2024. Severe Winter Storms are likely to occur throughout the entire planning area. The table below displays the date, location, and impact of storms that caused damage.

No fatalities or injuries reported. Estimates of damage are $410,000.

Probability and Extent

Based on historical occurrences it is highly likely a severe winter storm will affect Butler County on an annual basis, likely multiple times in a year. The extent of such a storm can be evaluated using the Northeast Snowfall Impact Scale (NESIS). The five categories include notable, significant, major, crippling, and extreme (rated on a scale of 1-5) depending on the event. It has an annualized frequency of 5.6 events per year, indicating a high probability.

Historical Occurrences of Winter Storms that have caused damage in Butler County 2000-2023

Source: NOAA Storm Event Database

Location	Date	Deaths	Injuries	Property Damage	Crop Damage
Butler County	02/01/2015	0	0	$50,000	$0
Butler County	01/30/2013	0	0	$25,000	$0
Butler County	12/19/2012	0	0	$25,000	$0
Butler County	02/08/2010	0	0	$10,000	$0
Butler County	01/06/2010	0	0	$25,000	$0
Butler County	04/05/2009	0	0	$10,000	$0
Butler County	12/18/2008	0	0	$5,000	$0
Butler County	12/08/2008	0	0	$10,000	$0
Butler County	02/24/2007	0	0	$250,000	$0
Total		0	0	$410,000	$0

Warning Time

The National Weather Service has developed effective weather advisories, which are promptly and widely distributed. There are several notifications made by the National Weather Service. These include winter storm watch, winter storm warning, blizzard warning, winter weather advisory, and a frost/freeze advisory.

Duration

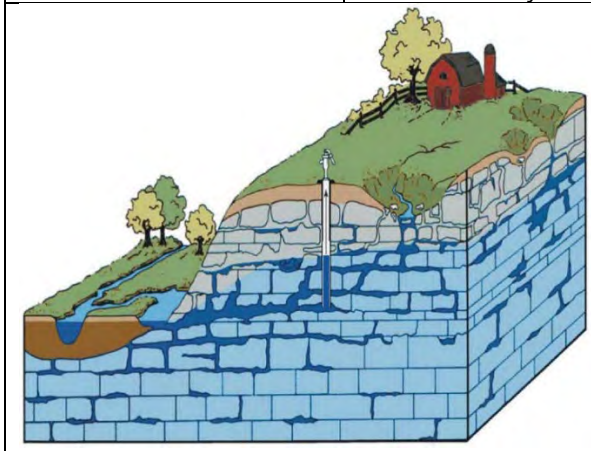
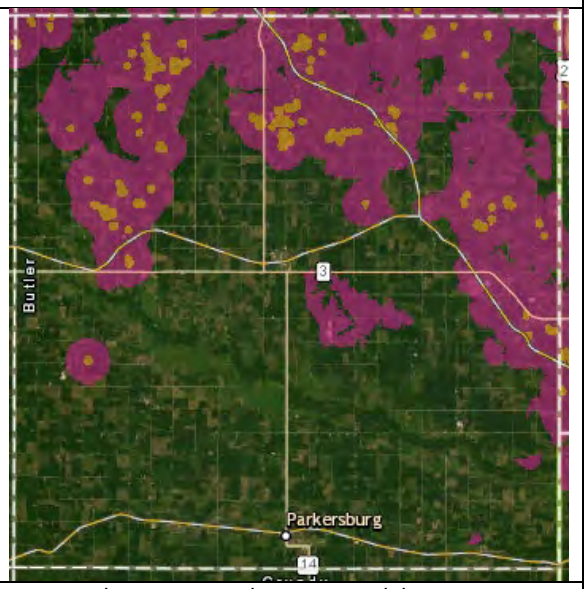
Depending on the type, duration, and the size of the event the entire population could feel the effect of a winter storm. Generally, due to existing snow removal services and other community services the effects of winter storms on incorporated communities in Butler County are short term; however, the more rural, unincorporated areas tend to be impacted longer due to rural nature of the county. Although more of an inconvenience, and somewhat more dangerous, travel and communication are usually an option in less than 24 hours of any given event.

Butler County's Risk Index Score for Hazard

Source: FEMA Risk Index

81.5 out of 100 (Relatively Moderate)

Expected Annualized Loss: $231,053
Source: FEMA Risk Index by County (2024)

<table>
<tr><td>Table 31
Sinkholes</td><td colspan="2">Definition: A sinkhole is the loss of surface elevation due to the removal of subsurface support. Sinkholes range from broad, regional lowering of the land surface to abrupt localized collapse. The primary causes of most subsidence are human activities such as underground mining of coal, groundwater/petroleum withdraw, or drainage of organic soils. Sinkholes can aggravate flooding potential, collapse of an abandoned mine may destroy buildings, roads, and utilities.</td></tr>
<tr><td>Historical Occurrences in Butler County</td><td colspan="2">According to Iowa DNR AFO siting maps, there are approximately 15-30 sinkholes located within Butler County (See below). These mainly occur over Karst formations in the ground. There is no data on historical/annual losses, and it is not in FEMA Risk Index. No fatalities or injuries reported. No damage to property or crops. No fatalities or injuries reported. No damage to property or crops.</td></tr>
<tr><td>Probability and Extent</td><td colspan="2">This hazard affects less than 2% of land in the County. Given the lack of historical occurrences, the severity of future events is likely to be negligible and unlikely to occur.</td></tr>
<tr><td colspan="3"> 
The dark blue areas denote groundwater stored within the bedrock's crevices, constituting the shallow aquifer and accessible to the depicted well. The diagram illustrates the porous nature of the bedrock, facilitating groundwater storage and movement. It also shows how the land surface and visible stream directly interface with the bedrock-stored water. In Karst systems, soil infiltration, surface runoff, and streams can directly feed into the shallow bedrock, contributing to the shallow groundwater and aquifer, potentially carrying contaminants from the surface to wells drawing from this source.
 
</td></tr>
<tr><td>Warning Time and Duration</td><td colspan="2">Sink holes growing in mass is a slow yet gradual process. Land use practices in the area, soil type in addition to a number of other factors will impact the speed of onset. By identifying these areas city agencies and property owners will be able to implement the necessary precautions to slow and potentially eliminate the development of a sink hole. Catastrophic sinkholes can provide little visible warning, setting in in as little as a few minutes. A sinkhole can affect the location in which it occurred for weeks.</td></tr>
</table>

<table>
<tr><td>Table 32
Thunderstorm with Lightning or Hail</td><td>Definition: Thunderstorms are created from a combination of moisture, rapidly raising warm air, and the lifting mechanism such as that caused when warm and cold air masses collide. Thunderstorms occur in the community on an annual basis. Lightning is an electrical discharge that results from the buildup of positive and negative charges within a thunderstorm. Hailstorms are a product of a severe thunderstorm in which pellets or lumps of ice (of most concern when greater than 1 inch in diameter) fall with rain.</td></tr>
<tr><td>Historical Occurrences in Butler County</td><td>According to the NOAA Storm Events Database Explorer, from 2004 to 2024, there have been 80 thunderstorm wind events, 105 hail events, and 3 lightning events reported. One fatality and one injury were reported for this hazard. The reported damage over that time is $3,010,000 from thunderstorm wind, $813,000 from hail, and $175,000 from lightning.</td></tr>
<tr><td>Probability and Extent</td><td>Hail and thunderstorms have the potential to impact all of Butler County. According to the Lightning Risk Index score, Butler County has a very low risk of thunderstorms occurring when compared to the rest of the United States in regard to the severity of such an event. As such, it is likely to occur on a yearly basis. The National Weather Service (NWS) uses objects to describe the size of hail. They range from pea-sized (0.25 in) to DVD-sized (4.75 in). Hail extent can range throughout the scale.</td></tr>
<tr><td>Historical Occurrences of Lightening, Hail, and Wind during a Thunderstorm in Butler County 2004-2024

Source: NOAA Storm Events Database</td><td>
<table>
<tr><th>Hazard</th><th>Occurrences</th><th>Deaths</th><th>Injuries</th><th>Property Damage</th><th>Crop Damage</th><th>Total Damage</th></tr>
<tr><td>Hail</td><td>105</td><td>0</td><td>0</td><td>$387,000</td><td>$426,000</td><td>$813,000</td></tr>
<tr><td>Lightning</td><td>3</td><td>0</td><td>0</td><td>$175,000</td><td>$0</td><td>$175,000</td></tr>
<tr><td>Thunderstorm Wind</td><td>80</td><td>1</td><td>1</td><td>$2,784,000</td><td>$226,000</td><td>$3,010,000</td></tr>
</table>
</td></tr>
<tr><td>Warning Time</td><td>The National Weather Service has developed effective weather advisories, which are promptly and widely distributed.</td></tr>
<tr><td>Duration</td><td>Less than 24 hours.</td></tr>
<tr><td>Butler County's Risk Index Score for Hazard</td><td>Hail: 80.1 out of 100 (Relatively Low)
Lighting: 17.4 out of 100 (Very Low)
Strong Wind: 83.7 out of 100 (Relatively Moderate)

Expected Annualized Loss Hail: $504,985
Expected Annualized Loss Lightning: $30,844
Expected Annualized Loss Strong Wind: $1,211,400
Source: FEMA Risk Index by County (2024)</td></tr>
</table>

Table 33

Tornados

Definition: A tornado is a violent whirling wind characteristically accompanied by a funnel shaped cloud extending down from a cumulonimbus cloud that progresses in a narrow, erratic path. a severe thunderstorm in which pellets or lumps of ice (most concern when greater than 1 inch in diameter) fall with rain.

Historical Occurrences and Location of Impact

According to the NOAA Storm Events Database, 16 tornadoes have been reported between 2004 and 2024. There was $76,128,000 in reported property damage and $96,700 in reported crop damage from these tornadoes. Nine fatalities and 50 injuries were reported.

Probability and Extent

It is likely greater than 25% likelihood for a tornado occurring in any given year. According to the NOAA National Risk Index, the annualized frequency over 72 years is 0.6 events per year. Butler County has a relatively low risk rating regarding the severity of such an event. The Enhanced Fujita tornado scale ranges from EF0 to EF5, depending on the damage and estimated wind speeds. The extent in Butler can potentially range throughout the scale.

Historical Occurrences of Tornadoes in Butler County 2004-2024

Source: NOAA Storm Events Database

Starting Location	Date	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Greene	12/15/2021	EF0	0	0	$5,000	$0
Buttler Center	7/14/2021	EFU	0	0	$0	$700
Shell Rock	7/14/2021	EF1	0	0	$300,000	$1,000
Parkersburg	11/28/2016	EF0	0	0	$3,000	$0
Aplington	8/31/2014	EF0	0	0	$20,000	$2,000
Parkersburg	8/31/2014	EF0	0	0	$0	$3,000
New Albion	8/31/2014	EF0	0	0	$0	$2,000
Shell Rock	8/31/2014	EF0	0	0	$0	$1,000
Eleanor	7/6/2014	EF0	0	0	$0	$1,000
Allison Muni Airport	6/16/2014	EF1	0	0	$200,000	$5,000
Allison Muni Airport	6/16/2014	EF0	0	0	$400,000	$1,000
Clarksville	6/16/2014	EF1	0	0	$200,000	$2,000
Aplington	5/25/2008	EF5	9	50	$75,000,000	$75,000
Kesley	6/21/2007	EF0	0	0	$0	$1,000
Shell Rock	6/21/2007	EF0	0	0	$0	$2,000
Greene	5/26/2005	F0	0	0	$0	$0
Total			9	50	$76,128,000	$96,700

Warning Time

Tornado and thunderstorm watches can warn of likely conditions hours in advance of an upcoming storm. Although an imminent tornado warning may occur with 95% accuracy and those can be issued at least 15 minutes.

Duration

Less than 24 hours.

Butler County's Risk Index Score for Hazard

59.2 out of 100 (Relatively Low)

Expected Annual Loss: $1,628,623
Source: FEMA Risk Index by County (2024)

Table 34 **Animal/Plant/Crop Disease**	**Definition:** A pathogen that may cause stress, infection, illness, and death. Communicable among livestock flocks, interactions with wild animals, crops, and bug infestations. Naturally occurring but hazard is not in the natural hazard section because of human induced causes such as tiling in agriculture, rising temperatures from climate change, etc. may induce more of a hazard.
Historical Occurrences in Butler County	Instances of plant, crop, or animal disease are common across Iowa and Butler County. However, according to available data and input, there have been no widespread recorded occurrences of plant, crop, or animal diseases having a long-term significant impact in the planning area. No fatalities or injuries reported for this hazard.
Probability and Extent	Plant and livestock diseases occur regularly. Iowa DNR tracks and notifies the public of any new or confirmed cases of a pathogen. Butler County has an agricultural crop value of $291,478,000. This is all potentially at risk of an infestation and loss.
In the past decade, there have been confirmed infestations of tar spot in corn crops in the County (2018). Emerald Ash borer insects infested the region in 2014 and have caused the widespread decline of ash trees. Tree removal of dying trees with falling limb hazards has been a top concern for many rural Iowan communities. Highly pathogenic avian flu cases have been confirmed in Butler County and across the State of Iowa throughout the past decade. Hog numbers remained relatively stable without major outbreaks of swine flu reported.	
Warning Time	With the reporting systems set up among agricultural stakeholders, the warning time is likely a few days ahead of time, but this is set to change and varies depending on the specific contagion. Quarantines are often too late to contain pest and insect infestations or migratory bird diseases.
Duration	Weeks or months. Impacts can be years.

Table 35 **Pandemic/Endemic Human Disease**	**Definition**: An epidemic as an unexpected increase in the number of disease cases in a specific geographical area. Yellow fever, smallpox, measles, and polio are prime examples of epidemics. A pandemic is an unexpected increase in disease across multiple continents where the contagion is often a virus. Often for new diseases, populations have no immunity and severity of the disease is dependent on the virus characteristics, spreading factors, and efficacy of any existing vaccines to control the spread.
Historical Occurrences in Butler County	Pandemic human disease has long been a known threat, but it was catapulted to the forefront of public thought in 2020 as the multi-year, COVID-19 pandemic caused by the novel SARS-COV2 virus swept across the globe, causing massive disruptions to public health and healthcare systems, public life and society, and economies at every scale. The reverberations from this pandemic are ongoing. Endemics of flu are regular and occur on an annual basis. Rates of infection have remained normal. Lyme Disease, Cryptosporidiosis, E-Coli, Latent tuberculosis are typical infections tracked by County public health officials that occur mostly from an environmental source (contaminated meats, water).
	Total reported deaths from COVID-19 in Butler County were 61. Most occurring during the 2020 outbreak.
Probability and Extent	Population of Butler County was 14,334 (2020 Census) As of Dec 2022, 57.41% are fully vaccinated for COVID 19. Rise in COVID-19 cases occur annually in the colder months making this an endemic that is likely to stay in the population.
In the last 20 years, 10 events occurred where contagions have occurred as pandemics or major endemics (H1N1, SARS, MERS, Polio, Ebola (2), Malaria, Zika, COVID-19). The scale and impact of each one was dependent on the contagion characteristics, vaccine efficacy, and cooperation of worldwide systems to contain these outbreaks. Based on past events, the probability is likely greater than 20% of major endemics or pandemics occurring within 10 years. However, the scale and magnitude can vary depending upon multiple factors primarily in the early weeks of appearance.	
Warning Time	Typically, a few weeks ahead of time.
Duration	Weeks or months. If not contained, pandemics can become endemics and stay in the human population indefinitely.

Table 36 **Terrorism**	**Definition:** Domestic terrorism is the focus on terrorism in this assessment. This is defined as violent, criminal acts committed by individuals and/or groups to further ideological goals stemming from domestic influences, such as those of a political, religious, social, racial, or environmental nature.
Historical Occurrences in Butler County	None in Butler County.
	No injuries or deaths reported.
Probability and Extent	Population of Butler County was 14,334 (2020 Census) The 2024 Homeland Threat Assessment expects domestic terrorism to remain unchanged in the coming years.
Rural areas are not prone to foreign born terrorism attacks. Domestic terrorism is far more likely for rural areas and the likelihood increases with a variety of factors. Radicalization online and the availability of accessing weapons can make any spot prone to attack. Attacks have largely targeted schools, churches, and mass gatherings such as shopping centers.	
Warning Time	None.
Duration	Usually occurs in less than an hour. Depending on the attack.

<table>
<tr><td>Table 37
Radiological Incidents</td><td colspan="2">Definition: A radiological incident is an occurrence resulting in a release of radiological material at a fixed facility or in transit. An incident resulting in a release of radiological material at a fixed facility includes, but is not limited to, power plants, hospitals, and laboratories. Although the term "nuclear accident" has no strict technical definition, it generally refers to events involving the release of significant levels of radiation.</td></tr>
<tr><td rowspan="2">Historical Occurrences in Butler County</td><td colspan="2">No occurrences recorded in Butler County</td></tr>
<tr><td colspan="2">No deaths or injuries reported due to this hazard in County.</td></tr>
<tr><td>Probability and Extent</td><td colspan="2">Butler County is located far beyond the 50-mile hazard radius from a nuclear powerplant. Beyond a nuclear bomb attack which would likely impact only large metro areas, Butler County has no vulnerability to radiological hazard.</td></tr>
<tr><td colspan="2">There are two nuclear power plants that operate close to Iowa's borders: the Quad Cities Generating Station near Cordova, Illinois, and the Cooper Nuclear Station near Brownsville, Nebraska. The map below identifies the location of each facility as well as the 10-mile and 50-mile planning buffers.</td><td rowspan="3">Nuclear Power Plants Impacting Iowa (2021).
 

Source: Iowa HSEMD</td></tr>
<tr><td>Warning Time</td><td>Usually no warning time.</td></tr>
<tr><td>Duration</td><td>A nuclear event is likely over in a few seconds. The fallout is likely to last for decades. For a meltdown at a power plant, this can occur over a period of hours or days. If left uncontained, the radioactivity would devastate the region, and winds could carry the fallout and drop hazardous fallout a vast area for hundreds of miles.</td></tr>
</table>

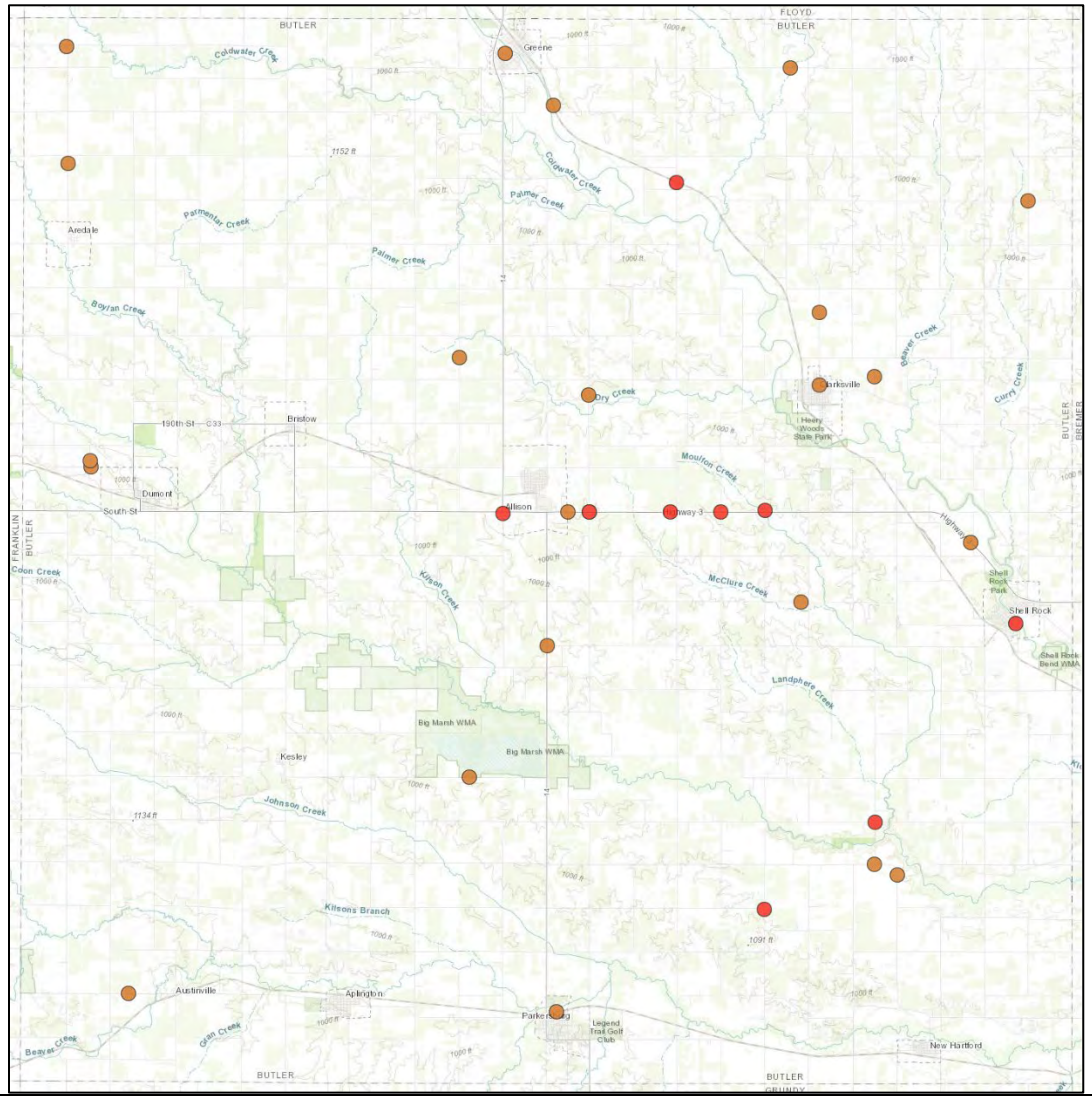
<table>
<tr><td>Table 37
Transportation Incidents</td><td>Definition: This hazard encompasses air transportation, highway transportation, railway transportation, and waterway incidents. A transportation incident is described as an accident involving any mode of transportation that directly threatens life, property damage, injury, or adversely impacts a community's capabilities to provide emergency services.</td></tr>
<tr><td>Historical occurrences and Location of Impact</td><td>There have been 447 total crashes from 2020 to 2024 that have resulted in 10 deaths and 22 serious injuries throughout the county according to the Iowa DOT. It involved 808 total occupants. Of those incidents, 6 involved rail. The major cause of 140 incidents was an animal.

There were no reported aviation incidents from 2020 to 2024.</td></tr>
<tr><td>Probability and Extent</td><td>Car crashes are likely to occur. Based on historical data, 15% probability of serious car accidents each year (not many confirmed involving drugs or alcohol). Most accidents involve 2 vehicles.

Railway and aviation accidents are not likely and there is less than 10% chance of occurring annually.</td></tr>
<tr><td>Historical Occurrences of Car Crashes in Butler County 2020-2024

Source: Iowa DOT Crash Analysis</td><td>
<table>
<tr><td>Total Crashes</td><td>447</td><td></td><td>Total Injury Status</td><td>336</td></tr>
<tr><td>Crash Severity</td><td></td><td></td><td>Injury Severity</td><td></td></tr>
<tr><td>Fatal</td><td>10</td><td></td><td>Fatalities</td><td>11</td></tr>
<tr><td>Suspected Serious Injury</td><td>22</td><td></td><td>Suspected Serious</td><td>23</td></tr>
<tr><td>Suspected Minor Injury</td><td>48</td><td></td><td>Suspected Minor</td><td>68</td></tr>
<tr><td>Unknown</td><td>50</td><td></td><td>Possible (complaints of pain)</td><td>71</td></tr>
<tr><td>Property Damage Only</td><td>317</td><td></td><td>Uninjured/Unknown</td><td>0</td></tr>
<tr><td>Property Damage Total</td><td>$5,400,588</td><td></td><td>Not Reported</td><td>160</td></tr>
</table>
</td></tr>
<tr><td>Warning Time</td><td>None</td></tr>
<tr><td>Duration</td><td>Most transportation incidents are of short duration and have limited impact.</td></tr>
</table>

Fatal and Suspected Serious Injury Crashes in Butler County (2020-2024)



Fatal Crash
Suspected Serious Injury Crash

Source: Iowa DOT Crash Analysis

Vulnerability Assessment

Hazard Risk for Urban Areas of Butler County

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

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

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

Top 3 Hazards for Cities in Butler County

Thunderstorm/ Lightning/Hail

Severe Winter Storm

Hazardous Materials

Table 38 : Hazard Risk Assessment Results for Urban Areas of Butler County

Rank	Hazard	Probability Score	Magnitude Score	Warning Time Score	Duration Score	Risk Score for Urban Areas
1	**Thunderstorm/Lightning/Hail**	3.5	2.1	3	1.4	2.80
2	**Severe Winter Storm**	3.6	2	2	2.7	2.79
3	**Hazardous Materials**	2.7	1.9	3.7	2.8	2.62
4	Pandemic Human Disease	2.4	2.6	2.2	3.4	2.53
5	Extreme Heat	3.1	1.9	1.3	3.4	2.5
6	Drought	2.8	2	1	4	2.41
7	Animal/Crop/Plant Disease	2.5	2.1	1.7	3.9	2.4
8	Flash Flood	2.5	1.9	3	2	2.35
9	Tornado/Windstorm	2.2	2	3.8	1.8	2.34
10	Transportation Incident	2.5	1.4	3.1	1.3	2.14
11	Grass/Wild Land Fire	2.1	1.3	3.6	1.3	2.01
12	River Flood	2.2	1.6	1.5	2.4	1.94
13	Infrastructure Failure	1.2	1.2	2.2	1.7	1.4
14	Sinkholes	0.9	1	2.7	1.5	1.26
15	Expansive Soils	1	1.1	1.3	1	1.08
16	Levee/Dam Failure	0.7	1.1	1.4	1.3	0.99
17	Radiological Incident	0.6	1	1.5	0.8	0.88
18	Terrorism	0.5	0.8	1.4	1	0.78
19	Landslides	0.2	0.3	0.8	0.2	0.32
20	Earthquake*	0	0	0	0	0

*No urban area of Butler County has not taken this hazard into consideration for community specific mitigation

Hazard Risk for Rural Areas of Butler County

Top 3 Hazards for Rural Areas in Butler County

Tornados/ Windstorms

Flash Flooding

Severe Winter Storms

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

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

Table 39 : Hazard Risk Assessment Results for Rural Areas of Butler County

Rank	Hazard	Probability Score (County)	Magnitude Score (County)	Warning Time Score (County)	Duration Score (County)	Risk Score for Rural Areas
1	**Tornado/Windstorm**	3	4	4	1	3.25
2	**Flash Flood**	3	2	2	3	2.55
3	**Severe Winter Storm**	3	2	2	3	2.55
4	Drought	3	2	1	4	2.5
5	Grass/Wild Land Fire	3	1	4	2	2.45
6	Transportation Incident	3	1	4	2	2.45
7	River Flood	3	2	1	3	2.4
8	Terrorism	2	2	4	3	2.4
9	Thunderstorm/Lightning/Hail	3	2	2	1	2.35
10	Animal/Crop/Plant Disease	2	2	1	4	2.05
11	Hazardous Materials	2	2	1	4	2.05
12	Pandemic Human Disease	2	2	1	4	2.05
13	Infrastructure Failure	1	2	4	3	1.95
14	Radiological Incident	1	1	4	4	1.75
15	Extreme Heat	2	1	1	3	1.65
16	Levee/Dam Failure	1	1	4	2	1.55
17	Sinkholes	1	1	4	2	1.55
18	Earthquake	1	1	4	1	1.45
19	Expansive Soils	1	1	4	1	1.45
20	Landslides	1	1	4	1	1.45

Critical Facilities

Incorporated Areas – Urban

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

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

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

Unincorporated Areas - Rural

A map of all the critical sites located in unincorporated county land is shown in Figure 7. The map illustrates an inventory of facilities such as electrical substations or fuel storage facilities so that strategies to implement mitigation activities are risk informed. The map can help visualize important corridors, locations where there are concentrations of hazardous storage facilities, and critical areas for emergency planning.

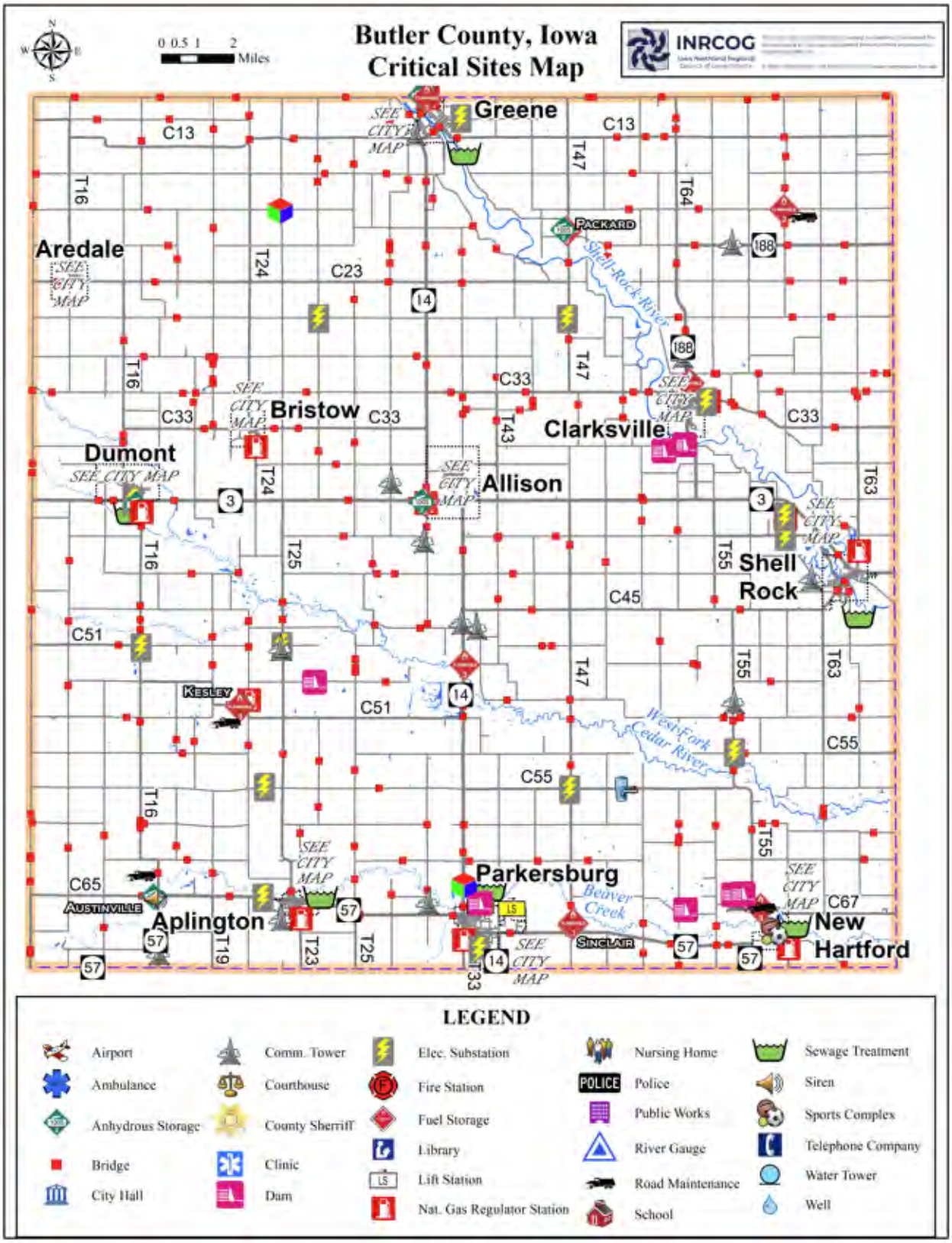
Requirement 44 CFR §201.6(c)(2)(ii): The plan should describe vulnerability in terms of (A) the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas.

Table 40: ***Critical Facilities in Select Communities for Butler County***

Critical Facilities in Allison	Critical Facilities in Aplington	Critical Facilities in Clarksville	Critical Facilities in Parkersburg
City Hall	City Hall	City Hall	Emergency Servies Building
Emergency Services Building	Fire Station	Fire Station	Fire Station
EMS Building	Public Works Facility	Nursing Home	Police Station
Butler County Courthouse	Water Treatment Plant	Public Library	Aplington-Parkersburg High School
Public Library	Wastewater Treatment Plant	Clarksville Community School	Parkersburg Elementary School
North Butler Elementary School	Old Water Tower	**Critical Facilities in Dumont**	Civic Center
AMVET Post 88	New Water Tower	City Hall	Veterans' Memorial Building
Rehabilitation Center	Aplington-Parkersburg School	Emergency Center	First Congregational Church
St. James Lutheran Church	Recreation Complex	Dumont Community Library	St. Patrick's Church
Trinity Reform Church	Maple Manor Village	Dumont United Methodist Church	Bethel Lutheran Church
United Church of Christ	Kidquest Day Care Center	Dumont Reformed Church	United Methodist church
	First Reformed Church	**Critical Facilities in Greene**	Christian Reformed Church
	Evangelical Presbyterian Church	City Hall/Community Center	**Critical Facilities in Shell Rock**
	Baptist Church	Emergency Services Building	City Hall
	Critical Facilities in Aredale	Public Works Facility	Fire Station
	City Hall	Water Treatment Facility	Community Center
	Fire Station	Waste Water Treatment Facility	Waverly-Shell Rock Elem. School
	United Methodist Church	North Butler Community School	Jehovah's Witness Church
	Landus	St. Peter's Church	First United Methodist Church
	Back Road Bar & Grill	St. Mary's Church	Faith Lutheran Church
	Critical Facilities in Bristow	**Critical Facilities in New Hartford**	
	City Hall	Community Building	
		Fire Station	
		New Hartford Community School	
		United Methodist Church	
		First Baptist Church	
		Co-op Elevator	

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

Figure 7: Map of Critical Sites in Butler County



Measuring Vulnerability to Selected Hazards

Property Valuation for Butler County

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

For residential, $482,708,108 is the total assessed value for a potential loss. Agricultural land is assessed at $423,933,412 and commercial land is assessed at $99,619,315. All industrial land is assessed at $84,608,438. Utilities without gas or electric valuations are assessed at $2,846,982. The entire county's valuation without gas and electric valuations is approximately $1,125,060,630. If we consider gas and electric valuations, the county is valued at a total assessed dollar value of $1,181,105,081. This is the total vulnerability in terms of cost for Butler County.

Table 41: Total Assessed Valuations of Property in Butler County by Land Type (2023)

Land Type	Assessed Value (2022)
Residential	$482,708,108
Agricultural Land	$423,933,412
Agricultural Buildings	$26,376,667
Commercial	$99,619,315
Industrial	$84,608,438
Utilities W/O Gas & Electric (G&E)	$2,846,982
Total Valuation W/O G&E Utilities	$1,125,060,630
Gas & Electric Utility Valuation	$56,044,451
Total Valuation With G&E Utilities	$1,181,105,081
Source: Iowa Dept. of Management	

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

Estimating Potential Property Losses from a 100-Year Flooding Scenario

A flood scenario was modeled across the county using the 1% annual chance flood hazard zone from FEMA's flood insurance rate maps (FIRM). For this analysis, the impact of flooding for the planning area was calculated with parcel valuation data from the county assessor's office and effective FIRM data. See Appendix T for the flood scenario maps of each city and the affected parcels in that city from a 100-year annual chance flood event.

The effective FIRM data is dated 09/16/2011. Since the 2020 Butler County MJ-HMP there have been no major changes in flood boundaries nor development within city boundaries. No levees or dams or changes in water ways have impacted the planning area nor have any infrastructure projects out of the county changed waterways throughout the County. No development changes have affected the vulnerability of the County. Assuming a similar impact from the 2020 analysis, the values from the 2020 Butler County's MJ-HMP were adjusted for inflation to 2023 dollars. Cumulative inflation was calculated using the BLS inflation calculator.

The total cost of a 100-year annual chance flood occurring is summarized in the table on this page. The next table lists the number properties in the entire county that are located within the 100-year floodplain.

For rural areas of Butler County (unincorporated), the following table displays the value of 3,418 parcels within the 100-year floodplain. Land values make up nearly 24% of this value. For city parcels, the table shows a total cost for all cities in 2024 dollars for a 100-year annual chance flood event occurring.

Table 42: Butler County - Entire Planning Area: 100-Year Flood Impacted Properties (2019 and 2023)

	2013	2023
Number of Parcels	4,497	4,497
Total Value of Land Building, and Dwelling	$497,131,086	$603,236,214

Source: INRCOG & Butler County Assessor 2018
Note: 2023 Dollars calculated with 34.6% cumulative rate of inflation.

Table 43: Butler County -Incorporated Planning Area: 100-Year Floodplain Properties

	2013	2023
Number of Parcels	1,079	1,079
Total Value of Land Building, and Dwelling	$47,794,796	$57,995,873

Source: INRCOG & Butler County Assessor 2018
Note: 2023 Dollars calculated with 34.6% cumulative rate of inflation.

Table 44: Butler County- Rural Unincorporated Planning Area: 100-Year Flood Impacted Properties

	2013	2023
Number of Parcels	3,418	3,418
Total Value of Land Building, and Dwelling	$449,336,290	$545,240,340

Source: INRCOG & Butler County Assessor 2018
Note: 2023 Dollars calculated with 34.6% cumulative rate of inflation.

Figure 8: FIRM Data Flood Risk Areas in Butler County

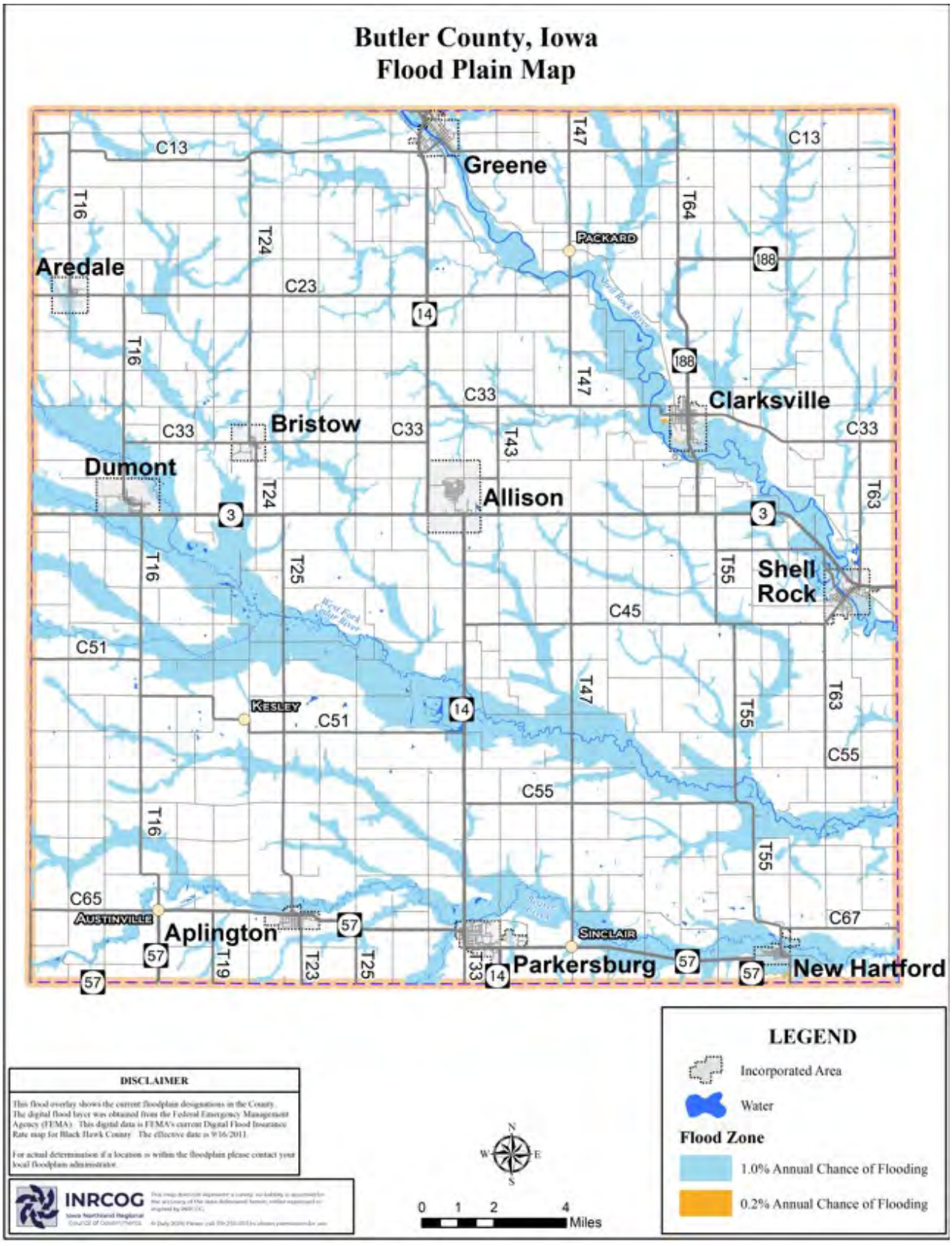
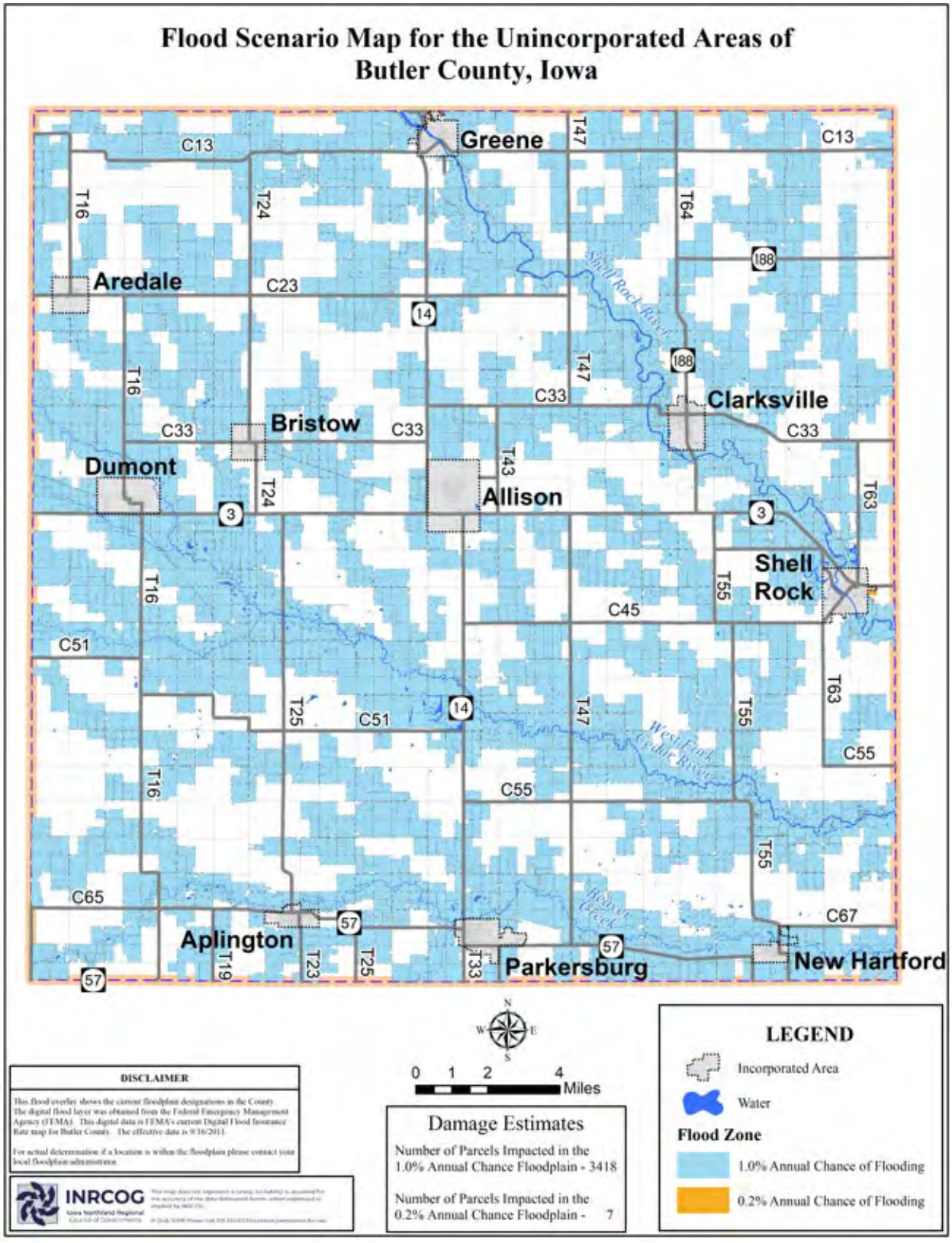


Figure 9: Flood Impacted Parcels in Butler County



Tornado Scenario

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

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

According to data from the 2023 ACS data, there are an estimated 123 mobile homes in the county. The average household size is 2.32 people. An estimated 382 people reside in mobile homes in the county. A potential tornado may affect the entire county. This puts 285 people at a greater risk than others during a tornado event.

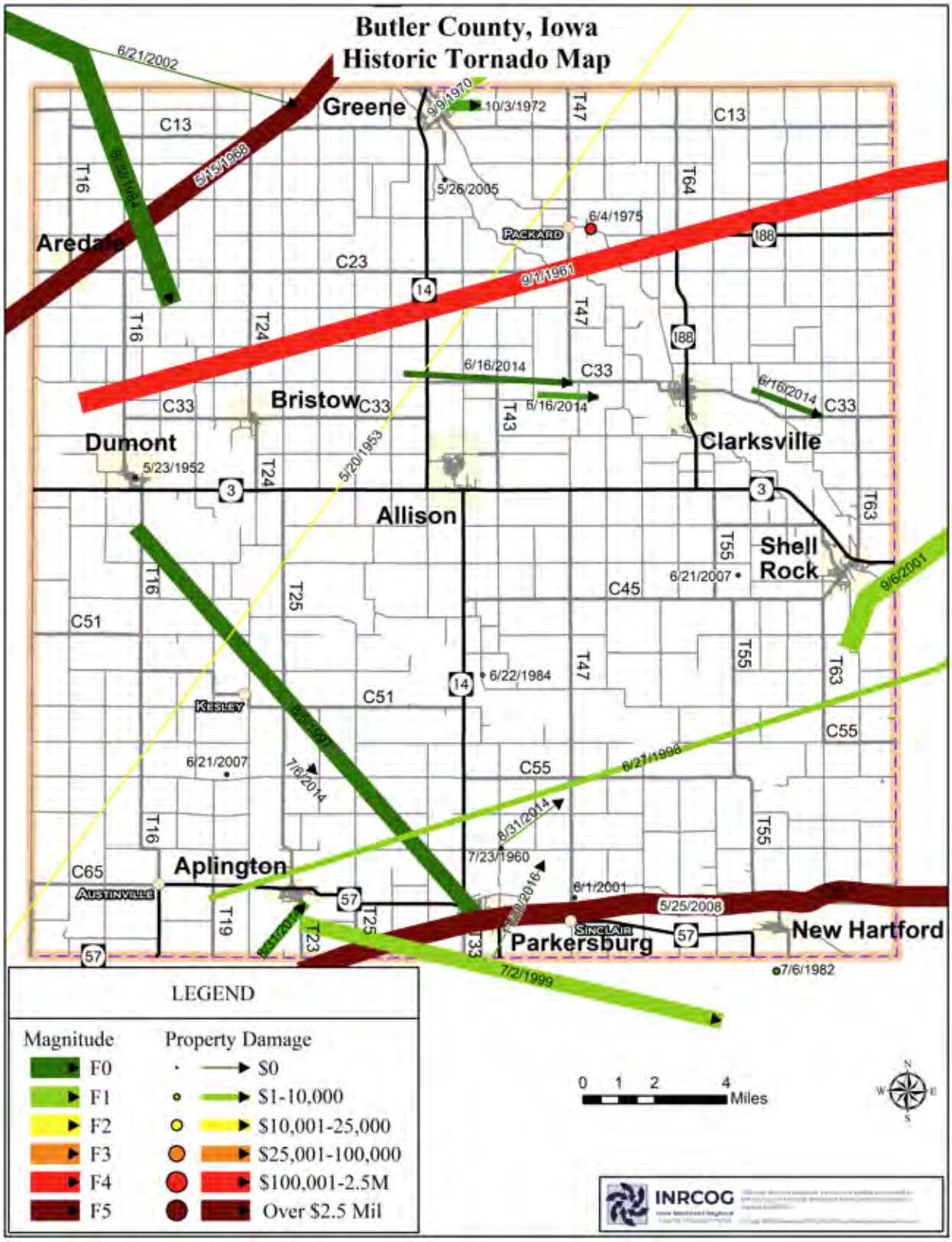
Vulnerable populations in a tornado are those over 70 years of age. For the elderly population, there are an estimated 3,118 adults greater than 65 years old which is 22% of the population in the county. Nearly 14% of the population are older adults (65 years or older) living alone. This is estimated at 1,984.

From this assessment, nearly 3,403 people in the county are at greater risk than others in a tornado. This accounts for older adults 65 years and older and people living in mobile homes. Both these measures account for nearly 25% of the population.

The maps below show a historical map of tornados for Butler County. See Appendix T for individual community's tornado scenario maps.

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

Figure 10: Historical Tornado Map in Butler County



Future Development

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

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

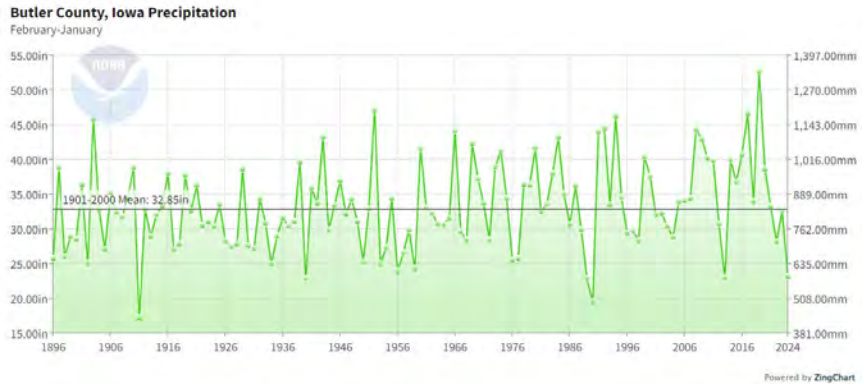
Long term trends of climate patterns for the region were summarized in the Fourth National Climate Assessment Midwest Section. The National Climate Report is mandated to be updated every 4 years and deliver results to Congress and President on the effects to agriculture, energy productions, land use,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

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

Annual Precipitation Levels in Butler County

Taking the monthly precipitation records from January to December between 1895 and 2024 is shown in Figure 6. The values hover between 20 – 50 inches of precipitation levels recorded. The average precipitation level for the year is plotted and a linear trend of those values is shown in Figure 6. The trend shows a growing level of annual precipitation on average of 32.80 inches. Based on this historical trend, precipitation is likely to continue to increase in the coming years.

Figure 11: Historical Precipitation Data and Trend for Butler County, Iowa[2]

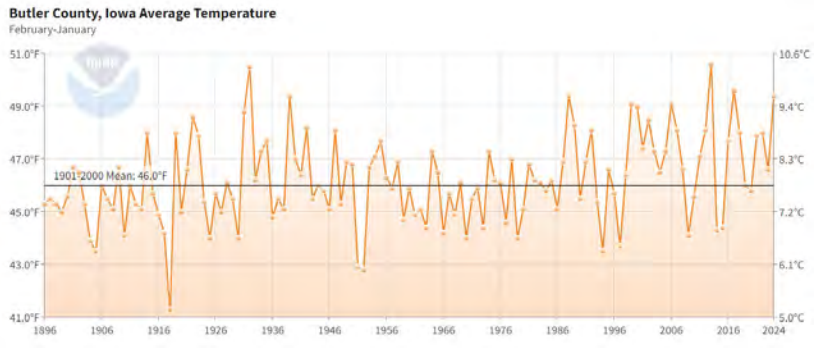


[2] NOAA National Centers for Environmental information, *Climate at a Glance: County Time Series*, published February 2024, retrieved on February 28, 2024 from https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series

Average Annual Temperatures in Butler County

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

Figure 12: Historical Temperature Data and Trend for Butler County, Iowa[2]



Climate Patterns from Increasing Precipitation and Higher Temperatures

Drought

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

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

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

Pest Infestation

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

Extreme Heat Domes

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

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

Projected Trends of Natural Hazards in Butler County

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

NFIP and Repetitive Loss Properties

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

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

Planning with hazard mitigation activities breaks this cycle of continuous and costly reinvestment for an area facing the same or greater risk to damage and losses. Redevelopment ensures investments can reduce future losses that protect life, property, and community life. Table 46 shows which jurisdictions participate in the National Flood Insurance Program (NFIP). Each participating jurisdiction is responsible for implementing and enforcing the NFIP related regulations where applicable by an appropriate designee of the jurisdiction.

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

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

Jurisdiction	NFIP	Initial FHBM Identified	Current Effective Map Date	Total Policy Count	Total Net Dollars Paid	Total Loss
Butler County	Yes	9/6/77	12/17/20	44	$1,213,570	46
Aredale	Yes	1/17/75	12/17/20	1	$2,363	1
Clarksville	Yes	9/17/75	12/17/20	15	$572,059	11
Dumont	Yes	5/24/74	12/17/20	0	$62,566	9
Greene	Yes	5/17/74	12/17/20	23	$1,244,885	49
New Hartford	Yes	5/31/74	12/17/20	66	$3,666,537	174
Shell Rock	Yes	12/17/76	12/17/20	10	$682.042	23
Parkersburg	Yes	7/2/76	12/17/20	-	-	-
Allison	No	7/16/76	12/17/20			
Aplington	No	7/16/76	12/17/20			
Bristow	No	7/2/76	12/17/20			

Section IV: Mitigation Strategy

Goals for Reducing Hazard Risk

The planning committee reviewed the County's Hazard Mitigation Plan Goals from the 2020 plan. The planning committee elected to continue forward with the same set of goals from the plan update (Goals 1 through 7). Goals 1 through 7 were approved by Butler County's Board of Supervisors in 2020. No additional goals were added.

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

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

Goal 1: Minimize to the greatest possible extent the number of injuries and/or loss of life associated with all identified hazards.

Goal 2: Reduce or eliminate property damage due to the occurrence of disasters.

Goal 3: Identify ways that response operations, in the event of a disaster, can be improved.

Goal 4: Return the community to either pre-disaster or improved conditions in a timely manner in the wake of a disaster.

Goal 5: Develop strategies that can be used to reduce the community's overall risk to the negative effects of natural, technological, and man-made disasters.

Goal 6: Reconvene the planning committee on an annual basis to review plan documents, check for compliance with the plan goals, and track progress in achieving the mitigation strategies.

Goal 7: Maintain the Countywide Multi-Jurisdictional format for future plan updates.

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

Capability Assessment

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

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

Local Plans and Regulations

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

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

Table 47: Inventory of County Programs/Plans/Strategy in Emergency Management

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

Administrative and Technical Capabilities

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

Table 48: Administrative Capabilities

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

Table 49: Technical Capabilities

Capability Type	***In Place?***	***Resources Regularly Used or Updated by Technical Resource***
Grant Writing	Yes	INRCOG
Hazard Data and Information	Yes	Hazard Mitigation Plans, Safety Meetings, MSDS hazard training for employees
GIS Analysis	Yes	
Mutual Aid Agreements	Yes	Emergency service coverage maps, emergency response plans, county dispatch office

Financial Capabilities

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

Emergency Management and Mitigation Funding Sources In Place	Description of Current Funds Utilized for Hazard Mitigation In County
Capital Improvement Project Funding	• Availability of funding is based on need or projects related to buildings, roads, land development, or trail improvement.
Non-FEMA Federal Funding Programs	• Secondary Road Department is a DOT agency that has access to limited bridge and road federal funds. • ARPA funds – security lighting/locked doors/cameras for county buildings, county law enforcement center building, radios for roadway crews in DOT • CDC Public Health Emergency Preparedness Program and Guidance – federal grant offered to Region 6 for preparedness planning, activities available to work with EMA on preparedness plans, updates, meetings, etc. CANNOT be used for emergency responses.
Local Public Health Services	• State grants to all county health departments to work with EMA on preparedness plans, updates, meetings, etc.

Education and Outreach Capabilities

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

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

Current Hazard Mitigation Actions and Updates

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

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

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

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

Table 50: Categories of Action Types in Hazard Mitigation Strategy

Mitigation Action Category	Description	Examples	
EMERGENCY SERVICES	Actions that protect people and property during and immediately after a disaster or hazard event.	• *Warning Systems* • *Emergency response services* • *Protection of critical facilities*	
EDUCATION AND AWARENESS PROGRAM	These types of actions keep residents informed about potential natural disasters.	• *Alert Iowa* • *Radio or television ads* • *Social media outreach*	• *Websites* • *Real estate disclosures,* • *Outreach to underserved or vulnerable communities*
NATURAL SYSTEM PROTECTION AND NATURE-BASED SOLUTIONS	Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions.	• *Sediment/erosion control* • *Stream restoration* • *Greenways*	• *Source water protection plans* • *Wetland preservation* • *Prairie land-controlled burns*
STRUCTURES AND INFRASTRUCTURE PROJECTS	Actions that either modify existing buildings or structures to protect them from a hazard, or removal from a hazard area.	• *Acquisition of flood prone properties* • *Installing utilities underground*	• *Safe rooms* • *Storm drain infrastructure such as concrete culverts* • *Structural retrofits*
LOCAL PLANS AND REGULATIONS	Actions by administrative or regulatory processes which direct how land and buildings are developed and built. These actions include regulations by public entities to reduce hazard losses.	• *Comprehensive land use plans* • *Land use ordinances* • *Development review procedures a*	• *Building codes and enforcement* • *Open space preservation* • *Storm water management regulations*

Emergency Services Activities

Emergency Management Agency

Allison works with the Butler County Emergency Management Coordinator, based out of the City of Allison, on various safety and emergency events. The Emergency Management Coordinator works in conjunction with local fire, rescue, police, and government officials to draft and implement workable emergency action plans in the community. The Butler County Emergency Management Coordinator is Chris Showalter.

Chris Showalter, Emergency Management Coordinator
610 Oak Street, Allison, IA 5062
Phone: (319) 346-6557
Email: ButlercoEMA@butlercounty.iowa.gov

Law Enforcement

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

Fire Protection

There are eight independent fire departments (Allison, Aplington, Clarksville, Dumont, Green, New Hartford, Parkersburg, and Shell Rock). Each department is responsible for providing fire protection services to a particular area within the county.

By law, every township must provide fire protection services to those citizens living within its borders. Every department within Butler County has signed a mutual aid agreement with one another. This document is on file with Butler County Emergency Management and can be viewed as a portion of the Butler County Contingency Plan.

Ambulance Services

Butler County EMS represents all 8 of the EMS service in the County. Butler County Board of Supervisors deemed EMS an Essential Service for the County according to Iowa Code Chapter 422D and recently hired an EMS Coordinator to provide coverage and support for EMS services within the county.

Medical Facilities

Butler County does not have a hospital located within the county. The Waverly Health Center in Waverly and Franklin General Hospital in Hampton are located east and west of the county. The county is home to several medical clinics throughout the county.

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

HAZMAT

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

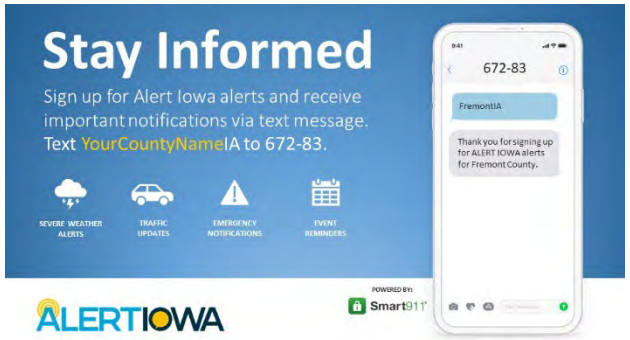
The jurisdiction also partners with the Northeast Iowa Response Group for assistance in responding to any methamphetamine labs located in the city limits. The Response Group assists the Police Departments in the containment of the site and disposal of hazardous chemicals.

Warning Systems

Alert Iowa

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

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



Tornado Sirens

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

Education and Awareness Programs Activities

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

Structure and Infrastructure Projects Activities

County Engineer and Secondary Roads Department

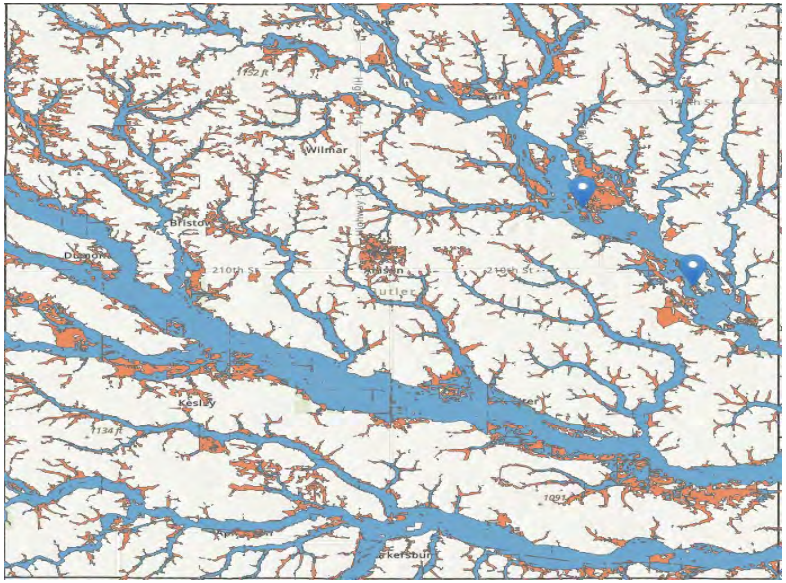
The Butler County Engineer's Office is tasked with the maintenance of all roads within Butler County. The Code of Iowa requires that the Board of Supervisors appoint a Registered Professional Engineer as department head. The Engineer, along with the Assistant to the Engineer and Technician, Road Superintendent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

Tornado Safe Rooms

Safe rooms are designed according to FEMA standards. They can withstand wind gusts of up to 250 mph and resist the impact of a 15-pound 2-by-4 board traveling horizontally at 100 miles per hour.

Natural Resource Protection Mitigation Activities

Floodplain Management in Butler County



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

Watershed Management Authority

Butler County has two watersheds that run through its county. They include the Shell Rock River Watershed Manamgnet Coalition and Middle Cedar WMA. The Watershed Management Authority to perform all the following duties:

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

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

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

Planning and Regulation Activities

Flood Protection Mitigation Actions

Butler County currently has a Floodplain Management Ordinance. Inquiries pertaining to construction areas in a floodplain are directed to the respective county or city and follow NFIP guidelines. Inquiries regarding flood insurance are directed toward the Federal Insurance and Mitigation Administration. The Federal Government completed new FIRM maps, as of September 2020 for Butler County. Butler County has and

enforces Zoning Ordinances. Butler County issue building permits for the unincorporated areas only.

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

Planning And Regulatory Documents

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

Table 51: Current Planning and Regulatory Documents for Selected Communities

Jurisdiction Planning and Regulation Documents	Allison	Aplington	Aredale	Bristow	Clarksville	Dumont	New Hartford	Parkersburg	Shell Rock	Unincorporated Butler County
Previous Hazard Mitigation Plan Participant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Comprehensive Plan	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes
Building Code	No	Yes	No	No	No	Yes	Yes	Yes	No	No
Zoning Ordinance	RR	RR	No	RR	RR	RR	RR	Yes	Yes	Yes
Subdivision Regulations	No	Yes	No	No	No	No	Yes	Yes	Yes	Yes
Floodplain Management Ordinance	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Tree-Trimming Ordinance	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
Storm Water Ordinance	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
Snow Removal Ordinance	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes

Source: Community Representatives

Hazard Mitigation Strategy for Butler County

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

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

Priority Level

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

The priority ranking for each identified mitigation activity is:

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

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

Timeline

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

Table 52: Mitigation Action Timeline	Timeframe Description
Immediate	1-6 Months
Short Term	1-3 Years
Mid-Term	3-5 Years
Long-Term	More than 5 Years
Completed or Active	Action Item Has Been Completed (and/or implemented as a regular, ongoing service/program/policy)

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

Estimated Cost

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

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

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

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

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

Hazard Mitigation Action Implementation Plan

Table 54: Hazard Mitigation Category Descriptions and Examples

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

Notes for Mitigation action Tables

ALL = All Hazards
A/P/CD = Animal/Plant/Crop Disease
D/L = Dam/Levee Failure
D= Drought
E= Earthquake
ES= Expansive Soils
EH= Extreme Heat
GWF= Grass/Wildland Fire
HMI= Hazard Materials Incident
IF= Infrastructure Failure
FF= Flash Flooding
FR= Flooding- River
L= Landslides
PHD= Pandemic Human Disease
RI= Radiological Incident
S= Sinkholes
SWS= Severe Winter Storm
T= Terrorism
TI= Transportation Incident
T/H/L= Thunderstorm/ Hail/ Lightning
T/W= Tornado/Windstorm
* Denotes primary agency responsible

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

Table 55: Emergency Services Mitigation Actions							
Actions that protect people and property during and immediately after a disaster or hazard event.							
Priority	**Mitigation Action/Program/Project**	**Associated Hazard**	**Primary Agency Responsible for Implementation**	**Timeline**	**Estimated Cost(s)**	**Possible Funding Source**	**Hazard Mitigation Goal(s) #**
High	Maintain well-trained personnel (fire, first responders, police, EMS, weather spotters, and other critical services: includes multi-jurisdictional training and cooperation for all hazards).	FF, FR, T/H/L, T/W, HMI, T, GWF	Individual Departments*, County EMA, Ambulance Service, Police Departments	Active	Minimal	County General Fund	1, 2, 3, 4, 5, 7
High	Establish and maintain an emergency notification system and conduct drills.	All	County EMA*	Short-Term	Minimal	County General Fund	1, 2, 3, 5
	Develop a NOAA Weather Radio Awareness program.	All	County EMA*	Short-Term	Minimal	County General Fund	1, 2, 3, 5
Low	Complete and maintain a secondary off-site dispatch center.	All	County EMA*	Short-Term	Low	County General Fund	1, 2, 3, 5
Medium	Maintain plans/procedures to assist at-risk populations during an event (transport to shelters, home visits, etc).	EH, FF, RF, SWS, T/H/L, T/W, HMI, D/L	County EMA*, Public Health	Active	Minimal	County General Fund	1, 5
High	Update the outdoor siren in Kelsey.	T/H/L, T/W	County EMA, County Board of Supervisors	Mid-Term	High	County General Fund	1, 2, 3, 5
High	Update the outdoor siren in Austinville.	T/H/L, T/W	County EMA, County Board of Supervisors	Mid-Term	High	County General Fund	1, 2, 3, 5
High	Add river gauge upstream of Dumont.	FF, RF	County EMA*	Immediate	Minimal	County General Fund	1, 2, 3, 5
High	Add river gauge upstream of Clarksville.	FF, RF	County EMA*	Immediate	Minimal	County General Fund	1, 2, 3, 5

Table 56: Education and Awareness Programs Mitigation Actions

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

Priority	Mitigation Action/Program/Project	Associated Hazard	Primary Agency Responsible for Implementation	Timeline	Estimated Cost(s)	Possible Funding Sources	Hazard Mitigation Goal(s) #
High	Promote the Alert Iowa notification system.	All	County EMA*	Immediate	Minimal	County General Fund	1, 2, 3, 5
High	Engage in community outreach to inform the public of floodplain permit requirements.	FF, FR	County Zoning*	Short-Term	Minimal	County General Fund	1, 2, 3, 5, 7
High	Establish and conduct a Public Awareness & Education Program (notices, newsletters, brochures, websites, warnings, shelter information, importance of vaccinations, hazard information, and at-home improvements).	D, EH, FF, FR, GWF, PHD, SWS, T/H/L, T/W, HMI< IF, D/L, ES, S	County EMA*, Public Health	Short-Term	Minimal	County General Fund	1, 2, 4, 5, 6
High	Educate the public about the importance of protecting their wells and annual water testing that is provided by the county for free.	D, FF, RF, S	County Environmental Health	Immediate	Minimal	County General Fund	1, 2, 5

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

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

Priority	Mitigation Action/Program/Project	Associated Hazard	Primary Agency Responsible for Implementation	Timeline	Estimated Cost(s)	Possible Funding Sources	Hazard Mitigation Goal(s) #
Low	Develop and maintain a Roadside Vegetation Management program.	L, A/P/CD, GWF	County Engineer*	Short-Term	Minimal	County General Fund	5
Low	Develop Groundwater Protection Plan or Drinkable Water Distribution Plan.	D, FF, FR, PHD, HMI, TI, T	County Environmental Health	Short-Term	Minimal	County General Fund	1, 5
Medium	Adopt a stormwater management ordinance to protect natural water sources, water flows, and surface water.	D, FF, FR, HMI, T/H/L	County EMA, County Conservation	Mid-Term	Moderate	County General Fund	2, 4, 5
High	Maintain membership in National Flood Insurance Program	FF, FR	County Board of Supervisors*	Active	Minimal	County General Fund	5
Low	Maintain a county-wide household hazardous waste disposal site.	HMI, PHD	County Board of Supervisors*	Active	Moderate	County General Fund, Solid Waste Commission	4
High	Establish regular communication between county and cities regarding floodplain regulations	All	County EMA*, City Clerks, City Councils	Active	Minimal	County General Fund	1, 2, 3, 4, 5, 6, 7

Table 58: Structure and Infrastructure Projects Mitigation Actions							
Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.							
Priority	**Mitigation Action/Program/Project**	**Associated Hazard**	**Primary Agency Responsible for Implementation**	**Timeline**	**Estimated Cost(s)**	**Possible Funding Sources**	**Hazard Mitigation Goal #**
High	Encourage well owners to raise well heads about flood levels and promote cost-share program related to these renovations.	D, FF, FR	County Environmental Health*	Immediate	Minimal	County General Fund	1, 2, 5
Medium	Install signage at critical transportation sites, including railroad crossing signs and lights.	FF, FR, GWR, SWS, T/H/L, T/W, HMI, D/L, TI	County Engineer*	Mid-Term	Minimal	County General Fund	1, 5
Low	Develop and Enforce an Inspection & Repair Program for public infrastructure.	E, EH, FF, FR, T/W, D/L, TI	County Engineer*	Short-Term	Moderate	County General Fund	1, 2, 5
Medium	Establish a groundwater protection ordinance for newly constructed wells in Karst to prevent contamination.	D, FF, FR	County Environmental Health*	Mid-Term	Moderate	County General Fund	1, 2, 4, 5
Low	Either purchase and/or remove structures in 100-YR Floodplain or elevate structures to at least 1-FT above 100-YR Floodplain.	FF, FR, D/L	County EMA, County Board of Supervisors, Floodplain/Zoning Administrator	Mid-Term	Moderate	County General Fund, Flood Mitigation Grant	1, 2, 5
Low	Conduct necessary studies, engineering, construction, etc. on existing infrastructure.	D/L, E, EH, HMI, IF, FF, FR, SWS, TI, T/H/L, T/W	County EMA, County Engineer	Short-Term	Moderate	County General Fund	1, 2, 5

Table 59: Local Plans and Regulations Mitigation Actions

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

Priority	Mitigation Action/Program/Project	Associated Hazard	Primary Agency Responsible for Implementation	Timeline	Estimated Cost (s)	Possible Funding Sources	Hazard Mitigation Goal #
Medium	Establish an annual review of plans and ordinances to ensure goals are being met and still appropriate.	All	County Zoning*	Annual	Minimal	County General Fund	6
Low	Maintain wellness clinics and Public Health Department	PHD	County Public Health*	Ongoing	Minimal	County General Fund	1
Medium	Establish building codes to ensure basements and/or safe rooms are constructed to protect from and withstand a tornado and other weather events.	T/H/L, T/W	County Zoning*	Short-Term	Low	County General Fund	1, 5
Medium	Update County Comprehensive Plan, Zoning & Subdivision Ordinances to help guide land use and development outside of hazard areas.	FF, FR, D/L,	County Zoning*	Mid-Term	Moderate	County General Fund	1, 2, 4, 5
Medium	Ensure schools and other buildings/structures with large populations have evacuation plans.	FF, FR, T/H/L, T/W, HMI, T	County EMA*	Short-Term	Minimal	County General Fund	1, 2
Low	Develop and maintain command procedures & center	All	County EMA*	Short-Term	Minimal	County General Fund	1, 5
Low	Develop and maintain Continuity of Operations Plan (COOP)	PHD, T/H/L, T/W, HMI, T	County Board of Supervisors*	Mid-Term	High	County General Fund	4, 6
Low	Develop and maintain a Clean Up/Recovery Procedure Plan.	FF, FR, SWS, T/H/L, T/W, HMI, D/L, T	County EMA*	Short-Term	Minimal	County General Fund, Hazard Mitigation Grant	4

Section V – Plan Maintenance

Future Amendments and Updates

This is an update to the 2020 Butler County Multi-Jurisdictional Hazard Mitigation Plan. A plan update is to occur every five (5) years. This 2025 plan is to be commenced upon FEMA Certification.

Future Amendments:

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

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

All amendments made to this plan should be shared with each participating jurisdiction, the Butler County Emergency Management Agency and the Iowa Department of Homeland Security and Emergency Management Division.

Future Updates:

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

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

The Implementation Process & Funding Recommendations

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

1. **Phasing Projects Over Budget Cycles**

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

2. **Capital Improvement Programs**

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

3. **Local Match Commitments**

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

4. **Strategic Planning and Prioritization**

   It is recommended that projects created by each city's and/or county's planning committee participants be shared with city clerks, managers, boards, and department heads so that projects or programs in each jurisdiction's implementation strategy may be prioritized for funding through the jurisdiction's budgeting process.

5. **Hazard Mitigation Grant Program**

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

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

Evaluation & Review Process

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

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

Reconvene Annually

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

Evaluation Tools

The Butler County Hazard Mitigation Plan Review Tool in Appendix U provides a public meeting evaluation form to assist in the review, evaluation, and updating process. In Appendix Q, the details on the updates or progress by each jurisdiction are provided. The updates in that appendix were provided by participants from the previous plan before this updated plan. Previous participants of the 2020 Butler County MJ-HMP participated and developed an updated to their local hazard mitigation plan per FEMA requirements to qualify for pre-disaster mitigation funding. Since many activities fall under the normal duties of most city governments (e.g. funding and maintaining emergency services), not many activities were deleted.

Several communities in Butler County are limited both in size and capacity to implement mitigation programs. Under the confines of these limited resources, some jurisdictions chose to drop a variety of previously defined mitigation actions, as they were determined to longer be a priority or were not feasible.

Continued Public Participation

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

Cities can expect Butler County's EMA coordinator to reach each jurisdiction for updates in the mail and email and to check for regular updates on the county website. To ensure that the public remains involved in the future implementation of this Plan, it shall remain available at all participating city halls, school districts, and the county courthouse. An electronic PDF copy of this plan will be posted on the Iowa Northland Regional Council of Government's website as well, at www.inrcog.org/pub.

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

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

Required Five (5) Year Update

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

Integrating the MJ-HMP Plan into other Planning Documents

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

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

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