Pottawattamie County
Emergency Management

Comprehensive Emergency Management Plan

Hazard Mitigation
2024 - 2029

Emergency Operations Center
205 S Main Street, Council Bluffs, Iowa 51503
pottcounty-ia.gov/emergency_management

Rev. 07.2024

Effective Dates

Plan Approval (FEMA): 08 August 2024

Plan Expiration: 07 August 2029

Applicability

Each participating jurisdiction or special district must have a formal resolution adopting the plan. The same official plan expiration date applies to all participants, regardless of local adoption date.

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

- Hazard Mitigation Grant Program (HMGP)
- HMGP Post-Fire
- Building Resilient Infrastructure and Communities (BRIC)
- Flood Mitigation Assistance (FMA)
- Rehabilitation of High Hazard Potential Dams Grant Program

Note: *Pottawattamie County hosts no qualifying high hazard potential dams for the rehabilitation grant program.*

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INTRODUCTION

Most mitigation occurs at the local level, where communities apply a localized understanding of risks to effective planning and identify strategic mitigation options. Since local governments are directly connected to community plans and goals, they can provide a better understanding of local vulnerabilities as they relate to risk reduction activities.

Making the connection between community resilience priorities and private sector development is a challenge most often addressed directly at the local level. Actions to reduce long-term vulnerability, such as effective building code adoption and enforcement, are applied in both the pre-disaster planning and the post-disaster recovery activities of the jurisdiction.

Effective mitigation begins with a comprehensive understanding of risk based on vulnerabilities to threats and hazards. Threats and hazards present long-term risks to people and their property. Mitigation is risk management action taken to avoid, reduce, or transfer those risks. By reducing the impact of disasters, mitigation supports protection and prevention activities, eases response, and speeds recovery to create better prepared and more resilient communities.

Local hazard mitigation plans form the foundation of a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repetitive damage. The mitigation plan is intended to support local capabilities in achieving the following:

- Foster partnerships among all levels of government.
- Develop and strengthen non-governmental and private partnerships.
- Promote more disaster-resilient and sustainable communities.
- Reduce the costs associated with disaster response and recovery by promoting mitigation activities.

Governments, including special districts, in Pottawattamie County seeking plan approval are responsible for participating in the planning process and meeting all requirements set forth in federal mitigation planning guidance. This includes adopting this plan in accordance with local laws.

As authorized by 44 CFR § 201.6(a)(4), this plan is multijurisdictional in nature. The Emergency Management Agency serves as the designated entity to lead the plan's participants through the planning and mitigation management process.

Participation in and approval of this plan is required for jurisdictions to access designated federal mitigation grants and programs.

PLAN INFORMATION

Jurisdictions:	**Cities of:** Avoca, Carson, Carter Lake, Council Bluffs, Crescent, Hancock, Macedonia, McClelland, Minden, Neola, Oakland, Treynor, Underwood, and Walnut. **County of:** Pottawattamie **Special Districts of:** AHSTW Community School District, Council Bluffs Community School District, Heartland Christian Schools, Lewis Central Community School District, Riverside Community School District, Saint Albert Catholic Schools, Treynor Community School District, Tri-Center Community School District, Underwood Community School District, and Iowa Western Community College.
Title of Plan:	Pottawattamie County Comprehensive Emergency Plan – Hazard Mitigation
New Plan or Update:	Update
Single- or Multi-Jurisdictional:	Multi-Jurisdictional
Date of Plan:	27 September 2023
Local Point of Contact:	Douglas C. Reed, Director Pottawattamie County Emergency Management Agency 205 S Main St., Council Bluffs, Iowa 51503 712-328-5777 dreed@pcema-ia.org
Alt. Point of Contact:	Gabriel N. Barney, Deputy Director Pottawattamie County Emergency Management Agency 205 S Main St., Council Bluffs, Iowa 51503 712-328-5777 gbarney@pcema-ia.org

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ELEMENT A – Planning Process

Element A1 (a) | Preparation and Approval of the Plan[1]

Work on this plan began with assembling background information, using the State of Iowa Hazard Mitigation Plan and previously approved Pottawattamie County Hazard Mitigation Plan materials. Additional sources of information included: U.S. Census Bureau, the USCB American Community Survey, Iowa Department of Management, Western Iowa Development Association, National Flood Insurance Program, Pottawattamie County Conservation, Iowa Department of Revenue, Pottawattamie County Assessor, Pottawattamie County Geographic Information Services, Federal Emergency Management Agency, National Weather Service, Council Bluffs Chamber of Commerce, Iowa State University, University of Iowa, Pottawattamie County Auditor, and staff from local jurisdictions. Information from these plans and sources were used to develop or update this plan's background information, vulnerabilities, critical facilities, historic events, values at risk, and other pertinent details.

The planning process was facilitated by the Emergency Management Agency in consultation and coordination with each of the political subdivisions and special districts included in this plan. Local and/or regional agencies with hazard mitigation responsibilities/activities or development of regulatory authority are represented through their county emergency management officials for the collection and communication of data and comments.

The planning process officially began in September 2022 by initiating hazard vulnerability assessments, inclusive of hazard and risk identification, with all the K-12 school facilities and district/system administrators within the county. The process continued by engaging public officials and local stakeholders regarding the upcoming process, estimated timelines, and estimated scope of work for primary contributors and tertiary contributors. Work on the plan was continuous from initiation to submission for review and approval at the state and federal level in September 2023. As in past updates, the county seeks *"Approval Pending Adoption"* authorization.

All meetings requiring official decisions on the plan are conducted in accordance with Iowa's open meetings laws [Chapter 21, Code of Iowa] to ensure that the basis and rationale of governmental decisions, as well as those decisions themselves, are easily accessible to the people. Advertisement of these public meetings, where citizens could participate in discussion, review materials, and provide input was conducted by publicly posting meeting notices in accordance with law. In addition, the plan is publicly posted on the Emergency Management Agency's website where it can be reviewed and commented on by the public throughout the entirety of the plan's lifespan.

Upon completion of a final draft, the plan is made available for review and comment by all jurisdictions covered in the plan, contiguous county emergency managers, and the public. Upon receipt of review notes or comment, a final draft is submitted to Iowa Homeland Security and

[1] 44 CFR §201.6(c)(1)

Emergency Management Department (HSEMD) and the Federal Emergency Management Agency (FEMA) for approval and certification.

Approval and adoption by each plan participant will be documented by Resolution and filed with the FEMA approved mitigation plan upon execution of each. Prior to adoption, the intention to adopt by each participant, public notification of the intended action in compliance with Iowa open meetings laws is made in order to provide information or answer public questions regarding the plan, prior to formal adoption.

Element A1 (b) | Participants Seeking Approval[2]

City of Avoca	City of Carson	City of Carter Lake
City of Council Bluffs	City of Crescent	City of Hancock
City of Macedonia	City of McClelland	City of Minden
City of Neola	City of Oakland	City of Treynor
City of Underwood	City of Walnut	County of Pottawattamie
AHSTW Schools	Council Bluffs Schools	Heartland Christian School
Lewis Central Schools	Riverside Schools	Saint Albert Schools
Treynor Schools	Tri-Center Schools	Underwood Schools
Iowa Western Community College		

Jurisdictions participated in a variety of ways including, but not limited to hazard assessment information; impacts assessment; update of strategies, objectives, activities, and status; review of existing plans and ordinances; review of draft update information; review of common goals; and review of activity viability. *(See Table 1)*

Participants provided this information through varying modes that included information at meetings, data/information sharing, emails, phone calls, and in-person discussions and review.

Element A2 (a) | Stakeholder Engagement[3]

For the purposes of this plan "stakeholders" consists of public and private entities, internal and external to the county, as identified in the FEMA Local Mitigation Planning Policy Guide (LMPPG). Internal stakeholder engagement is summarized in the table of this section *(See Table 2)* and external stakeholders were represented by neighboring emergency managers. No contiguous partners provided additional comments or input previous to or in drafting of this plan update. All stakeholders are engaged through a variety of means (meetings, email, interviews, self-initiated review, etc.). All stakeholders have online access to the plan year-round and are encouraged to provide input on an ongoing, as needed basis. This continuous input capability has been communicated to stakeholders, internal and external, through

[2] 44 CFR §201.6(c)(1)
[3] 44 CFR §201.6(b)(2)

meetings, outreach events, notifications, and regional collaboration and planning meetings. All participants and stakeholders are notified of the planning process through various means, including in-person notification at briefings, meetings, regional coordination meetings, email, and/or direct phone calls. Participation in the process was conducted in a similar manner with participants being inclusive in the project through various means, such as: meeting attendance, email, telephone, and in-person collaboration and correspondence in their contributions to this update.

Table 2. Participant Stakeholder Summary

Plan Participant	Representatives / Plan Contributors	Plan Participant	Representatives / Plan Contributors
City of Avoca	Teresa Hoepner, City Clerk Rob Sampson, Public Works Drew Becker, Fire Chief Tom Bruck, Mayor	City of Carson	Brianne Duede, City Clerk-City Administrator James Skalberg, Public Works Chad Gordon, Fire Chief Tim Todd, Mayor
City of Carter Lake	Jackie Carl, City Clerk Bob McCloud, Public Works Phil Newton, Fire Coordinator Ron Cumberledge, Mayor	City of Council Bluffs	Matt Cox, City Engineer & Public Works Justin James, Fire Chief Tim Carmody, Police Chief Brandon Garrett, Chief of Staff Courtney Harter, Planning & Community Development
City of Crescent	Jody Shea, City Clerk Galen Barrett, Fire Chief Craig Peterson, Public Works Chuck Hildreth, Mayor	City of Hancock	Kim Gress, City Clerk Josh Billings, Fire Chief & Public Works Vince Guyer, Mayor
City of Macedonia	Moriah Mahan, City Clerk Dan Lajko, Fire Chief Melia Clark, Mayor	City of McClelland	Denise Magnuson, City Clerk Curtis Letner, Fire Chief Mitch Kay, Mayor
City of Minden	Teressa Tenner, City Clerk Phil Bintz, Public Works Jacob Nelson, Fire Chief Kevin Zimmerman, Mayor	City of Neola	Heidi Irwin, City Clerk Aric Thomsen, Fire Chief Karla Pogge, Mayor
City of Oakland	Marissa Lockwood, City Clerk-City Mgr Brant Miller, Mayor & Fire Chief Kris Bramman, Public Works	City of Treynor	Michael Holton, City Administrator Dan Roberts, Fire Chief Casey Baragary, Public Works Allen Hadfield, Mayor
City of Underwood	Cindy Sorlien, City Clerk Brett Goehring, Public Works Jim Pingel, Fire Chief Dennis Bardsley, Mayor	City of Walnut	Shannon Wood, City Clerk Robb Akers, City Superintendent Michael Chapman, Fire Chief Brett Simpson, Mayor
County of Pottawattamie	Andy Brown, Sheriff Sam Arkfeld, 911 Communications Mark Shoemaker, Conservation Jamie Petersen, GIS Matt Wyant, Planning Director Pam Kalstrup, Zoning & Land Use Coordinator Maria Sieck, Public Health John Rassmussen, County Engineer Mitch Kay, Chief Financial Officer Brian Shea, Board of Supervisors	Emergency Management	Doug Reed, Director Gabe Barney, Deputy Director Scott Manz, EMA Specialist Michell Bose, EMA Specialist
Council Bluffs Schools	Vickie Murillo, Superintendent	AHSTW Schools	Darin Jones, Superintendent
Lewis Central Schools	Brent Hoesing, Superintendent	Heartland Christian	Larry Gray, Superintendent
Saint Albert Catholic	Donna Bishop, Superintendent	Riverside Schools	Stephanie Anderson, Superintendent
Tri-Center Schools	Angela Huseman, Superintendent	Treynor Schools	Joel Beyenhof, Superintendent
Iowa Western	Don Koehler, VP Marketing-PR-IT	Underwood Schools	Andy Irwin, Superintendent

Element A3 (a) | Public Involvement[4]

The public is afforded various ways to participate in plan updates. First, this plan is considered a living document and is publicly available year-round on the EMA website[5] and provides a direct method for the public to provide ongoing comment regarding the update of the plan. In addition, formal deliberation or decisions that need to occur during the update process are publicly advertised with unfettered access by the public and opportunity to ask questions or provide input. EMA also makes available copies of the plan during its annual preparedness fair in September where the public can provide comments and recommendations directly to staff for consideration in the next update cycle. The September Preparedness Fair is designed with public and private non-profit entities showcasing their emergency and disaster-related programs and services. This outreach is targeted to underserved communities and vulnerable populations within the planning area. The participating organizations advertise to their clientele and connections within our underserved areas and populations as their priority demographic for participation in this annual event. As such, emergency management staff provides not only hazard and preparedness information but an opportunity for the public, including our underserved and vulnerable population, to review, comment, and ask questions about the mitigation strategy of the planning area. The final draft plan updates are also posted to the agency's public website during the final review stage and while in the review process at the state and federal level. Once again, advertised opportunities are afforded to the public to provide comments or ask questions during the formal public adoption process with each of the jurisdictional governing bodies that participate in this plan.

Element A4 (a) | Associated Plans and Information[6]

The following list identifies additional plans, studies, or reports that were reviewed for information to aid in the review and update of this plan. Information found in these plans, and other sources of information, that were deemed relevant to the update of this plan replaced demographic, vulnerability, strategy, or activities data from previous versions of this plan.

- Pottawattamie County Comprehensive Plan 2030
- Housing Affordability in the Omaha and Council Bluffs Area
- Pottawattamie County Workforce Housing Strategy
- Pottawattamie County Workforce Housing Strategy – City Data Books
- Pottawattamie County Chapter 5.30 – Flood Plain Management
- Bluffs Tomorrow: 2030 Comprehensive, Downtown, Subarea, & Economic Plans
- Iowa Mitigation Strategy

[4] 44 CFR §201.6(b)(1)
[5] https://pcema-ia.org/planning
[6] 44 CFR §201.6(b)(3)

Table 1. PLANNING ACTIVITIES & PARTICIPATION SUMMARY																											
Date	Activity Description	EMA	Avoca	Carson	Carter Lake	Council Bluffs	Crescent	Hancock	Macedonia	McClelland	Minden	Neola	Oakland	Treynor	Underwood	Walnut	County	AHSTW	CBCSD	HCS	Lewis Central	Riverside	St. Albert	Treynor	Tri-Center	Underwood	IWCC
10-1-2018	Approved update posted on web for continuous access and comment.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
9-14-2022	Began HVA & Risk Analysis at all school facilities in the county. (through 12-19-2023)	■	■	■	■	■	■						■	■			■	■	■	■	■	■	■	■	■	■	
9-30-2021	Current plan available to public during annual preparedness fair for review/comment.	■																									
12-9-2022	Update preparation info provided to key stakeholders.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
1-2023	Review of new FEMA planning guidelines.	■																									
2-8-2023	Initial plan update briefing provided to jurisdictional leadership.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
2-16-2023	Plan process briefing to leadership. Objectives affirmed.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
3-2023	Initiate data collection, plan review.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
3-2023	Coordinating new plan standard info, planning assistance with HSEMD.	■																									
4-2023	Plan draft updates initiated and ongoing.	■																									
5-2023	Local data updates initiated and ongoing.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
6-19-2023	Final Hazard/Risk Analysis review/approval with jurisdictional public safety officials.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
8-2023	Final local data collection & updates to activities, priorities, objectives.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
9-2023	Final draft construction, review period.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Ongoing	Local resolutions adopting HMP, post-APA notification from FEMA.																										

ELEMENT B – Risk Assessment

Element B1 (a) | Identified Hazards[7]	Animal / Plant Disease	Drought / Extreme Heat	Earthquake	Flash Flood	Grass/Wildland Fire	Hazardous Materials	Human Disease	Infrastructure Failure	Landslide	Levee/Dam Failure	Mass Casualty Event	Radiological Incident	River Flood	Severe Thunderstorm	Severe Winter Weather	Tornado
City of Avoca																
City of Carson																
City of Carter Lake																
City of Council Bluffs																
City of Crescent																
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Riverside Community School District																
Saint Albert Catholic Schools																
Treynor Community School District																
Tri-Center Community School District																
Underwood Community School District																
Iowa Western Community College																
		Applicable			N/A											

[7] 44 CFR §201.6(c)(2)(i)

Element B1 (d), B2 (a) | Historical Disasters[8]

The following table identifies historical federal emergencies and disaster declarations that have impacted, to some degree, all participants of the plan. Further vulnerabilities and potential impacts will be described in further sections of Element B.

Federal Emergencies and Declarations (1965 – 2023)		
Declaration Date	**Type**	**Number**
3-23-2020	COVID-19 Pandemic	FEMA DR-4438
3-23-2019	Severe Storm & Flooding	FEMA DR-4421
7-7-2014	Severe Storms	FEMA DR-4181
6-27-2011	Flood	FEMA DR-1998
3-2-2010	Severe Winter Storms	FEMA DR-1880
2-25-2010	Severe Winter Storm	FEMA DR-1877
5-27-2008	Severe Storms	FEMA DR-1763
5-25-2007	Severe Storms	FEMA DR-1705
3-30-2007	Snow	FEMA EM-3275
9-10-2005	Hurricane (Evacuation Assistance)	FEMA EM-3239
5-25-2004	Severe Storms	FEMA DR-1518
5-2-2001	Severe Storms	FEMA DR-1367
7-2-1999	Severe Storms	FEMA DR-1282
7-2-1998	Flood	FEMA DR-1230
11-20-1997	Snow	FEMA DR-1191
8-21-1996	Severe Storms	FEMA DR-1133
7-9-1993	Flood	FEMA DR-996
9-6-1990	Flood	FEMA DR-879
7-28-1988	Tornado	FEMA DR-814
6-27-1984	Severe Storms	FEMA DR-715
9-26-1972	Flood	FEMA DR-354
4-22-1965	Flood	FEMA DR-193

State Proclamations of Disaster Emergency involving Pottawattamie County 2018- 2024		
Date	Number	Type
07/03	2024-26	Severe Storms and Flooding June 21 and continuing
05/21	2024-12	Severe weather beginning May 20 and continuing
05/08	2024-11	Severe weather beginning May 6 and continuing
04/26	2024-09	Severe weather beginning April 26 and continuing
06/16	2022-22	Severe weather beginning June 14 and continuing
12/16	2021-28	Severe weather beginning December 15 and continuing
03/09	2020-01	COVID-19 Virus

[8] 44 CFR §201.6(c)(2)(i), (ii), (iii)

Element B1 (c-f), B2 (a-c) | Hazard Analysis and Profiles[9]

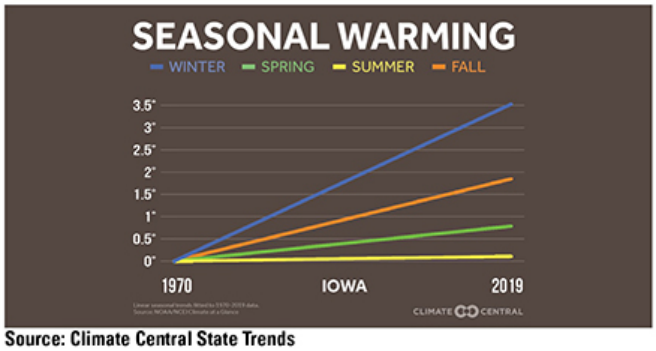
The following hazard profiles will describe identified hazards that can affect the planning area, its extent, historical occurrences of significance, probability of future events, and any unique impacts to planning participant jurisdictions.

Pottawattamie County has ranked hazards based on a Calculated Priority Risk Index, or CPRI. These rankings were considered by participants for the plan update. The methodology of the CPRI is outlined below.

The vulnerability assessment builds upon the developed hazard information by identifying the community assets and development trends and intersecting them with the hazard profiles to assess the potential amount of damage that could be caused by each hazard event. A summary of Calculated Priority Risk Index (CPRI) categories and risk levels is shown on page 15. In addition, the effects of future conditions were also considered. No major development or cultural changes are anticipated, and population centers within the planning area remain fairly constant. Property valuations have seen a significant increase over the past tax valuation assessment cycle and the current economy remains plagued with inflation that impacts the daily lives of planning area residents and governmental operations. Additionally, climate change could also impact the effects of many of the identified hazards directly or by creating cascading events from one primary hazard into others.

Climate Change in Iowa

Climate change is occurring in Iowa and the planning area. Anecdotally, the natural hazards identified in this plan haven't appeared to decrease or increase over recent history, but duration or intensity of events have given the appearance of increase. The challenge, in the emergency management domain, is to separate the term "climate change" from today's political connotation that is part of the divisive fuel stoking our current political climate around the globe. The politics of the climate debate are dangerous to preparedness efforts.



Source: Climate Central State Trends

Throughout history there is a documented pattern of climate change that cycles periods of cold/wet, warm/wet, warm/dry, cold/dry patterns. The climate is always "changing" and there is documented evidence of a warming trend in Iowa (about 1 to 1 ½ degrees over the past century) and a documented observation of increased flooding across the state with 100-to 500-year flood events occurring in 1993, 2008, 2011, 2016, 2019, and 2023. This represents a 100-to-500-year flood (by FEMA definitions) occurring in Iowa on an average of 6 years over the past 30 years.

Precipitation in the Midwest over the past 50 years has increased 5-10%. Springtime is anticipated to be wetter but higher evaporation rates and lower summer rains will intensify summer droughts and reduce river flows. Iowa experiences about 50 tornadoes per year and experts are uncertain how climate change could impact these events. Although higher humidity attributed to increased

[9] 44 CFR §201.6(c)(2)(i), (ii), (iii)

greenhouse gases would encourage tornadoes, windshear is likely to decrease and could discourage tornadoes. Over the past 3 years, the planning area has seen 3 separate single-event, multiple-tornado touchdowns in the planning area. One of which occurring in mid-December, spawning 4 confirmed tornado touchdowns.

A changing climate could have a combination of favorable or harmful effects on the agriculture industry in the planning area. Longer periods of frost-free growing seasons and higher carbon dioxide would increase yields but summers with intensified heat or more frequent droughts could decrease yields. Heat stress could also impact livestock productivity.

Human health could also be impacted, especially to those most vulnerable or those with pre-existing respiratory issues. Increased ground-level ozone or increases in the pollen season could exacerbate respiratory or even cardiac issues. Increased and intensified heat waves can impact not only the health of people but increase the demand for electrical use to cool buildings and homes which has the potential to destabilize portions of the electrical grid.

Despite the political rancor associated with "climate change", changes in the climate and cyclical patterns and trends are changing. These changes could have an impact on the frequency, intensity, or duration of events. Experts from various fields are diligently studying these changes to forecast what future events may look like and it is incumbent on local officials to remain aware and consider these changes when contemplating mitigation solutions.

Definitions of CPRI Categories

Probability – a guide to predict how often a random event will occur. Annual probabilities are expressed between 0.001 or less (low) up to 1 (high). An annual probability of 1 predicts that a natural hazard will occur at least once per year.

Magnitude/Severity – indicates the impact to a community through *potential* fatalities, injuries, property losses, and/or losses of services. The vulnerability assessment categories detailed further in this section gives information that is helpful in making this determination for each community.

Warning Time – plays a factor in the ability to prepare for a potential disaster and to warn the public. The assumption is that more warning time allows for more emergency preparations and public information.

Duration – relates to the span of time local, state, and/or federal assistance will be necessary to prepare, respond, and recover from a potential disaster event.

CPRI Category	DEGREE of RISK			Weight Factor
	Level ID	Description	Index Value	
Probability	Unlikely	Extremely rare with no documented history of occurrences or events. Annual probability of less than 0.001	1	45%
	Possible	Rare occurrences with at least one documented or anecdotal historic event. Annual probability that is between 0.01 and 0.001.	2	
	Likely	Occasional occurrences with at least two or more documented historic events. Annual probability that is between 0.1 and 0.01.	3	
	Highly Likely	Frequent events with a well-documented history of occurrence. Annual probability that is greater than 0.1.	4	
Magnitude / Severity (Extent)	Negligible	Negligible property damage (less than 5% of critical and non-critical facilities and infrastructure). Injuries or illnesses are treatable with first aid and there are no deaths. Negligible quality of life lost. Shutdown of critical facilities for less than 24 hours.	1	30%
	Limited	Slight property damage (greater than 5% and less than 25% of critical and non-critical facilities and infrastructure). Injuries or illnesses do not result in permanent disability and there are no deaths. Moderate quality of life lost. Shut down of critical facilities for more than 1 day and less than 1 week.	2	
	Critical	Moderate property damages (greater than 25% and less than 50% of critical and non-critical facilities and infrastructure). Injuries or illnesses result in permanent disability and at least one death. Shut down of critical facilities for more than 1 week and less than 1 month.	3	
	Catastrophic	Severe property damage (greater than 50% of critical and non-critical facilities and infrastructure). Injuries or illnesses result in permanent disability and multiple deaths. Shut down of critical facilities for more than 1 month.	4	
Warning Time	< 6 hours		4	15%
	6 – 12 hours		3	
	12 – 24 hours		2	
	> 24 hours		1	
Duration	Brief	Up to 6 hours	1	10%
	Intermediate	Up to 1 day	2	
	Extended	Up to 1 week	3	
	Prolonged	More than 1 week	4	

The composite hazard rankings for the planning area were based upon review of 1) hazard rankings in the past HMP updates, 2) reevaluated hazard rankings in the Calculated Priority Risk Index (CPRI) conducted by planning partners, and 3) review and discussion with public safety officials that serve as primary authority for hazard identification and assessment for their jurisdictions.

As some hazards may not apply to every participant in the plan, the determination was made that a composite hazard ranking is the most useful and beneficial to all participants. Specific or disproportionate jurisdictional impacts are further detailed in the hazard profiles.

For this multi-jurisdictional plan, the risks are assessed for each jurisdiction where they deviate from the risks facing the entire planning area. The planning area is fairly uniform in terms of climate and topography as well as building construction characteristics. Accordingly, the geographic areas of occurrence for weather-related hazards do not vary greatly across the planning area for most hazards. The more urbanized areas within the planning area have more assets that are vulnerable to the weather-related hazards and varied development trends impact the future vulnerability.

Similarly, more rural areas have more assets (crops/livestock) that are vulnerable to animal/plant/crop disease.

These differences are discussed in greater detail in the profile sections of each hazard. Regardless of direct impact or not, because of response and recovery mutual aid requirements throughout the planning area, every plan participant will be impacted in some way by each of the hazards should they occur in the planning area.

Planning Area Hazard Rankings - Pottawattamie County-wide

	Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
Tornado	4	1.8	3	0.9	4	0.6	4	0.4	3.70	High
Hazardous Materials	4	1.8	3	0.9	4	0.6	1	0.1	3.40	High
Severe Thunderstorm	4	1.8	2	0.6	3	0.45	3	0.3	3.15	High
River Flood	3	1.35	3	0.9	2	0.3	4	0.4	2.95	Medium
Infrastructure Failure	4	1.8	1	0.3	4	0.6	2	0.2	2.90	Medium
Severe Winter Storm	4	1.8	2	0.6	1	0.15	3	0.3	2.85	Medium
Levee/Dam Failure	2	0.9	3	0.9	4	0.6	4	0.4	2.80	Medium
Human Disease	3	1.35	3	0.9	1	0.15	4	0.4	2.80	Medium
Flash Flood	3	1.35	2	0.6	4	0.6	2	0.2	2.75	Medium
Mass Casualty Event	2	0.9	3	0.9	4	0.6	1	0.1	2.50	Medium
Drought/Extreme Heat	3	1.35	2	0.6	1	0.15	4	0.4	2.50	Medium
Radiological Incident	2	0.9	2	0.6	4	0.6	4	0.4	2.50	Medium
Animal/Plant Disease	3	1.35	1	0.3	1	0.15	4	0.4	2.20	Medium
Grass/Wildland Fire	2	0.9	1	0.3	4	0.6	4	0.4	2.20	Medium
Landslide	1	0.45	1	0.3	4	0.6	3	0.3	1.65	Low
Earthquake	1	0.45	1	0.3	4	0.6	1	0.1	1.45	Low

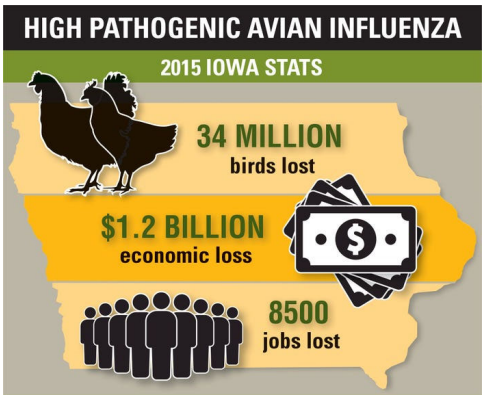
1.0 - 1.99	Low
2.0 - 3.0	Medium
3.1 - 4.0	High

Hazard Profile | Animal and Plant Disease

Agricultural infestation is the naturally occurring infection of vegetation, crops or livestock with insects, vermin, or diseases that render the crops or livestock unfit for consumption or use. Land use in Pottawattamie County is significantly agricultural which poses an economic threat to the county and state related to animal/plant disease.

Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
3	1.35	1	0.3	1	0.15	4	0.4	2.20	Medium

Consideration	Impact	Description
Location	ALL	Each jurisdiction has one or more facilities/employers related to the agriculture industry. An epidemic of this hazard would impact the population residing on and operating farms in the county and although unquantifiable would result in cascading impacts on the local and state economy.
Previous Occurrences	VARIABLE	• 2015 HPAI – Statewide event, no impact in Pottawattamie County. • 2022 ASF – The county was not impacted by a single-farm breakout of African Swine Fever reported in June of 2022. • 2022/2023 HPAI – Pottawattamie County had one reported site with a small flock infection of HPAI. The flock was a private/non-commercial hobby operation that was quickly mitigated. Other areas of the state saw additional infections but there were no response/recovery impacts locally.
Probability	LIKELY	Although Iowa has seen a moderate to large outbreak of animal disease, impacts locally have been minimal due to the type of outbreak. Additionally, widespread crop disease has not been experienced in the state, largely due to the industry's robust disease prevention engineering in crop seed. However, it cannot be ignored that ongoing animal disease outbreaks could have an impact in the county. Avian-based incidents will have a minimal impact as birds/poultry are not a primary operation in this county. An outbreak of swine or cattle disease could have profound impacts on the scale that was seen in Iowa during the 2015 HPAI outbreak.
Extent[10]	NEGLIGIBLE	Overall risk is negligible considering the overall community assets, unless the exact pathogen introduced to the right livestock occurs. Isolation, quarantine, and elimination are fairly rapid and efficient with state and federal authorities in charge of response operations. • 1,114 farms | 511,714 acres | 70% crop | 30% livestock • Market value of products sold: $409,257,000 • Livestock Inventory: Poultry 1,622 | Cattle 73,328 | Swine 86,266 | Goats 156 | Sheep 1,313 | Equine 528



[10] Data from www.nass.usda.gov/AgCensus

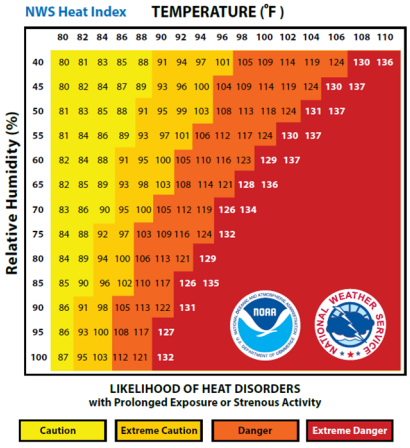
Hazard Profile | Drought and Extreme Heat

Drought is considered a period of prolonged lack of precipitation for weeks at a time producing severe dry conditions and typically, for the area, associated with occurrences of extreme heat events. Extreme Heat is considered in excess of 100° F or three (3) successive days of 90° F or higher with significant heat index values. Typically, the National Weather Service would issue a heat advisory at 105° F and a warning at 115° F (including heat indices).

Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
3	1.35	2	0.6	1	0.15	4	0.4	2.50	Medium

Consideration	Impact	Description
Location	ALL	The planning area has no environmental or geographical anomalies that create pockets of dissimilar weather events and patterns. It is almost a guarantee that weather of any kind impacted one portion of the planning area is or will be experienced by all jurisdictions.
Previous Occurrences[11]	SEASONAL	Warmer temperatures are experienced beginning in June but significantly rise warmer toward late July and through August in typical year for the area. When these seasonal trends are accompanied by periods of minimal precipitation, impacts to humans and animals occur. Drinking water systems operate on reduced capacities with increased demands and even the electrical grid management forecasts could be overwhelmed during prolonged extreme heat events. Previous occurrences of drought or heat have been experienced in the area prompting USDA Secretarial designations to afford access to assistance programs and loans for agriculture producers. • Most recent drought: 2012 | 10-month period (7-2012 to 4-2013) • 5 recorded extreme heat events
Probability	LIKELY	In this climatological region it is highly likely that short periods of flash drought or extreme heat can be experienced annually, which have minimal impacts to the area. Prolonged or extreme events are fewer than once per decade. Impacts from changing climate patterns can exacerbate these events.
Extent	LIMITED	Most occurrences are short-lived and have no significant impacts outside of basic human services assistance or water use restrictions, etc. However, long-term events can adversely impact health and economic considerations of the area and pose a risk to water and electrical service delivery. As a metric to evaluate response, recovery, or mitigation needs the standard U.S. Drought Monitor scale and NWS Heat Index scales are used to help guide decision-making in all phases of emergency management.

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



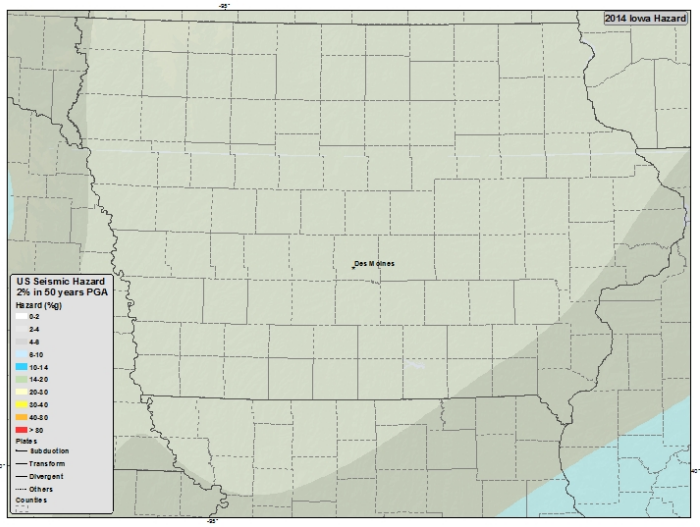
[11] Data from Iowa HSEMD Hazard Mitigation Viewer

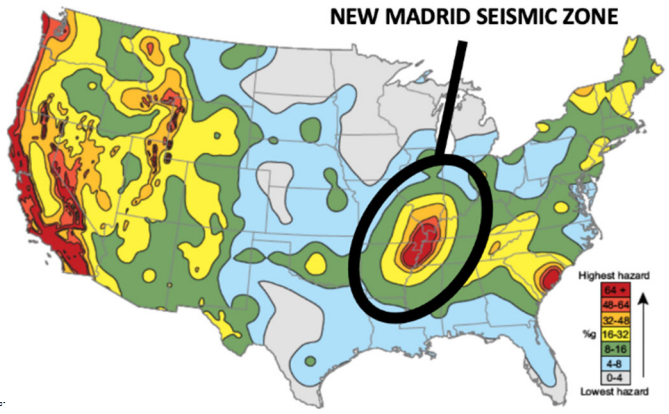
Hazard Profile | Earthquake

A sudden, rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface classified as either tectonic (natural shifting), volcanic (byproduct of volcanic activity), or artificially produced (mining, drilling, or other manipulation).

Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
1	0.45	1	0.3	4	0.6	1	0.1	1.45	Low

Consideration	Impact	Description
Location	ALL	All areas of the planning area are subject to impact from seismic events. Energy and chemical sectors as well as all areas with homes and buildings built prior to the 1940's could experience a higher level of impact.
Previous Occurrences	VARIABLE	Although residents have felt very weak tremors from earthquakes hundreds of miles away, no earthquakes have been recorded in the planning area since the start of geological data collection in 1931.
Probability	UNLIKELY	The USGS indicates there is a 0.29% chance of a major earthquake occurring within 31 miles of Pottawattamie County within a 50-year period.
Extent	LIMITED	Estimated impacts based on current information would likely produce very little to no injuries, loss of life, or extensive property damage. Planning activities, if required, would rely on USGS data and tools such as the Richter Magnitude Scale as a foundation. The most likely scenario the planning area should be prepared for in relation to this hazard is the receipt and management of earthquake victims or refugees from a major seismic zone. The nearest being the New Madrid Seismic Zone (580 miles away at center) and has the capability of producing a major earthquake that could impact multiple densely populated U.S. cities.





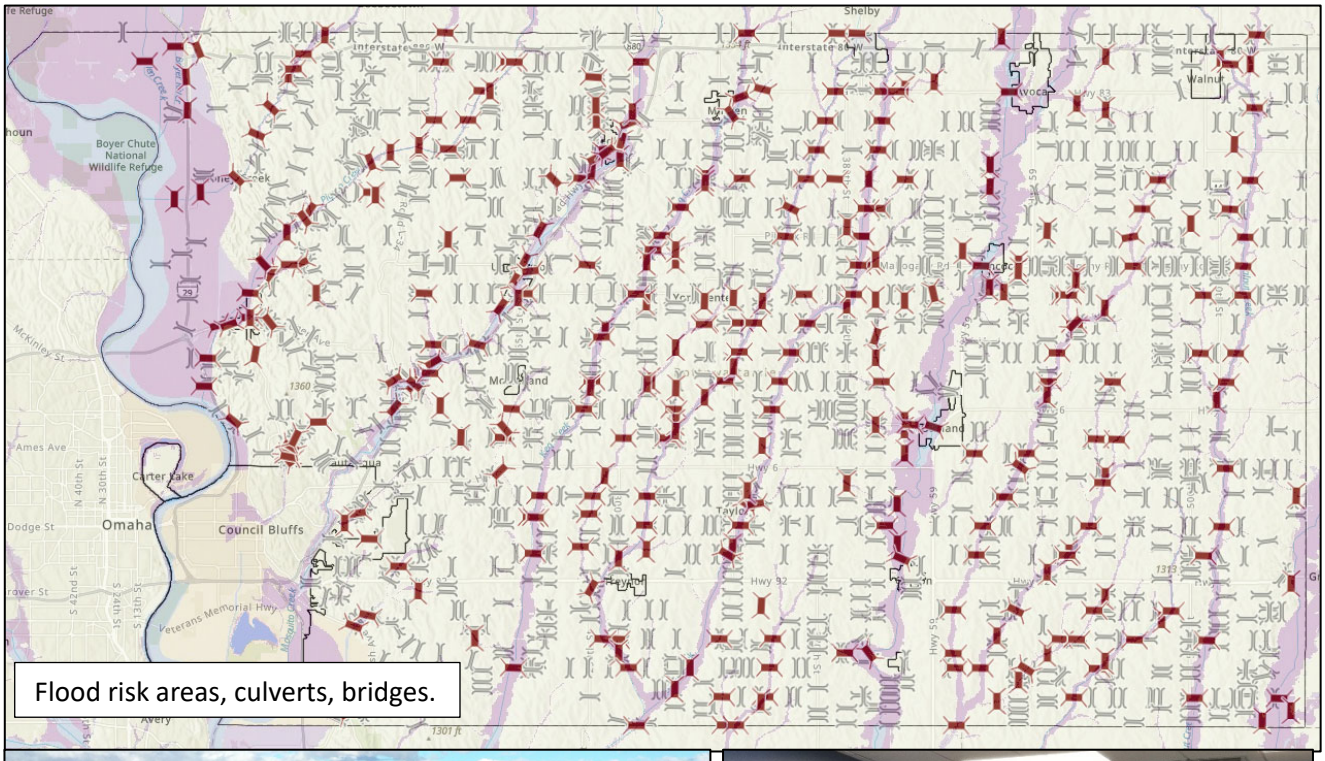
Hazard Profile | Flash Flood

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 (training). Flash flooding is an extremely dangerous form of flooding which can reach full peak in only a few minutes and allows little or no time for protective measures to be taken by those in its path. Flash flood waters move at very fast speeds and can roll large objects, boulders, tear out trees, scour channels, destroy buildings, and obliterate bridges. Generally, flash flooding often results in higher loss of life, both human and animal, than slower developing river and stream flooding.

Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
3	1.35	2	0.6	4	0.6	2	0.2	2.75	Medium

Consideration	Impact		Description
Location	ALL	Avoca	The forks of the W Nishnabotna River fork around the entire city to the east and west reconvening at its south, which is the lowest elevation and most at risk. The school district, fairgrounds, a power substation, a city park, and chemical storage facility are all within 720' to 1,200' of the river.
		Carson	The city park, water and wastewater treatment facilities are prone to flash flooding along the W Nishnabotna River which borders the west side of town.
		Carter Lake	Some low laying areas around the northern portion of the city along the lake are prone to some flash flooding during extreme high rain events.
		Council Bluffs	Low-laying areas, especially those close to dry creek beds or drainage ditches are at risk of flash flooding. There are identified areas in the west and south portions of the city that have insufficient storm sewers that experience flash flooding during heavy rain events.
		Crescent	Structures adjacent to Crescent and Pigeon Creek are subject to flash flooding. Areas south of East Welch are prone to ditch build-up and flash flooding. This includes Crescent Elementary, ball fields, and the City Maintenance Facility.
		Hancock	The W Nishnabotna River runs along the west end of Hancock placing the county park (Botna Bend), the sewer lagoons, sewer lift station, and an ag industry facility all within 100 to 1600 feet of the riverbank.
		Macedonia	N/A
		McClellend	N/A
		Minden	Keg Creek runs along the southern end of the town, which is in the 100 yr. floodplain. The creek is surrounded by agricultural fields that runoff into the creek at and north of the city creating a potential flash flood hazard. The bridge on 340th St, one of the main entrances to town is subject to damage and/or closure during these events.
		Neola	A quarter of the properties in town are within the 100-year floodplain. Primarily, the properties in the southwest portion of town nearest Mosquito Creek are most at risk for flash flooding.
		Oakland	An extremely hilly community, urban flash flooding is a regular occurrence during heavy rain events. Excess water drains east to west down steep street slopes to US Hwy 59/6. Particularly areas near Brown Street, the Chautauqua Park area, and the southwest business district are more prone to this flash flooding as excess water rapidly flows to the W Nishnabotna River which makes up the towns western border.
		Treynor	N/A
		Underwood	The east side of Underwood is in proximity to the Mosquito Creek with less than 20% of the town in the 100 yr. floodplain. Portions of the western and central city is in the 500 yr. floodplain.
		Walnut	Very small portion of Walnut Creek lies within undeveloped parts of the town with minimal flash flood risk.
		County	322 bridges, several culverts, and ditches are maintained by the county and subject to damage and/or closure during flash flooding events in the unincorporated county. Most of the potential is along dry creek beds, drainage ditches, and creeks in the rural areas that are extremely sensitive to heavy rain events where crop and pasture lands drain into these waterways.
		Schools	As described in the community specific notes.

Previous Occurrences[12]	ANNUAL	Flash flooding potential is more prominent in the spring months as well as during the standard severe weather season. Off-peak season precipitation has an influence on the likelihood of flash flooding potential as well. • The planning area has experienced 6 flash flood events over the past two decades for an annual cost average of approximately $588,000.
Probability	LIKELY	There is a likely chance that some form of flash flooding will occur in the planning area at least once annually. The degree of impact is based on the environmental and climatological conditions for that time. Flash flooding is more likely in the eastern half of the county while urban street flooding is more likely in the Council Bluffs metro area.
Extent	LIMITED	Most flash flooding experienced is very short-lived and causes no significant property damage, infrastructure disruption, or loss of life. However, the extreme events in March of 2019 led to the activation of emergency shelters on both ends of the county as well as evacuations along the Mosquito Creek in Council Bluffs.



Flood risk areas, culverts, bridges.


Flash flood evacuation area, 2019 (DR-4421)


Regional coordination meeting, 2019 (DR-4421)

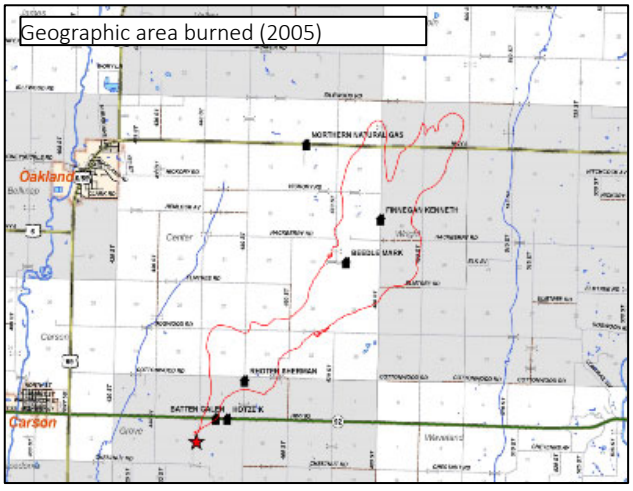
[12] Data from HSEMD Hazard Mitigation Viewer

Hazard Profile | Grass / Wildland Fire

An uncontrolled natural vegetation fire that threatens life and property in either a rural or wooded area and is beyond normal day-to-day response capabilities of local fire departments.

Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
2	0.9	1	0.3	4	0.6	4	0.4	2.20	Medium

Consideration	Impact	Description
Location	ALL	The planning area is predominately rural county/cropland subject to widespread fire during extreme dry conditions. However, the vast majority of fires experienced are able to be controlled by the jurisdictional department with or without implementing existing inter-local response agreements. Many natural fire breaks exist based on the construction and number of rural roads in the county. Predominately all municipalities are surrounded by crop and grassland but the immediate switchover to domesticated and treated grass along with paved roads acting as fire breaks significantly reduces the risk of a fire spreading into an incorporated municipality. Automatic inter-local response agreements for major fire events are programmed into the dispatching system to rapidly deploy needed assets during a major wildfire event. In addition, a coordinated burn ban implementation program is used during times of high-risk and prolonged wildfire threat conditions which are monitored daily in the Emergency Operations Center.
Previous Occurrences	ANNUAL	• Up to 20 per year with limited extension/exposure threat. • March 6, 2005 | Extreme conditions led to a 4,000-acre fire resulting in loss of 4 homes, several vehicles, outbuilding, and farm implements with an estimated loss of over $5,000,000. It spanned 8 miles in length and 3 miles wide. Response included over 60 fire & support apparatus, over 200 firefighters, 21 farmers with tillage equipment, 5 law enforcement agencies, emergency management, and 2 aircraft for surveillance. It took 6 hours to control and an additional 48 hours of mop-up and scouting operations to prevent rekindles.
Probability	LIKELY	Fires are experienced multiple times annually but handled under normal response conditions with little to no threat of significant structural damage. The existence of special response plans, training, and open burning ban policies contribute to a decreased extent of impacts.
Extent	LIMITED	Most fires are contained to road and rail rights-of-way areas , are less than a few acres in size, and occur in sparsely populated areas.



Geographic area burned (2005)


Aerial scouting of burned acres (2005)

Hazard Profile | Hazardous Materials

Accidental release of chemical substances or mixtures that may cause harm or damage to persons, property, or the environment when released to the soil, water, or air. This can occur during the production, handling, or transportation of hazardous substances via road, rail, water, or pipeline. It may even occur by the illegal dumping of hazardous materials often referred to as "orphan dumps."

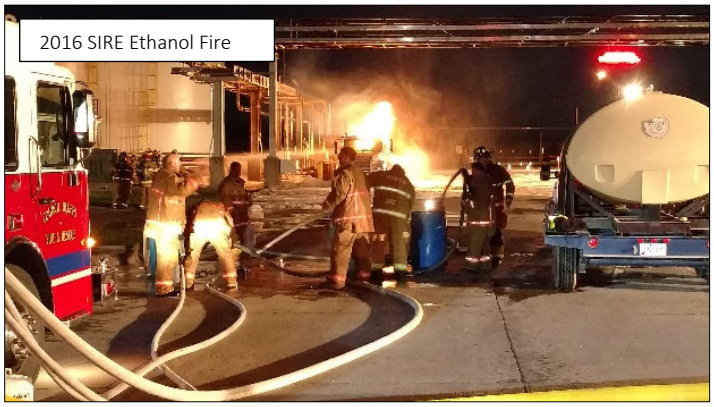
Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
4	1.8	3	0.9	4	0.6	1	0.1	3.40	High

Consideration	Impact		Description
Location	ALL	Avoca	Lies within the vulnerability zone radius of (1) fixed facility and several modes of transportation. Anhydrous ammonia is the most significant threat. A major I-80 truck stop on the north end of town creates an area where semis carrying hazardous materials can congregate. State and federal highway routes with heavy truck traffic in and around the city increase the community's risk of a transportation hazmat incident. A stem of the Northern Natural Gas pipeline terminates within the eastern portion of the city.
		Carson	There are no fixed facilities. State Highway 92 runs through the south edge of the city. U.S. Hwy 59 just east of Carson and State Hwy 92 running through the south edge of Carson places the city at risk during a transportation hazmat incident. Northern Natural Gas operates a 2-inch line entering from the north near Mildred and North Streets.
		Carter Lake	There are (6) fixed facilities in the city with (3) designated as having EHS chemical(s). The city also borders the Missouri River. Abbott Dr and Locust St are major thoroughfares of the city. Hazmat substances are common transport items in these areas which are on their way to the regional airport (Eppley Airfield) or one of the fixed facilities within the city or the City of Omaha. Williams Pipeline Group operates petroleum lines that serve the city and Eppley Airfield. It is a 6-inch line that carries gasoline, fuel oils, aviation fuels, liquefied gases, and crude oil. A rupture could present a potentially dangerous hazard to the entire city.
		Council Bluffs	The city hosts (68) fixed facilities of which (34) store one or more EHS chemicals. Although many sites are identified they have a very minor amount of reportable chemicals stored and would likely not impact an area outside the primary property. Other facilities, however, have the potential to impact a significant area under the right release and weather conditions that could prompt the implementation of public protective measures that could affect up to 30,000 residents. There are many residential areas immediately adjacent to several major transportation routes in and around the city, especially at the Midwest crossroads of I-80 and I-29 that host significant quantities of hazmat transports on a daily basis. Any accident along these routes could impact approximately 25% of the population immediately. Several pipelines operate in and around the city ranging from 2 to 30 inches in diameter conveying petroleum products. The most common risk is from the large number of excavating operations done within the city for various reasons and natural gas line penetrations are a fairly common occurrence within the city that typically impact just the immediate area. A rupture or compromise of a large main could impact a significant portion of the city either directly (as a hazard) or indirectly (isolated areas and traffic disruptions).
		Crescent	There are no fixed hazmat sites in Crescent. (2) major rail lines and I-29 are within a couple miles of the city proper and under the correct atmospheric and weather conditions, any hazmat transportation incident could affect the majority, if not all, of the city. A large oil pipeline runs from northwest to southeast through the northeast quadrant of the city. This area does have numerous residential structures that could be impacted in an event.
		Hancock	The presence of anhydrous ammonia on the west end of Hancock poses a significant threat to the city based on the small size of the town. A large area of the town could easily be in the plume cloud under the right weather conditions. The presence of the fixed sites in Hancock increases the hazmat transportation volume and accident potential for the small community. There are no major pipelines running through the city.
		Macedonia	There are no fixed hazmat sites that pose a significant threat to the city. U.S. Hwy 59 is found east of the city approximately 2 miles and under the correct

			wind conditions and hazardous substance could impact a portion of the city. There are no major pipelines running through the city.
		McClellend	There are no fixed hazmat sites in McClelland. The lack of major transportation routes in the area significantly decreases the threat due to transportation, but the volume of agricultural operations in the area does provide a potential for an incident. There are no major pipelines running through the city.
		Minden	There are no fixed hazmat sites in Minden. The proximity of I-80 north of Minden provides a small potential for a portion of the city to be impacted by a major leak or explosion of an extremely hazardous substance. A Northern Natural Gas pipeline traverses the eastern portion of the city and transects another pipeline less than a mile north of the city limits.
		Neola	The agricultural Co-Op facility within the city poses an anhydrous ammonia threat that could impact a majority of the city under a significant release scenario. Proximity to I-80 east of the city and a major thoroughfare (Railroad Hwy) running through the community provides a slightly increased risk of a transportation incident for the community. A stem of the Northern Natural Gas pipeline traverses east to west through the city.
		Oakland	Oakland hosts (4) EHS sites with the entire community at risk or within a significant portion of the vulnerability zone. Additionally, the community assisted living and nursing home is in a property adjacent to an area that often stores several agricultural pup tanks for anhydrous where even a small to moderate leak could prompt a complete evacuation of the facility. A major explosion or leak at any of the facilities could prompt a complete evacuation of the city. US Hwy 59 and US Hwy 6 intersect both north and south of the community as well as running through the center of the city. These routes see a significant amount of semi traffic hauling hazardous substances as well as a significant amount of area agricultural traffic to fixed facilities within the city hauling ag chemicals and products. A stem of the Northern Natural Gas pipeline connects to Oakland at the southeast corner of the city limits.
		Treynor	Treynor has no fixed sites within the city and would be minimally impacted by an incident of a fixed site east of the community. State Hwy 92 runs through the heart of Treynor and is Treynor's "Main Street". Along this route are (2) school facilities, several businesses, and residential properties. Hwy 92 is a significant route of travel throughout the planning area that is frequented by hazardous substance carriers. A stem of the Northern Natural Gas pipeline connects to the southwest outside the city limits.
		Underwood	Underwood has (2) fixed sites. One site is within the city proper and under optimal wind conditions could impact a large portion of the community during a leak. Proximity to I-80 east of the city and a major thoroughfare (Railroad Hwy) running through the community provides a slightly increased risk of a transportation incident for the community. A stem of the Northern Natural Gas pipeline connects to the northeast portion of the city.
		Walnut	There are no fixed hazmat sites in Walnut. I-80 runs to the northern edge of the city with significant transport traffic. Additionally, county road M47 and Tamarack Rd (old State Hwy 83) intersect in Walnut and are primary agricultural routes for the eastern portion of the planning area seeing high quantities of field chemical or anhydrous ammonia transports to end users. A stem of the Northern Natural Gas pipeline terminates in the city limits on the southern border.
		County	There are several fixed sites with various substances such as anhydrous ammonia, ethanol, and other fuels that could impact populated areas under the correct weather conditions either as an immediate impact to health and safety or a respiratory hazard as a bi-product of combustion. The overall county contains some of the highest amounts of highway, interstate, secondary roads, rail, and pipeline miles in the state. This places an overall high risk countywide, especially when analyzed with the data obtained in the countywide hazardous materials commodity flow study. The highest impact areas would be in and near the population centers where spills, leaks, or bi-products of hazardous material combustion would pose life safety and health hazards along with longer duration transportation disruptions or environmental impacts.
		Schools	School facilities share the identified risks with their host communities as detailed in this table. An incident, regardless of cause, could force facilities to shelter in place or evacuate due to fixed facilities, transportation, or pipeline emergencies originating in or within proximity of their host communities.
Previous Occurrences[13]	VARIABLE	103 spills have been reported between October 2018 and December 2022. Predominately these are from facilities and transportation incidents in	

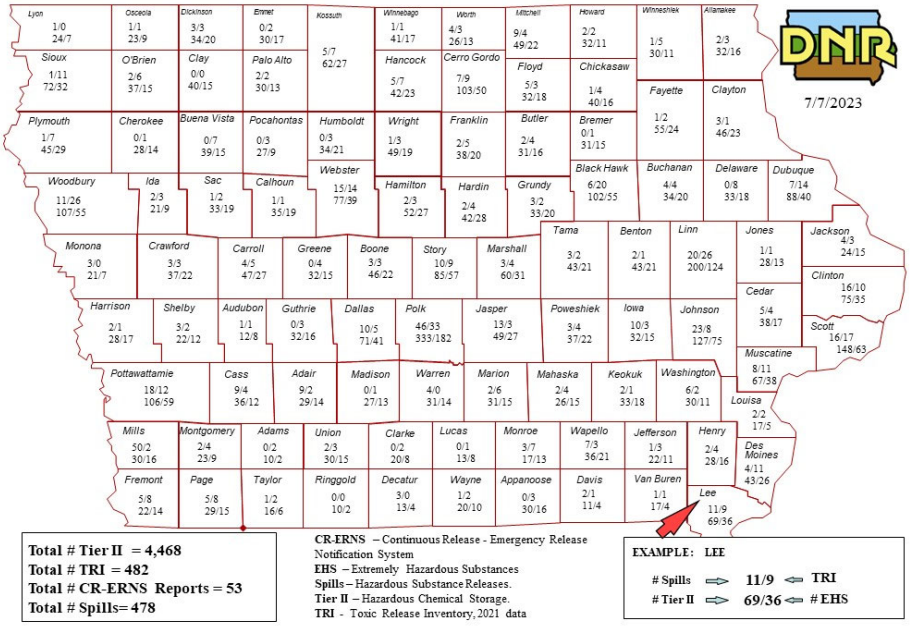
[13] Iowa DNR HazMat Release Database

		amounts required for reporting. Only 1 orphan dump was reported since the last HMP update. • 2007 | Stern Oil Co., 5-alarm fire at oil distribution facility. $1.5 million in damages, 2 firefighters injured. • 2016 | Ethanol explosion and tanker fire at SIRE Ethanol plant. >6,600 gallons. 19 public safety agencies from 3 counties, U.S. Air Force, 4 private sector companies; over 100 assigned personnel. $80,000 in local agency response costs. 1 fatality, 2 minor injuries.
Probability	HIGHLY LIKELY	On average there are approximately 20 reportable spills within the county each year and over 100 Tier II sites. In addition, the transportation and commodity flow via road, rail, pipeline, or water, increase the probability of a potential spill/release.
Extent	CRITICAL	A significant portion of the population is always at risk of being exposed to the high volume of hazardous materials within the county from either fixed facilities or the abundance of multi-modal transportation sources. The county experiences annual occurrences and regardless of most of them being small and short-lived incidents without impact, there have been rare occurrences that have caused injury and fatality.


2016 SIRE Ethanol Fire


2007 Stern Oil Fire

2022 EPCRA Statistics



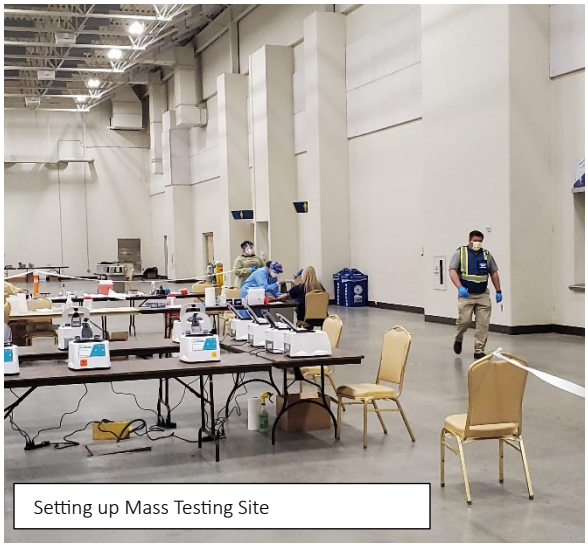
Hazard Profile | Human Disease

A medical, health, or sanitation threat to the general public such as contamination, epidemic, pandemic, plagues, infestations, etc.

Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
3	1.35	3	0.9	1	0.15	4	0.4	2.80	Medium

Consideration	Impact	Description
Location	ALL	Vulnerability among jurisdictions is generally uniform. Although vaccines are available for many diseases, residents remain at risk. The densest concentration of the county population is part of the Omaha/Council Bluffs Metro area which is a very fluid and mobile area that is home to a major national transportation intersection and a Midwest regional airport. It's also a significant employment and shopping area for the entire county.
Previous Occurrences	VARIABLE	• 2009 H1N1 Outbreak | >100 personnel assigned, 8 months of operations, POD vaccine clinics operated, activation of the SNS. • 2014 Ebola | Preventative education, public information operations, operational preparedness activities (no cases). • 2020 COVID-19 Pandemic | >27,000 cases, 349 deaths, multiple testing and mass vaccination sites operated, EMA operated as a 9-county logistics hub.
Probability	LIKELY	Due to the highly mobile nature of today's society, diseases can travel and infect people in a short period of time. People living in cities or in close proximity to each other are more likely to become infected at a rapid rate, but residents in more rural areas are not any less immune. As many rural communities and those living in unincorporated areas travel daily to places of employment, entertainment venues, or shop for living essentials predominately in the larger population centers, a major disease epidemic will reach every corner of the county.
Extent	LIMITED	During the 2020 pandemic the county population was 93,328. The pandemic created confirmed cases for 30% of our population with a mortality rate of 0.37%. The impacts pushed the healthcare system capacities and staffing levels had to be augmented to maintain, even with hospital and clinical services reduced or cut during peak times of pandemic cases. Future planning should account for a 50% infection rate.

EMA Medical Logistics Site


Setting up Mass Testing Site

Hazard Profile | Infrastructure Failure

The widespread breakdown or disruption of normal communication capabilities or an extended interruption of potable water, electric, petroleum or natural gas service. This could include major telephone outages, loss of local government emergency communications systems, long-term interruption of electronic broadcast services, or the long-term disruption and distribution of potable water, electric, petroleum, or natural gas, including local supply shortages.

Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
4	1.8	1	0.3	4	0.6	2	0.2	2.90	Medium

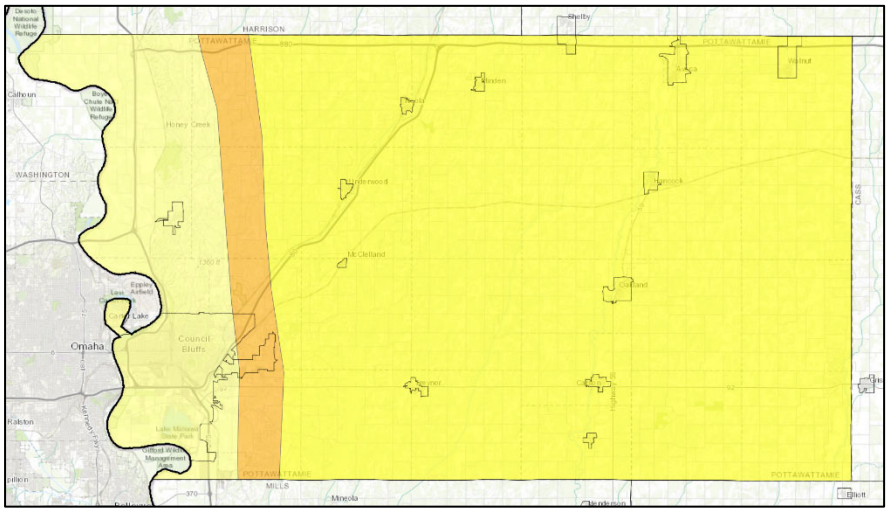
Consideration	Impact	Description
Location	ALL	Vulnerability among jurisdictions is generally uniform. Although vaccines are available for many diseases, residents remain at risk. The densest concentration of the county population is part of the Omaha/Council Bluffs Metro area which is a very fluid and mobile area that is home to a major national transportation intersection and a Midwest regional airport. It's also a significant employment and shopping area for the entire county.
Previous Occurrences	VARIABLE	• 1988 Tornado | Public safety radio communications out for > week. • Telephone/911 Outages | At least annually, < 6 hours. • Power Outages | 5-6x annually, generally related to severe thunderstorms, duration typically < 24 hours. • 2007 & 2010 Winter Storms | Prompted Presidential Disaster Declarations, power outages > 72 hrs.
Probability	LIKELY	With the exception of natural gas and local fuel supply outages, other lifeline areas covered in this hazard have disruptions/outages on an annual basis. They are typically very short-lived and usually occur as a secondary event to another hazard impacting one or more locations in the county.
Extent	NEGLIGIBLE	Although some power and critical communications outages are likely to occur annually, they are very short-lived incidents with protocols in place to maintain continuity of operations related to community lifelines. A major disaster that impacts infrastructure could occur but redundancies, technology advancements, and available gap equipment would reduce the potential for long-term communications outages. Power and water delivery for >70% of the population have significant redundancies that minimize outage impacts. Most likely cause of outage potentials would be from cascading effects due to another hazard (i.e., drought, extreme heat, etc.). Disruption to natural gas delivery from a loss of integrity in primary transportation supply pipelines would hold the biggest potential impact. These systems take a significant amount of time to rehab, repressurize, and resume delivery to community distribution systems. Technology advancements and emergency protocols that monitor and govern these systems have advanced significantly and make this scenario a low probability, high consequence type event.

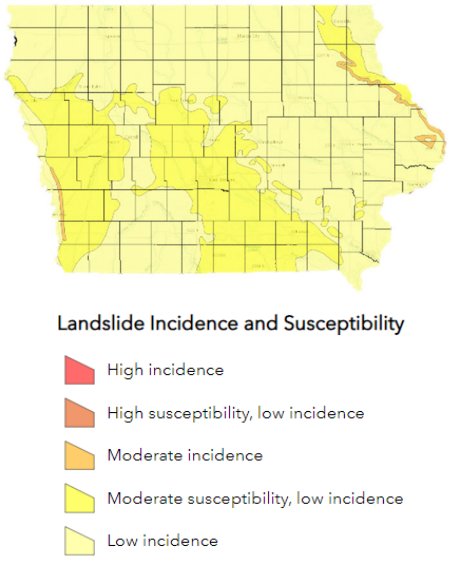
Hazard Profile | Landslide

Masses of rock, earth, or debris move down a slope. Landslides may be very small or very large and can move at slow to very high speeds. Vulnerable slopes fail as a result of fire, rainstorms, earthquakes, and various human activities.

Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
1	0.45	1	0.3	4	0.6	3	0.3	1.65	Low

Consideration	Impact	Description
Location	ALL	Due to the presence of some very steep Loess Hills bluffs in the western part of the county which makes it the likeliest area landslides could occur. These slides would likely encompass an area of 1 mi2 or less. Loess Hills soil is highly cohesive and tends to stand in cliffs or blocks when dry, however, saturation can cause the slopes to fail, resulting in landslides. Fortunately, the location of the most susceptible areas for these events to occur is such that damage to property would not be widespread. Landslides are usually highly localized and relegated to gullies where little human activity occurs. The mining of Loess Hills soil as fill dirt contributes to the probability of landslides, thus the likelihood of slope failure near quarries is high. Construction practices in the Loess Hills also contribute to the probability of slope failure; sediment and erosion control practices will help to curb this risk.
Previous Occurrences	VARIABLE	No documented incidents of significance.
Probability	UNLIKELY	6% of the county holds a moderate susceptibility to landslides with documented incidents of significance.
Extent	NEGLIGIBLE	An incident occurring in the likeliest area of probability would have little to no impact on critical infrastructure and limited impact on residential/business properties.





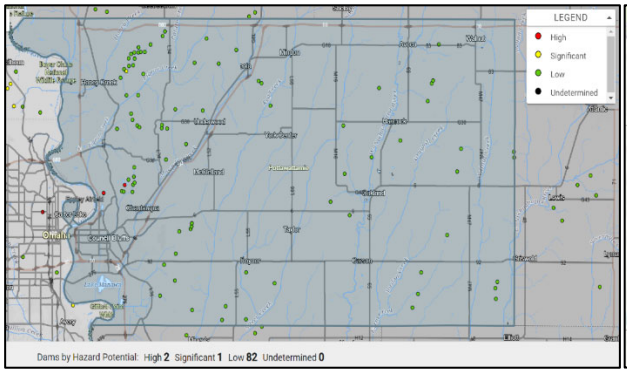
Hazard Profile | Levee / Dam Failure

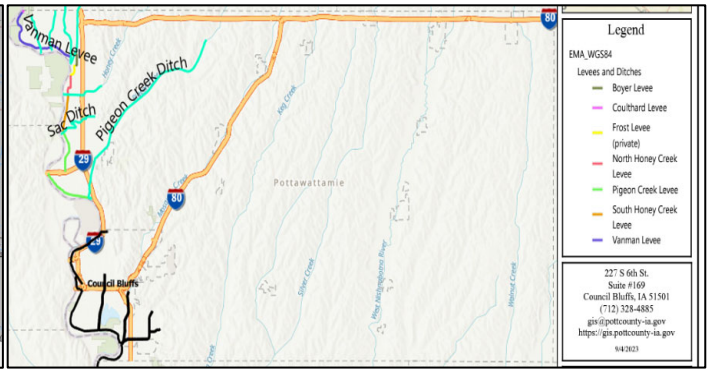
Loss of structural integrity of a wall, dike, berm, or elevated soil by erosion, piping, saturation, overtopping or under seepage causing water to inundate normally dry areas. A break in, or imposed threat from, any water retention fixture which may endanger a population adjacent to or downstream of the containment area.

Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
2	0.9	3	0.9	4	0.6	4	0.4	2.80	Medium

Consideration	Impact		Description
Location		Avoca	No direct threat.
		Carson	No direct threat.
		Carter Lake	The city would be threatened and impacted by a breach of the levee on the Nebraska side of the river. A dam failure of one or more of the northern USACE Missouri River dams would, at a minimum impact the entire city potentially inundating many areas of the city and cutting off the primary traffic routes along the eastern border.
		Council Bluffs	The city is significantly vulnerable to a potential levee failure. Most of the western border of the city, home to residential, industrial/chemical, and entertainment facilities, is protected by the levee system. The A 500-year-rated levee protecting the area was compromised and stressed in the 2011 floods. A complete restoration and recertification project has been underway since then and continues as of this update. https://www.cblevees.com/ A dam failure of one or more of the northern USACE Missouri River dams would impact the city and rural areas to the north and likely leading to the overtopping or failure of a portion of the protective levee system within the city. Access and use of I-29 will be cut off. Additionally, failure of the Indian Creek Dam Site No. 2 (a HHPD) would release a volume of water nearing 8' that would rush southward through the Indian Creek drainage system that is 80 years old) toward the city. Significant property damage and loss of life for unwarned motorists, pedestrians, and residents would be likely. Due to the age of the existing plan and changes to properties and infrastructure along the drainage channel, no valid populations/values at risk currently exist. Inundation mapping is also significantly out of date and no longer accurate. The Monument Road Dam (a HHPD) presents less risk but would still threaten a few down-elevation homes and a business (less than 10 people at risk) and wash over Monument Rd. potentially causing damage to Mynster Springs Rd.
		Crescent	No direct threat. A dam failure of one or more of the northern USACE Missouri River dams would, at a minimum, impact rural area residents and cut the city off from road systems to the west of the city.
		Hancock	No direct threat.
		Macedonia	No direct threat.
		McClellend	No direct threat.
		Minden	No direct threat.
		Neola	No direct threat.
		Oakland	No direct threat.
		Treynor	No direct threat.
		Underwood	No direct threat.
		Walnut	No direct threat.
		County	A dam failure of one or more of the northern USACE Missouri River dams would impact the rural areas to the north of CB and likely destroy the rural protective levees north and south of CB. Access and use of I-29 and I-680 will be cut off. Additionally, failure of the Indian Creek Dam Site No. 2 (a HHPD) would release a volume of water nearing 8' that would rush southward through the Indian Creek system toward CB impacting unincorporated areas along the way. Significant property damage and loss of life for unwarned motorists, pedestrians, and residents would be likely. The Monument Road Dam (a HHPD) presents less risk but would still threaten a few downgrade homes and road infrastructure of the county and city as uncontrolled flows made its way to Mynster Springs Rd. and Big Lake Park.
		Schools	CB CSD, St. Albert, Heartland Christian, and Lewis Central would all see significant disruptions to operations. Many students and staff would be directly impacted personally by a levee breach and transportation routes will be compromised. Some facilities, based on the actual breach location and

			active flood duration, could be compromised by water encroachment or associated power disruptions.
Previous Occurrences	VARIABLE	• 1952 | Flooding on the Missouri easily overtopped and damaged the CB Levee system which was built at the time to hold up to a 100-year flood event. Levees were rebuilt to hold up to a 500-year flood. • 2011 | In May of 2011, controlled flooding of the Missouri River by the U.S. Army Corps of Engineers created active record flooding conditions over a period of over four months. From May through October, levees along the Missouri River were inundated with water inundating western areas of the planning area. Millions were lost to property damage, agricultural production, and road systems, and though there were no levee failures, structural integrity of the levees was significantly compromised. • 2019 | Record rainfalls occurred flash melting a significant accumulation of snow and ice already on the ground leading to flash flooding of creeks and tributaries as well as follow-on river flooding along the Missouri. All levees north of CB were damaged or destroyed. Millions in losses occurred, similar to 2011. Flood inundation remained in some areas until early December. • There are no documented dam failures that have affected the residents of Pottawattamie County in the last 35 years.	
Probability	POSSIBLE	Although the county is no stranger to flooding, only 3 major floodings have occurred between 1952 and this update that posed a threat to protective levees in the county with two occurring within an eight-year timeframe with the worst of the events being human-caused/influenced due to poor federal system management and poor flood control policies.	
Extent	CRITICAL	In the extremely remote event of failure of one or more of planning area levels, a very large portion of the 500-year floodplain and adjoining low laying areas near the river could be flooded within 72 hours. Many dams in Pottawattamie County are beginning to show signs of age and wear, increasing the risk of a failure with time. These dams are inspected on an annual basis to mitigate failure. Presently the probability of any dam failing in the next few years is relatively low. Overall, there are 84 total dams of varying size in the county, 2 of which have been classified as "high hazard" potential dams. A countywide dam inventory is maintained in the emergency operations center[14].	





[14] Further details on high hazard dams are located at Element G of this plan.

Hazard Profile | Mass Casualty Event

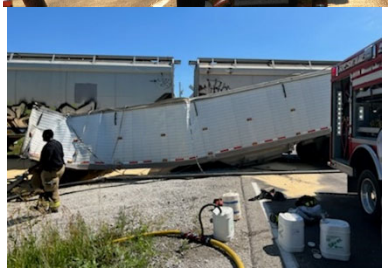
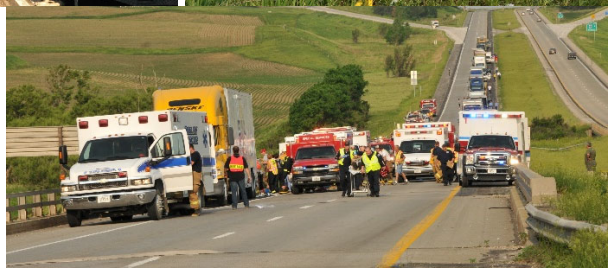
Mass Casualty events can be associated with many hazards. For the purposes of this HMP, this hazard profile focuses on the highest probable originating event that could cause a mass casualty incident – a transportation-borne event. Pottawattamie County hosts one of largest inventory of total road/highway transportation miles, rail miles, and is home to local and regional air traffic as well as commercial and pleasure river traffic. This hazard does not address the numerous single or multiple road transportation incidents that occur but focuses on those transportation incidents resulting in mass casualties with the highest potential to exceed local response capacity.

Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
2	0.9	3	0.9	4	0.6	1	0.1	2.50	Medium

Consideration	Impact	Description	
Location		Avoca	I-80 borders the northern edge of Avoca. A large-scale transportation incident would impact local services.
		Carson	Highways 92 and 59 intersect at the eastern edge of Carson with 92 running through the southern portion of the city. These highways are major routes with heavy commuter and commercial traffic.
		Carter Lake	Resides within close proximity to Eppley Airfield putting the population at risk of being impacted directly by an incident or indirectly should an incident occur at the airport. Abbott Drive sees approximately 20,000 vehicles per day with many commuter and commercial vehicles traveling to Eppley Airfield. A major rail line runs in the city south of Ave H with a hotel approximately 50 yards away from the line. The area is also industrial with large petroleum storage that could exacerbate a derailment incident. The Missouri River is the only waterway with commercial maritime traffic that includes hazardous substance shipments.
		Council Bluffs	A significant portion of residential and business areas are in line with the approach and departure paths of Eppley Airfield. Should an airline have an incident during takeoff or landing, the impacts of a populated area crash would be significant resulting in multiple fatalities and injuries that would overwhelm the local public safety system. Interstates 80, 29, and 480 along with Highways 6 and 92 are very high-volume traffic routes in and around the city. There is a very high amount of commuter and commercial traffic (including hazardous substance shipments) that make the city susceptible to a major traffic incident, especially during peak travel hours or planned events. The city has a rich railroad history and rail traffic (non-commuter) is prevalent in the city, especially at the numerous crossings, sidings, switch stations, and loading/unloading points. It is estimated that a major rail incident could impact approximately 5% of the population at any given point depending on the scope of the accident and materials transported. The Missouri River is the only waterway with commercial maritime traffic that includes hazardous substance shipments.
		Crescent	Also, within Eppley's approach and departure paths, the city could be impacted by a crash scenario. Impacts would likely be peripheral, and transportation related based on the geographical area. I-29 is less than a mile west of the city and a large traffic incident would have local resource and travel restriction/rerouting implications. Additionally, Old Lincoln Highway is a major arterial road that runs north/south through the community. Crescent could be impacted by a derailment incident involving hazardous substances. 2 lines run north/south within 2 miles of the city.
		Hancock	No direct threat.
		Macedonia	No direct threat.
		McClellend	No direct threat.
		Minden	I-80 is two miles north of the city. Local traffic would be impacted by a major interstate event in the area with traffic rerouting and local emergency services would be taxed.
		Neola	Neola sits south of the I-80 and I-880 split. This intersection is prone to accidents and a potential site for a mass casualty event considering the high volume of commuter and commercial traffic. BNSF has a line that runs along Front Street (the main route through town) which, depending on the scope of a derailment and materials being shipped, could impact critical facilities in the area (fire station, water treatment plant) as well as the central business district.

		Oakland	Highways 6 and 59 split at both the southern and eastern edges of the city as well as running directly through the center of the community. These are major transportation routes for commercial traffic, especially hazardous substance shipments. The community will see between 1,500 and 2,000+ vehicles per day.
		Treynor	The city is bisected by Highway 92. It is largely used as a primary commuter route for the traveling workforce and an agricultural route for grain markets.
		Underwood	I-80 runs adjacent to the city on the east. Railroad Highway runs through the community and is a major transportation route in the western part of the planning area. A major event on 80 would cause the rerouting of traffic through the city. BNSF's line (also runs through Neola) could put the city's wastewater treatment operations and the Agriland FS at risk in a major derailment with hazardous substances.
		Walnut	I-80 runs along the northern border of Walnut. This site is particularly dangerous during winter storm events often causing traffic to stop in and around the community or attempts to reroute through the community. Walnut is often a shelter site for stranded motorists during major winter events.
		County	There are no unincorporated significant impacts related to transportation mass casualty incidents. The sparse rural population limits the impacts of an event occurring in an unincorporated area not in proximity to a population center.
		Schools	Tri-Center CSD (Neola) could see operational disruption with a major event occurring at the 80/880 split. Riverside CSD is set at the southern split of Hwy 59/6 (Oakland) which poses an increase for accident potential with a large amount of inexperienced teenage drivers navigating a 4-way sign-controlled intersection with heavy traffic volumes. All schools share the commensurate amount of risk exposure as identified above in their host communities.
Previous Occurrences	VARIABLE	• June 2011 | I-80 near the Shelby Exit – Charter bus for a high school trip rolled down an embankment resulting in a (50) patient mass casualty response. The majority of patients were uninjured or had minor injuries.	
Probability	POSSIBLE	The entire planning area is vulnerable to mass casualty incidents from transportation modes; however, the highest probability exists in and around the Council Bluffs Metro area where which has the highest density of population and modes/amount of transportation. • Traffic – 11,713 traffic crashes since last HMP update • Rail – 35 accidents since last HMP update • Air – 4 aircraft incidents since last HMP update • Maritime – No data	
Extent	CRITICAL	When one of these very low frequency/probability events occurs, they hold a high potential to create a number of casualties that would overwhelm local resources and require an extensive amount of mutual aid. Fatalities are likely in a significant event. Local hospitals could easily be overwhelmed in relation to daily average census and availability of acute trauma care specialists and operating room staff.	



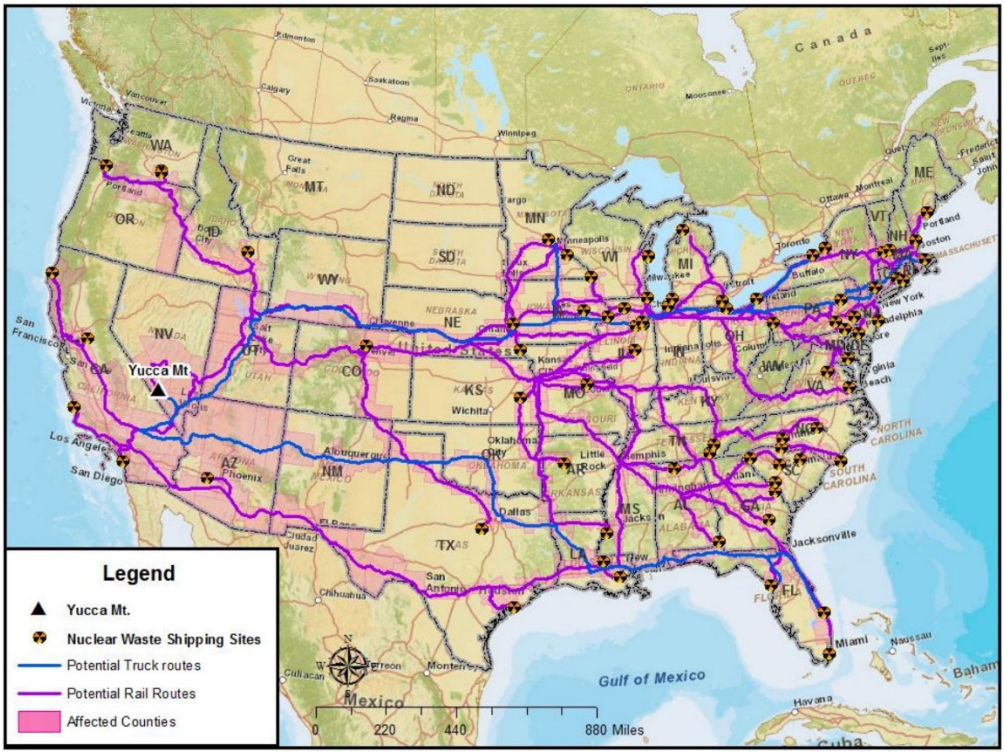




Hazard Profile | Radiological Incident

An accident involving radioactive waste and materials that are shipped through the planning area. During commodity flow research, the identified routes of I-80, I-29, I-680, and Highways 6 and 59 have been identified as knowingly having radiological materials shipped through the planning area.

Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
2	0.9	2	0.6	4	0.6	4	0.4	2.50	Medium

Consideration	Impact	Description
Location	ALL	Radioactive waste that is transported is typically low level waste and would not pose any serious health threats unless exposure was long-term. However, any incident in the planning area would likely require assistance from outside resources. Being in close proximity to major transportation routes increases a jurisdiction's risk but the probability of an occurrence is significantly low.
Previous Occurrences	VARIABLE	2002 | Tractor trailer hauling radiological waste container involved in a minor accident on I-80. No container breach or damages.
Probability	POSSIBLE	These shipments have been identified as occurring on major transportation routes through the planning area with only one documented incident on record.
Extent	NEGLIGIBLE	The security of certain shipments and containers that materials are shipped in are extremely robust and reduce the risk of a large-scale radiological incident not related to an act of terrorism/intentional release. Those most vulnerable to an incident would be those in the immediate accident area of transported materials and any first responders caught unaware of materials present. Communities along the primary routes of the planning area also bear some minimal vulnerability depending on the actual incident location.



Hazard Profile | River Flooding

The rising or overflowing of a river, tributary, or body of water that covers adjacent land not usually covered by water when the volume of water exceeds the channel's capacity. They can be slow or fast rising but generally develop over a period of days and in relation to another natural hazard (i.e., severe storms, prolonged rainy periods, etc.). Flooding is a natural and expected phenomenon that occurs annually, usually restricted to specific streams, rivers, or watershed areas.

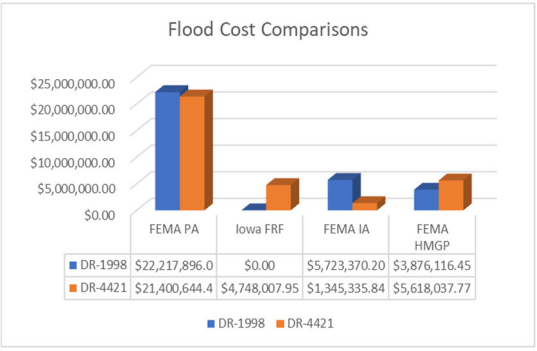
Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
3	1.35	3	0.9	2	0.3	4	0.4	2.95	Medium

Consideration	Impact		Description
Location		Avoca	East and West branches of the W Nishnabotna River surround the city. The southern portion of the city is most at-risk, being home to the county fairgrounds, a school, and school sports complex. There are lower elevations on the east of the city along the river which is home to the city park, ballfields, walking trails, and swimming pool.
		Carson	The W Nishnabotna traverses the west and south side of Carson. The rodeo grounds, city park, ball field, and water/sewer treatment infrastructure are all at risk from flooding along the river.
		Carter Lake	Although the Missouri River is located on the east side of the city, distance from the river makes direct inundation unlikely. The high-water table will increase flooding risk in the form of basement inundation and inability to drain water during river flood events.
		Council Bluffs	Approximately half the city is constructed in the Missouri River floodplain which poses a significant risk to the city from the river and tributary streams should there be a compromise to the levee system. The Corps of Engineer Levee system built after the 1952 flood protects many of the at-risk areas along the Missouri. The far southern portion of the city is not protected by the levee and there is a secondary flood threat from tributary creeks backing up during river flooding events.
		Crescent	The city hosts Pigeon Creek on the west side and Crescent Creek on its south. The Missouri is approximately 10 miles to the west. Some areas of the city without storm sewer infrastructure are at higher risk than others.
		Hancock	The W Nishnabotna River flows on the west side of the city in close proximity to Botna Bend Park, the City Park, Hancock Elevator and Fertilizer, and the city's sewer lift station. All these facilities were breached and damaged in 1993.
		Macedonia	There are no special flood hazards.
		McClellend	There are no special flood hazards.
		Minden	The city hosts Keg Creek near the southern and eastern portions of the city. Most of the potential flood area is agricultural land and adjoining commercial buildings, threat to residential areas is minimal but can overtop the main entrance highway into the community.
		Neola	Mosquito Creek and Neola Creek run to the east and west of Neola.
		Oakland	The W Nishnabotna River runs along the western border of Oakland. Oakland has conducted aggressive mitigation projects removing residential structures from the threat area over the past 20+ years preserving the area as green space and recreational areas. The most vulnerable areas would be very few residential properties and businesses in the southwest portion of the city.
		Treynor	There are no special flood hazards.
		Underwood	Mosquito Creek runs east of the city posing a risk to those properties within close proximity. Mitigation work to the channel has reduced the risk of flooding for the city.
		Walnut	Walnut Creek runs on the east side of the city. The city has mitigated flood risk by developing away from the hazard.
		County	Botna Bend Park (Hancock) is vulnerable to Nishnabotna River flooding. This threatens not only campers using the facility but also the elk and buffalo herds on display at the campground.
		Schools	• AHSTW is in the 1% annual chance flood hazard (Zone AE). • Council Bluffs Schools has (8) facilities in Minimum Hazard Zone X, (2) facilities in the 1% annual chance flood hazard Zone AE, (11) facilities in the Regulated Floodway Zone X (Reduced risk from levee), and (3) facilities in the 1% annual chance flood hazard Zone AH.

			• Heartland Christian is in the Regulated Floodway Zone X (Reduced risk from levee. • Lewis Central is in the 1% annual chance flood hazard (Zone AE). • Riverside facilities are all within the Minimum Flood Hazard Zone X category. • St. Albert facilities are within the Minimum Flood Hazard Zone X category. • Treynor facilities are within the Minimum Flood Hazard Zone X category. • Tri-Center facilities are within the Minimum Flood Hazard Zone X category; however, their athletic fields reside in the 1% annual chance flood hazard Zone A. • Underwood facilities are within the Minimum Flood Hazard Zone X category. • IWCC Comm. College facilities are within the Minimum Flood Hazard Zone X category, however, some of its property is within both the Regulated Floodway and the 1% annual chance flood hazard Zone AE.
Previous Occurrences	VARIABLE	• (7) Presidential Disaster Declarations specific to flooding as the primary hazard and need for assistance. • There have been (9) additional declarations made in the planning area under the category of Severe Storms where at a minimum, flash flooding was part of the combination hazard requiring a declaration, although not necessarily the primary hazard event. • Flooding, as a component or primary hazard, to nearly 75% of all federally declared disasters and one of the most common occurring hazards in the planning area. • Historical flooding events include 1952, 1993, 2011, and 2019.	
Probability	LIKELY	Flood season forecasts generally predict near a 10% probability of river flooding annually. Historical occurrences support mitigation and preparedness efforts on an ongoing basis as related to the costs incurred during the significant historical flooding within the planning area. It is likely there will be minor flooding event within the next (2) years, and a moderate to major flood event within the next decade.	
Extent	CRITICAL	This hazard, especially the historical events, have cost the planning area millions of dollars in emergency response costs, damages, destroyed properties, economic losses, infrastructure damages, and have forced people into leaving their homes and government into property acquisition mitigation efforts to minimize its impacts. More than 15% of the planning area is affected by the 100 or 500-year flood plain.	

2011 Missouri River Flooding | DR-1998-IA			
	Eligible	Recovered	Unrecovered
FEMA Public Assistance	$22,217,896.08	$18,821,021.78	$3,396,874.30
FEMA Individual Assistance	NA	$5,723,370.20	NA
Hazard Mitigation Grant	$3,876,116.45	$3,876,116.45	$0.00
State Flood Recovery Fund	NA	NA	NA

2019 River & Flash Flooding | DR-4421-IA_[15]			
	Eligible	Recovered	Unrecovered
FEMA Public Assistance	$21,400,644.49	$11,022,824.19	$10,358,142.80
FEMA Individual Assistance	NA	$1,345,335.84	NA
Hazard Mitigation Grant	$5,618,037.77	$2,643,235.27	$2,947,802.50
State Flood Recovery Fund	$4,748,007.95	$4,747,190.05	$817.90



Repetitive & Severe Repetitive Loss Properties

Location	Location Total	Residential				Commercial / Industrial			
		NFIP RL	*NFIP SRL*	*FMA RL*	*FMA SRL*	*NFIP RL*	*NFIP SRL*	*FMA RL*	*FMA SRL*
Council Bluffs	31	16	0	1	0	3	0	0	0
Rural – Crescent	13	12	3	4	3	2	0	1	1
Rural – Honey Creek	01	1	0	0	0	0	0	0	0
TOTALS	**45**	29	3	5	3	5	0	1	1

Note – *Location totals reflect unique R/SRL properties in the planning area. Property type/status by program contains some duplicate classifications per property.*

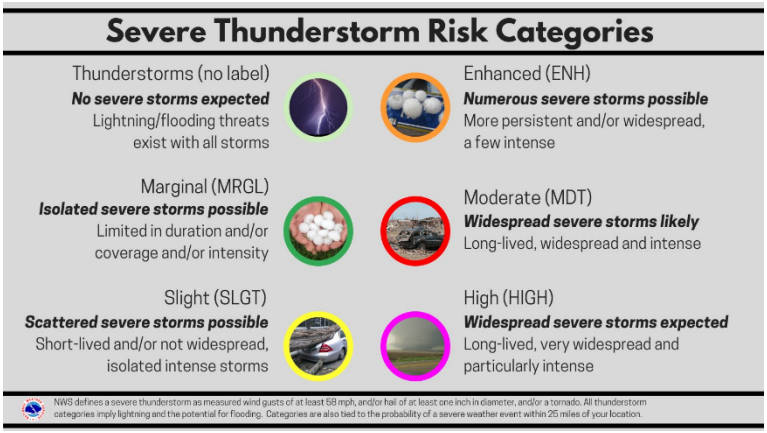
[15] DR-4421-IA has not been closed out; recovery continues.

Hazard Profile | Severe Thunderstorm

Atmospheric imbalances and turbulence that can result in heavy rains, winds in excess of 58 mph, surface hail greater than .75" in diameter, dangerous cloud-to-ground lightning, and even tornadoes[16].

Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
4	1.8	2	0.6	3	0.45	3	0.3	3.15	High

Consideration	Impact	Description
Location	ALL	The vulnerability from severe thunderstorms among jurisdictions in the planning area is generally uniform. Storms can damage homes, vehicles, wipe out entire fields of crops, injure livestock and pets, cause injury and death, and damage other property by the size and sheer force of hail, significant and rapid rainfall, devastating winds, and dangerous lightning. Persons caught outside during a severe thunderstorm are most at risk. Power and communications failures along with flooding can also result from intense severe thunderstorms. However, loss of community lifeline systems is usually temporary with many critical lifelines having redundant capabilities.
Previous Occurrences	SEASONAL	The highest potential risk for this hazard is generally from April through September, however, severe thunderstorms can occur any time during the year. Severe thunderstorms have prompted (10) Presidential Disaster Declarations in the planning area since 1964, (5) of which have occurred in the last decade.
Probability	HIGHLY LIKELY	The planning area has been included in a National Weather Service Severe Thunderstorm Warning 196 times since the last HMP update. This is nearly 40 potential events per year on average[17].
Extent	LIMITED	Severe thunderstorms can cover a number of miles with the most severe portion of individual systems generally isolated. However, thunderstorms that impact the planning area will affect most residents in one way or another. It is highly probable that multiple jurisdictions in the planning area will be affected by the same storm system moving in its typical west to east pattern. Severe thunderstorms can produce rapid and significant accumulations of rainfall. They can produce dangerous lightning, extreme winds, and large hail. Each of these hazards alone, but especially when combined, can produce property damage, electrical system interruptions, communications interruptions, fires, transportation interruptions, infrastructure damage, delays in emergency services, injuries, and even death. A very significant number of these annual events, however, do not produce any notable disruptions to community lifelines or cause injuries.



[16] Tornadoes discussed in a separate hazard profile.

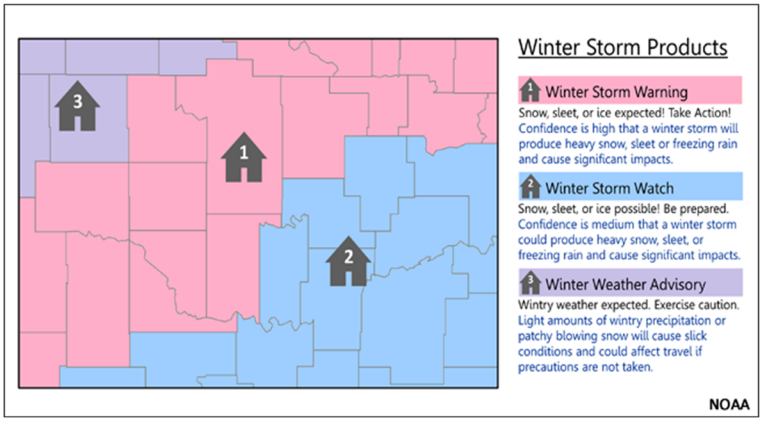
[17] https://mesonet.agron.iastate.edu/

Hazard Profile | Severe Winter Storm

Winter storm systems that adversely and significantly impact day-to-day activities and public services. These events can include blizzard conditions, heavy and blowing snowfall, freezing rain/heavy sleet, extreme cold, or any combination thereof.

Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
4	1.8	2	0.6	1	0.15	3	0.3	2.85	Medium

Consideration	Impact	Description
Location	ALL	The vulnerability from severe winter storms among jurisdictions in the planning area is generally uniform. A severe winter storm could hinder or entirely shut down access to many of the jurisdictions, especially if major transportation routes and secondary road systems are impassable. In a long duration power outage associated with the event, heating of homes could become an issue. Emergency Services in all jurisdictions would face delayed responses and operational challenges in extreme conditions. Major highways and interstates could be impassable causing the need for temporary emergency shelters of stranded motorists and managing increased commercial traffic into communities when forced to exit closed road systems.
Previous Occurrences	SEASONAL	The highest potential risk for this hazard is generally from late November through early March. Severe winter storms have prompted (4) Presidential Disaster or Federal Emergency Declarations since 1997.
Probability	HIGHLY LIKELY	The planning area will usually experience at least one heavy snowfall and/or freezing precipitation event annually.
Extent	LIMITED	Winter storms generally affect multiple counties and cover hundreds of miles. In addition to affecting the entire planning area, many severe winter storms often restrict access to communities for extended periods due to poor road conditions in adjoining rural areas. Almost 100 percent of the geographic area will be affected. Dangerous driving conditions and exposure to extreme conditions are the primary threats associated with severe winter storms. Power outages can be dangerous to vulnerable populations during extremely cold periods. It also hampers the public's ability to access needed services and commodities due to power, communications, or transportation disruptions due to the conditions and also pose a risk to the care and feeding of livestock.

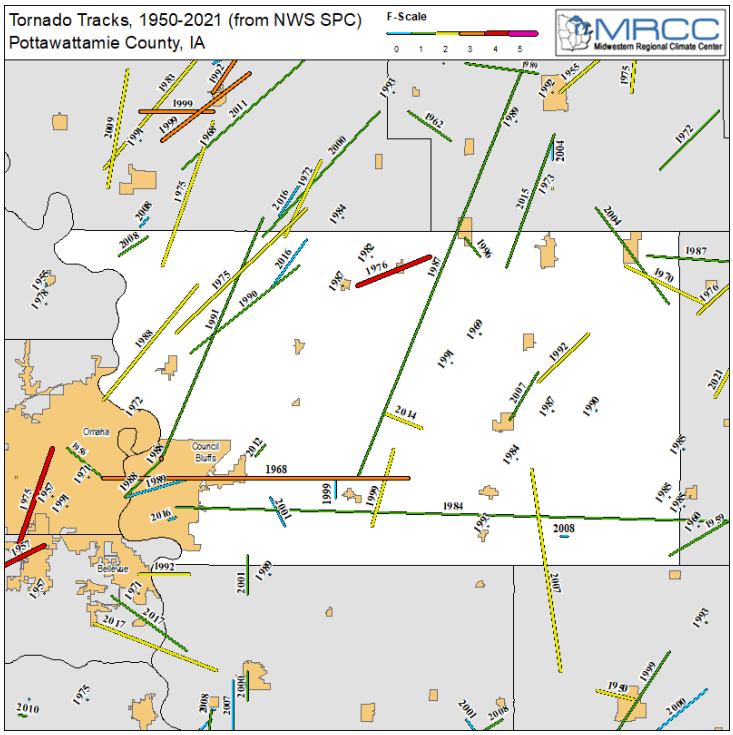


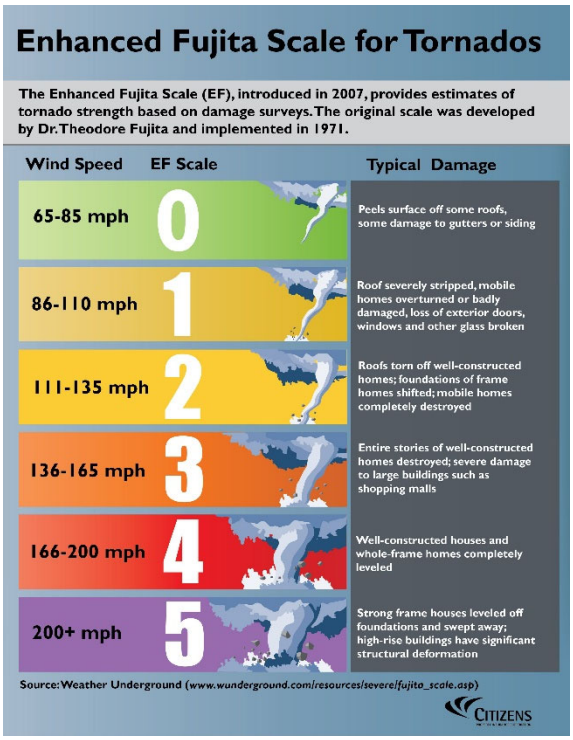
Hazard Profile | Tornado

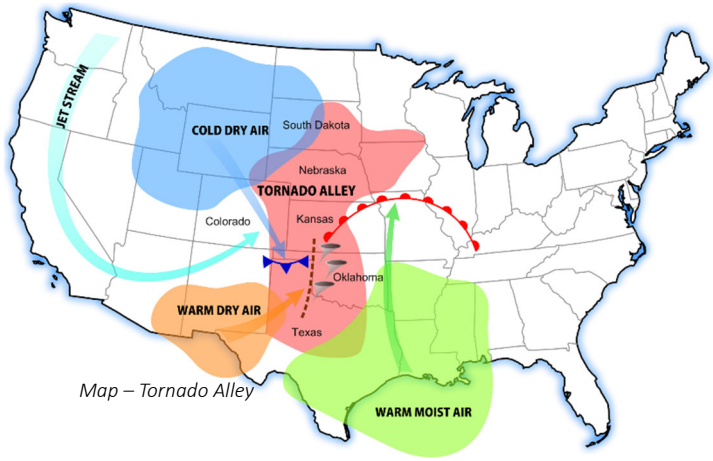
A violent, destructive, rotating column of air taking the shape of a funnel-shaped cloud that progresses in a narrow, erratic path. Rotating wind speeds can exceed 200 mph and travel across the ground at average speeds of 25 to 30 mph.

Probability	CPRI	Severity	CPRI	Time	CPRI	Duration	CPRI	Total CPRI	Priority
4	1.8	3	0.9	4	0.6	4	0.4	3.70	High

Consideration	Impact	Description
Location	ALL	The vulnerability from tornadoes among jurisdictions in the planning area is generally uniform as the entire area is considered a part of tornado alley and most tornadic systems move from the west to east through a significant part of the county. A large and violent tornado impact on a rural community in the planning area, considering infrastructure and budgets, could hold the potential for such a community to be unable to survive the time and cost of rebuilding. Some communities also have small pockets of mobile homes or even areas where houses are built on slab foundations due to being in a recognized flood hazard area, whether levee protected or not. In contrast, a direct tornado impact to the planned area's largest population center would likely reverberate across the entire county. With over 62,000 residents in Council Bluffs, the largest concentration of public safety personnel and resources, as well as the economic and employment hub of a majority of the county, all community lifelines would be significantly impacted for the first 12-24 hours post-event and have an adverse impact on public safety as well as residents countywide. The county operates (4) public parks/campgrounds, and the state operates (2) within the planning area. None of these locations have a purpose-built public storm shelters available for use. Schools within the planning area were constructed previous to the trend of building a portion or section of the school as a designated storm/tornado shelter area that meets FEMA recommended specifications. Additionally, with typical storm timing in the planning area, it is not unreasonable to have multiple school buses transporting students during tornado potential times of the early afternoon. Later in severe weather season with a shift to later threat times, school sport practices, competitions, and transportation to and from those activities align during the peak of severe weather season for the planning area.
Previous Occurrences	VARIABLE	• There have been 49 confirmed tornadoes in the planning area since 1970 that have contributed to (6) Presidential Disaster Declarations since 1984. There have been no documented deaths during this timeframe and 96 injuries, 42 of which occurred during the 1988 tornado in Council Bluffs. • 7 tornadoes have occurred since the last HMP update with 5 of them occurring on December 15, 2021.
Probability	HIGHLY LIKELY	There have been 25 Tornado Watches or Warnings issued since the previous HMP update. Historical data indicates an annual average potential of at least 1 tornado per year possible.
Extent	CRITICAL	The extent of damage is largely defined by where the tornado tracks. Coupled with its intensity at the time, as measured on the Enhanced Fujita Scale, events can range from very negligible severity to near catastrophic. The demographics of a particular community in the planning area can also factor into the ultimate determination of extent. Those most at risk from tornadoes include people living in mobile homes, campgrounds, and other dwellings without secure foundations, basements, or storm shelters. People in automobiles are also very vulnerable to tornados. The elderly, very young, and the physically and mentally handicapped are especially vulnerable because of an increased potential for lack of situational awareness and/or possessing the mobility to escape to adequate shelter.







Map – Tornado Alley

NATIONAL WEATHER SERVICE
Preliminary Damage Survey Results

Avoca, IA – Pottawattamie County	
Date	07/12/2023
Time (Local)	628 am – 630 am
EF Rating	EF1
Est. Peak Winds	105 mph
Path Length	1.5 miles
Max Width	40 yards
Injuries/Deaths	0 / 0

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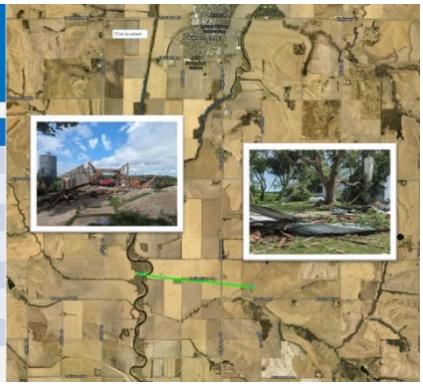


Most recent tornado touchdowns in the planning area (2023)

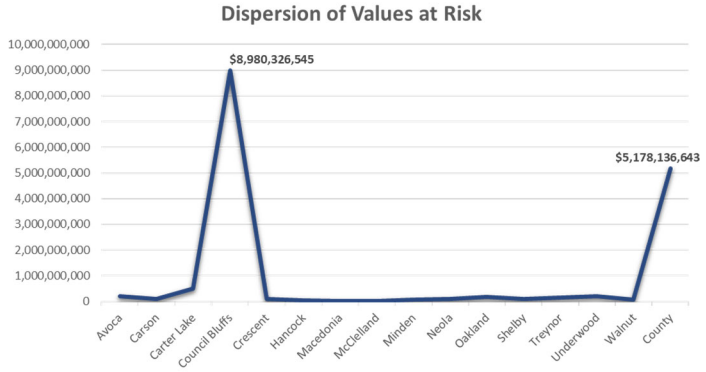
Jurisdictional Vulnerability to Identified Hazards[18]

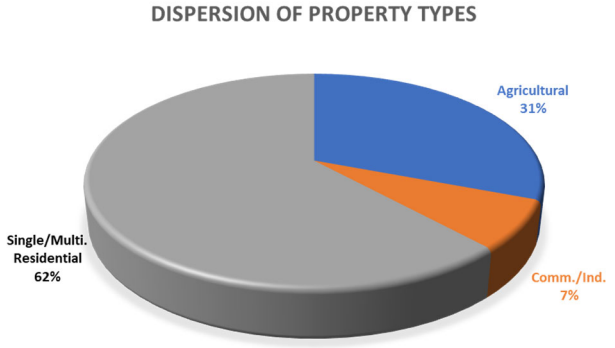
This section summarizes each jurisdiction's max-potential vulnerability to the hazards described in the hazard profiles of this Element. The summary tables describe vulnerability in terms of:

- Population at risk.
- The types and numbers of existing and future buildings, infrastructure, and critical facilities.
- An estimate of the potential dollar losses to vulnerable structures and a description of the methodology used to prepare the estimate.
- A general description of land use and development trends within the planning area.

Exposure of Population and Structures

Jurisdiction	Population	Agricultural	Ag. Value	Ag. Contents	Comm./Ind.	Comm./Ind. Value	Comm./Ind. Contents	Single/Multi. Residential	Residential Value	Residential Contents	Total Building Count	Total Values at Risk
Avoca	1,683	57	$ 384,700	$ 384,700	165	$ 25,773,500	$ 32,216,875	792	$ 100,380,000	$ 50,190,000	1,014	$ 209,329,775
Carson	765	29	$ 1,842,200	$ 1,842,200	62	$ 3,639,300	$ 4,549,125	400	$ 53,806,700	$ 26,903,350	491	$ 92,582,875
Carter Lake	3,783	0	$ -	$ -	172	$ 74,972,600	$ 93,715,750	1,371	$ 214,632,800	$ 107,316,400	1,543	$ 490,637,550
Council Bluffs	62,415	390	$ 21,456,000	$ 21,456,000	2,485	$ 1,644,133,442	$ 2,055,166,803	22,572	$ 3,492,076,200	$ 1,746,038,100	25,447	$ 8,980,326,545
Crescent	626	32	$ 1,133,500	$ 1,133,500	36	$ 8,025,300	$ 10,031,625	378	$ 56,880,700	$ 28,440,350	446	$ 105,644,975
Hancock	201	22	$ 200	$ 200	23	$ 11,314,000	$ 14,142,500	123	$ 7,614,800	$ 3,807,400	168	$ 36,879,100
Macedonia	267	12	$ 517,600	$ 517,600	23	$ 692,700	$ 865,875	175	$ 12,739,500	$ 6,369,750	210	$ 21,703,025
McClelland	147	12	$ 169,500	$ 169,500	19	$ 1,985,300	$ 2,481,625	75	$ 9,482,600	$ 4,741,300	106	$ 19,029,825
Minden	599	17	$ 311,100	$ 311,100	52	$ 2,151,700	$ 2,689,625	256	$ 36,393,100	$ 18,196,550	325	$ 60,053,175
Neola	913	42	$ 339,900	$ 339,900	71	$ 6,058,500	$ 7,573,125	407	$ 60,346,800	$ 30,173,400	520	$ 104,831,625
Oakland	1,510	50	$ 386,500	$ 386,500	175	$ 22,178,400	$ 27,723,000	731	$ 77,667,800	$ 38,833,900	956	$ 167,176,100
Shelby	8	21	$ 17,200	$ 17,200	16	$ 40,773,500	$ 50,966,875	3	$ 720,800	$ 360,400	40	$ 92,855,975
Treynor	1,068	21	$ 673,600	$ 673,600	42	$ 6,783,500	$ 8,479,375	437	$ 85,497,500	$ 42,748,750	500	$ 144,856,325
Underwood	957	22	$ 308,600	$ 308,600	69	$ 39,680,500	$ 49,600,625	377	$ 72,740,200	$ 36,370,100	468	$ 199,008,625
Walnut	732	52	$ 501,900	$ 501,900	102	$ 7,915,622	$ 9,894,528	392	$ 29,987,700	$ 14,993,850	546	$ 63,795,500
County	17,638	16,566	$ 378,111,000	$ 378,111,000	645	$ 930,880,597	$ 1,163,600,746	6,312	$ 1,551,622,200	$ 775,811,100	23,523	$ 5,178,136,643
TOTALS	**93,312**	**17,345**	**$ 406,153,500**	**$ 406,153,500**	**4,157**	**$ 2,826,958,461**	**$ 3,533,698,076**	**34,801**	**$ 5,862,589,400**	**$ 2,931,294,700**	**56,303**	**$ 15,966,847,637**





[18] 2021 estimated population data | Content Value derived by applying multiplier to building values based on Hazus Inventory Technical Manual, Hazus 4.2, Service Pack 3 (February 2021). Residential (50%), Commercial (100%), Industrial (150%), Agricultural (100%). For the purposes of these calculations, commercial and industrial were calculated at an averaged factor of 125%.

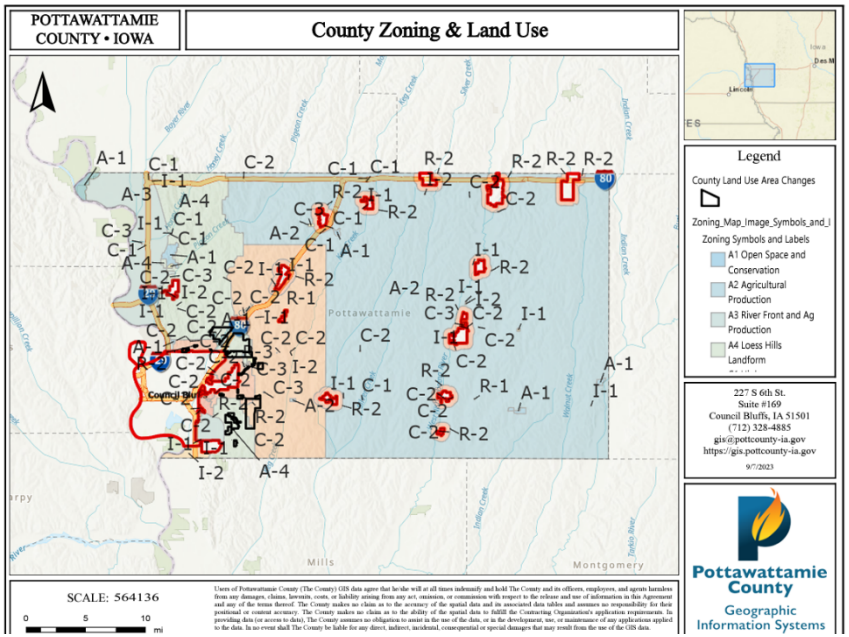
Exposure of Critical and Essential Facilities / Infrastructure

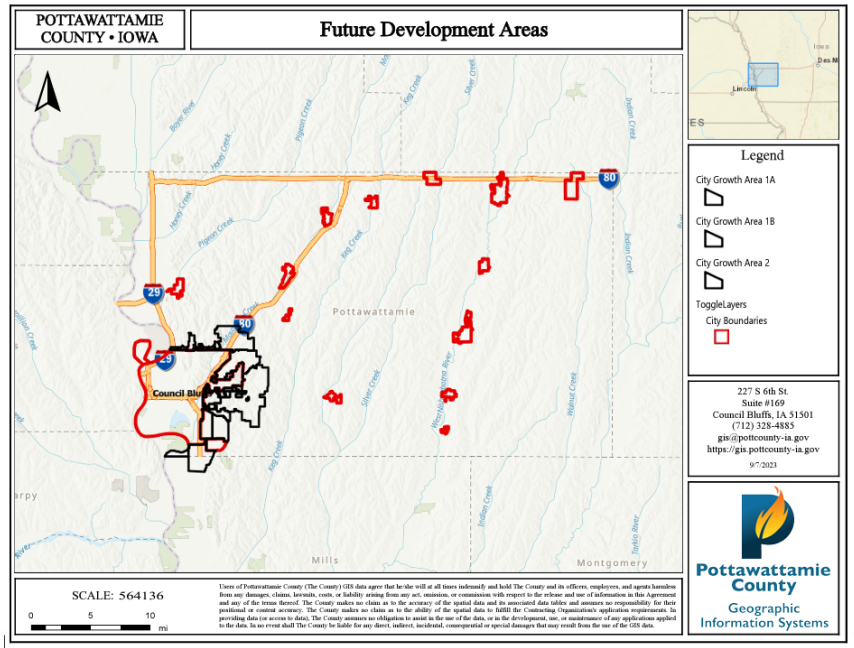
JURISDICTION *(Attributed to physical location, not ownership)*	Airport Facility	Bus/Public Transit Facility	Childcare Facility	Communications Tower	Electric Power Facility	Emergency Operations Center	Fire/EMS Service Facility	Government Facility	Public Housing Facility	Shelter Facility	Bridges	Hospital/Healthcare Facility	Military Facility	Natural Gas Facility	Nursing Home Facility	Law Enforcement Facility	Potable Water Facility	Railroad Facility	Sewer Treatment Facility	School Facility	Tier II/EHS Chemical Facility	Wastewater Facility	TOTALS
Avoca	0	0	2	0	0	0	1	2	0	0	0	1	0	0	1	2	0	0	1	1	2	1	14
Carson	0	0	1	0	0	0	1	4	0	0	0	0	0	0	0	0	1	0	1	1	0	1	10
Carter Lake	0	0	4	1	0	0	1	4	0	0	0	0	0	0	0	1	0	0	1	1	6	0	19
Council Bluffs	1	1	88	37	10	1	5	12	1	17	47	20	2	1	4	2	1	10	1	24	58	1	344
Crescent	0	0	1	0	1	0	1	2	0	0	3	0	0	0	0	0	0	0	1	1	1	1	12
Hancock	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	1	1	0	1	1	7
Macedonia	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	1	0	1	1	6
McClelland	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	1	0	0	1	5
Minden	0	0	0	0	0	0	1	2	0	0	1	0	0	0	0	0	0	0	1	0	0	1	6
Neola	0	0	4	0	0	0	1	3	0	1	3	1	0	0	0	0	1	0	1	0	2	1	18
Oakland	0	0	4	0	1	0	1	4	0	1	1	1	0	0	1	0	1	0	1	1	3	1	21
Treynor	0	0	2	0	0	0	1	2	0	2	0	1	0	0	0	0	1	0	1	2	0	1	13
Underwood	0	0	1	0	0	0	1	1	0	0	5	1	0	0	0	0	0	0	1	2	3	1	16
Walnut	0	0	1	0	0	0	1	4	0	0	1	0	0	0	0	0	1	0	1	0	0	1	10
Pott. County *(Unincorporated)*	0	0	1	38	13	0	1	6	0	2	308	0	0	1	0	0	1	0	0	2	22	0	395
TOTALS	1	1	109	76	25	1	19	51	1	23	369	25	2	2	6	5	8	11	14	35	99	13	**896**

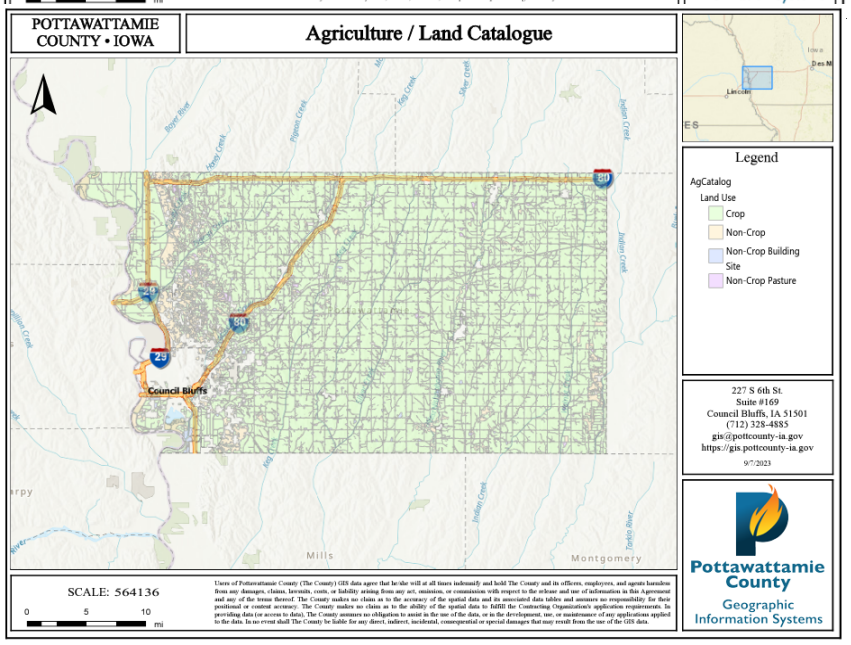
Inventory of Manufactured/Mobile Homes

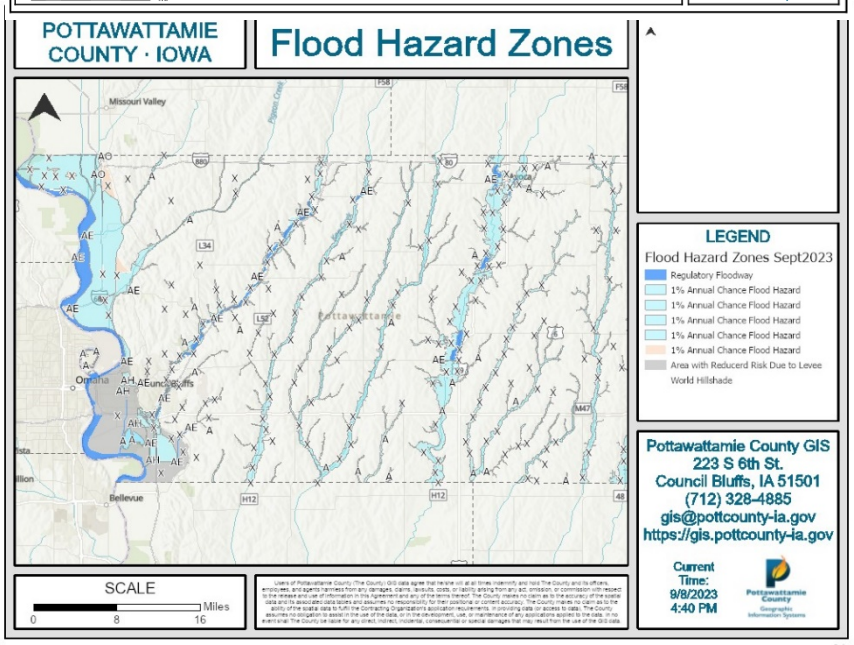
Jurisdiction & Category	Avoca	Carson	Carter Lake	Council Bluffs	Crescent	Hancock	Macedonia	McClelland	Minden	Neola	Oakland	Treynor	Underwood	Walnut	County	Planning Area Totals
# of Single parcel units	15	16	18	309	5	10	19	4	1	6	7	0	7	15	251	683
# of Commercial lots w/ units	0	0	1	10	0	0	0	0	0	0	0	0	0	1	1	13
# of Spaces at commercial lots	0	0	329	743	0	0	0	0	0	0	0	0	0	5	6	1,083
Max potential units by jurisdiction	15	16	347	1,052	5	10	19	4	1	6	7	0	7	20	257	**1,766**

Planning Area Land Use and Development









ELEMENT C – Mitigation Strategy

Element C1 (a-b), C2 (a) | Mitigation Capabilities and NFIP [19]

Mitigation Supporting Tools

Jurisdictions in the planning area, including special districts (i.e., schools.) have an assortment of tools at their disposal to support mitigation activities. Most jurisdictions maintain a comprehensive plan, or locally referred to as: master plan, strategic plan, etc. Regardless of the name, these plans identify future development potential (economic, housing, industrial, etc.), infrastructure projects, and other community/organizational priorities.

Many of these activities have mitigation benefits and are utilized to support mitigation activities and mitigation activities are likewise utilized to support priorities in community comprehensive plans. County and municipal governments are duly authorized to enact laws (i.e., laws, ordinances, etc.), including building codes, development regulations related to floodplains, or other mitigation supporting legal actions applicable to identified hazards and priorities.

Mitigation Supporting Tools	Comprehensive /Strategic Plan	Building /Zoning Codes	Floodplain Ordinances	NFIP Participation
Avoca	Has	Has	Has	Has
Carson	Has	Has	Has	Has
Carter Lake	Has	Has	Has	Has
Council Bluffs	Has	Has	Has	Has
Crescent	Has	Has	Has	Has
Hancock	Has	None	Has	Has
Macedonia	None	Has	None	None
McClelland	None	None	None	None
Minden	None	None	Has	Has
Neola	Has	Has	Has	Has
Oakland	Has	Has	Has	Has
Treynor	Has	Has	None	None
Underwood	Has	Has	Has	Has
Walnut	Has	Has	Has	Has
Pottawattamie Co.	Has	Has	Has	Has
All Schools	Has	NA	NA	NA

These locally existing authorities and the inherent authority and capability to expand or improve upon these tools allow the flexibility and mechanisms to help formulate strategies that account for disaster mitigation in tandem with other community and economic development interests. Planning for mitigation in future development minimizes creating unnecessary vulnerability and reduces future vulnerability in relation to the identified hazards of the planning area.

Additionally, each community, as noted in the table left, that currently participates in the National Flood Insurance Program (NFIP) will continue in their efforts to participate within the program. Identified jurisdictions of the planning area that participate in the NFIP will use a strategy of public awareness campaigns, implementation and enforcement of zoning ordinances, and pro-active mitigation, such as acquisition projects to continue its participation in the NFIP that will meet and promote the intent of the program's goals and objectives.

The table below outlines the NFIP par cipa on ac vi es for each plan par cipant.

[19] 44 CFR §201.6(c)(3), 44 CFR §201.6(c)(3)(ii)

The table below outlines the NFIP participation activities for each plan participant.

Community Name	NFIP Participant (Yes/No)	Appointed designee to implement NFIP Requirements	Participant in CRS (Yes/No)	Current Effective Map Date	Regular- Emergency Program Entry Date
City of Avoca	Yes	City Clerk	No	04/16/13	12/16/80
City of Carson	Yes	City Clerk	No	04/16/13(M)	9/4/85
City of Carter Lake	Yes	City Clerk	No	04/16/13	8/8/78
City of Council Bluffs	Yes	Flood Zone Administrator	No	04/16/13	6/15/78
City of Crescent	Yes	City Clerk	No	2/4/05	11/1/99
City of Hancock	Yes	City Clerk	No	04/16/13	4/21/06
City of Macedonia	No	N/A	No	04/16/13	N/A
City of McClelland	NSFHA	N/A	No	NSFHA	N/A
City of Minden	Yes	City Clerk	No	04/16/13	12/7/88
City of Neola	Yes	City Clerk	No	04/16/13	12/17/90
City of Oakland	Yes	City Clerk	No	04/16/13	8/3/81
City of Treynor	No	N/A	No	04/16/13	N/A
City of Underwood	Yes	City Clerk	No	04/16/13	6/1/82
City of Walnut	Yes	City Clerk	No	04/16/13(M)	12/31/09
County of Pottawattamie	Yes	Planning & Development Director	Yes	04/16/13	8/3/93

Source: FEMA Community Status Book Report, 5/7/2024. https://www.fema.gov/cis/IA.pdf

(M) - No elevation determined - All Zone A, C and X

(NSFHA) - No Special Flood Hazard Area

<u>All Pottawattamie County Communities participating in the NFIP:</u>

a) Have adopted the minimum floodplain management criteria and the latest effective FIRM

b) Enforce flood plain regulation on development in the SFHA by requiring permits for development in the floodplain and flood insurance on all mortgaged property in the floodplain

c) Implement substantial improvement / substantial damage provisions in the following manner: Local officials (1) determine the cost of work, (2) determine the market value of buildings, (3) make SI/SD determinations and provide determinations to property owners, and (4) require owners to obtain permits to bring substantially improved and substantially damaged structures into compliance with the floodplain management requirements.

The cities of Macedonia and Treynor do not currently patriciate in the NFIP because the insurable assets in the flood zone are considered minimal. No SFHA is currently mapped in the City of McClelland.

Element C3(a) | Mitigation Goals and Strategies [20]

This sub-element identifies goals and supporting strategies intended to reduce or avoid long-term vulnerabilities to planning area hazards. The identified goals and strategies, by hazard, serve as each participating jurisdiction's foundation to guide, select, and prioritize potential actions/projects that could achieve the documented goals of this plan. Pre-identified priority actions/projects of jurisdictions will be outlined in sub-element C4.

Goal 1	**Continue development of plans, policies, and programs to minimize the effect of any hazard that could impact the planning area.**
Hazard(s):	**ALL**
Strategy 1.1	Maintain a collaborative comprehensive emergency management plan, inclusive of a Hazard Mitigation Plan compliant with the Disaster Mitigation Act of 2000 (Public Law 106 – 390).
Strategy 1.2	Develop or enhance programs, regulations, and ordinances that further mitigation priorities within the planning area jurisdictional entities, as needed.
Strategy 1.3	Provide public education regarding hazard awareness and preparedness measures, inclusive of a centralized public repository of mitigation and preparedness tools.

Goal 2	**Minimize the potential impact and damage from flooding events.**
Hazard(s):	**DAM/LEVEE FAILURE, FLASH FLOOD, RIVER FLOOD**
Strategy 2.1	Enhance efficient flow of rivers and streams throughout the planning area as appropriate.
Strategy 2.2	Enhance efficient flow of storm water throughout the planning area as appropriate.
Strategy 2.3	Maintain and improve dam and levee structures as necessary.
Strategy 2.4	Maintain, update, and exercise emergency plans for flood protection systems.
Strategy 2.5	Maintain, enforce, and update zoning and floodplain management ordinances as needed.
Strategy 2.6	Continue and encourage participation in the NFIP.
Strategy 2.7	Educate the public regarding flood risk and NFIP.
Strategy 2.8	Continue ongoing floodplain property acquisitions and infrastructure relocation/flood proofing projects to limit exposure to known flood hazard areas.
Strategy 2.9	Ensure emergency plans exist or are updated for known and significant flood risks, including provisions for training, exercise, and response capacities.

Goal 3	**Minimize the potential impact of erosion along the banks of creeks, streams, lakes, ponds, and areas with steep grades.**
Hazard(s):	**LANDSLIDE, FLASH FLOOD, RIVER FLOOD**
Strategy 3.1	Implement stabilization projects on stream and riverbanks where necessary.

[20] 44 CFR §201.6(c)(3)(i), 44 CFR §201.6(c)(3)(ii)

Goal 4	Minimize the potential damage and impact from severe weather events.
Hazard(s):	**SEVERE THUNDERSTORMS, SEVERE WINTER STORMS, TORNADOES**
Strategy 4.1	Educate residents on severe weather safety and market registration to the countywide emergency notification system.
Strategy 4.2	Construct/enhance safe rooms/storm shelters in schools, public facilities, and open public areas (parks, campgrounds, etc.) that lack shelter space or inadequate shelters.
Strategy 4.3	Enforce local building codes that address structural integrity and safety.
Strategy 4.4	Develop or improve severe weather response plans, training, and exercises that will aid in minimizing the impacts of severe weather events.

Goal 5	Minimize the potential impact of infrastructure system disruptions.
Hazard(s):	**INFRASTRUCTURE FAILURE**
Strategy 5.1	Ensure critical facilities have adequate backup power capabilities.
Strategy 5.2	Maintain, upgrade, and develop public infrastructure system projects to maximize resilience; include redundancy capacity building.
Strategy 5.3	Use ordinances to implement underground utility requirements to mitigate exposure to severe weather events.
Strategy 5.4	Identify areas that would benefit from underground utility conversion; consider adoption of requirements for underground installation of utilities.

Goal 6	Minimize risk of mass casualty transportation events.
Hazard(s):	**MASS CASULATY EVENTS**
Strategy 6.1	Design and improve transportation routes commensurate with best practices and appropriate for existing and future traffic density.
Strategy 6.2	Partner in traffic incident management (TIM) and transportation improvement projects and activities (planning, training, exercise, protocols).
Strategy 6.3	Enhance and improve planning area-wide mass casualty planning and response capabilities and capacities.

Goal 7	Minimize the potential damages and impacts of a hazardous substance release.
Hazard(s):	**HAZARDOUS MATERIALS, RADIOLOGICAL INCIDENT**
Strategy 7.1	Ensure there is a qualified hazardous materials response and cleanup capability throughout the planning area.
Strategy 7.2	Maintain and enforce hazardous substance ordinances, rules, and regulations as appropriate.
Strategy 7.3	Educate the public regarding their exposure and risk to local hazardous substances and appropriate emergency actions in the event of a release.
Strategy 7.4	Enhance and sustain a Local Emergency Planning Committee (LEPC) with public and private sector partners regarding hazardous substance preparedness and safety initiatives.

Goal 8	Minimize the potential impact of health-related incidents.
Hazard(s):	**HUMAN and ANIMAL/PLANT DISEASE**
Strategy 8.1	Collaborate on health monitoring and surveillance of human, animal and plant diseases that could affect the planning area.
Strategy 8.2	Enhance and sustain a collaborative preparedness posture for public health emergencies (planning, training, exercise, and response capabilities).
Strategy 8.3	Enhance the capacity of planning area-wide public health services through infrastructure and capability investment.

Goal 9	Minimize the potential impact and damage of fires.
Hazard(s):	**GRASS/WILDLAND FIRE**
Strategy 9.1	Develop ordinances to limit, prohibit, or require certain safety standards and notifications for open or controlled burning in the planning area.
Strategy 9.2	Encourage proactive land management practices to reduce fuels and improve habitat with a focus on locally identified wildland-urban interface areas.
Strategy 9.3	Enhance planning area response agencies relating to wildland preparedness, training, exercise, and response capabilities.

Goal 10	Minimize potential impact of prolonged drought and extreme heat conditions.
Hazard(s):	**DROUGHT/EXTREME HEAT**
Strategy 10.1	Monitor municipal water systems to guide implementation of water conservation practices.
Strategy 10.2	Develop municipal water system emergency conservation plans and ordinances for use in water emergencies resulting from drought.
Strategy 10.3	Develop, through infrastructure investment, redundant or auxiliary water supply capacities to maintain potable water supplies during extreme conditions.
Strategy 10.4	Ensure relief is available to the most vulnerable and highest risk populations during extreme heat conditions, including awareness campaigns, programs, and emergency public information.

Element C4 (a-b), C5 (a-b) | Mitigation Actions[21]

Participant jurisdictions reviewed goals and strategies, provided updated information to previous goals, strategies, and desired activities, and proposed any new goals, strategies, and activities. In assessing the validity and/or feasibility of mitigation activities based on the updated hazard identification and vulnerability assessment, priority mitigation activities to be applied countywide or by individual jurisdiction were included in this update. Utilizing factors, as outlined below, each potential mitigation action indicates its project feasibility for implementation, which is classified as "good," "fair," or "poor."

Jurisdictions selected their priority activities by considering a myriad of factors that included, but was not limited to:

1. Life-safety, health, and welfare activities.
2. Preparedness and response support activities that would minimize impacts of hazards.
3. Infrastructure projects that promote resilience and continuity of government/operations.

Additional considerations included discussions using the STAPLEE model:

- Social acceptance and/or population impact/effect.
- Technical feasibility and sustainment, as applicable.
- Administrative feasibility and sustainment.
- Political considerations.
- Legal implications or challenges.
- Economic impact and feasibility (including preliminary cost-benefit).
- Environmental implications.

The identified actions for consideration include designation of the position, office, department, or agency responsible for implementing or administrating the identified mitigation action, as well as potential funding source(s) for execution.

[21] 44 CFR §201.6(c)(3)(ii), 44 CFR §201.6(c)(3)(iv), 44 CFR §201.6(c)(3)(iii)

Selected Mitigation Action Priorities : ALL JURISDICTIONS

#	Hazard	Action Item	Corresponding Goal(s)	Responsible	Cost Estimate	Funding Sources	Desired Completion
1	All Hazards	Participate in all-hazard planning, training, exercise, and public education efforts across the planning area.	1, 2, 4, 5, 6, 7, 8, 9, 10	Emergency Management – Lead Entity Identified local stakeholders	$6,000	Local budgets	Ongoing
2	All Hazards	Review all current ordinances, building codes, floodplain regulations, or other applicable regulations for applicability and enhancement opportunities.	1, 2, 3, 4, 5, 7, 9	Local Planning/Zoning – Lead Entity Local Elected Leaders – Decision Authority	Negligible	Local budgets	Ongoing
3	Dam/Levee Failure --- Flash/River Flood	Continue NFIP participation, encourage participation in jurisdictions not currently enrolled, and educate the public regarding flood risks and insurance programs under the NFIP.	1, 2	Jurisdictional Flood Plain Managers	Negligible	Local budgets	Ongoing
4	Dam/Levee Failure --- Flash/River Flood	Acquire properties located in flood-prone areas within jurisdictions, placing a funding priority on repetitive loss properties (RLPs).	1, 2	Jurisdictional Flood Plain Managers Planning/Zoning Departments	Based on market values	Local budgets HMGP	Based on grant timeframes
5	All Hazards	Encourage the installation of emergency generators at critical infrastructure sites to ensure continuity of operations for community lifelines as well as a potential emergency sheltering location for displaced disaster victims.	4, 5, 10	Emergency Management Local Jurisdictions (Public Works) Private Sector Critical Infrastructure	$60k/ea.	Local budgets HMGP	Based on grant timeframes
6	Svr. Thunderstorm --- Svr. Winter Storms --- Tornado	Participate in annual Svr. Weather Awareness Week and statewide tornado drill (March). Conduct annual Preparedness Fair during National Preparedness Month (Sept.) to promote hazard and risk awareness, household preparedness, and provide access to emergency notification platforms.	1, 4	Emergency Management	$3k/yr.	Local budget	Annual
7	Hazardous Materials	Modernize the planning area LEPC, inclusive of public information campaigns related to local hazards and response actions.	1, 7	Emergency Management	$1k	Local budget	Aug.2024
8	Mass Casualty --- All Hazards	Update and modernize the planning area mass casualty response plan and resources, inclusive of training, exercising, equipment.	1, 6	Emergency Management – Lead All jurisdictions	$10k	EMA budget	Mar.2024
9	Hazardous Materials	Sustain a hazardous materials response capacity for the entirety of the planning area, inclusive of a program to provide appropriate training and exercising of response plans and capabilities.	1, 7	Emergency Management Council Bluffs Fire Department Local Fire Chiefs	$16k/yr.	EMA budget	Annual

Selected Mitigation Action Priorities : ALL JURISDICTIONS, continued.

#	Hazard	Action Item	Corresponding Goal(s)	Responsible	Cost Estimate	Funding Sources	Desired Completion
10	Human Disease ---------- Animal Disease	Establish a joint ESF-8 committee to create a coordinated hazard specific human disease response plan founded upon the authorities in Iowa Code and standards set forth in the County Emergency Operations Plan, NIMS, and the ICS.	1, 8	Emergency Management County Public Health	$1k	EMA budget	Aug.2024
11	Grassland/ Wildland Fire	Establish a joint ESF-4 committee to create a coordinated Community Wildfire Protection Plan (CWPP).	1, 4	Emergency Management County Conservation	$1k	EMA budget	Aug.2025
12	Drought/ Extreme Heat	Establish a joint ESF-6 committee to create an extreme heat event response plan to ensure community resources are available, inclusive of community actions to take and alerting capabilities.	1, 10	Emergency Management	$1k	EMA budget	Aug.2026
13	Drought/ Extreme Heat	Encourage the review and amendment of emergency water conservation plans so alert levels and actions are consistent across the planning area, inclusive of adopting such plans where not existing.	1, 10	Emergency Management Elected Leaders	Negligible	Local budgets	2025

Selected Mitigation Action Priorities : COMMON or JOINT ACTIVITIES

#	Hazard	Action Item	Corresponding Goal(s)	Responsible	Cost Estimate	Funding Sources	Desired Completion
14	Tornado ---------- Svr. Thunderstorm	Schools will construct safe rooms as opportunities arise for their facilities, especially during new construction or renovation projects.	4	All School Boards	$800k/ea.	HMGP	Based on grant timeframes
15	Dam/Levee Failure	Facilitate the creation of an emergency plan for the Monument Road Dam, a privately owned HHPD.	1, 2, 5	Private Owner / Iowa DNR Emergency Management (Primary) County Planning / Zoning	$2k	Private owner funds EMA budget	2026
16	Drought/ Extreme Heat	Extend water supply infrastructure from the Missouri River (CB Water Works) to infrastructure into central/eastern local communities (Minden, Oakland, Carson, Macedonia, Avoca) to ensure a redundant capacity during extreme or prolonged drought conditions.	5, 10	Regional Water Rural Water Assoc. Local Public/Water Works Local Elected Leaders	Being assessed	Local budgets HMGP, USDA	Jan.2027
17	Dam/Levee Failure	Update and enhance the Indian Creek Dam Emergency Plan.	1, 2, 5	County Soil/Water Conservation Dist. Council Bluffs Engineer/Public Works Emergency Management (Primary)	$2k	EMA budget	2025

Selected Mitigation Action Priorities : Jurisdiction Specific - AVOCA

#	Hazard	Action Item	Corresponding Goal(s)	Responsible	Cost Estimate	Funding Sources	Desired Completion
18	Flash Flood	Conduct drainage improvement projects in the May Street & N Buttermilk Flat areas.	2	City Administrator Public Works Director	$750,000	Local budget HMGP	2029

Selected Mitigation Action Priorities : Jurisdiction Specific - CARSON

#	Hazard	Action Item	Corresponding Goal(s)	Responsible	Cost Estimate	Funding Sources	Desired Completion
19	Infrastructure Failure	Install generators to provide backup power to the water treatment plant, (2) well pumps, and the city hall which serves as the city's emergency shelter and coordination center.	4, 5	City Manager Public Works Director	$165,000	Local budget HMGP, USDA	2026
20	Drought/ Extreme Heat ---------- Infrastructure Failure	Participate in multi-city extension of water supply infrastructure from the Missouri River (CB Water Works) to infrastructure in central & eastern communities to create a redundant potable water capacity.	5, 10	Regional Water RWA – Project Lead Project Coordination: City Leaders & Public Works Directors	Unknown	Local budgets HMGP, USDA, DNR	March 2027

Selected Mitigation Action Priorities : Jurisdiction Specific - COUNCIL BLUFFS

#	Hazard	Action Item	Corresponding Goal(s)	Responsible	Cost Estimate	Funding Sources	Desired Completion
21	Dam/Levee Failure --- Flash/River Flood --- Svr. Thunderstorm	Improve the drainage of the Mosquito Creek 22 channel. (5-year project)	2, 3, 4	City Engineer Public Works	$3.5 mil.	Local capital projects budgeting	2029
22	Dam/Levee Failure --- Flash/River Flood --- Svr. Thunderstorm	Install new pump station at 13th & Broadway.	2, 3, 4	City Engineer Public Works	$1.2 mil.	Local capital projects budgeting	2027
23	Dam/Levee Failure --- Flash/River Flood --- Svr. Thunderstorm	Separate storm and sanitary sewer systems into individual systems in a 21-block area (9th/16th Aves, Main/8th St.) over a 4-year project period.	2, 3, 4	City Engineer Public Works	$4 mil.	Local capital projects budgeting	2028
24	Dam/Levee Failure --- Flash/River Flood --- Svr. Thunderstorm	Construct storm sewers & pump/lift stations in Twin City area over 6yr project period.	2, 3, 4	City Engineer Public Works	$12 mil.	Local capital projects budgeting	2030
25	Dam/Levee Failure --- River Flood	Continue Missouri River levee maintenance, enhancements, and recertification (FEMA), inclusive of emergency plan updates.	2	City Engineer Public Works	$25 mil.	Local budget USACE, FEMA	In progress
26	Svr. Thunderstorm	Increase the Indian Creek flow capacity to alleviate potential flooding by excavating for 4 miles between 16th Ave and the Missouri River and assess/rehabilitate required areas of the Indian Creek Channel through the city, as required.	2, 3	City Engineer Public Works	Unknown	Local budget HMGP	2028
27	Mass Casualty	Reduce interference of rail traffic crossings that impede emergency response access within the city.	6	City Engineer Public Works	Unknown	Local budget Private Railroad	2028

Selected Mitigation Action Priorities : Jurisdiction Specific - McCLELLAND

#	Hazard	Action Item	Corresponding Goal(s)	Responsible	Cost Estimate	Funding Sources	Desired Completion
28	Svr. Thunderstorm ---------- Flash Flood	Conduct a stormwater drainage assessment, implementation & funding plan & initiate a project to address the lack of directed drainage to alleviate internal flooding and transportation infrastructure damages.	2	City Council	Unknown	HMGP USDA	2029
29	Svr. Thunderstorm Tornado ---------- Drought/ Extreme Heat	Install emergency backup generators at city fire department and city hall for continuity of operations, government, and provide emergency sheltering location for residents.	4, 5, 10	City Council Fire Chief	$50,000	HMGP USDA Local budget	2029

Selected Mitigation Action Priorities : Jurisdiction Specific – POTTAWATTAMIE COUNTY

#	Hazard	Action Item	Corresponding Goal(s)	Responsible	Cost Estimate	Funding Sources	Desired Completion
30	Dam/Levee Failure ---------- All Flooding	Engage county drainage and levee districts to create a coalition for planning, training, exercise around system developments, maintenance, and development of emergency response capacity.	1, 2	Emergency Management County Planning/Zoning Rural Levee District Trustees	$1k	EMA Budget	2027
31	Tornado ---------- Svr. Thunderstorm	Construct tornado/severe storm safe rooms in the (4) county campgrounds.	4	County Conservation	$300k	Local Budget HMGP	2029
32	Flash Flood ---------- Svr. Thunderstorm	Conduct a stream stabilization project to prevent erosion and protect an existing bridge.	2, 3	County Engineer	$250k	Local Budget HMGP	2028
33	Flash Flood ---------- Svr. Thunderstorm	Construct a dam to stop erosion encroaching into (2) areas along county road L52.	2, 3	County Engineer	Unknown	Local Budget HMGP	2029
34	Flash Flood ---------- Svr. Thunderstorm	Partner with Golden Hills RC&D and Northern Natural Gas to repair or replace (2) stream stabilization structures along Walnut Creek.	2	County Engineer	Unknown	Local Budget HMGP, USDA Private dollars	2029

Selected Mitigation Action Priorities : Jurisdiction Specific - UNDERWOOD

#	Hazard	Action Item	Corresponding Goal(s)	Responsible	Cost Estimate	Funding Sources	Desired Completion
35	Flash Flooding ---------- Svr. Thunderstorm	Insall a storm water drainpipe on Railroad Hwy from 3rd-4th St in Underwood to improve stormwater flow.	2	City Council Public Works	$50k	Local budget	2025
36	Flash Flooding ---------- Infrastructure Failure	Raise Underwood lift station #2 above the flood plain elevation (1,060') and adjacent land to protect infrastructure.	2, 3, 5	City Council Public Works	$275k	Local budget HMGP, USDA	2026
37	Flash Flooding ---------- Infrastructure Failure	Assess the need for a streambank stabilization project, and conduct as determined necessary, on the Mosquito Creek in Underwood to prevent bank erosion and potential critical infrastructure damage.	2, 3	Council Bluffs Public Works	$650k	Local budget HMGP, USDA	2029
38	Drought/ Extreme Heat ---------- Infrastructure Failure	Dig and activate an emergency backup potable water supply well at Underwood for continuity of operations.	5, 10	City Council Public Works	$2mil.	Local budget HMGP, USDA	2029

ELEMENT D – Plan Maintenance

Element D1 (a) | Ongoing Public Participation [22]

Communities participating in this plan recognize Emergency Management as the planning coordinator for this multi-jurisdictional effort. As such, Emergency Management will publicly post the plan for access on a continual basis throughout each five-year planning update and recertification cycle. The public will have continuous access to review the plan and instructions on how to provide comments, recommendations, and make inquiries related to the plan. During times of official review during the final update process in year five of each recertification cycle, public notices will be provided via the website, social media, and posting announcements of public meetings where mitigation is part of the meeting agenda. Communities are encouraged to link, copy, and redistribute all information publicly posted by Emergency Management on their behalf to help inform the community. Additionally, the Disaster Mitigation Plan is publicly displayed for review and comment by all residents in the planning area who attend the Annual Preparedness Fair held in September.

Element D2 (a-c) | Plan Monitoring and Update [23]

Emergency Management serves as the centralized information repository related to the monitoring and update of this plan. Planning Participants are solely responsible for implementing, supporting, and reporting on the activities identified in this plan or additional strategies and activities initiated related to mitigation. As a mitigation project is initiated, or being planned, local officials should communicate or involve emergency management staff in the process. The plan will be reviewed annually by Emergency Management staff, in cooperation with the appropriate local representatives. This review will typically occur in the first quarter of each calendar year and will identify any progress made addressing the mitigation goals, strategies, and activities outlined in the plan. As part of that evaluation, certain goals may need adjusted, removed, or new goals, strategies, and activities added to ensure that they continue to meet the needs of the jurisdictions. The functionality of the plan should also be assessed following a significant hazard event within the planning area. Near the end of the five-year planning cycle, a full re-evaluation will occur in order to remain compliant under the provisions of the Disaster Mitigation Act of 2000 to remain eligible for state and federal hazard mitigation funding assistance. The effectiveness of the plan rests predominately on the ability to invest funding or attain funding through the mitigation grant programs through FEMA (i.e., HMGP, BRIC, etc.). Some projects may remain a priority activity for years in an unfunded status, however that does not diminish the plan's effectiveness. As hazards are updated along with vulnerability, the effectiveness of previously identified mitigation actions will be determined as either remaining relevant or become irrelevant and will be removed or amended to ensure it remains an effective objective, strategy, or priority activity.

[22] 44 CFR §201.6(c)(4)(iii)
[23] 44 CFR §201.6(c)(4)(i)

Future reviews and updates will generally conform to the following evaluation guidelines:

Task A:	Evaluate the effectiveness of the planning process
	• Re-engage local representatives
	• Review planning process
	• Build the planning and coalition cadre
	• Engage the public and stakeholders
	• Data gathering and information analysis
	• Coordinate with other agencies
Task B:	Evaluate the effectiveness of mitigation actions
	• Identify actions/projects implemented and the results
	• Evaluate the actions/projects cost effectiveness
	• Document actions delayed or not implemented
Task C:	Determine why actions/projects did or did not work
	• Lack of available resources/funds
	• Political and/or popular support
	• Distribution of tasks among responsible parties
	• Time

Tentative plan update schedule:

Year 1:	Calendar Qtr. 1
	• Poll participants for ongoing or initiated mitigation actions.
Year 2:	Calendar Qtr. 1
	• Poll participants for ongoing or initiated mitigation actions.
Year 3:	Calendar Qtr. 1
	• Poll participants for ongoing or initiated mitigation actions.
Year 4:	Calendar Qtr. 1
	• Poll participants for ongoing or initiated mitigation actions.
	Calendar Qtr. 4
	• Officially initiate formal plan update per process/descriptions outlined in Element A, consistent with DMA2000.
	• Develop a draft update timeline specific to plan update requirements within DMA2000 standard at 44 CFR §201.6 – Local Mitigation Plans.
Year 5:	Calendar Qtr. 1 - Qtr. 3
	• Complete the plan update as outlined in Element A and submit it to Iowa HSEMD and FEMA Region VII for approval pending adoption status.
	• Upon notification of APA status from FEMA, have planning participants adopt by resolution and submit to HSEMD and FEMA for final approval.

Element D3 (a-c), E2 (c) | Plan Integration[24]

Plan participants have utilized and will continue to utilize the Disaster Mitigation Plan in various ways during the development of other localized planning and regulatory efforts. Such local documents include but are not limited to:

- Capital Improvement Plans (i.e., Strategic Plans, Comprehensive Plans, etc.).
- Infrastructure project plans and engineering designs.

[24] 44 CFR §201.6(c)(4)(ii), 44 CFR §201.6(d)(3)

- Adoption, updates, or enhancements of building codes and zoning ordinances.
- Community Rating System (CRS) documentation and audits.
- Evaluation and approval processes for Zoning changes and/or development approvals.
- Community Health Assessments.
- Emergency and disaster response and recovery plans.
- Grant applications (public safety, mitigation, economic development, etc.).

Upon the identified need to develop or update a community/participant specific plan, as exampled above, officials leading the planning or project development will cause the planning or development team to review appropriate portions of the mitigation plan to assess the applicability or feasibility of considering such for inclusion in that plan or project. The relative priority of review is recommended as:

- A review of the hazard identification and vulnerability assessment to ascertain if any hazards have an impact on items contained within the plan or a specific project.
- A review of any specific mitigation actions for the subject community/participant.
- A review of any mitigation actions applicable to all jurisdictions/participants.
- A review of all the objectives and strategies to ascertain or conceptualize any actions that could be included in planning topics or a specific project as a pro-active mitigation investment.

ELEMENT E – Plan Update

Element E1 (a) | Development Changes [25]

No significant changes have occurred throughout the planning area that have produced a significant change in vulnerability. Some minor changes have occurred due to mitigation or development that has produced some slight changes, but not to a level that equates to a significant reduction or increase in vulnerability. Some examples include:

- Floodplain Property Acquisitions (DR-4421): 4-Council Bluffs, 7-Pottawattamie County, 4-Oakland.
- Residential development eastern Council Bluffs: development size within the means of public infrastructure and services.
- Residential development northern Treynor: development size within the means of public infrastructure and services.

Additionally, Pottawattamie County and the City of Council Bluffs entered into an agreement related to development standards for an identified development buffer-zone around the city limits. The agreement identifies an agreed upon processes and standards for development improvements, zoning, construction/development standards, and the approval mechanisms of such developments. This agreement was executed in September 2023.

[25] 44 CFR §201.6(d)(3)

Element E2 (a-b) | Mitigation Priorities and Actions Status[26]

The current plan update was not materially changed due to priority shifts in the planning area. The following table identifies mitigation actions from the previous plan update and their status. Status will show a designation of one of the following descriptors:

a) Completed – the action was completed since the previous update.
b) Deleted – the action was removed from the priority listing of activities.

Mitigation actions that are not documented in this Element are still active and are shown in Element C4 of this plan update.

Mitigation Action	Jurisdiction(s)	Status
Partnership project to conduct a joint land use study for the city's (2) mile extraterritorial jurisdiction.	Pottawattamie County Council Bluffs	COMPLETED
Notes: *Agreement executed 9/2023 as described in Element E1 (p.52).*		
Participate with Iowa DOT on interstate development and renovation projects within city limits to ease congestion issues that contribute to potential life safety issues.	Council Bluffs	COMPLETED
Notes: *Primary interstate redevelopment project is complete, one small portion remains but to be completed in late 2023.*		
Emergency Services agencies conduct hazard awareness presentations to community organizations and schools annually.	All Jurisdictions	COMPLETED
Notes: *Public safety agencies & EMA conduct several outreach programs annually, this is an ongoing activity each year of the planning cycle.*		
Develop regional LEPC with Mills & Montgomery Co to enhance hazmat safety & risk awareness initiatives. Target administrative completion & 1st meetings in 2019.	EMA	DELETED
Notes: *The LEPC will transition back to a single county effort as of this update. The regional concept did not produce planning area benefit.*		
Update mitigation plan data and information annually to culminate in a 5-year update project completed in 2023.	EMA (All Jurisdictions)	COMPLETED
Notes: *NA*		
11 properties within flood hazard areas acquired part of FEMA HMGP (2019 Flooding, DR-4421).	Pottawattamie County	COMPLETED
Notes: *Grant not closed out. Current mitigation investment = $2,840,334.32*		
4 properties within flood hazard areas acquired part of FEMA HMGP (2019 Flooding, DR-4421).	Oakland	COMPLETED
Notes: *Council Bluffs – 4 properties / Oakland – 4 properties / County unincorporated (11 properties)*		
Amendments made and adopted to Chapter 5.3 – Flood Plain Management Ordinance.	Pottawattamie County	COMPLETED
Notes: *Enhanced after DR-4421. Amended and passed 1-3-2022.*		
Stormwater infiltration assessment and improvement project.	Carter Lake	DELETED
Notes: *Project was abandoned to make room for the updating and replacement of both the wastewater and potable water system in the city.*		
Adopted emergency water conservation ordinance and policies in response to drought conditions.	Underwood	COMPLETED
Notes: *Passed in 2023 based on identified needs with continuing and worsening drought conditions.*		

[26] 44 CFR §201.6(d)(3)

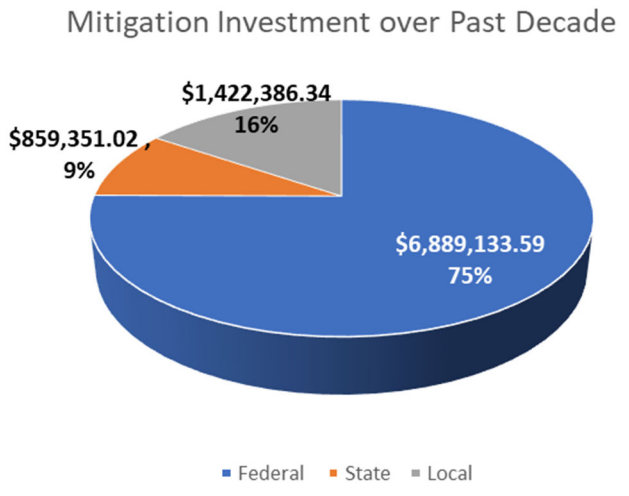
HMGP Program and Planning Actions[27]

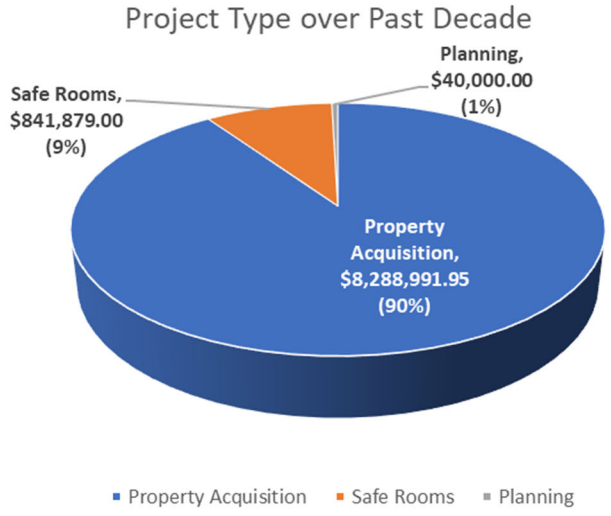
Use of HMGP Funding (2017-2023)

Jurisdiction	Project Type	Federal	State	Local	Work Completion
Riverside Schools	Saferoom	$631,409	$84,187	$126,283	2018
City of Oakland	Property Acquisition	$290,010	$0	$90,696	2022
Pottawattamie County	Property Acquisition	$1,703,398	$223,653	$335,480	2023
Mitigation Investment Totals		**$2,624,817**	**$307,840**	**$552,459**	
		$3,485,116			

Use of HMGP Funding (2012-2018)

Jurisdiction	Project Type	Federal	State	Local	Work Completion
City of Council Bluffs	Property Acquisition	$1,689,725	$225,297	$337,945	2015
Pottawattamie County	Property Acquisition	$2,416,609	$322,215	$483,322	2014/2013
City of Oakland	Property Acquisition	$127,985	$0	$42,662	2012
Emergency Management	Disaster Mitigation Plan	$30,000	$4,000	$6,000	2012
Mitigation Investment Totals		**$4,264,319**	**$551,512**	**$869,929**	
		$5,685,760			





[27] 1-year plan overlap used to account for projects crossing update timelines

ELEMENT F – Plan Approval

Element F1 (a), F2 (a) | Approval Process and Documentation[28]

As has been previous practice in the planning area, and as this document is a multi-jurisdictional plan, the approval process consists of the following guidelines in the interest of coordination and processing efficiency.

Process

1) Emergency Management submits to the State Hazard Mitigation Officer (SHMO), the official final draft for review and submission to FEMA requesting the status of Approval Pending Adoption (APA). This allows for complete FEMA review and editing to meet all Code of Federal Regulation requirements without needing to conduct the formal adoption process with twenty-five participants in the planning area for each revision seeking update approval.

2) Upon review and any edits, as required under the Code of Federal Regulations, FEMA submits to the State and Pottawattamie County Emergency Management Agency a letter certifying the plan as "Approved Pending Adoption."

3) The Emergency Management Agency prepares for execution the resolutions for adoption of the Disaster Mitigation Plan by each jurisdiction documented as a participant in the plan.

4) Each participant executes the adopting resolutions in a timely manner and submits documentation to Emergency Management.

5) Emergency Management provides the documentation for verification to the SHMO, who in turn provides notification to FEMA.

6) Upon any review or further requests for information, FEMA submits a letter to the State providing full approval of the plan.

7) Emergency Management retains a copy of all executed resolutions and plan certification letters on file in the Emergency Operations Center.

[28] 44 CFR §201.6(d)(3)

Sample Adopting Resolution

RESOLUTION # _____

A Resolution to approve and adopt the Pottawattamie County Disaster Mitigation Plan.

WHEREAS, *the Pottawattamie County Disaster Mitigation Plan, a multi-jurisdictional planning documents, was presented and recommended for adoption by the Pottawattamie County Emergency Management Agency; and*

WHEREAS, *the Pottawattamie County Disaster Mitigation Plan was prepared in compliance with Iowa Administrative Code 605—7.2, Code of Iowa 29C.9 and the Disaster Mitigation Act of 2000 established by the Iowa Department of Homeland Security and Emergency Management and the Federal Emergency Management Agency, respectively; and*

WHEREAS, *the Pottawattamie County Disaster Mitigation Plan identifies the potential hazards throughout Pottawattamie County; and*

WHEREAS, *the Pottawattamie County Disaster Mitigation Plan includes a profile of hazard events, a vulnerability assessment, evaluation of mitigation goals, strategies, local mitigation priorities, and a plan maintenance process,*

NOW THEREFORE BE IT RESOLVED that the _____
(County of, City of, School or School District of)

hereby approves and adopts the Pottawattamie County Disaster Mitigation Plan this

_____ day of _____, 20_____.

_____ _____
Authorized Executive *Date*

_____ _____
Attest *Date*

ELEMENT G – High Hazard Potential Dams

This optional section of the plan is intended to bring priority and attention to three emerging priorities related to both the classified High Hazard Potential Dams (HHPD) within the planning area:

1) The update of the Indian Creek Dam Emergency Plan.
2) Infrastructure improvements to the Indian Creek Drainage Structures.
3) The development of a Monument Road Dam Emergency Plan.

HHPD 1 (a-b) – Incorporation of HHPD Data

Data available from the first Indian Creek Dam Emergency Plan was reviewed as part of the preparation of the Levee/Dam Failure Hazard Profile. As that plan and associated data is 15 years old, it was limited in benefit. There is no validated data available for the Monument Road Dam and no emergency plan has been developed by the owner. Validation of status and responsible parties as well as overview mapping was retrieved in the review from Iowa Homeland Security and Emergency Management and the National Inventory of Dams. Additionally, the Emergency Management Agency, Iowa DNR, and the private owner of Monument Road Dam examined initial plan drafts and conducted risk assessment discussions during a planning meeting, of which, the planning effort will continue. Likewise, Emergency Management and Iowa DNR began initial discussions and planning efforts related to the Indian Creek Dam.

HHPD 2 (a-b) – Risk Assessment

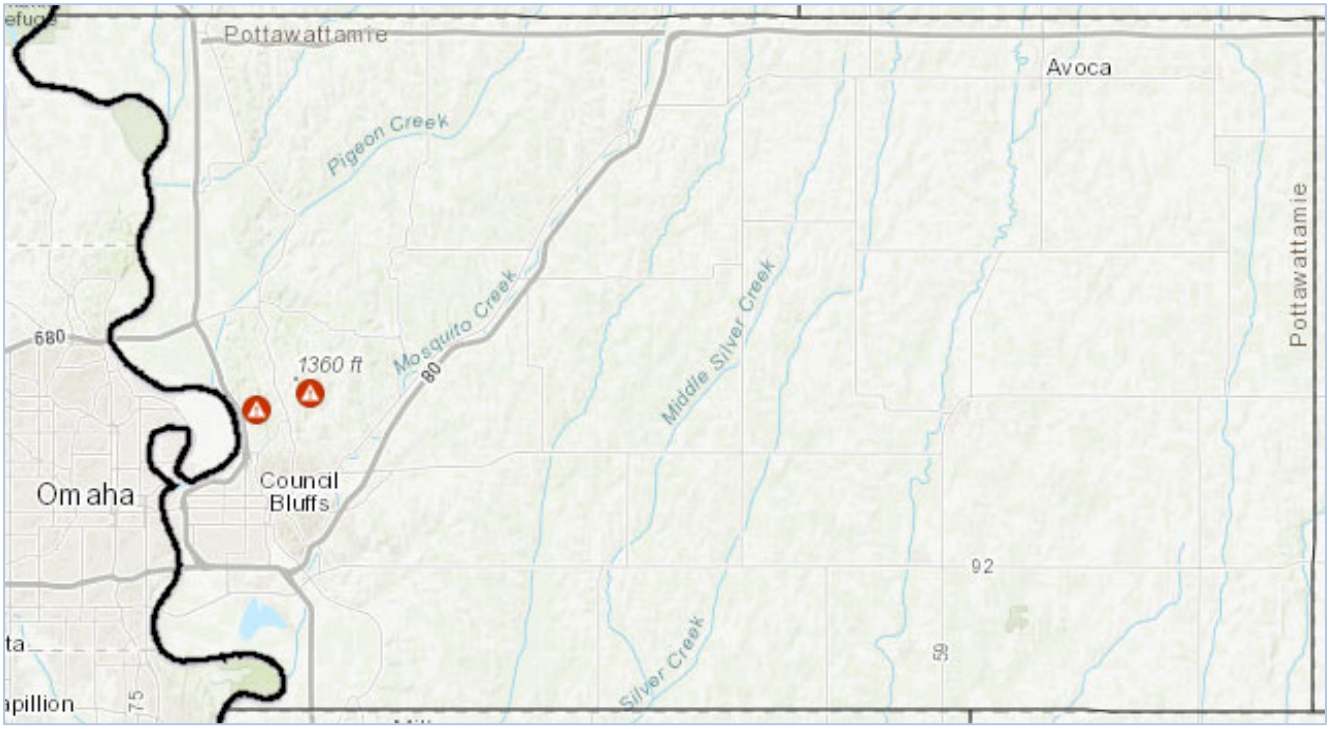
All available data was utilized in the development of the Levee/Dam Failure Hazard Profile and values at risk are incorporated into the overall vulnerability assessment portion of this plan. Currently, deficiencies in accounting for this hazard include the failure to develop emergency plans or the failure to maintain existing plans. These limitations can be addressed by prioritizing the update or construction of plans and conducting, as part of that process, a hazard-specific risk assessment that can be used for future mitigation project development. This process is underway for both high hazard dams which will produce valid inundation/breach mappings as well as properties and lives at risk. This data will be essential in updating the dam/levee breach risk profile ahead of the next mitigation plan update.

HHPD 3 (a-b), HPPD 4 (a-c) – HHPD Specific Mitigation Goals

The following mitigation priority actions have been identified in Elements C3, C4, and C5 of this plan. Responsible entities are identified within the priority actions table.

- Goal 2: Minimize the potential impacts and damages from flooding events (Strategies 2.3 ,2.4, 2.8, 2.9).
- Priority Actions:
    - ✓ (#1, 16, 17) Update and create emergency plans specific to the identified HHPD and associated drainage structures.
    - ✓ (#31) Assess Indian Creek drainage channel and system and make appropriate modifications, repairs, or upgrades to minimize the potential of flooding associated with a dam failure or flooding from a high precipitation severe weather event.

Name	Indian Creek Watershed Site 2	Monument Road Dam
Designer	NRCS	Erhart, Griffin & Associates
Owner Type	Local Government	Private
NID Height	65	32
NIG Storage	767	59
Length	2,000	2,011
Year Complete	1975	2011
EAP	Yes	No



ELEMENT H – State Requirements

None.

Pottawattamie County

Emergency Management