# 2026
# Harrison County
## Multi-Jurisdictional
# Hazard Mitigation Plan

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Harrison County supports equal employment opportunity for all individuals without regard to race, color, religion, sex, age, national origin, marital status, disability, status as a veteran, genetic information of employees, gender identity, sexual orientation, and any other category protected by any applicable local, state or federal law. This policy extends to all terms, conditions and privileges of employment, as well as the use of all Employer facilities and participation in all Employer-sponsored activities as follows: Recruitment, advertising and job application procedures; Hiring, promotion, demotion, transfer, layoff, termination, right of return from layoff and rehiring; Rates of pay or any other form of compensation and changes in compensation; Job assignments, job classifications, organizational structure, position descriptions, lines of progression, and seniority lists; Leaves of absence, sick leave or any other leave; Fringe benefits available by virtue of employment, whether or not administered by the County; Selection and financial support for training, including apprenticeships, professional meetings, conferences and other related activities and selection for leaves of absence to pursue training; Activities sponsored by a covered entity including social and recreational programs and; Any other term, condition or privilege of employment.

# Section I: Plan Organization

## Executive Summary

### Purpose and Scope

The Disaster Mitigation Act of 2000 provides a legal basis for FEMA mitigation planning requirements for State, local and Indian Tribal governments as a condition of mitigation grant assistance. This act was intended to facilitate cooperation between state and local authorities and established a new requirement for local mitigation plans. Jurisdictions are challenged to identify methods and implement procedures to prevent damages prior to the event of a disaster.

This Hazard Mitigation Plan has been prepared in order to:

- Comply with both Federal and State Hazard Mitigation plan requirements;
- Provide a comprehensive hazard analysis/risk assessment that best defines the hazards most likely to impact Harrison County, Iowa;
- Quantify the monetary value of hazard mitigation activities, which would lessen or eliminate the effects of the identified hazards;
- Outline a strategy for the implementation of hazard mitigation projects and;
- Replace the current FEMA approved hazard mitigation plans for Harrison County – Unincorporated Harrison County, Dunlap, Little Sioux, Logan, Magnolia, Missouri Valley, Modale, Mondamin, Persia, Pisgah and Woodbine; Harrison Community School Districts, Boyer Valley CSD, Logan-Magnolia CSD, Missouri Valley CSD, West Harrison CSD, Woodbine CSD.

The overall goal of the Harrison County Multi-Jurisdictional Hazard Mitigation Plan (from here on to be referred to as the "Harrison County Hazard Mitigation Plan", or just "the Plan") is to identify potential hazards that could affect the county for the purposes of mitigation planning. It is important to note that the focus of mitigation is on reducing long-term risks of damage or threats to public health and safety caused by natural hazards and their effects.

In 2010, Iowa Homeland Security and Emergency Management began to recommend cities and counties work together, through leadership of county emergency management agencies, in the establishment of multi-jurisdictional plan, rather than individual planning efforts. Multi-jurisdictional hazard mitigation plans are an effective tool to incorporate resiliency best practices into the day-to-day activities of county and municipal governments. These plans recommend specific actions designed to protect residents, as well as the built environment, from hazards that pose great risk. Our identified mitigation actions go beyond only recommending structural solutions to reduce existing vulnerability. Important additional actions intended to reduce vulnerability include local policies on growth and development, incentives tied to natural resource protection, and public awareness and outreach activities. Emergency planning helps to strongly position communities against the threat of hazards. Vulnerability is reduced through services like emergency management training and exercises, flood risk reduction studies, flood plain management, drought management planning, and dam inundation mapping. This plan will replace the current FEMA approved Multi-jurisdictional plans.

All of the meetings and public input during the plan development were done with the intent to be part of a multi-jurisdiction plan.

The mitigation planning process followed a methodology prescribed by FEMA:

- Describing the planning process
- Developing and reviewing risk assessments to analyze natural and manmade hazards statewide
- Developing and reviewing the mitigation strategy for reducing the losses identified in the risk assessment
- Establishing a plan maintenance process

The hazard identification portion of the hazard analysis and risk assessment is an inventory of all the hazards that could potentially impact Harrison County. Each hazard profile was reviewed for accuracy and updated using the best available data.

While the method used for prioritizing hazard mitigation measures is effective, it must be recognized that disaster specific events and associated disaster response and recovery actions can result in the prioritization of specific mitigation measures that contribute to the disaster recovery process.

## Planning Process

The hazard mitigation planning process has four general steps, which include: organization of resources; assessment of risks; development of mitigation strategies; and, implementation and annual monitoring of the plan's progress. The mitigation planning process is rarely a linear process. It is not unusual that ideas developed during the initial assessment of risks may need revision later in the process, or that additional information may be identified while developing the mitigation plan or during the implementation of the plan that may result in new goals or additional risk assessment.

- Organization of Resources
    - Focus on the resources needed for a successful mitigation planning process. Essential steps include:
        - Organizing interested community members
        - Identifying technical expertise needed
- Assessment of Risks
    - Identify the characteristics and potential consequences of the hazard. Identify how much of the jurisdiction can be affected by specific hazards and the impacts they could have on local assets.
    - The hazard identification portion of the hazard analysis and risk assessment is an inventory of all the hazards that could potentially impact Montgomery County. Each hazard profile was reviewed for accuracy and updated using the best available data.
- Mitigation Plan Development
    - Determine priorities and identify possible solutions to avoid or minimize the undesired effects. The result is a hazard mitigation plan and strategy for implementation.
    - While the method used for prioritizing hazard mitigation measures is effective, it must be recognized that disaster specific events and associated disaster response and recovery actions can result in the prioritization of specific mitigation measures that contribute to the disaster recovery process.
- Plan Implementation and Progress Monitoring
    - Bring the plan to life by implementing specific mitigation projects and changing day-to-day operations. It is critical that the plan remains relevant to succeed. Thus, it is important to conduct periodic evaluations and revisions, as needed.

## Plan Update Process

Harrison County contracted with SWIPCO on September 25, 2025, to guide and facilitate the planning process and assemble the multi-jurisdictional hazard mitigation plan update. For the planning area, SWIPCO staff led the development of the plan and served as the primary point-of-contact throughout the project. The project kick-off meeting with Harrison County and SWIPCO provided an overview of the work to be completed over the following months: including the identification of and coordination with the planning team; determination of number and location of future public meetings; assessment of the attendance requirements; and, discussion of what types of information would need to be developed and collected to successfully complete the plan.

The first activity in the development process for the Harrison County HMP update was coordination of efforts with local, state, and federal agencies and organizations.

## Coordination

In order to write the plan for Harrison County, Southwest Iowa Planning Council (SWIPCO) worked with a number of local organizations, government officials and agencies in obtaining information relevant to the plan and the communities. The planning team at SWIPCO studied hazards relevant to the area, local inventories, and capabilities of local agencies to develop this plan.

Under the recommendation of the Iowa Homeland Security and Emergency Management, Harrison County Emergency Management Agency (EMA), and Southwest Iowa Planning Council worked together to develop a multi-jurisdictional plan. The County EMA helped to coordinate efforts to involve officials, stakeholders and residents of local jurisdictions. The County EMA also provided information pertaining to the plan and reviewed documentation.

To develop a multi-jurisdictional plan a local point of contact for each community was identified consisting of local officials, stakeholders and residents. These participants provided information, comments and suggestions regarding the plan. They also worked with members from their local jurisdiction during the planning process in providing requested information and reviewing the plan.

SWIPCO also contacted and coordinated with various local organizations to provide additional resources that were required, relevant and/or beneficial to the planning process and plan creation. This was done by either identifying the local organizations that held that particular information relevant to the plan or by determining how or what information found would enhance the planning process and/or document.
Hazard mitigation is any sustained action taken to reduce or eliminate long-term risk to people and property from natural hazards and their impacts. This process has unique and distinguished actions in comparison to response and recovery actions from a disaster. Hazard mitigation is the only planning phase of emergency management specifically dedicated to long term changes and seeks to prevent and mitigate impacts caused by hazardous events. This planning phase creates more resilient communities that limits or removes hazard risk and strengthens community response to hazard events. The hazard mitigation planning process contains four core steps:

1. Organize Resources
2. Assess Risks
3. Develop a Mitigation Strategy
4. Implement a Plan and Monitor Progress

# Section II: Community Profile

An important component to the planning process for the Plan was to develop a community profile for both counties. Climate and weather, geography, land use and other conditions that impact Harrison County or can be influenced by hazards in the counties were researched. Identification of these items were utilized in the determination of goals for local jurisdictions when addressing individual hazards.

## Harrison County

### History

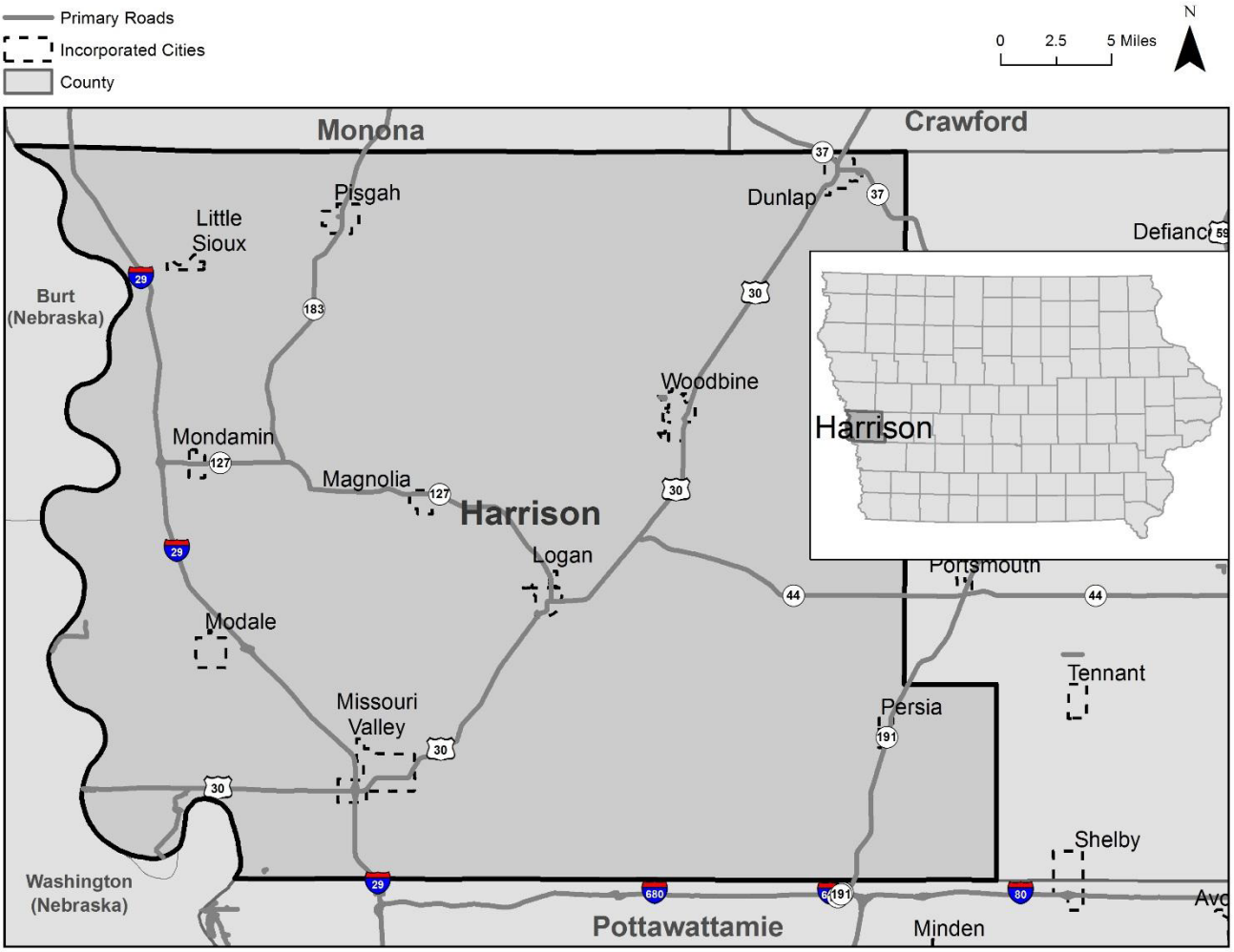
Harrison County was first established in 1851 and became an organized county on March 7, 1853 by the 4th General Assembly of Iowa and named after the 9th President of the United States, William Henry Harrison. The earliest inhabitants of the region included the Omaha, Pottawatomie, Sioux and Winnebago Native American tribes. In early August of 1804, following the purchase of the Louisiana territory, Lewis and Clark were the first Europeans to explore Harrison County when their expedition led them up the Missouri River. Settlement in Harrison County began in the mid-1880s when the first settlers, many of them from the Mormon Church, began arriving between 1845 and 1847. Under the leadership of Brigham Young, many people separated from the church and headed west, many of them destined for Utah, with some of them staking claim to the lands or setting up businesses in the region. As people moved west and with the expansion of railroad lines into Iowa, Harrison County saw a dramatic rise in population between 1860 and 1900. The original County Seat was established in Magnolia in 1853, but was moved in 1876 to its current location in Logan. The early government of the County was under a County Judge system in which the management of the county affairs were left to one person. It wasn't until January 1st, 1861 that these powers were handed over to a Board of County Supervisors consisting of one member from each civil township, which was reduced to a three or five person board when the townships were divided into districts.

### Geography and Environment

Harrison County is a rural county located in west central Iowa along the Missouri River and is located north of Council Bluffs. With an area of 700.5 square miles, Harrison County ranks 15th in size of Iowa's 99 counties.-The county is primarily rectangular in shape with its longest length at 41.4 miles east to west and 32.9 miles north to south. The county seat of Harrison County is the City of Logan located in roughly the central portion of the county. Nine other incorporated communities are located within Harrison County, which are the cities of Dunlap, Little Sioux, Logan, Magnolia, Missouri Valley, Modale, Mondamin, Persia, Pisgah, and Woodbine. There are also six unincorporated towns named Beebeetown, Orson, California Junction, Yorkshire, Findley (St. John) and River Sioux. Counties adjacent to Harrison County are Burt and Washington Counties in the State of Nebraska to the west which share a border line that runs primarily along the Missouri River, Shelby County to the east, Monona and part of Crawford County to the north, and Pottawattamie County to the south.

The following map shows the location of Harrison County and its incorporated cities as well as the neighboring counties and communities:

**Map 2.1 - Harrison County Location**

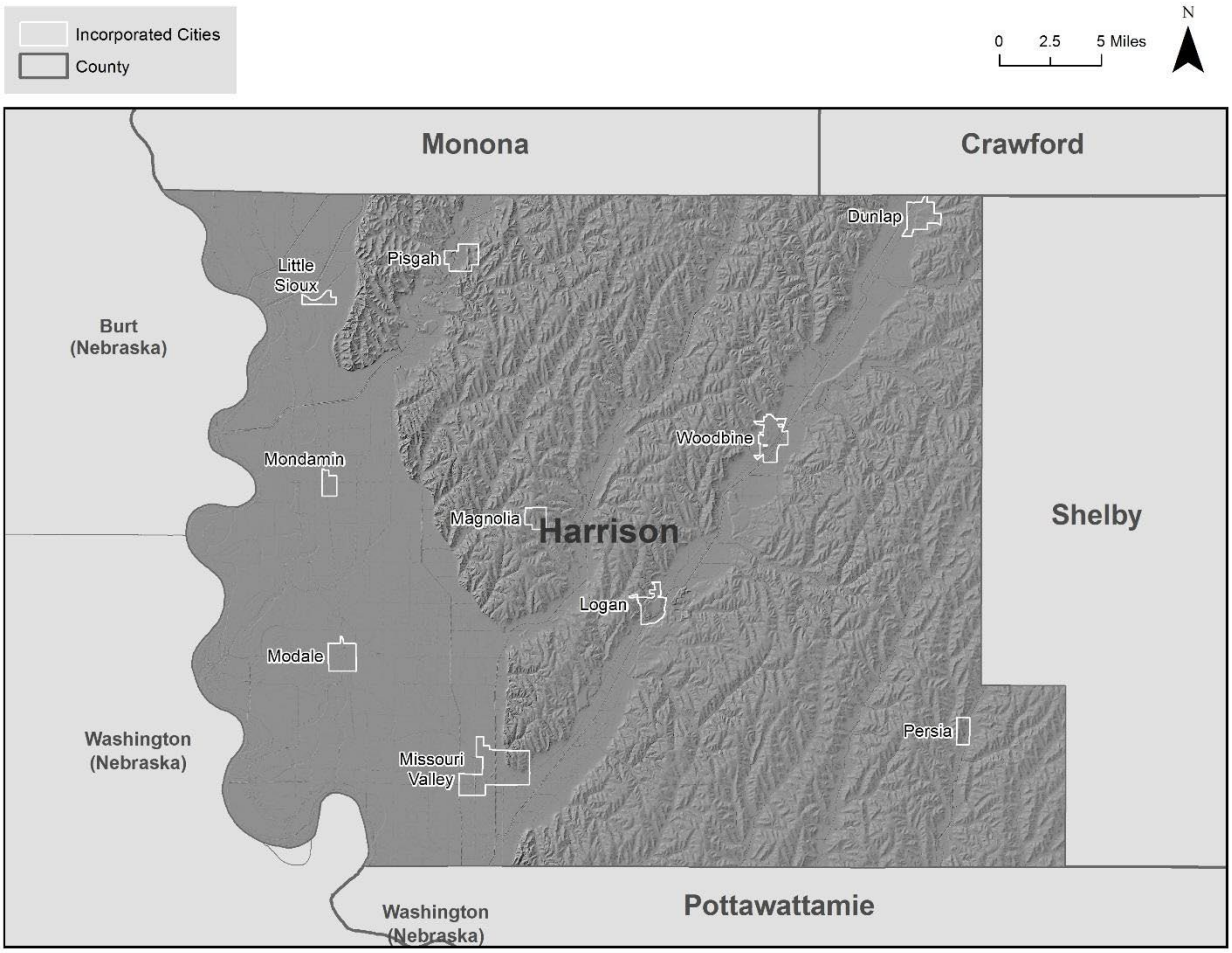



Source: Iowa Department of Natural Resources

## *Elevation*

The topography of Harrison County consists of the rolling hills to the east and the flat flood plains of the Missouri River to the west. The Loess Hills make up a majority of the land running north-south through the county. The hills are cut by various streams, tributaries, and intermittent drainage ways that eventually drain into the Missouri River. Elevation between the communities varies by location with the communities running near the Missouri River having the lowest elevation.

**Map 2.2 - Harrison County Shaded Relief**



Source: Iowa Department of Natural Resources

**Table 2.1 - Elevation by Populated Places**

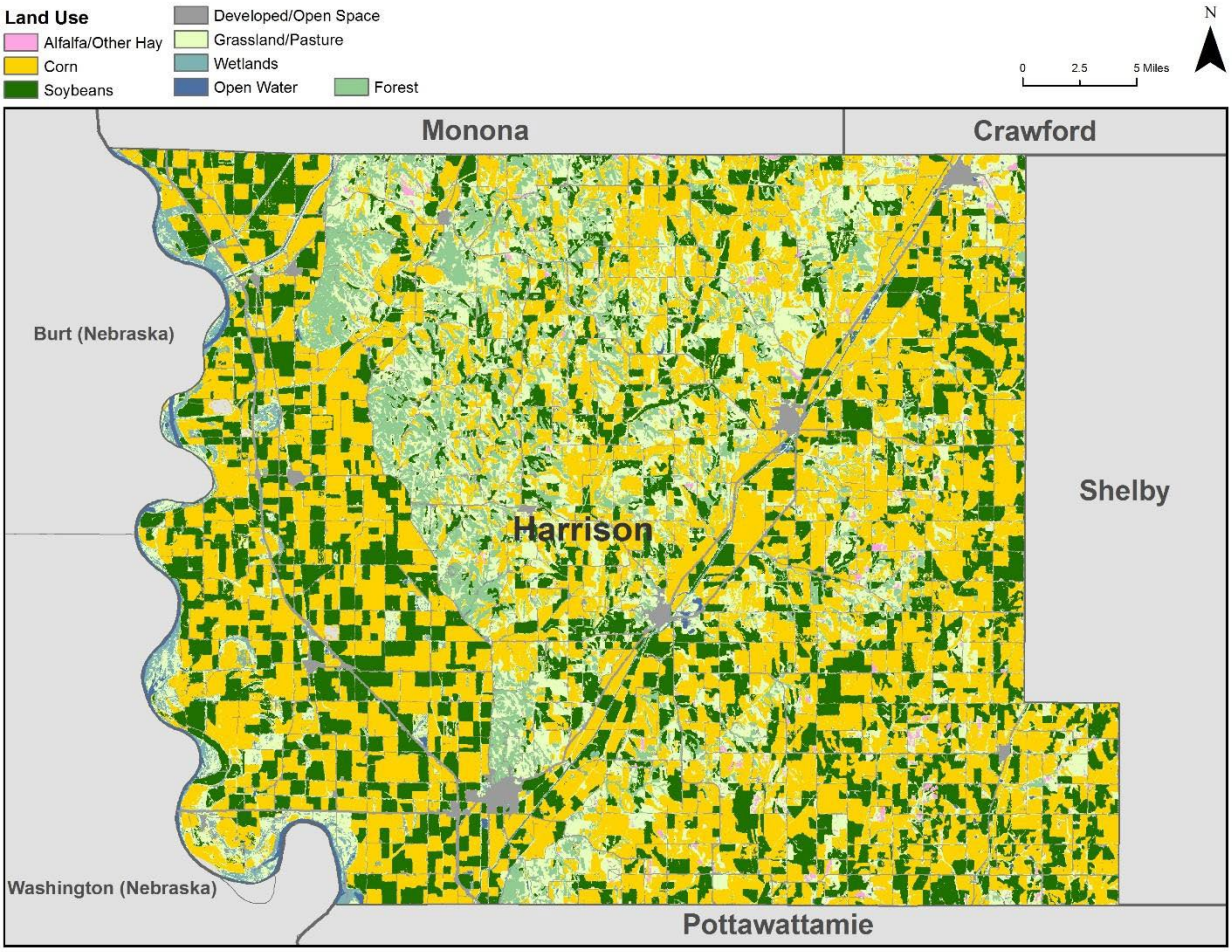
| | | | |
|---|---|---|---|
| Dunlap | 1145 ft. | Modale | 1010 ft. |
| Little Sioux | 1036 ft. | Mondamin | 1023 ft. |
| Logan | 1086 ft. | Persia | 1174 ft. |
| Magnolia | 1338 ft. | Pisgah | 1059 ft. |
| Missouri Valley | 1017 ft. | Woodbine | 1089 ft. |

Source: TopoZone

## *Land Use*

Land use in Harrison County is predominantly tied to the agricultural industry with over 85 percent of the land used for agricultural purposes. Corn and soybean production make up the majority of agriculture farming in the county with 41 percent and 23.5 percent respectively and is dispersed evenly throughout the county. Pasture and grasslands make up the third largest area at 18.3 percent and is primarily located on the eastern two-thirds of the county and some areas along the Missouri River on the western border of the county. Forest accounts for only 7.5 percent of the area and is concentrated along the western portion of the Loess Hills region while open water and wetlands account 2.29 percent and are located primarily along the Missouri River in the western half of the county. Incorporated urban areas make up 6.6 percent of the land use in the county. This highlights the importance of the agricultural industries to the county. The land cover map and table illustrate the distribution of land use throughout the county.

**Map 2.3 - Harrison County Land Use (2013)**




Source: United States Department of Agriculture, Natural Resources Conservation Service

## *Rivers, Streams, and Lakes*

The major types of waters in Harrison County include lakes, ponds streams, rivers and wetlands. Rivers and streams in the county channel water that runs off the land and eventually merge or combine to create larger rivers and streams. These water bodies are crucial for both natural and agricultural plant and animal life in the county. Communities in Harrison County rely on underground water sources through shallow wells that tap into aquifers near the existing streams or rivers.

Rivers in the county are subject to sudden fluctuations due to the nature of the soils, topography, land use and weather. All rivers and streams have a riparian zone (floodplain). River source or headwaters of rivers or streams are usually quite clear and less subject to water fluctuations while lower stream reaches are more turbid and subject to greater agricultural and industrial pollution. Streams and rivers naturally meander and change course, often during or shortly after large amounts of precipitation upstream. Channelization (straightening of a stream or river), replacement or destruction of surrounding natural vegetation and the creation of impermeable surfaces all contribute to the elimination of habitat and, thus, aquatic life in the area. Water in channelized streams flows faster, increasing erosion and deepening the channel. This can result in more severe floods that can inflict greater damage to infrastructure and communities. Vegetation is also important to the safety of cleanliness of water by trapping sediment, animal waste and chemicals. This is vital to the region as waste and chemicals can often find their way into the water from the large amount of agricultural activities that take place in the county.

The Missouri River is a 2,341 mile long river that begins in the Rocky Mountains of western Montana and flows into the Mississippi River just north of St. Louis Missouri. The Missouri River runs 31.1 miles along the western edge of Harrison County. The river is was one of the main routes for western expansion in the United States during the 19$^{th}$ Century and has been a source of transportation to the region for over 12,000 years. In Harrison County, the river has shaped the terrain with the flood plain making up a large portion of the western part of the County. The river meanders closely to the shape of the western border of the county although due to natural and manmade channelization of the river, it has deviated from its original path creating a number of oxbow lakes. All of the rivers and streams within Harrison County eventually drain into the Missouri River.

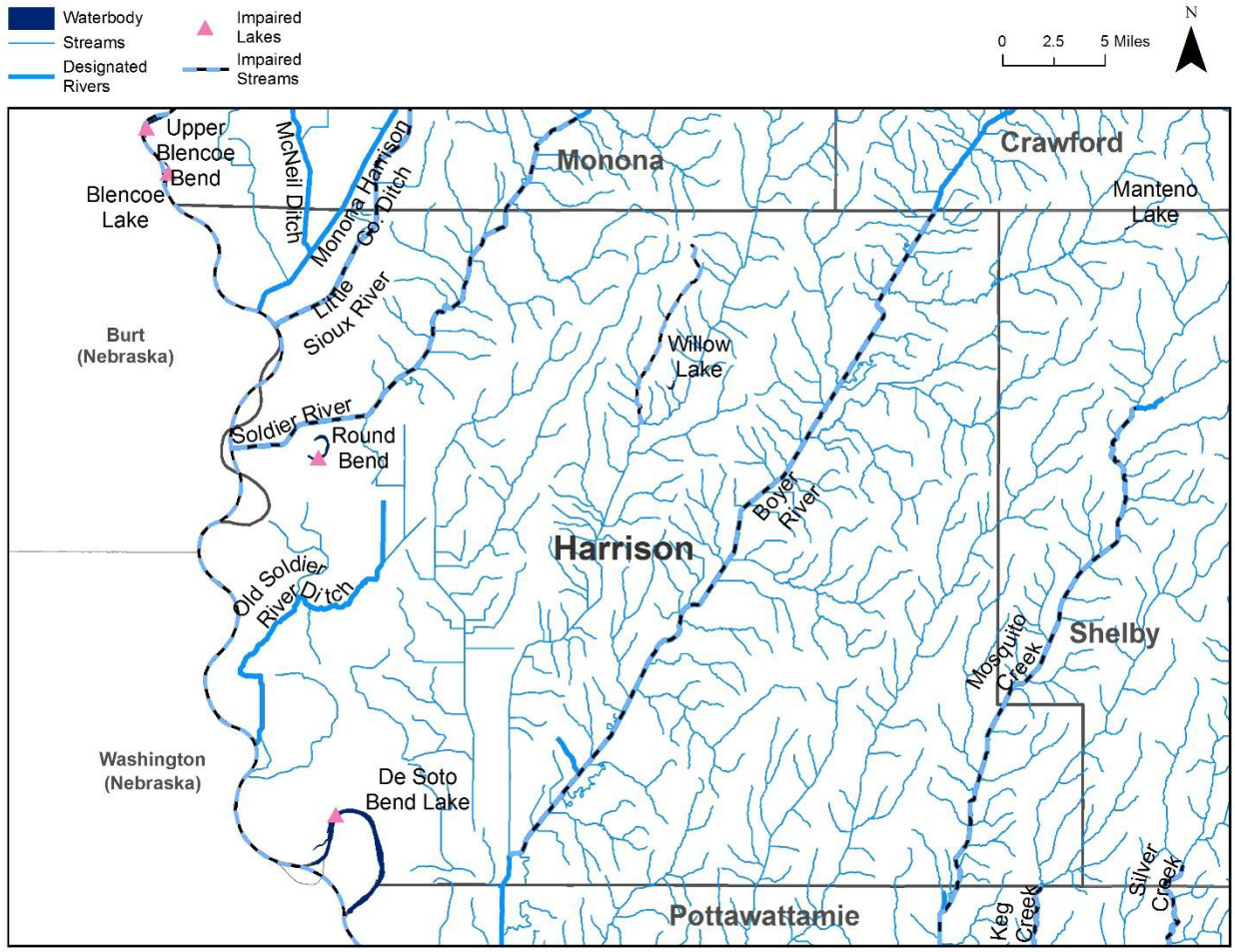
Other streams and rivers make up approximately 849.57 miles of additional waterways in Harrison County. Major rivers within Harrison County include the Boyer River, Keg Creek, Little Sioux River, McNeil and Monona Harrison Ditch, Mosquito Creek and Soldier River. The Mosquito Creek cuts through the eastern corner of Harrison County and the Boyer River runs diagonally through the center of the county from northeast to southwest. Both rivers eventually connect to the Missouri River in Pottawattamie County. The McNeil and Monona Harrison Ditch, Little Sioux River, Soldier River enter the county from the northeastern corner and connect to the Missouri River within the County. The Old Soldier River Ditch begins in the central western part of the county and connects to the Missouri River in Harrison County.

There are three lakes located in Harrison County. DeSoto Lake, located on the border of the Southwest corner of the county, is the largest of the three at 865 acres in size. Round Bend, located just east of the Missouri River and north of Mondamin, is 120 acres in size. Lastly, Willow Lake, located in the northern part of the county about six and a half miles northeast of Woodbine, is the smallest at 27 acres in size.

In 1960, an Army Corps of Engineers channelization project on the Missouri River relocated the main river channel to the west creating a seven-mile long oxbow lake named DeSoto Lake. This lake became a part of the DeSoto National Wildlife Refuge that was created two years prior to the project and was for 20 years after its construction used for both recreational boating and a wildlife habitat. Today, recreational use is

prohibited and the lake is entirely a wildlife refuge. The refuge is home to around 30 mammal species and is used by a number of migratory birds.

**Map 2.4 - Harrison County Rivers, Streams, and Water bodies**




Source: Iowa Department of Natural Resources

## *Ponds and Wetlands*

There are 1,336 individual freshwater ponds and 1,431 individual wetlands located in Harrison County totaling 5,888.85 acres. Ponds are found more readily in the southern part of the state of Iowa due to the clay soils that form a water-tight basin. Ponds are generally less than 10 acres in size. Wetlands are areas of high water saturation for periods of time during the growing season. These areas often have traits of both terrestrial and aquatic systems. To be categorized as a wetland, three conditions must be met that include: hydric soils, a hydrology, and the presence of hydrophytes (water plants). Hydric soils form when soil is saturated with water and decomposition of organic material is slow due to the low amount of oxygen in the water. These soils are characterized by thick, dark layers of organic soil just below the topsoil with a gray layer beneath mixed in with splotches of brown, orange or yellow. Hydrophytes or water plants have roots that have adapted to the wet soils and the high saturation of water. Of the ponds and wetlands located in Harrison County, 96.2 percent of them are smaller than 10 acres with the average size for all ponds and wetlands being 2.1 acres.

Ponds and wetlands are scattered throughout the county and provide a reliable water source for livestock and wildlife as well as allow for an abundance and variety of vegetation to grow. These sources of water, including lakes, can also hold water during dry periods and lessen the effect of drought in the region. At the same time, these areas can become reservoirs and buffers during periods of heavy precipitation and can lessen the impact of flooding. Vegetation around these areas also play a key role in water retention, soil erosion and absorbing pollutants.

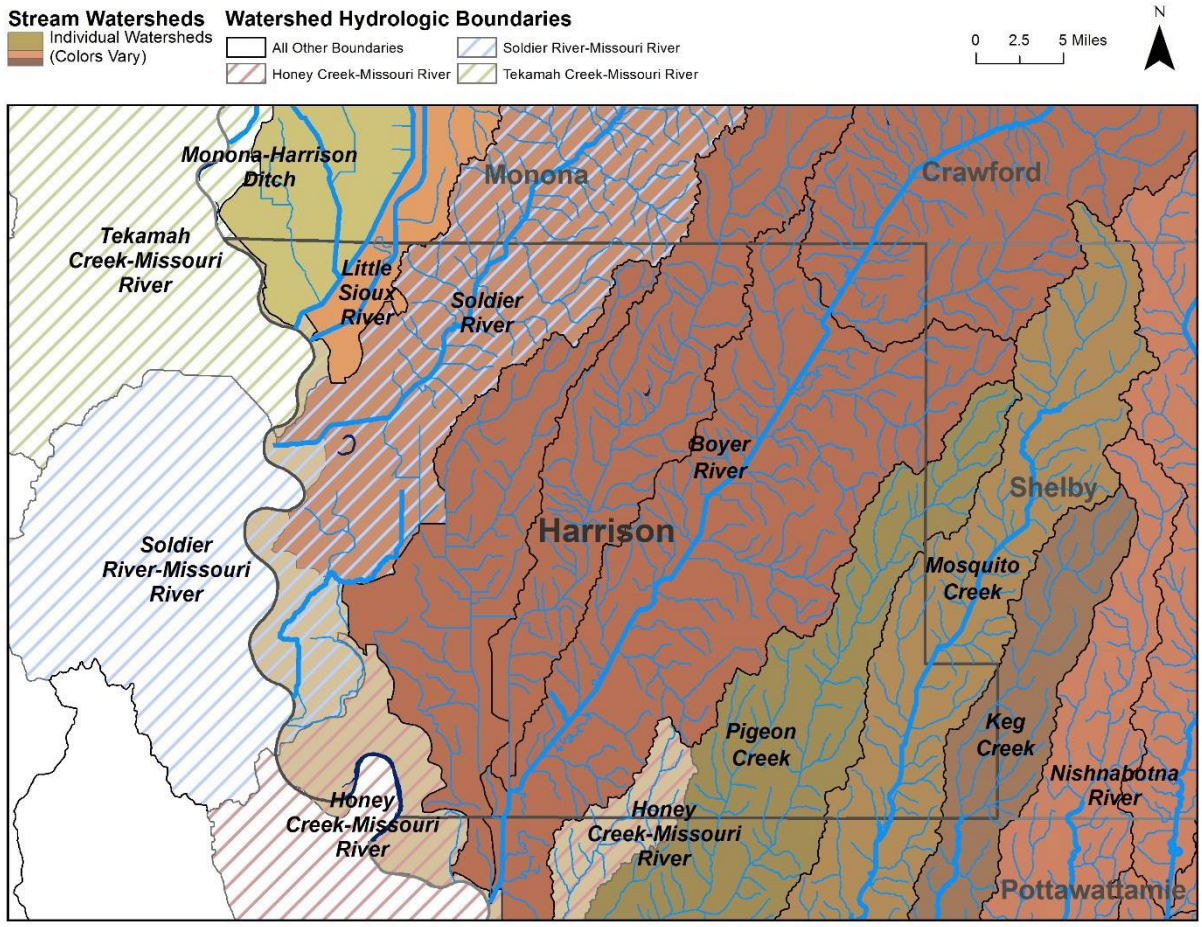
## *Watersheds*

The area of land where all water sources are linked and eventually combine into a single water source is defined as a watershed. The State of Iowa maintains three different hydrologic watershed boundary datasets and are useful for a number of water-resource management and planning activities, particularly for site-specific and localized studies. These data sets were then used to define the stream watershed layer for the State of Iowa. These stream watersheds represent the watershed boundaries of Iowa's rivers and streams. Because the stream watershed layer does not extend to the western edge of Harrison County in map 5, and due to the importance of the Missouri River in the county, the 10 digit hydrologic unit overlay was included to show the watershed boundaries in those areas.

Seven stream watersheds are located within Harrison County. The northwestern quarter of Harrison County is made up of the Monona-Harrison Ditch, Little Sioux River, and Soldier River watersheds. These stream watersheds continue north of the county. The Boyer River watershed makes up the majority of the county running from the north-east corner to the southwest corner of the county. This stream watershed extends to the northeast into Crawford County and continues on into Sac County. The Pigeon Creek, Mosquito Creek and Keg Creek watersheds make up the remaining part of the county in the southeast corner of the county. These stream watersheds are primarily located in Harrison County. Each stream watershed eventually drains into the western edge of the county and into the Missouri River.

The overlay in map 2:5 shows that Harrison County has three hydrologic watershed boundaries that make up the Missouri River. The Soldier River-Missouri River hydrologic watershed is the only hydrologic watershed that expands deep into and runs north of the county. The Honey Creek-Missouri River hydrologic watershed covers a small portion of the southwest corner of the county and also cuts up through the southern center of the county. The Tekamah Creek-Missouri River hydrologic watershed covers only a sliver of the northwest corner of the county.

**Map 2.5 - Harrison County Watersheds**

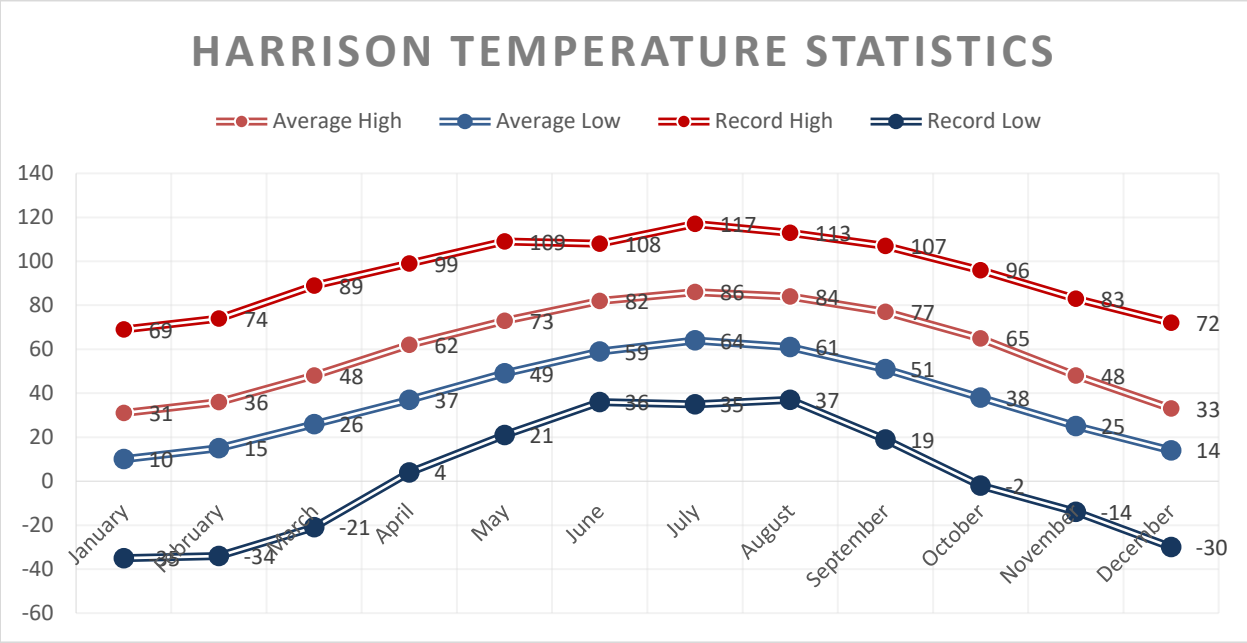



Source: Iowa Department of Natural Resources

## *Climate and Weather*

Harrison County has a four-season climate that ranges from hot and humid summers to cold and dry winters. January winter temperatures average between a high of 31ºF and a low of 10ºF with a record low of -33ºF in 1996. July summer temperatures average between a high of 86ºF and a low of 64ºF with a record high of 117ºF in 1974. The annual average precipitation for the county is 33.56 inches. The spring and summer months of May, June and July see the highest average precipitation between 4.6 and 4.17 inches per month. Flood risk is at its highest during these three months and thunderstorms are common in the spring and summer months. It is also during the warm summer months that severe drought can occur causing major widespread crop losses. The lowest months of precipitation occur during December, January and February, each having a monthly average of less than 1.2 inches in precipitation. Although precipitation is at its lowest during the winter months, snowstorms, ice storms and blizzards are common.

**Figure 2.1 - Harrison County Historic Temperature Records**




Source: weather.com

## Population and Households

Harrison County reached its peak population period around the year 1900, when the population was 25,597. Since then the county population has steadily declined, with only minor growth shown occasionally. Like many other rural counties in the State of Iowa, Harrison County experienced a sharp decline in its population during the 1980's. The 2010 census showed the county's population at 14,928, the lowest population the county has seen since the 1870 census. The 2013 estimates show further loss in population at 14,431. The decrease in population over the course of the last century can largely be attributed to a decline in rural population. Many influential factors led populations to decline in rural areas, including but not limited to, a decrease in manufacturing employment, decreasing number of farms and related agriculture employment, and the decline in the young adult population. Furthermore, with the consolidation of farms and the advances in agricultural technology, farm sizes have increased which contribute to the reduction of farm-related jobs.

Table 2.3 below shows Harrison County's population trends as compared to the State of Iowa. Harrison County ranks 54th in population of the 99 counties in the State of Iowa, carrying only 0.49 percent of the total population for the State. This statistic supports the State Hazard Mitigation Plan's conclusion "Population distribution within Iowa can generally be described as highest in the Central and East Central regions of the state and lowest in the Southwest and South Central regions."

**Table 2.3 - Population Trends for the State of Iowa and Harrison County, 2010-2024**

| | 2010 | 2020 | 2024 (estimate) | % Change 2010-2020 | % Change 2020-2024 |
|---|---|---|---|---|---|
| Harrison County Total | 14,928 | 14,582 | 14,362 | -2.3%14 | -1.5% |
| State of Iowa Total | 3,046,355 | 3,190,369 | 3,210,507 | 4.7% | 0.6% |

Source: U.S. Census, American Community Survey

Dunlap, Logan, Missouri Valley and Woodbine are the four largest communities with a population over 1,000 with the largest being Missouri Valley at 2,678 at the 2020 Census. Each of the remaining communities have a population under 350 according to the 2020 U.S. Census. Unlike many counties in Iowa which typically have one large population center, Harrison County urban population is spread amongst these four communities. All jurisdictions except Woodbine saw a population decrease from the 2010 Census to the 2020 Census.

**Table 2.4 - Population Trends for All Jurisdictions within Harrison County, 2010-2024**

| | 2010 | 2020 | 2024 (estimate) | % Change 2010-2020 | % Change 2020-2024 |
|---|---|---|---|---|---|
| Dunlap | 1,042 | 1,038 | 1,170 | -0.4% | 12.7% |
| Little Sioux | 170 | 166 | 129 | -2.4% | -22.3% |
| Logan | 1,534 | 1,397 | 1,392 | -8.9% | -0.4% |
| Magnolia | 183 | 190 | 180 | 3.8% | -5.3% |
| Missouri Valley | 2,838 | 2,678 | 2,666 | -5.6% | -0.4% |
| Modale | 283 | 273 | 181 | -3.5% | -33.7% |
| Mondamin | 402 | 339 | 403 | -15.7% | 18.9% |
| Persia | 319 | 297 | 294 | -6.9% | -1.0% |
| Pisgah | 251 | 249 | 255 | -0.7% | 2.4% |
| Woodbine | 1,459 | 1,625 | 1,471 | 11.4% | -9.5% |
| Unincorporated Harrison County | 6,447 | 6,330 | 6,221 | -1.8% | -1.7% |

Source: U.S. Census, American Community Survey, 2024 5 -year estiamtes

Harrison County is largely comprised of persons considering themselves White or Caucasian, totaling 94.9 percent of the population, which is significantly higher than the State of Iowa's 84.1 percent. For most jurisdictions, two or more races makes up the second highest race outside of Caucasian.

**Table 2.5 - Harrison County Jurisdictions and State of Iowa Populations by Race and Hispanic/Latino 2024**

| | White | Black or African American | American Indian and Alaska Native | Asian | Hawaiian and Other Pacific Islander | Some other race | Two or more races | Hispanic /Latino (includes all of the previous races) |
|---|---|---|---|---|---|---|---|---|
| Dunlap | 97.5% | 1.3% | 0.0% | 0.0% | 0.0% | 0.0% | 1.2% | 1.6% |
| Little Sioux | 89.1% | 0.0% | 0.8% | 0.0% | 0.0% | 0.0% | 10.1% | 3.1% |
| Logan | 95.3% | 0.2% | 0.1% | 0.0% | 0.0% | 1.9% | 2.4% | 1.9% |
| Magnolia | 98.9% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 1.1% | 1.1% |
| Missouri Valley | 95.8% | 0.0% | 0.1% | 0.0% | 0.0% | 0.9% | 3.2% | 1.6% |
| Modale | 97.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.6% | 2.2% | 0.0% |
| Mondamin | 93.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.5% | 6.2% | 2.0% |
| Persia | 94.9% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 5.1% | 3.1% |
| Pisgah | 99.6% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.4% | 0.0% |
| Woodbine | 96.7% | 0.0% | 0.0% | 0.9% | 0.0% | 0.3% | 2.0% | 1.8% |
| Harrison County Total | 94.9% | 0.1% | 0.1% | 0.3% | 0.0% | 0.6% | 4.0% | 2.2% |
| State of Iowa Total | 84.1% | 3.9% | 0.4% | 2.5% | 0.2% | 2.4% | 6.6% | 7.3% |

Source: U.S. Census, American Community Survey, 2024 5-year estimates

Harrison County's median age rate is 42.1 years, higher than the State of Iowa's at 38.6 years. This illustrates the County as having an aging population. Two jurisdictions in Harrison County have a lower median age rate than the State of Iowa, Missouri Valley and Woodbine which are the two largest cities in Harrison County, both having schools within their boundaries.

**Table 2.6 - Harrison County Jurisdictions and State of Iowa Populations by Age, 2024**

| | Under 5 years | 5-20 years | 20-64 years | 65+ years | Median age |
|---|---|---|---|---|---|
| Dunlap | 5.1% | 9.7% | 51.4% | 33.8% | 56.1 |
| Little Sioux | 2.3% | 21.8% | 48.1% | 27.9% | 58.1 |
| Logan | 9.8% | 17.5% | 56.7% | 16.1% | 43.1 |
| Magnolia | 5.0% | 19.5% | 50.5% | 25.0% | 43.6 |
| Missouri Valley | 4.6% | 18.7% | 56.8% | 19.9% | 38.0 |
| Modale | 4.4% | 5.6% | 61.3% | 28.8% | 58.8 |
| Mondamin | 5.2% | 20.6% | 58.3% | 15.8% | 41.3 |
| Persia | 5.8% | 24.9% | 56.3% | 13.0% | 43.0 |
| Pisgah | 1.6% | 13.8% | 71.1% | 13.8% | 44.5 |
| Woodbine | 6.2% | 26.7% | 49.3% | 17.8% | 36.2 |
| Harrison County total | 5.8% | 19.2% | 54.7% | 20.1% | 42.1 |
| State of Iowa total | 5.9% | 19.9% | 56.0% | 18.1% | 38.6 |

Source: U.S. Census, American Community Survey, 2024 5-year Estimates

At the 2010 Census, Harrison County showed an urban population of 18.9 percent and rural population of 64.0 percent. For the 2020 Census, the U.S. Census Bureau changed its definition of urban from a geographic area with 2,500 population to a geographic area with 5,000 population. Due to this, the 2020 Census for Harrison County shows no population living in urban areas and 100 percent living in rural areas as there are no jurisdictions that have a population of 5,000 or more.

**Table 2.7 - Harrison County and State of Iowa Rural and Urban Population 2010-2020**

| | 2010 | | | | 2020 | | | |
|---|---|---|---|---|---|---|---|---|
| | Iowa | | Harrison County | | Iowa | | Harrison County | |
| | # | % | # | % | # | % | # | % |
| Urban | 1,950,256 | 64.0% | 2,819 | 18.9% | 2,014,831 | 63.1% | 0 | 0% |
| Rural | 1,096,099 | 36.0% | 12,109 | 81.1% | 1,175,538 | 36.8% | 14,582 | 100% |

Source: U.S. Census

There were 5,951 households in Harrison County according to the 2020 Census. Of these housholds, approximately 28.7% are householders living alone, comparable to the 30.0% for the State of Iowa. Individual jurisdictions within Harrison County range from 20.0% to 41.7% percent of households with a single person occupancy.

**Table 2.8 - Harrison County Jurisdictions and State of Iowa Households, 2020**

| Households by Type | Total Households | Percent Householder living alone |
|---|---|---|
| Dunlap | 451 | 34.8% |
| Little Sioux | 72 | 41.7% |
| Logan | 573 | 33.9% |
| Magnolia | 76 | 26.3% |

| | | |
|---|---|---|
| Missouri Valley | 1,136 | 36.6% |
| Modale | 123 | 27.6% |
| Mondamin | 162 | 39.9% |
| Persia | 111 | 20.0% |
| Pisgah | 117 | 32.5% |
| Woodbine | 651 | 32.0% |
| Unincorporated Harrison County | 2,479 | 20.7% |
| Harrison County total | 5,951 | 28.7% |
| State of Iowa total | 1,288,560 | 30.0% |

Source: U.S. Census, 2020

## Housing

Table 2.9, below, shows that 44.3 percent of the housing units in Harrison County were built before 1939. This is significantly high considering only 23.5 percent of the housing units in the State of Iowa were built in 1939 or earlier. The high percentage of older housing can be attributed to a lower amount of residential development when compared to the urban regions of the State. These regions bring in newer development, thus increasing the number of new structures. Tables 2.10, 2.11 and 2.12 show that all of the incorporated cities and the unincorporated areas in Harrison County have an aging housing stock with at least a third or more of housing built before 1940. Half of the communities have over 50 percent of housing built before 1940. Most of these structures were built prior to any building code requirements, leading to a risk of deteriorating housing structures. In addition, the older housing stock poses a threat of possible lead-based paint and asbestos exposure, since both substances were widely used in many building products for housing construction prior to the 1970's.

**Table 2.9 - Year structures have been built within Harrison County and State of Iowa**

| Year Structure Was Built | State of Iowa | | Harrison County | |
|---|---|---|---|---|
| | # | % | # | % |
| Total | 1,437,699 | | 6,698 | |
| 2020 or later | 24,063 | 1.7 | 107 | 1.6 |
| 20110-2019 | 132,666 | 9.2 | 230 | 3.4 |
| 2000-2009 | 155,455 | 10.8 | 579 | 8.6 |
| 1990-1999 | 138,510 | 9.6 | 583 | 8.7 |
| 1980-1989 | 101,703 | 7.1 | 377 | 5.6 |
| 1970-1979 | 201,627 | 14.0 | 848 | 12.7 |
| 1960-1969 | 139,255 | 9.7 | 412 | 6.2 |
| 1950-1959 | 139,867 | 9.7 | 349 | 5.2 |
| 1940-1949 | 66,133 | 4.6 | 243 | 3.6 |
| 1939 or earlier | 338,420 | 23.5 | 2,970 | 44.3 |

Source: US Census Bureau, American Community Survey, 2024 5-year estimates

**Table 2.10 - Year structures have been built within Dunlap, Little Sioux, and Logan**

| Year Structure Was Built | Dunlap | | Little Sioux | | Logan | | Magnolia | |
|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % |
| Total | 635 | | 111 | | 631 | | 83 | |
| 2020 or later | 11 | 1.7 | 3 | 2.7 | 3 | 0.5 | 0 | 0.0 |
| 2010-2019 | 44 | 6.9 | 6 | 5.4 | 22 | 3.5 | 0 | 0.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2000-2009 | 29 | 4.6 | 1 | 0.9 | 15 | 2.4 | 11 | 13.3 |
| 1990-1999 | 23 | 3.6 | 11 | 9.9 | 37 | 5.9 | 2 | 2.4 |
| 1980-1989 | 34 | 5.4 | 1 | 0.9 | 37 | 5.9 | 0 | 0.0 |
| 1970-1979 | 101 | 15.9 | 19 | 17.1 | 44 | 7.0 | 15 | 18.1 |
| 1960-1969 | 49 | 7.7 | 3 | 2.7 | 19 | 3.0 | 4 | 4.8 |
| 1950-1959 | 62 | 9.8 | 0 | 0.0 | 35 | 5.5 | 4 | 4.8 |
| 1940-1949 | 13 | 2.0 | 3 | 2.7 | 21 | 3.3 | 0 | 0.0 |
| 1939 or earlier | 269 | 42.4 | 64 | 57.7 | 398 | 63.1 | 47 | 56.6 |

Source: US Census Bureau, American Community Survey, 2024 5-year estimates

**Table 2.11 - Year structures have been built within Missouri Valley, Modale, Mondamin and Persia**

| Year Structure Was Built | Missouri Valley | | Modale | | Mondamin | | Persia | |
|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % |
| Total | 1,374 | | 102 | | 200 | | 108 | |
| 2020 or later | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 2010-2019 | 4 | 0.3 | 12 | 11.8 | 4 | 2.0 | 1 | 0.9 |
| 2000-2009 | 34 | 2.5 | 5 | 4.9 | 5 | 2.5 | 2 | 1.9 |
| 1990-1999 | 42 | 3.1 | 4 | 3.9 | 5 | 2.5 | 0 | 0.0 |
| 1980-1989 | 55 | 4.0 | 11 | 10.8 | 15 | 7.5 | 5 | 4.6 |
| 1970-1979 | 144 | 10.5 | 38 | 37.3 | 58 | 29.0 | 11 | 10.2 |
| 1960-1969 | 162 | 11.8 | 0 | 0.0 | 22 | 11.0 | 8 | 7.4 |
| 1950-1959 | 97 | 7.1 | 1 | 1.0 | 11 | 5.5 | 19 | 17.6 |
| 1940-1949 | 58 | 4.2 | 1 | 1.0 | 3 | 1.5 | 16 | 14.8 |
| 1939 or earlier | 778 | 56.6 | 30 | 29.4 | 77 | 38.5 | 46 | 42.6 |

Source: US Census Bureau, American Community Survey, 2024 5-year estimates

**Table 2.12 - Year structures have been built within Pisgah, Woodbine, and Unincorporated Harrison County**

| Year Structure Was Built | Pisgah | | Woodbine | | Unincorporated Harrison County | |
|---|---|---|---|---|---|---|
| | # | % | # | % | # | % |
| Total | 137 | | 667 | | 2,650 | |
| 2020 or later | 0 | 0.0 | 15 | 2.2 | 75 | 2.8% |
| 2010-2019 | 1 | 0.7 | 77 | 11.5 | 59 | 2.2% |
| 2000-2009 | 1 | 0.7 | 21 | 3.1 | 455 | 17.2% |
| 1990-1999 | 5 | 3.6 | 38 | 5.7 | 416 | 15.7% |
| 1980-1989 | 14 | 10.2 | 17 | 2.5 | 188 | 7.1% |
| 1970-1979 | 16 | 11.7 | 111 | 16.6 | 291 | 11.0% |
| 1960-1969 | 0 | 0.0 | 50 | 7.5 | 95 | 3.6% |
| 1950-1959 | 15 | 10.9 | 38 | 5.7 | 67 | 2.5% |
| 1940-1949 | 6 | 4.4 | 15 | 2.2 | 107 | 4.0% |
| 1939 or earlier | 79 | 57.7 | 285 | 42.7 | 897 | 33.8% |

Source: US Census Bureau, American Community Survey, 2024 5-year estimates

Home ownership in Harrison County, at 77.1 percent, is slightly above that of the State of Iowa at 71.7 percent. Most jurisdictions, which includes the unincorporated area have an ownership rate over 70 percent except Dunlap, Missouri Valley, and Woodbine. Median rent ranges from a low of $753/month in Missouri Valley to a high of $1,354/month in Magnolia. The county's median rent is $123 lower than that of the.

**Table 2.13 - Home Ownership and Median Rent, 2024**

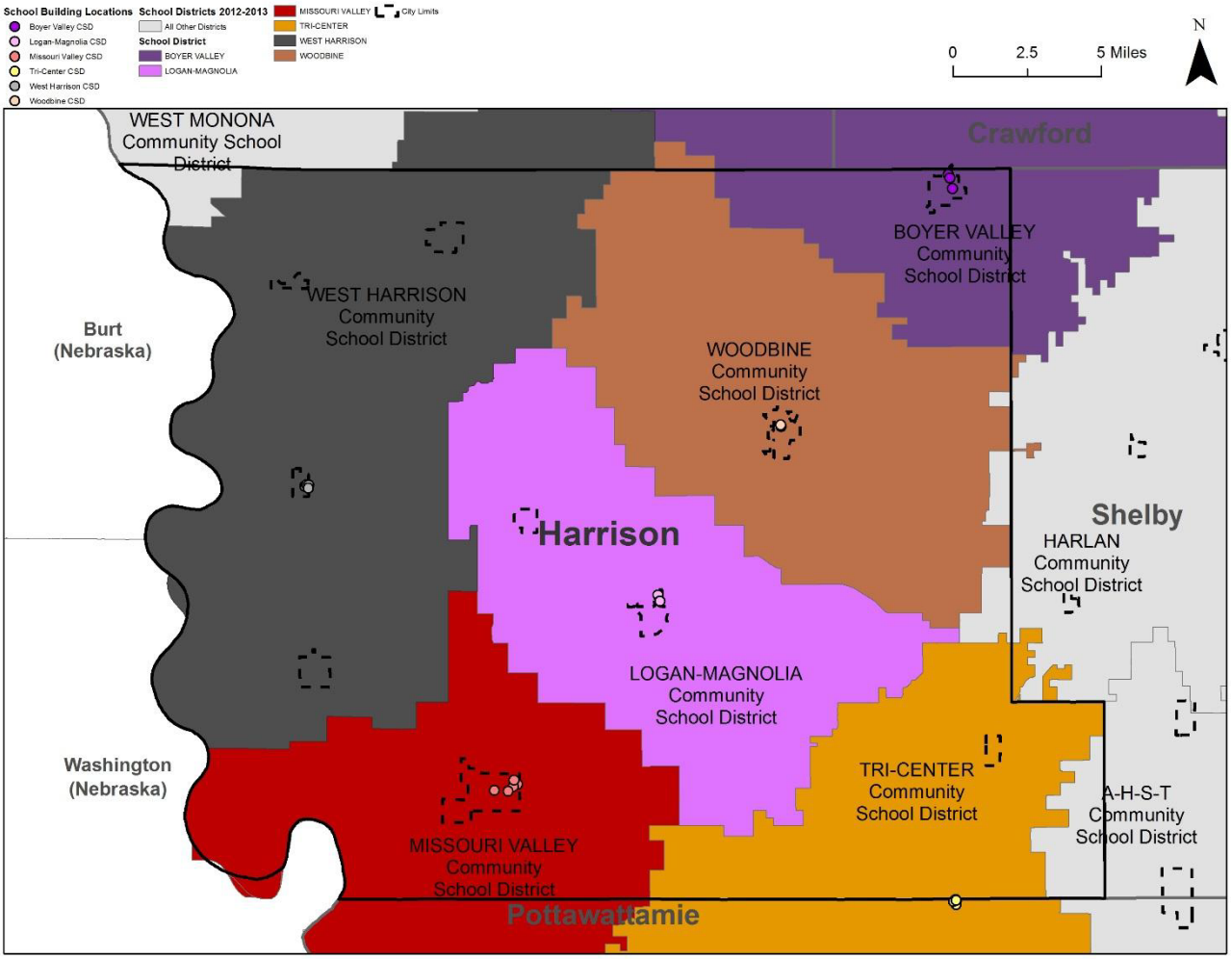
| Jurisdiction | # Occupied | # Owned | % Owned | # Rented | % Rented | Median Rent |
|---|---|---|---|---|---|---|
| State of Iowa | 1,315,707 | 943,396 | 71.7% | 372,311 | 28.3% | $972 |
| Harrison County | 6,089 | 4,697 | 77.1% | 1,392 | 22.9% | $849 |
| Dunlap | 579 | 389 | 67.2% | 190 | 32.8% | $918 |
| Little Sioux | 69 | 62 | 89.9% | 7 | 10.1% | - |
| Logan | 528 | 467 | 88.4% | 61 | 11.6% | $807 |
| Magnolia | 79 | 72 | 91.1% | 7 | 8.9% | $1,354 |
| Missouri Valley | 1,222 | 833 | 68.2% | 389 | 31.8% | $753 |
| Modale | 88 | 69 | 78.4% | 19 | 21.6% | $1,125 |
| Mondamin | 174 | 133 | 76.4% | 41 | 23.6% | $890 |
| Persia | 108 | 88 | 81.5% | 20 | 18.5% | $918 |
| Pisgah | 126 | 92 | 73.0% | 34 | 27.0% | $775 |
| Woodbine | 557 | 356 | 63.9% | 201 | 36.1% | $840 |
| Unincorporated Harrison County | 2,559 | 2,136 | 83.5% | 423 | 16.5% | - |

Source: US Census Bureau, American Community Survey, 2024 5-year estimates

## School Districts

Harrison County is served by six school districts. Boyer Valley Community School District serves the city of Dunlap in Harrison County and the cities of Arion and Dow in Crawford County. Logan-Magnolia Community School District serves the cities of Logan and Magnolia with a campus located in Logan. Missouri Valley Community School District serves the city of Missouri Valley and has a High School-Middle School building and two elementary school buildings. Tri-Center Community School District serves the city of Persia in Harrison County and the cities of Minden and Neola in Pottawattamie County. Tri-Center Community School District has a campus that includes a High School-Middle School building and a separate Elementary School building located on the county border line between Harrison and Pottawattamie just north of the Highway 191 and Interstate 680 intersection. West Harrison Community School District serves the cities of Little Sioux, Modale, Mondamin, and Pisgah with a campus building located in Mondamin. Woodbine Community School District serves the city of Woodbine with a campus located within the city.

**Map 2.6 - Harrison County School Districts**




Source: Iowa Department of Natural Resources

# Public and Private Infrastructure

## *Highway and Roads*

Highways and roads are essential to the communities within Harrison County as a primary mode of commuting and for freight transportation. Harrison County has 1,340 miles of urban and rural roadways connecting its communities to resources and industries located inside and out of the county. These roads are vital in moving goods and services throughout the region. Roadways are classified by their use and the volume of traffic they can handle. Principal arterials and major or minor collector roads, such as those listed below, are responsible for moving traffic throughout the region as well as to adjacent communities and consist of mainly state highways and interstates. They are designed to move traffic quickly over medium to long distances. Within the network of these highways and interstates are local roads that allow access to the smaller communities and rural homes and businesses located within the county as well as make up the network of roadways within the cities. These roads are vital to a smaller population, though equally important to the communities that they are located in. A number of state highways cross through the county connecting it with adjacent counties and providing quick access to local communities. Two Interstate roadways are of importance to the county, one located just south of Harrison County and one running along the western portion of the county.

- Interstate 29 runs north to south through the western portion of Harrison County. This interstate runs near the cities of Little Sioux, Mondamin, Modale and Missouri Valley and connects with the urban metropolitan areas of Council Bluffs and Omaha eventually entering Kansas City, Missouri to the south and Sioux City to the north.

- Interstate 80 and 880 runs east to west less than one mile south of the Harrison County border. At the junction of 80 and 880, Interstate 80 turns south and runs through Council Bluff and Omaha, while 880 continues west and connects with Interstate 29. Heading east, Interstate 80 continues through Des Moines, Iowa City, Davenport and eventually makes its way to Chicago, Illinois.

- U.S. Highway 30 begins in the City of Missouri Valley and runs diagonally through the county to the northeast passing the cities of Logan Woodbine and Dunlap before it eventually enters Crawford County. After entering Crawford County, it heads east through Ames and Cedar Rapids. This highway is particularly useful for traffic between these communities and as a medium to long distance route and becomes an important east-west route for freight moving across the state north of Interstate 80.

- U.S. Highway 37 crosses diagonally from the southeast to the northwest through the City of Dunlap and the northeast corner of Harrison County. This Highway connects Highway 59 running north-south in Harrison County to Interstate 29 past Onawa in Monona County. This highway primarily serves as a direct connection between other primary roads within the region.

- State Highway 44 begins as a junction on Highway 30 between Logan and Woodbine and heads east through Harlan in Harrison County and eventually connects to Des Moines. This highway is primarily used for access between communities north of Interstate 80.

- State Highway 127 begins in Logan and heads northwest into Magnolia and Mondamin before connecting to Interstate 29. This highway is intended for travel between these three communities and as a quick access to Interstate 29.

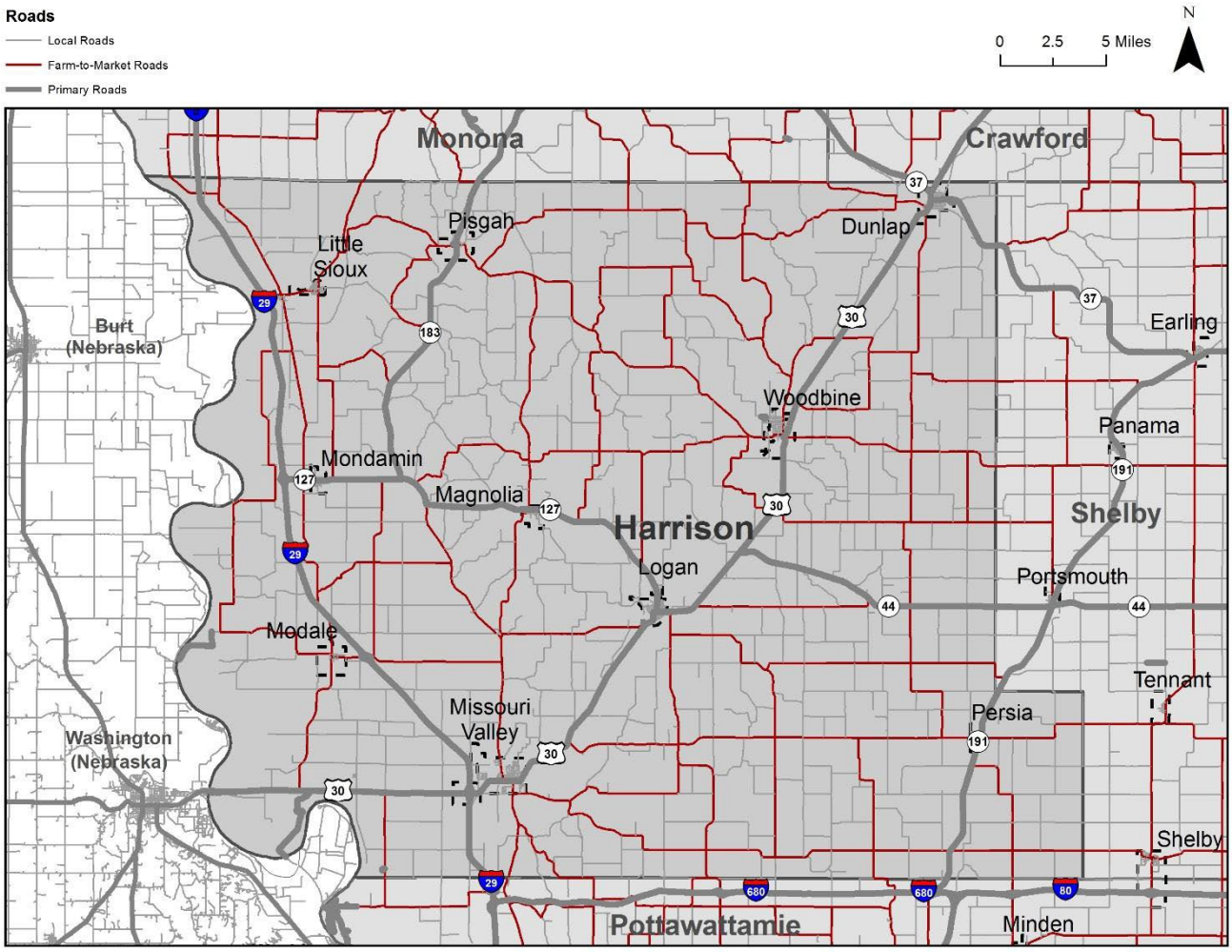
- State Highway 183 begins at a junction point between Magnolia and Mondamin on Highway 127 and heads north through Pisgah before heading into and ending in Monona County. This Highway is primarily used as a route to connect local communities in Harrison and Monona County.

- State Highway 191 runs through the southeastern corner of Harrison County through the City of Persia. It extends south connecting to Interstate 880 near the junction of Interstate 80 and 880 and heads north into Harrison County ending in the City of Earling. This highway is primarily used as a route to connect local communities in Harrison and Harrison County and give them a direct access to Interstate 80 and 880.

- Farm-to-market roads are either state or county roads that lead from the rural agricultural areas to the local city or market towns. These roads are designed primarily for farmers to use to transport goods and products to market towns and/or distribution centers and are better quality roads, such as highways, than local roads. Farm-to-market roads are designated by the State and 8 percent of the road use tax money goes to these roads. The road use tax money designated for farm-to-market roads are specified for construction, reconstruction or improvements.

The map below shows the highways and roads running in and through the county. The location of major roads and farm-to-market roads have been highlighted showing the location of vital routes throughout the county.

**Map 2.7 - Harrison County Highways and Roads**



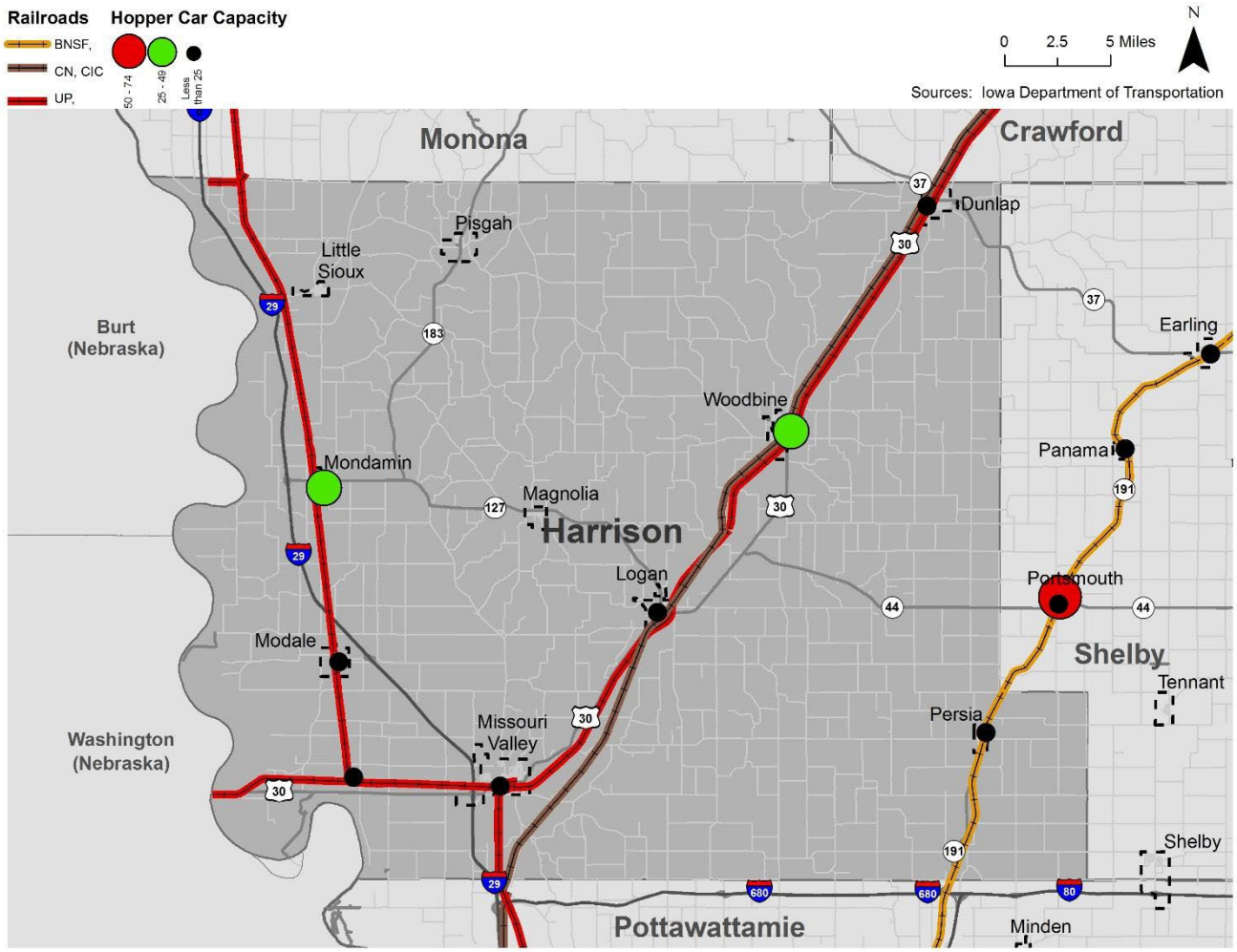

Source: Iowa Department of Transportation

## *Rail*

Harrison County has 119.2 miles of railroad track within its county border. Union Pacific Railway operates the majority of track in the county. Union Pacific operates a number of routes that branch out of the City of Missouri Valley. Its northern route runs through Modale, Mondamin and near Little Sioux before eventually reaching Sioux City in northwestern Iowa. A second route coming out of Missouri Valley heads northeast through Logan, Woodbine and Dunlap before running through Ames and Cedar Rapids and eventually heading east out of Iowa. A third route operated by Union Pacific heads south of Missouri Valley into Council Bluffs before it enters Omaha and continues west into Nebraska. A fourth route runs directly west and merges with another Union Pacific Route heading west out of Omaha, Nebraska. The Canadian National Railway Co. operates a route running from Council Bluffs past Missouri Valley, through the cities of Logan, Woodbine and Dunlap before heading through Fort Dodge, Cedar Falls, Waterloo, Dubuque and eventually east out of Iowa. BNSF Railway Co. operates a line that runs through only the city of Persia in Harrison County. This route heads south through Council Bluffs and along the Iowa boarder into Missouri and north then east through the counties of Harrison, Crawford, Carroll and ending in Guthrie. Grain hopper car capacity is available in the County in the cities of Dunlap, Logan, Missouri Valley, Modale, Mondamin

and Persia as well as the one location in the unincorporated area of California Junction east of Missouri Valley. Mondamin and Woodbine have the largest hopper car capacity with 25 to 49 cars while the remaining communities have a capacity that is below 25 cars. The map below illustrates the locations and routes of the hopper car locations and rails.

**Map 2.8 - Harrison County Railroads**




Source: Iowa Department of Transportation

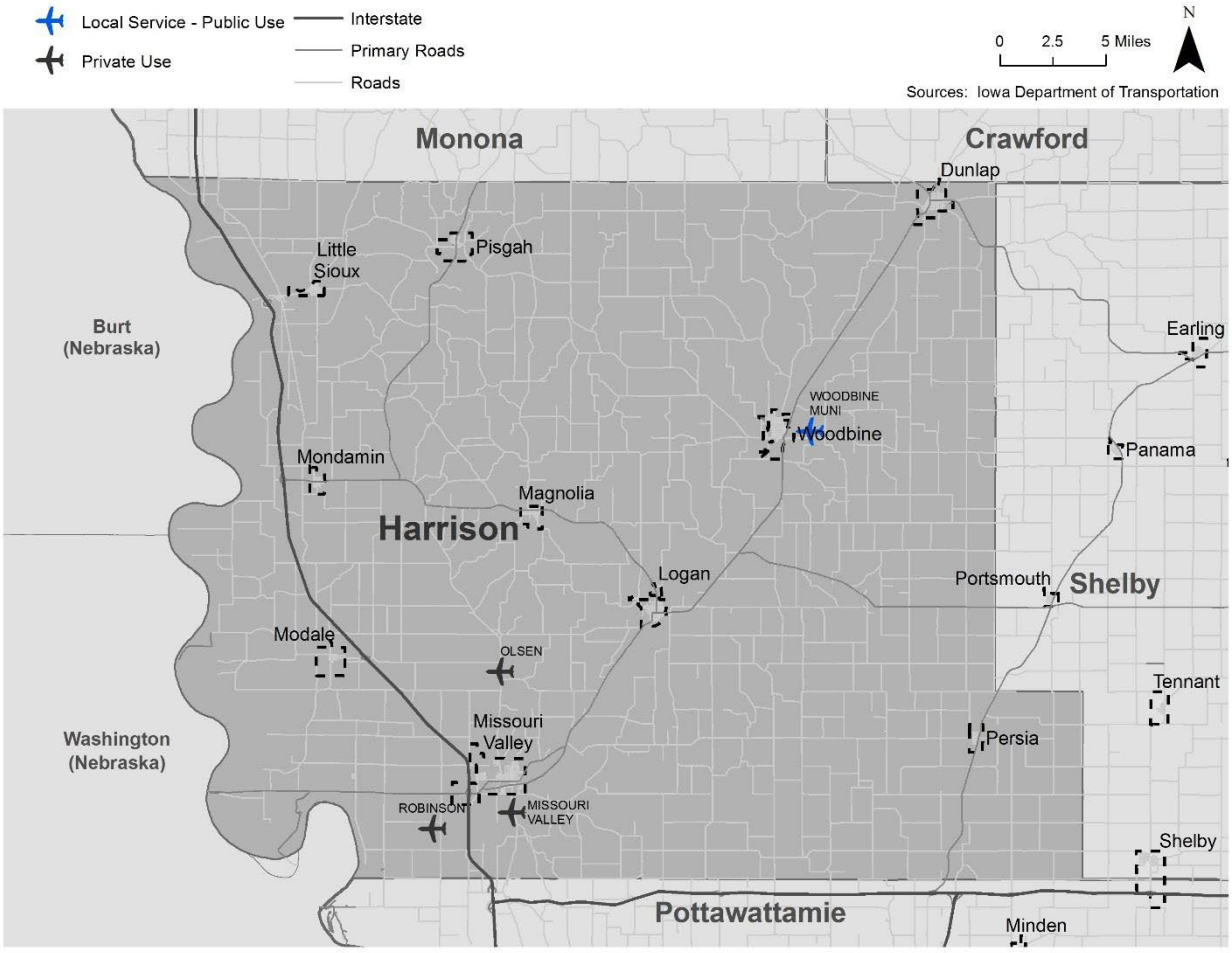
## *Airports*

Woodbine Municipal Airport (3Y4) – The Woodbine Municipal Airport is located one mile east of the City of Woodbine. The airport has one runway, 17/35, which has a turf surface and is 95 feet in width and 2,045 feet long. The runway has low intensity runway edge lighting, but no approach lights or visual glide slope indicators. The airport does not have any fuel services. The airport is unattended with no operational hours. The airport is classified as a local airport, which supports local aviation activity. Three other private use and privately owned airports are located around Missouri Valley. These airports support businesses and recreational flying for communities in and around Harrison County. The Individual Airport Report for Woodbine Municipal Airport from the Iowa Aviation System Plan has identified six goals to meet user demands. Those include safety and security, infrastructure and user support, accessibility, economic support, planning and education and outreach.

**Figure 2.2 - Aerial Photo of Woodbine Municipal Airport**

*Source: Iowa Department of Transportation*

**Map 2.9 - Harrison County Airports**




Source: Iowa Department of Transportation

## *Utilities*

### Electric

The county is served by three different power companies. Mid-American Energy is the supplier for electricity to all but the City of Woodbine. Harrison County REC (A Touchstone Energy Cooperative) is an electricity provider to three communities as well as the unincorporated areas. Woodbine Municipal Light and Power provides electricity to the City of Woodbine.

- Dunlap – Mid-American Energy
- Little Sioux – Mid-American Energy
- Logan – Mid-American Energy
- Magnolia – Mid-American Energy
- Missouri Valley – Mid-American Energy
- Modale – Mid-American Energy
- Mondamin – Mid-American Energy
- Persia – Mid-American Energy
- Pisgah – Mid-American Energy

- Woodbine – Woodbine Municipal Light & Power
- Harrison County – Mid-American Energy, Harrison County REC

**Gas**

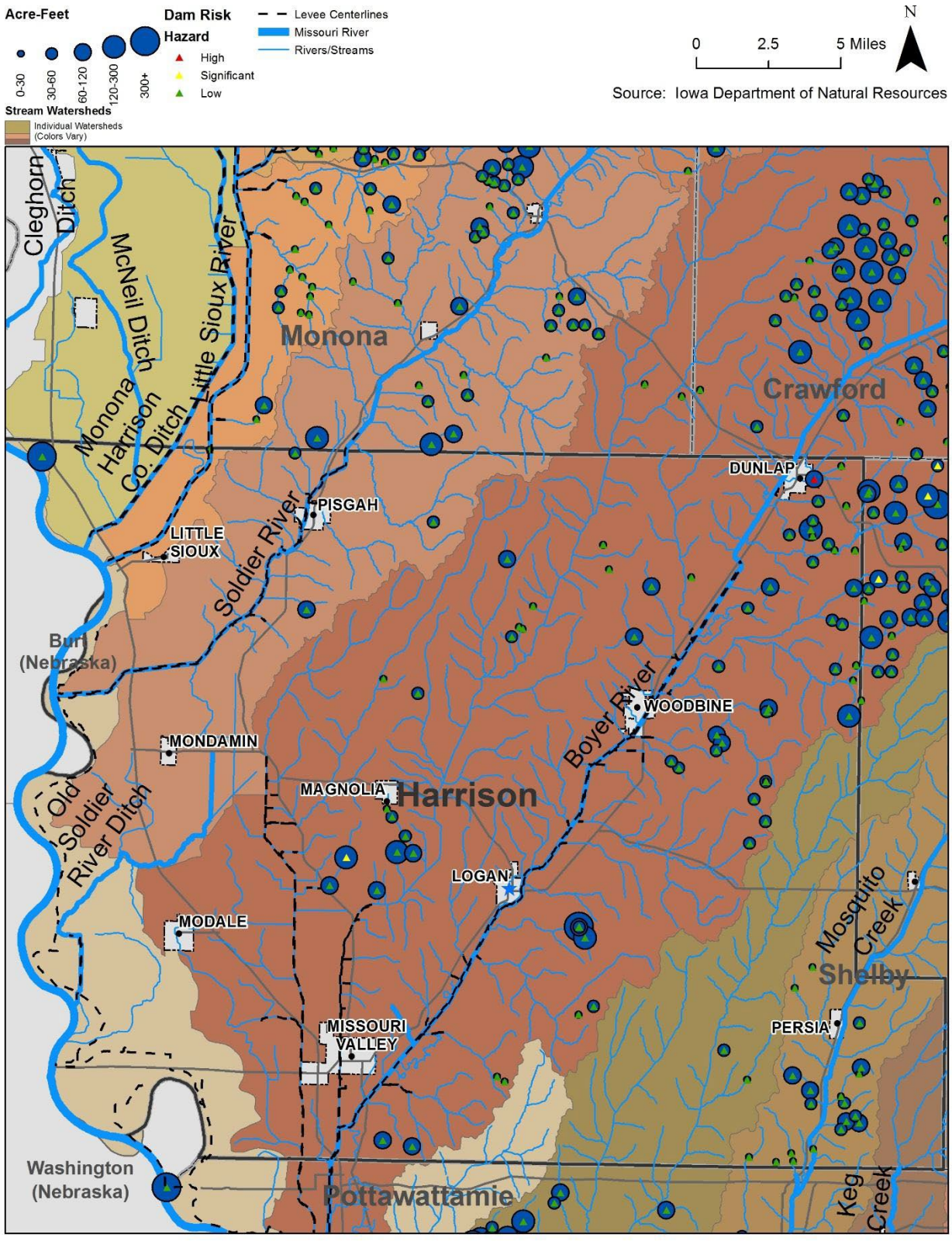
Gas is provided to a number of communities in Harrison County through Mid-American Energy. Woodbine Municipal Gas Co. is the only other gas company in the County and provides its services to the City of Woodbine.

- Dunlap – Mid-American Energy
- Little Sioux – Heartland Coop, New Coop
- Logan – Mid-American Energy
- Magnolia – Individual LP Gas Tanks
- Missouri Valley – Mid-American Energy
- Modale – Propane/Resident Choice of Provider
- Mondamin – Heartland Co-op
- Persia – Mid-American Energy
- Pisgah – Heartland Co-op
- Woodbine – Woodbine Municipal Gas Co.
- Harrison County – Northern Natural Gas

## *Dams*

Dams in Harrison County are stretched across the county in primarily the eastern and central parts. There are a total of 91 dams located in Harrison County with the majority of them located in the Boyer River watershed. Of the three possible ratings given for dam risk, high, significant or low, there is one dam with a rating of significant and one with a rating of high. The highest risk dam is located in the City of Dunlap within the eastern portion of the city limits and has a normal storage capacity of 70 acre-feet. The dam with a risk rating of significant is located south of the City of Magnolia and is located on a creek that runs past Highway 183. This dam has a normal storage capacity of 246 acre-feet. A large number of dams are located northeast and east of Dunlap in Crawford and Harrison Counties in the Boyer River watershed with eight of them rated as a significant risk. A large number of dams are also located in Monona County north of Harrison County, but these are all of low risk. Due to the nature of the region where water eventually flows south, dam failure in these counties could affect communities in Harrison County and contribute to flooding.

**Map 2.10 - Harrison County Dams and Waterways**




Source: Iowa Department of Natural Resources

## *Source Water*

The quality and quantity of water provided in a community greatly affects living conditions and desirability of potential future investment or residents. Quality water in adequate amounts is essential for domestic use, industrial purposes, and fire protection. Potable water for Harrison County citizens is provided through a variety of sources. Much of the unincorporated areas are served by private wells. A majority of the incorporated areas are served by municipal water systems while the remaining contract their water services or purchase water from a regional source.

- The City of Dunlap operates its own municipal water system and has four wells that draw water from the Boyer River surficial aquifer. Wells three and four are used to supply water to the city and are treated with chlorine, fluoride, and calciquest at a water treatment facility located at the site. Well one is used as a standby and the water is not treated. Well two is used by the fire department and for agricultural use. Approximately 180,250 gallons of water are pumped per day. A 300,000 gallon water storage system provides pressure to the distribution system. The distribution system consists of four inch, six inch, eight inch and ten inch cast iron water main. The distribution systems is very old with some newer portions that were upgraded or repaired when needed. The system was last upgraded in 2006 to install a new well.

- The City of Little Sioux operates its own municipal water system. The system consists of two active shallow ground water supply wells that draw water from the Little Sioux River surficial aquifer and a well that was abandoned after it had collapsed, a treatment plant for iron and manganese reduction and a 30,000 gallon standpipe installed in 1972 for storage and distribution. The distribution system consists of six inch, five inch, four inch, three inch, two inch and one and a half inch mains.

- The City of Logan operates its own municipal water system. Water is pumped from four shallow, gravel packed wells that drawn from the Boyer River surficial aquifer. Well one, two and three were built in the late 1980s, well five was built to replace the decommissioned well four in 2009. Storage of the city's water is in a 250,000 gallon water tower built in the late 1970s and 100,000 gallon clear well located at the water treatment plant which was constructed in 1962. The distribution system consists of four inch to twelve inch water mains. Most of the water mains are 80 to 90 years old while a number of them were replaced in 1991-92.

- The City of Magnolia water system is operated by People Services. The system consists of two wells, a water treatment plant and a 24,750 gallon water standpipe for storage. Water treatment consists of hypochlorination, forced draft aeration, detention, and pressure filtration using sand media. Water mains in the distribution system range from four inch to one and a half inch and are flushed twice a year. The system was last upgraded in 2014.

- The City of Missouri Valley water department is operated by People Services. The system contains three shallow wells located near the water treatment plant that all actively run to draw water for the city from the Boyer River surficial aquifer. Water is stored in a 300,000 gallon reservoir and a 750,000 gallon water tower before distribution. Distribution of the water runs through a number of different main sizes ranging from sixteen inch to four inch in diameter, is made out of iron piping and are flushed twice a year. The system was last upgraded in 2008 which included a new water treatment plant.

- The City of Modale operates its own municipal water system. The system consists of two shallow, gravel packed wells that draws ground water that is then treated through high pressure sand and water softeners before it is stored in a 40,000 gallon elevated water tower. The water is then distributed throughout the city through four inch iron water mains. The system was last upgraded in 2008.

- The City of Mondamin operates its own municipal water system and contracts maintenance repairs with People Service. The system consists of two shallow alluvial wells that draw water from the Missouri River surficial aquifer and a new water tower built in 2008. The water tower provides 100,000 gallons of elevated storage. The largest water distribution mains are eight inch in diameter and are flushed twice a year.

- The City of Persia purchases its water from Regional Water of Avoca. Water is piped to an elevated 30,000 gallon water tower located on the western portion of the city. The water is then distributed through a series of two, three, four and six inch mains.

- The City of Pisgah operates its own municipal water system. The system consists of two gravel packed wells that were built in the 1950s and alternate between each other to draw water from the ground for the system. The wells draw water from the Missouri River surficial aquifer. Pumped water then goes through a water treatment facility before it is stored in a 75,000 gallon water tower for pressure to the distribution system. Water is then distributed through six inch, four inch and two inch water mains.

- The City of Woodbine and Woodbine Light and Power operates the city's water system. The system has three gravel packed wells that currently operate, two of which were constructed around the 1940s and the third constructed around the 1980s. A fourth well, built around 2002, is non-operational due to high levels of nitrate. The wells draw from the Boyer River surficial aquifer. The well field is located in the northeast portion of the city and runs along two major railway lines. The water is stored in two separate standpipes and holds a combined 300,000 gallons. Distribution to the majority of the city is through four inch, six inch and eight inch iron pipes built prior to the 1980s. A separate section of the distribution system that runs to the industrial park is fitted with eight inch PVC and was installed in the early 1990s.

## *Wastewater*

Wastewater systems throughout Harrison County are similar to the potable water systems. The rural unincorporated areas of Harrison County utilize private septic systems, leech fields, cesspools, and/or clarification pits. The incorporated areas in the county utilize municipal systems to treat wastewater or contract out their services.

- The City of Dunlap operates its own municipal waste water system. The system collects sewage using gravity fed six inch mains and an eighteen inch main running to the lift station. The lift station was built in 1967 and the pumps were replaced in 2009. Water treatment system consists of a two cell controlled discharge lagoon and is discharged into the Boyer River after treatment.

- The City of Little Sioux operates its waste water system in conjunction with the unincorporated town of River Sioux. The system consists of a three cell waste stabilization, controlled discharge lagoon located northwest of Little Sioux. Collection mains are made of six inch and eight inch PVC piping to the central lift station and is then pumped into the lagoon by four to six inch PVC pipes. Construction of the system finished in 2008.

- The City of Logan operates its own municipal waste water system. The system consists of a three cell control discharge lagoon that is discharged twice a year into a ditch that runs to the Boyer River. Waste water is collected from eight inch to twelve inch mains and taken to one of two lift stations. The main lift station was rehabilitated in 2002 while the secondary lift station was rehabilitated in 2017.

- The City of Magnolia's waste water is handled by individual septic systems. A number of companies are available to provide cleaning services, installation and repair of septic systems to its residents.

- The City of Missouri Valley's waste water facilities are operated by People Services while the city runs the sewer collection system. People Services operates the lift station and a three cell control discharged lagoon system. The lagoons are discharged twice a year into Willow Creek which eventually flows into the Boyer River. The system was last upgraded in 2013.

- The City of Modale operates its own municipal waste water system. The system consists of a two cell controlled discharge with eight inch collection mains running to the lift station. The system was constructed in 2007.

- The City of Mondamin operates its own municipal waste water system which consists of a two cell waste stabilization lagoons with additional cell for aeration. The system constantly discharges into Spooner Ditch, which flows into the Soldier River.

- The City of Persia's sewer system is owned and operated by Regional Water out of Avoca. Regional water operates a two cell lagoon system located approximately 2,000 feet south of the city. The system discharges treated wastewater into the Mosquito Creek.

- The City of Pisgah operates its own municipal waste water system which consists of a three cell, controlled-discharge lagoon facility located south of the city. Sewage is collected from the city through a network of gravity collection mains and then conveyed into a lift station to the lagoon facility. The lagoons are discharged twice a year into the Soldier River. The system was last upgraded in 2012 and included building the third lagoon and rehabilitating the existing lagoons.

- The City of Woodbine operates the city's waste water system. The system was originally installed around 1915 with a number of additions since. Portions of the mains were upgraded in 1975, 1987 and sometime between 2000 and 2005 and are mostly made up of eight inch mains, with some six inch and ten inch mains. Some of the lower areas of the town are feed by two inch force mains. The lagoon system was upgraded to a three cell controlled discharge system. Discharge from the lagoons goes into the Boyer River. One main lift station pumps waste water into the lagoons while another lift station serves the community pool and ball fields and a third that serves the Brookview housing addition. The city is in the process of rehabilitating manholes throughout the city with ten of them completed in 2013.

## *Communications*

Telephone and internet services are supplied by a variety of companies throughout Harrison County. Landline telephone services are offered through the following companies:

- Dunlap – Windstream

- Little Sioux – Windstream
- Logan – Windstream
- Magnolia – Windstream
- Missouri Valley – CenturyLink and Longlines
- Modale – Windstream
- Mondamin – Windstream
- Persia – Marne Elk Horn
- Pisgah – Windstream
- Woodbine – Windstream
- Harrison County – Windstream, Longlines, Walnutel

Internet service providers to the region are offered by the following companies:

- Dunlap – Loganet, Windstream
- Little Sioux – Windstream
- Logan –Longlines and Windstream
- Magnolia –Longlines and Western Iowa Wireless
- Missouri Valley – Centurylink and Longlines
- Modale – Loganet, Windstream
- Mondamin – Future Technologies
- Persia – Marne Elk Horn
- Pisgah – Windstream
- Woodbine –Longlines
- Harrison County – Windstream, Longlines, Western Iowa Wireless

# Emergency Services

## *Emergency Management*

The Harrison County Emergency Management Agency (EMA) is the lead agency for the county that is responsible for disaster planning and preparedness, response, recovery, and mitigation. Its primary duties involve creating contingency plans for countywide multi-hazards, coordinating emergency planning activities and services, assisting governing officials in the event of a disaster, and promoting public knowledge of emergency management activities. The Harrison County EMA coordinates activities and response between the County's fire departments, law enforcement agencies, hospital, medical and ambulance services, the hazardous materials response team as well as the Red Cross, Salvation Army and Health and Human Services agencies and other outside organizations.

The Harrison County Emergency Management Agency operates under the Harrison County Emergency Management Commission. The Harrison County Emergency Management Commission is made up of the mayor or their representative from each of the ten cities in the county, the Sheriff or his/her representative and a member of the Board of Supervisors. This commission allows the communities and county to coordinate local activities to create cooperation between the various emergency response teams in the county.

The Harrison County Emergency Communications Center handles and directs emergency services and requests in the county and is operated by the Emergency Management Agency. The Harrison County EMA is staffed with one full time coordinator, six full time emergency dispatchers with one supervisor and 15 response volunteers. Dispatchers are highly skilled communications personnel that receive and handle requests for emergency services and receive continual training to provide them with the most up-to-date

knowledge and skills employed by emergency response organizations. This team works out of the communications center located in the City of Logan and has specialized equipment to handle calls and requests for emergency services which includes 911 phones, radios, computers and specialized mapping equipment and software to assist in providing the quickest and most efficient response. A twenty four foot mobile command trailer with specialized communications equipment is also available to the county to mobilize response coordination within the county.

Harrison County has established two mass notification systems to notify residents of severe weather or emergency events. Citizen Alert System (Everbridge notification system) is Harrison County's own and independently contracted mass notification system that alerts participating citizens to potential safety hazards or concerns. Users are able to sign up and receive texts, emails or voice notifications. The county also participates in the Alert Iowa statewide messaging system set up by the Iowa Department of Homeland Security and Emergency Management and is available to all counties in the State of Iowa. This system, like the Citizen Alert System, allows citizens to sign up for alerts that are issued through landline or wireless phone, text messaging, email, fax, TDD/TYY, and social media. These systems provide residents early warning and awareness to allow them to seek shelter or protection from severe weather or hazardous events.

## *Fire Protection and Rescue*

Harrison County is served by ten fire and rescue departments with one located in each of the ten cities. Each fire department in Harrison County operates with a fire chief and a number of local volunteer fire fighters and emergency response personnel to respond to emergencies. All of the fire departments within the county as well as the Harrison County Emergency Management are members of the Harrison County Fire Rescue Association. The intent of this association is to coordinate fire protection and rescue response between each fire department and discuss issues relating to rescue services. The association also promotes fire and EMS training for its emergency response personnel. As members of the association, local fire departments have established multilateral agreements with one another to provide emergency response in the event that an incident would exceed local resources. All calls for emergency assistance are handled by the Harrison County Communications Center. The Communications Center notifies and dispatches the appropriate department.

Each city in Harrison County has been rated using the countrywide classification system used by the Insurance Services Office to rate local fire protection capabilities. This advisory organization serves the property and casualty insurance industry by providing inspection services and statistical information relating to fire protection and safety. ISO classifies city from a score of 1 (best) to 10 (worst) based on their Fire Suppression Rating Schedule. This schedule grades water distribution, fire department equipment and personnel and fire alarm facilities to determine each score. The fire insurance ratings (ISO) for each city in Harrison County are as follows:

- City of Dunlap – 6
- City of Little Sioux – 9
- City of Logan – 5
- City of Magnolia – 9
- City of Missouri Valley – 6
- City of Modale – 8
- City of Mondamin – 7
- City of Persia – 7
- City of Pisgah – 7
- City of Woodbine – 5

- Unincorporated Harrison County – 10

## *Law Enforcement*

The Harrison County Sheriff is the coordinator of any countywide operations and is in charge of law enforcement throughout the unincorporated areas of the county. The Sheriff's Office also provides law enforcement services by contract to the cities of Little Sioux, Logan (partial), Magnolia, Modale, Mondamin, Persia, and Pisgah. This reduces costs to these small local communities while maintaining a law enforcement presence in that community. The remaining cities operate their own law enforcement agencies within their jurisdiction.

The County Sheriff operates a Patrol Division and a Civil Division in the county as well as a county Jail located in the City of Logan. The patrol division deploys five shifts of regular patrol deputies and is responsible for initially handling of calls for service and performing most initial investigations, service of civil papers and provide citizen assistance activities. The Sheriff's Office handles all routine and emergency calls and regularly patrols all areas of the county. The Civil Division of the Harrison County Sheriff handles any civil process in the county. The Harrison County Jail can house up to twenty four inmates and performs all the necessary functions within the jail, including serving the courts and conducting transports of inmates. The department is staffed by a Sheriff, a Chief Deputy, nine other deputies and a civil administration personnel. Other duties of the Sheriff's Office include issuing permits to purchase and carry firearms and providing security for special events in the county.

The cities of Dunlap, Logan, Missouri Valley and Woodbine each maintain their own law enforcement agency which performs their law enforcement activities within their jurisdiction as well as provides assistance to and coordinates with the Harrison County Sheriff's Office and other agencies as needed. The police department in Dunlap consists of a police chief and one officer. The police department in Logan consists of a police chief. The City of Missouri Valley police department consists of a police chief, a sergeant and three officers. The City of Woodbine police department consists of two police officers and a police chief.

Iowa State Troopers have a daily presence in Harrison County and also provide another level of support to the county. Federal and state law enforcement agencies are available to support the local law enforcement agencies in time of an emergency. Adequate law enforcement resources and services will often be available through the existing Law Enforcement Agency Mutual Aid Agreement.

## *Medical and Hospitals*

Harrison County local medical and hospital services are provided by CHI Health Clinics located throughout the county. CHI Health has been serving the county for over 50 years. The main clinic, located in Missouri Valley, has emergency care capacity and a number of specialty clinics. Smaller clinics located in Dunlap, Logan and Woodbine provide family care. These clinics as well as the Missouri Valley clinic provide health care services that are convenient and close to home. For specialty health needs not provided by the clinics, patients must travel to regional hospitals located in Council Bluffs, Omaha or Des Moines.

CHI Health Clinic is a network of highly skilled primary and specialty care physicians. The clinics within the county are supported by physician assistants and/or nurse practitioners who have the expertise to prevent, diagnose and treat a wide variety of conditions. Patients of all ages use CHI Health Clinic for services including preventive care; health screening x-ray, laboratory and other diagnostic services; and minor surgical procedures.

The clinic located in Missouri Valley, the largest facility located in Harrison County, serves many of the medical needs in the county. The physicians, nurses and other associates at this community-based hospital deliver personalized care for individuals. The clinic has many tools to provide care for the residents of the county that include technologically advanced medical services, quality health education, health screenings, and more. CHI Health Missouri Valley also works closely with businesses, community groups, churches, schools, social service agencies and others to build a healthier community.
The following is a list of services provided at the CHI Health in Missouri Valley:

- 25 Acute Inpatient Beds - Acute Inpatient Beds are also certified as Skilled Swing Beds allowed under Critical Access Hospital rules
- 24-hour emergency care with heliport accommodations
- Diagnostic imaging services: MRI, CT scans, Dexa bone density scans, Nuclear Medicine, general radiology, mammography, surgical radiography and ultrasound
- Diagnostic and evaluative laboratory services
- Cardiovascular services including non-invasive diagnostics studies such as EKG, telemetry monitoring, treadmill stress testing, ECHO cardiogram, and stress ECHO cardiogram
- Cardiac and Pulmonary Rehabilitation
- Inpatient and outpatient physical therapy for orthopedic, burn, occupational health, stroke and sports injuries
- Outpatient and Hospice services
- Mental/Behavioral Health and Geriatric services
- Nutritional services
- Outpatient surgery
- Outpatient clinics
- Respite services
- Social services
- Educational programs and instruction for patients, staff and the community.

The clinic also provides a variety of specialty clinics listed below:

- Cardiology non-invasive studies
- Ear, Nose and Throat
- Gastroenterology including videoscope equipment
- General Surgery/Wound Care
- Medical/Surgical consultation
- OB/Gyn
- Oncology/Oncology outpatient Center
- Ophthalmology
- Orthopedics
- Pain management
- Podiatry
- Urology

## *Tri-County Special Operations Unit*

The Tri-County Special Operations Unit is an emergency response team organized between the counties of Crawford, Shelby and Harrison. Personnel and equipment are shared between the three counties to response to emergency incidents. The Special Operations unit identifies personnel to respond to a number of specialized emergency incidents and sets up procedures for handling such incidents. The Special Operations Unit provides hazardous material response, rescue operations that include, but not limited to, confined space rescue, water rescue, rapid intervention team, trench rescue and high angle rope rescue and to respond to events of WMDs, terrorism, and chemical, biological or radiological emergencies. The purpose of the unit

is to organize and coordinate emergency response between a greater number of agencies and personnel to provide a more effective response to those in and around the region.

## Business and Industry

Business and industry in Harrison County are primarily centered on and supports the agricultural industry and health care. Although several businesses may have higher levels of employment, farming is still the "cultural leader." Much of the business activity, if not a part of the agricultural industry, supports the populations within the county that sustain the agricultural businesses. Despite declines in total number of farms and direct employment, all the communities in Harrison County derive basic economic support from farm-related activities. The top businesses in Harrison County by employment of 100+ employees include:

- CHI Health Missouri Valley
- Carry-On Trailer Inc.
- Tommy Lift Gate
- Azria Health Longview
- Perfection Learning Corp
- Liddell Laboratories
- Sullivan Supply

**Source:** Iowa Workforce Information Network

Per capita retail sales in Harrison County are lower than the State of Iowa. This is due to both the agricultural activities as the primary economic industry and the nature of the smaller communities' ability to only sustain small downtown shopping districts. Instead the number of retail sales are primarily agricultural related or necessities that can be found at the local stores. Shopping centers in larger cities outside of the County provide access to expanded variety in consumer goods. The metropolitan area of Council Bluffs and Omaha provide several large department stores and malls that offer consumer goods. When broken down by city, all communities aside from Dunlap have a lower retail sale per capita than the State of Iowa. The City of Missouri Valley also has a notably higher retail sales per capita than most communities in the county, though slightly lower than the State of Iowa. The higher retail sales per capita in each city reveals the importance of retail activity.

**Table 2.14 - Per Capita Retail sales by Jurisdiction**

| | FY 2020 | FY 2021 | FY 2022 | FY 2023 | FY 2024 |
|---|---|---|---|---|---|
| **State of Iowa** | $14,449 | $15,141 | $15,658 | $15,760 | $15,599 |
| **Harrison County** | $5,892 | $6,037 | $6,113 | $6,425 | $6,294 |
| **Dunlap** | $13,512 | $14,872 | $15,388 | $16,169 | $16,626 |
| **Little Sioux** | - | - | - | - | - |
| **Logan** | $8,088 | $7,872 | $9,505 | $10,587 | $9,946 |
| **Magnolia** | - | - | - | - | - |
| **Missouri Valley** | $15,551 | $15,938 | $15,663 | $15,896 | $15,317 |
| **Modale** | $2,445 | $2,208 | $2,252 | $2,342 | $2,349 |
| **Mondamin** | $1,415 | $2,158 | $2,291 | $3,689 | $3,672 |
| **Persia** | $0 | $0 | $444 | $2,141 | $2,485 |
| **Pisgah** | - | - | - | - | - |
| **Woodbine** | $9,460 | $9,616 | $9,894 | $9,687 | $9,611 |

Source: Iowa State University, Iowa Community Indicators Program

The nominal total taxable retail sales provides a greater picture of the location of the largest economic centers within the County. Missouri Valley has about half of the taxable retail sales within Harrison County, which shows its importance as an economic hub in the county.

**Table 2.15 – Nominal Total Taxable Retail Sales by Jurisdiction**

| | FY 2020 | FY 2021 | FY 2022 | FY 2023 | FY 2024 |
|---|---|---|---|---|---|
| **State of Iowa** | - | - | - | - | - |
| **Harrison County** | $73,277,782 | $78,404,578 | $84,846,684 | $92,459,652 | $92,330,061 |
| **Dunlap** | $11,976,578 | $13,769,717 | $15,185,658 | $16,490,791 | $17,208,122 |
| **Little Sioux** | - | - | - | - | - |
| **Logan** | $9,608,889 | $9,706,238 | $12,390,330 | $14,130,772 | $13,467,252 |
| **Magnolia** | - | - | - | - | - |
| **Missouri Valley** | $35,638,692 | $37,974,940 | $39,740,237 | $41,574,180 | $40,681,365 |
| **Modale** | $570,964 | $543,057 | $598,288 | $645,384 | $682,965 |
| **Mondamin** | $411,328 | $647,413 | $734,176 | $1,222,898 | $1,237,502 |
| **Persia** | $0 | $0 | $124,687 | $619,522 | $728,235 |
| **Pisgah** | - | - | - | - | - |
| **Woodbine** | $13,085,760 | $13,905,836 | $15,273,443 | $15,931,104 | $16,511,273 |

Source: Iowa State University, Iowa Community Indicators Program

## Labor Force

Harrison County's unemployment rate is lower than that of the State as a whole. Three communities in Harrison County have an employment rate that is greater than the State's. Table 2.16 shows employment and unemployment rates for the State of Iowa, Harrison County, and all ten of Harrison County's incorporated communities.

**Table 2.16 - Employment Statistics for the Population 16 Years and over for the State of Iowa, Harrison County, and Harrison County Jurisdictions, 2024 Estimates**

| Population 16 years and over | Total | Percentage In labor force | Employed Rate | Unemployment Rate |
|---|---|---|---|---|
| State of Iowa | 2,564,248 | 66.4% | 63.9% | 2.4% |
| Harrison County | 11,660 | 65.2% | 63.6% | 1.5% |
| Dunlap | 1,048 | 60.6% | 57.2% | 3.4% |
| Little Sioux | 106 | 51.9% | 47.2% | 0.9% |
| Logan | 1,054 | 72.8% | 71.2% | 0.8% |
| Magnolia | 148 | 63.5% | 62.8% | 0.7% |
| Missouri Valley | 2,167 | 65.5% | 63.4% | 2.2% |
| Modale | 167 | 46.7% | 42.5% | 4.2% |
| Mondamin | 339 | 65.5% | 63.7% | 1.8% |
| Persia | 220 | 65.5% | 62.7% | 2.7% |
| Pisgah | 218 | 67.9% | 65.6% | 2.3% |
| Woodbine | 1,037 | 63.4% | 60.8% | 2.5% |

Source: U.S. Census, American Community Survey, 2024 5-year estimates

Harrison County's occupational statistics are very similar to the state as a whole, with education, health care, and social assistance being the largest sector of private employment, employing almost a quarter of

the civilian populations. The employment sector with the most notable difference in percentage between the State and County is the Agricultural sector. Harrison County has a higher percentage of people working in this industry than the state of Iowa. This is due to the importance of farming in the County. Harrison County has almost 12 percent of its civilian population working in the agricultural sector in comparison to the State of Iowa's four percent of civilian population employed in that sector, the largest difference than any other sector.

**Table 2.17 - Industry by Occupation for the Civilian Employed Population 16 Years and Older for the State of Iowa and Harrison County, 2024**

| Private Employment | State of Iowa | | Harrison County | |
|---|---|---|---|---|
| | # | % | # | % |
| Total | 1,639,141 | | 7,415 | |
| Agriculture, forestry, fishing and hunting, and mining | 61,372 | 3.7% | 496 | 6.7% |
| Construction | 113,871 | 6.9% | 669 | 9.0% |
| Manufacturing | 241,106 | 14.7% | 840 | 11.3% |
| Wholesale trade | 39,554 | 2.4% | 265 | 3.6% |
| Retail trade | 188,629 | 11.5% | 689 | 9.3% |
| Transportation and warehousing, and utilities | 83,794 | 5.1% | 556 | 7.5% |
| Information | 22,587 | 1.4% | 89 | 1.2% |
| Finance, insurance, real estate, and rental and leasing | 124,916 | 7.6% | 493 | 6.6% |
| Professional, scientific, management, administrative, and waste management services | 124,829 | 7.6% | 519 | 7.0% |
| Educational services, and health care and social assistance | 396,455 | 24.2% | 1,946 | 26.2% |
| Arts, entertainment, recreation, accommodation and food services | 113,941 | 7.0% | 325 | 4.4% |
| Other services (except public administration) | 71,602 | 4.4% | 283 | 3.8% |
| Public administration | 56,485 | 3.4% | 245 | 3.3% |

Source: U.S. Census Bureau, American Community Survey, 2024 5-year estimates

**Table 2.18 - Industry by Occupation for the Civilian Employed Population 16 Years and Older for Dunlap, Little Sioux, Logan, Magnolia, Missouri Valley and Modale, 2024**

| Private Employment | Dunlap | | Little Sioux | | Logan | | Magnolia | | Missouri Valley | | Modale | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| Total | 599 | | 50 | | 750 | | 93 | | 1,373 | | 71 | |
| Agriculture, forestry, fishing and hunting, and mining | 34 | 5.7% | 0 | 0.0% | 46 | 6.1% | 0 | 0.0% | 32 | 2.3% | 2 | 2.8% |
| Construction | 82 | 13.7% | 5 | 10.0% | 47 | 6.3% | 10 | 10.8% | 116 | 8.4% | 11 | 15.5% |
| Manufacturing | 103 | 17.2% | 0 | 0.0% | 97 | 12.9% | 10 | 10.8% | 202 | 14.7% | 7 | 9.9% |
| Wholesale trade | 60 | 10.0% | 0 | 0.0% | 9 | 1.2% | 4 | 4.3% | 33 | 2.4% | 3 | 4.2% |
| Retail trade | 98 | 16.4% | 5 | 10.0% | 44 | 5.9% | 7 | 7.5% | 151 | 11.0% | 5 | 7.0% |
| Transportation and warehousing, and utilities | 6 | 1.0% | 1 | 2.0% | 60 | 8.0% | 6 | 6.5% | 130 | 9.5% | 6 | 8.5% |
| Information | 0 | 0.0% | 2 | 4.0% | 4 | 0.5% | 0 | 0.0% | 6 | 0.4% | 3 | 4.2% |
| Finance, insurance, real estate, and rental and leasing | 11 | 1.8% | 0 | 0.0% | 57 | 7.6% | 2 | 2.2% | 60 | 4.4% | 10 | 14.1% |
| Professional, scientific, management, administrative, and | 9 | 1.5% | 15 | 30.0 | 42 | 5.6 | 1 | 1.1 | 99 | 7.2 | 6 | 8.5 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| waste management services | | | | | | | | | | | | |
| Educational, health and social services | 103 | 17.2% | 7 | 14.0% | 229 | 30.5% | 25 | 26.9% | 378 | 27.5% | 13 | 18.3% |
| Arts, entertainment, recreation, accommodation and food services | 30 | 5.0% | 6 | 12.0% | 52 | 6.9% | 8 | 8.6% | 62 | 4.5% | 3 | 4.2% |
| Other services (except public administration) | 33 | 5.5% | 2 | 4.0% | 34 | 4.5% | 15 | 16.1% | 74 | 5.4% | 2 | 2.8% |
| Public administration | 30 | 5.0% | 7 | 14.0% | 29 | 3.9% | 5 | 5.4% | 30 | 2.2% | 0 | 0.0% |

Source: U.S. Census Bureau, American Community Survey, 2024, 5-year estimates

**Table 2.19 - Industry by Occupation for the Civilian Employed Population 16 Years and Older for Mondamin, Persia, Pisgah, Woodbine, and Unincorporated Harrison County, 2024**

| Private Employment | Mondamin | | Persia | | Pisgah | | Woodbine | |
|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % |
| Total | 216 | | 138 | | 143 | | 631 | |
| Agriculture, forestry, fishing and hunting, and mining | 11 | 5.1% | 13 | 9.4% | 5 | 3.5% | 34 | 5.4% |
| Construction | 27 | 12.5% | 16 | 11.6% | 16 | 11.2% | 57 | 9.0% |
| Manufacturing | 21 | 9.7% | 9 | 6.5% | 41 | 28.7% | 109 | 17.3% |
| Wholesale trade | 10 | 4.6% | 3 | 2.2% | 8 | 5.6% | 7 | 1.1% |
| Retail trade | 13 | 6.0% | 6 | 4.3% | 19 | 13.3% | 41 | 6.5% |
| Transportation and warehousing, and utilities | 15 | 6.9% | 25 | 18.1% | 3 | 2.1% | 22 | 3.5% |
| Information | 0 | 0.0% | 2 | 1.4% | 2 | 1.4% | 3 | 0.5% |
| Finance, insurance, real estate, and rental and leasing | 8 | 3.7% | 12 | 8.7% | 11 | 7.7% | 10 | 1.6% |
| Professional, scientific, management, administrative, and waste management services | 9 | 4.2% | 2 | 1.4% | 3 | 2.1% | 33 | 5.2% |
| Educational, health and social services | 72 | 33.3% | 29 | 21.0% | 14 | 9.8% | 239 | 37.9% |
| Arts, entertainment, recreation, accommodation and food services | 20 | 9.3% | 12 | 8.7% | 5 | 3.5% | 31 | 4.9% |
| Other services (except public administration) | 7 | 3.2% | 5 | 3.6% | 14 | 9.8% | 22 | 3.5% |
| Public administration | 3 | 1.4% | 4 | 2.9% | 2 | 1.4% | 23 | 3.6% |

Source: U.S. Census Bureau, American Community Survey, 2024, 5-year estimates

## Income

Income in Harrison County is similar to that of the State of Iowa's. The average household income in Harrison County is $94,184 in 2024, roughly $4,000 less than the State. Over half of the households have a household income between $50,000 and $150,000, similar to the State. The median income in the county is slightly higher than the State by $4,476.

**Table 2.20 - Household Income in the Past 12 Months for State of Iowa and Harrison County, 2024 Estimates**

| Income level | State of Iowa | Harrison County |
|---|---|---|
| Less than $10,000 | 4.0% | 3.0% |
| $10,000 to $14,999 | 3.2% | 1.5% |
| $15,000 to $24,999 | 6.7% | 6.6% |
| $25,000 to $34,999 | 7.2% | 8.3% |
| $35,000 to $49,999 | 11.3% | 11.0% |
| $50,000 to $74,999 | 17.5% | 16.6% |
| $75,000 to $99,999 | 14.0% | 16.2% |
| $100,000 to $149,999 | 18.7% | 20.9% |
| $150,000 to $199,999 | 8.8% | 8.5% |
| $200,000 or more | 8.6% | 7.5% |
| Median household income (dollars) | $75,059 | $79,535 |
| Mean household income (dollars) | $98,187 | $94,184 |

Source: U.S. Census, American Community Survey, 2024 5-year estimates

# Section III: The Planning Process

## Adoption Assurances

The Harrison County Multi-jurisdictional Hazard Mitigation Plan in accordance with FEMA requirements, must be formally adopted by each participant through the approval of a resolution. The approval and formal adoption of this plan by each jurisdiction will create responsibility and evidence of the participant's full commitment to implementation of the Plan's goals, objectives and action items and authorizes the appropriate responsible agencies to perform their responsibilities. The Harrison County Multi-jurisdictional Hazard Mitigation Plan demonstrates the counties and each jurisdiction's commitment to reducing risks from hazards and serves as a guide for the commitment of resources and duties to reducing these effects.

This plan shall be made available to any party that requests to see it. A copy of the mitigation plan will be available for public view at Southwest Iowa Planning Council located at 1501 S.W. 7th Street, Atlantic, Iowa 50022. The mitigation plan shall be distributed to County and local jurisdictions that have participated in the writing of the plan or are assigned hazard mitigation duties.

The adopting resolutions for all participating jurisdictions can be found in Appendix A.

## Resource Organization

Harrison County began the process of developing a multi-jurisdictional hazard mitigation plan on September 25, 2025. The county contracted with Southwest Iowa Planning Council, located in Atlantic, Iowa, to facilitate the planning process and create the plan. Glenn Birks, Harrison County Emergency Management Coordinator, was the primary points of contact during the planning process. The process for jurisdictional meetings is as follows:

Meeting 1 – The first planning meeting was held with all jurisdictions on January 13, 2026 at the Harrison County EMA office in Logan. The meeting highlighted the purpose and scope of mitigation planning by describing the planning process then the formation of a planning team took place. Discussion of the planning committee explained the roles that the community would take on to participate in the hazard mitigation plan process. This included how the public would be involved and steps the city should take to announce to the public about the planning process. A timeline of future meetings and important dates was discussed as well as the agenda for the next meeting. Worksheets were distributed to each jurisdiction for community capabilities, hazards of top concerns, and community lifelines.

Meeting 2 – The second meeting was held on February 10, 2026 at the Harrison County EMA office in Logan. At this meeting, jurisdictions reviewed mitigation actions established in the previous plan and provided updates on current status and priority levels. Jurisdictions were given this time to establish new mitigation actions to assist in mitigating hazards identified in previous meetings. Jurisdictions also reviewed and amended their implementation plans.

In August of 2026, the final draft of the Harrison County Multi-Jurisdictional Hazard Mitigation Plan was sent to all jurisdictions and individuals involved in the planning process for review. Members of the

planning committee were responsible for reviewing the respective community capabilities, critical facilities, hazard rankings and mitigation actions. Revisions were then sent to SWIPCO for inclusion. After this review, the final draft was sent to neighboring communities to provide them with an opportunity to submit any feedback.

# Opportunity for Public Involvement

Public involvement and stakeholder coordination were integral components of the development of the Harrison County Multi-Jurisdictional Hazard Mitigation Plan. The planning process was designed to provide opportunities for public participation, ensure transparency, and engage a broad range of local officials and subject-matter experts in identifying hazards, assessing risk, and developing mitigation strategies.

Representatives from participating jurisdictions were identified and invited to serve on the Hazard Mitigation Planning Team. These participants acted as local experts by contributing knowledge of historical hazard events, community vulnerabilities, critical facilities, and feasible mitigation actions. Jurisdictions were encouraged to include interested members of the public, boards, or commissions on their local planning teams to broaden community representation.

Key stakeholder organizations were directly solicited to participate and provide input throughout the planning process. Stakeholders included, but were not limited to:

**Table 3.1: Harrison County Stakeholders**

| Organization | Position |
|---|---|
| CHI Health Missouri Valley | Administrative Services Manager |
| Harrison County Sheriff's Department | Sheriff |
| Harrison County Public Health | Administrator |
| Harrison County Engineer | Engineer |
| Iowa DOT | District Planner |

The Hazard Mitigation Planning Team conducted a series of meetings that were open to the public and held in publicly accessible locations. Meeting notices were sent to the Harrison County newspaper and emails were sent to the planning team notifying them of upcoming meetings. To support public awareness and comply with Iowa's Open Meetings Law, the following outreach and notification methods were utilized:

- Meeting notices published in Harrison County newspaper
- Meeting notices were distributed to participating jurisdictions in advance of each meeting and jurisdictions were encouraged to post agendas locally.
- Email notifications were sent throughout the planning process to planning team members, jurisdictional contacts, and individuals who had expressed interest in participating.
- Stakeholder groups were directly notified of meeting dates and given opportunities to provide input.

These actions were intended to provide reasonable notice and opportunity for public participation, consistent with local practices and state open meetings requirements.

Despite multiple outreach efforts and the availability of meetings to the public, no members of the general public attended the hazard mitigation planning meetings. Attendance was documented through sign-in sheets maintained for each meeting, which are included in Appendix D. The planning team recognizes

that public attendance can vary and that limited participation does not diminish the importance of offering opportunities for engagement.

Public input opportunities were further supported through direct communication with stakeholders and jurisdictional representatives, ensuring that local knowledge and community perspectives were reflected in the final plan.

# Participating Jurisdictions and Representatives

The Plan was developed through a collective effort by Harrison County – City of Dunlap, City of Little Sioux, City of Logan, City of Magnolia, City of Missouri Valley, City of Modale, City of Mondamin, City of Persia, City of Pisgah, City of Woodbine, Boyer Valley Community School District, Logan-Magnolia Community School District, Missouri Valley Community School District, West Harrison Community School District, Woodbine Community School District. Many of the representatives chosen not only are involved in the functioning of the jurisdiction, but are also involved in local organizations, own businesses, and serve on various boards and committees. The list of the planning team members for each jurisdiction can be found on the following table:

**Table 3.2 - Planning Team Members**

| NAME | JURISDICTION | TITLE |
|---|---|---|
| Ryan Murphey | Dunlap | Council |
| Mike Bonsall | Dunlap | Council |
| Scott Ortiz | Little Sioux | Mayor |
| Angela Winther | Logan | City Administrator |
| Al Ploen | Magnolia | Council |
| Dave Weigelt | Magnolia | Mayor |
| Tammy Cooperrider | Modale | Council |
| Rick Sell | Modale | Council |
| Shauna Gerke | Modale | City Clerk |
| Alyx Hirst | Mondamin | City Clerk |
| Chris Gilipin | Missouri Valley | Council |
| Roger Marshall | Missouri Valley | Mayor |
| Shawn Flaharty | Persia | Mayor |
| Kim Lindquist | Persia | City Clerk |
| Todd Noah | Pisgah | City Administrator |
| Lisa Koch | Woodbine | City Administrator |
| Toni Waite | Woodbine | City Clerk |
| Jeremy Christiansen | Boyer Valley CSD | Superintendent |
| Chris Conover | Boyer Valley CSD | Counselor |
| Jacob Hedger | LOMA CSD | Superintendent |
| Jane King | LOMA CSD | Psychologist |
| Melanie Freund | LOMA CSD | Interventionist |
| Marty Fonely | West Harrison | Superintendent |
| Justin Wagner | Woodbine CSD | Superintendent |
| Glenn Birks | Harrison County | Emergency Management Coordinator |

# Opportunity for Neighboring Communities

Efforts were taken to inform and extend opportunity for public involvement beyond Harrison County. Counties adjacent were contacted and invited to provide comments or feedback. Refer to Appendix B for information sent to the neighboring communities.

The following neighboring counties were sent information regarding the Harrison County Multi-Jurisdiction Hazard Mitigation Plan:

- Audubon
- Cass County
- Carroll County
- Crawford County
- Monona County
- Pottawattamie County

# Risk Assessment

Risk assessment was established by conducting research on each hazard type and through the input of local elected officials, key stakeholders and residents. Information for each hazard was presented to each jurisdiction during meetings and included definitions and data on historical occurrences. Historical data on weather related incidents was obtained from the National Oceanic Atmospheric Administration. During the meeting, each hazard was discussed individually with participants ranking each hazard independently pertaining to their individual jurisdictions and collectively to assess each hazard on a region-wide basis. Risk assessment information from local jurisdictions was gathered from participants through the distribution of worksheets at local meetings and follow up packets requesting review and additional information were sent to designated team members.

All hazards named in the State Hazard Mitigation Plan were reviewed and participants decided to include both natural and man-made hazards that pose a risk to Harrison County. Each hazard was discussed then ranked individually by each jurisdiction in order to determine and understand the risk a hazard poses to each local jurisdiction. The methodology used to rank the hazards was the same methodology used in the State Hazard Mitigation Plan and included the following components: History, Probability, Magnitude/Severity, Warning Time and Duration. Specific hazards that were addressed included:

1. Animal/Crop/Plant Disease
2. Dam/Levee Failure
3. Drought
4. Earthquake
5. Extreme Heat
6. Flash Flood
7. Grass/Wildland Fire
8. Hazardous Materials Incident
9. Human Disease
10. Infrastructure Failure
11. Radiological
12. River Flooding
13. Severe Winter Storm
14. Sinkholes
15. Terrorism
16. Thunderstorm/Lighting/Hail
17. Tornado/Windstorm
18. Transportation Incident

Each individual risk assessment provided by the participants are found in their corresponding appendices under Hazard Scoring. Each table represents the individual assessment made by each jurisdiction after completion of the region-wide and county-wide assessments. Individual assessments vary by jurisdiction as the risk for each community is different due to geographical location, accessibility of resources relating to each hazard as well as personal opinion. Communities less likely to be affected by a hazard or had the resources to respond or prevent a hazard typically ranked them lower whereas communities more likely to be affected by a hazard and did not have the resources to respond or prevent the hazard ranked them higher. These factors as well as historical occurrences and personal accounts contributed to the personal opinions of those ranking the hazards, thus the outcome of the hazard rankings.

# Jurisdictional Inventory

A structural inventory survey was performed to assess the value of each jurisdiction that has the potential or possibility of being affected in the event of a hazard incident. The survey evaluated the number of structures and total value of all structures in each jurisdiction, the total population of each jurisdiction and a crop value inventory. Using FEMA floodplain data, an analysis of the number of structures, total value of structures and crop value that could be affected in the event of river flooding was performed for each jurisdiction. Inventories were conducted using the corporate limits of Dunlap, Little Sioux, Logan, Magnolia, Missouri Valley, Modale, Mondamin, Panama, Persia, Pisgah, and Woodbine as well as for the unincorporated area of Harrison County.

Structural inventories were conducted using data obtain through the Montgomery County Assessor and the Iowa DNR. Harrison County Assessor data included building values and land use while Iowa DNR data was used to show structure location. Data was processed using ArcGIS to categorize structures and to determine structures located in the flood plain using FEMA floodplain data. Due to the importance of agriculture to the county, estimated yearly values for crops and animals were gathered from the United States Department of Agriculture's 2022 Census of Agriculture. The attempt was made to collect as many missing values as possible. Structures were categorized by the following classifications:

- Residential
- Multi-Residential
- Commercial
- Industrial
- Agricultural

Values associated with this analysis can be found in Appendix A for each jurisdiction.

# Mitigation Strategy

The mitigation strategies are the goals, objectives and actions that a jurisdiction follows to prevent or mitigate the effects of potential hazards in the area. Jurisdictions first discussed mitigation strategies that focused on determining mitigation goals. Participants readily agreed to use the same three goals for the Harrison County Multi-Jurisdictional Hazard Mitigation Plan as found in the State Hazard Mitigation Plan. These goals were broad enough to cover all aspects of protecting the communities and ensuring safety from not only the identified hazards but for those that were not identified or are unknown. Following the establishment of the goals, objectives and actions were created to outline the steps to ensure progress

towards reaching those goals. The hazard analysis and risk assessment helped in identifying objectives and actions that would create steps addressing the needs and issues of each jurisdiction.

# Resources: General Plans, Documents and Information

A number of resources were used during the development of the Plan. Information and resources used in the plan are as follows:

**Table 3.3 - Resource Documentation**

| Resource/Document | Source | Description |
|---|---|---|
| Federal Emergency Management Agency | http://www.fema.gov | Hazard Mitigation Materials and Information |
| Iowa Homeland Security & Emergency Management | www.homelandsecurity.iowa.gov | Hazard Mitigation Materials and Information |
| Iowa State Hazard Mitigation Plan | HSEMD | State of Iowa Hazard Mitigation Plan (2023) |
| Harrison County Hazard Mitigation Plan | SWIPCO | Previously approved Harrison County Hazard Mitigation Plan |
| Harrison County Website | www.harrisoncountyia.org | County Website |
| Harrison County Assessor | www.harrisoncountyia.org | Building and Structure Information |
| Harrison County Emergency Management | Meetings, email, phone | Emergency Management and Community Information |
| Beacon GIS Portal | www.beacon.schneidercorp.com | Assessor parcels and structure data |
| Iowa Department of Natural Resources (IDNR) | http://www.iowadnr.gov/ | State agency that manages Iowa's natural resources |
| Iowa DNR GIS Library | http://www.igsb.uiowa.edu/nrgislibx/ | Portal for GIS Data |
| FEMA Local Multi-Hazard Mitigation Plan Handbook | FEMA | Guidebook to develop, update and implement local mitigation plans |
| Unified Hazard Mitigation Assistance Grant Programs | https://www.floodsmart.gov/toolkits/flood/downloads/hma_grants_factsheet.pdf | HMA Grant Programs |
| National Flood Insurance Program (NFIP) | http://www.fema.gov | NFIP program information |
| National Climatic Data Center (NCDC) | www.ncdc.noaa.gov | Archive of weather data and historical weather incidents |
| National Resources Conservation Service (NRCS) | http://www.nrcs.usda.gov/ | Soil, water and other natural resource conservation service |
| U.S. Department of Commerce: U.S. Census Bureau | www.data.census.gov | U.S. Census and American Community Survey Estimates |
| Iowa State University Extension and Outreach | http://www.extension.iastate.edu/agdm/ http://www.icip.iastate.edu/ | Iowa Community Indicators Program |
| Iowa Department of Transportation (IDOT) | www.iowadot.gov | Transportation Infrastructure and GIS Data |
| Harrison County Community Hospital | www.hcchospital.org | Health and Medical Services |
| Mrytue Medical Center | http://myrtuemedical.org/ | Health and Medical Services |
| Harrison County Public Health | www.harrisoncountyhealth.org | Health and Medical Services |

| | | |
|---|---|---|
| The Weather Channel | www.weather.com | Weather reports and related historical weather statistics |
| TopoZone | http://www.topozone.com/ | Elevation Data |
| Open Library – Internet Archive | https://archive.org/stream/biographicalhist00wsdu#page/281/mode/1up | Historical Information |

# Section IV: Multi-Jurisdictional Hazard Analysis/Risk Assessment

The purpose of the Hazard Analysis and Risk Assessment is to identify and prioritize threats and hazards that pose a risk to the health and safety of the citizens, property and economy within the jurisdiction. This material creates an informative resource for emergency management professionals and stakeholders to utilize in the event of a disaster. The information includes a clear understanding of the potential threats and impact a hazard can have on a community and is the basis for determining the need for hazard mitigation planning. By completing a hazard analysis and risk assessment, jurisdictions can not only be better prepared for hazard occurrences, but be able to plan ahead to better mitigate those hazards.

# Hazard Identification

For the purpose of the Harrison County plan, hazards identified in the 2023 Iowa Hazard Mitigation Plan were used. These hazards include 13 that are considered natural hazards, meaning they "are a source of harm or difficulty created by a meteorological, environmental, or geological phenomenon or combination of phenomena". Additionally, there were 7 hazards considered "non-natural".

**Table 4.1 - Hazards**

| Natural Hazards | Non-Natural Hazards |
|---|---|
| Dam/Levee Failure (relates to natural hazard of flooding) | Animal, Plant, and Crop Disease |
| Drought | Hazardous Materials Incident |
| Earthquake | Human Disease |
| Expansive Soils | Infrastructure Failure |
| Extreme Heat | Radiological |
| Flooding-Flash | Terrorism |
| Flooding-River | Transportation Incident |
| Landslide | |
| Severe Winter Storms | |
| Sinkholes | |
| Thunderstorm, Lighting, and Hail | |
| Tornadoes and High Wind | |
| Wildfire, including Grass Fire | |

# Presidential Disaster Declaration History

A Presidential Disaster Declaration is an action by the President to make U.S. federal funding available for emergency relief and reconstruction assistance. Once a disaster has occurred and a state has declared an emergency, the State will evaluate their recovery capabilities and determine if the damage is beyond their recovery capability. If it is deemed that recovery is beyond their capabilities, the governor then sends a request letter to the President requesting relief. After a presidential declaration has been made, FEMA will designate the area eligible for assistance and announce the type of assistance available. The table below

summarizes historic presidential disaster declarations involving Harrison County where either or both individual and public assistance was given.

**4.2 Historical Presidential and State Disaster Declarations affecting Harrison County**

| Declaration Date | Disaster Number | Description |
|---|---|---|
| **March 23, 2020** | DR-4483 | COVID 19 Pandemic |
| **March 13, 2020** | EM-3480 | COVID 19 Pandemic |
| **March 23, 2019** | DR-4421 | Severe Storms and Flooding |
| **June 27, 2011** | DR-1998 | Flooding |
| **March 2, 2010** | DR-1880 | Severe Winter Storms |
| **February 25, 2010** | DR-1877 | Severe Winter Storms and Snowstorm |
| **May 27, 2008** | DR-1763 | Severe Storms, Tornadoes and Flooding |
| **May 25, 2007** | DR-1705 | Severe Storms, Flooding, and Tornadoes |
| **July 22,1999** | DR-1282 | Severe Storms and Flooding |
| **May 21, 1999** | DR-1277 | Severe Storms, Flooding, and Tornadoes |
| **July 2, 1998** | DR-1230 | Severe Weather, Tornadoes, and Flooding |
| **August 21, 1996** | DR-1133 | Flooding |
| **July 9, 1993** | DR-996 | Flooding and Severe Storms |
| **June 24, 1974** | DR-443 | Severe Storms and Flooding |
| **September 26, 1972** | DR-354 | Severe Storms and Flooding |
| **August 18, 1972** | DR-348 | Severe Storms and Flooding |
| **April 25, 1969** | DR-259 | Flooding |
| **April 22, 1965** | DR-193 | Flooding |
| **State Proclamations** | | |
| **Declaration Date** | **Disaster Number** | **Description** |
| **March 27, 2025** | 2025-12 | Severe Winter Weather |
| **March 19, 2025** | 2025-11 | Severe Winter Weather |
| **July 22, 2024** | 2024-37 | Severe Thunderstorms |
| **July 15, 2024** | 2024-34 | Disaster Recovery Housing Assistance |
| **July 3, 2024** | 2024-32 | Severe Storms and Flooding |
| **June 28, 2024** | 2024-31 | Severe Storms and Flooding |
| **June 26, 2024** | 2024-30 | Severe Storms and Flooding |
| **June 26, 2024** | 2024-28 | Severe Storms and Flooding |
| **June 24, 2024** | 2024-26 | Severe Storms and Flooding |
| **June 19, 2024** | 2024-21 | Severe Storms |
| **May 21, 2024** | 2024-12 | Severe Storms |
| **April 29, 2024** | 2024-10 | Severe Storms |
| **July 25, 2022** | 2022-24 | Severe Storms |

Source: FEMA/U.S. Department of Homeland Security

# Hazard Profile and Risk Assessment

The Hazard Profile and Risk Assessment provides information that identifies and explains how a hazard can impact the community. The hazard profile defines the characteristics and possible conditions associated with the hazard. Each hazard then includes a ranked assessment from each jurisdiction based on probability, magnitude and severity, warning time and duration to illustrate how each jurisdiction views the risk associated with each hazard.

FEMA Requirement §201.6(c)(2)(ii) (B) suggests that when the appropriate data is available, hazard mitigation plans should also provide an estimate of potential dollar losses for structures in vulnerable areas. This risk assessment methodology includes an overview of assets at risk and provides historic average annual dollar losses for all hazards for which historic event data is available. Additional loss estimates are provided separately for those hazards for which sufficient data is available. These estimates can be found within the relevant hazard profiles.

## Animal/Plant/Crop Disease

### General Description
Animal/Plant/Crop Disease occurs when a disease is transmitted from animal to animal or plant to plant causing an outbreak amongst a population or area. A disease outbreak can have severe economic and public health implications.

### Previous Occurrences
The Emerald Ash Borer was first detected in Harrison County in 2016 and has since been confirmed in all 99 counties within Iowa. Larvae of these beetles feed on Ash trees and burrow within them causing extensive damage. Trees infested with EAB are at an increased risk of falling during hazardous weather and causing damage to properties located near by.

According to Iowa State University Extension in Harrison County, there have been no reported cases of swine or avian flu in agricultural setting in recent years. It is likely that Avian Flu has been present in wild birds migrating near the DeSoto Wildlife Refuge, but it is hard to track. Corn diseases and funguses such as Rust is an annual occurrence with some years being worse than others, but data quantifying this is not actively kept.

### Location, Probability, and Intensity
Harrison County has numerous large scale commercial chicken flocks that would be at high risk of Avian Influenza. The DeSoto Wildlife Refuge consists of over 8,000 acres of various habitats including prairie and wetlands that acts as a crucial sanctuary for migrating birds. Because of this, there is an increased risk of Avian Influenza being introduced from wild birds. While there hasn't been any reported cases in commercial flocks, an outbreak of Avian Influenza could be detrimental to Harrison County poultry farms.

Corn related diseases have been and will continue to be a common occurrence throughout the State of Iowa. Annual cases are seen in Harrison County and usually have a localized impact that doesn't spread.

### Summary of Vulnerability
The highest area of vulnerability for animal, plant, and crop disease would be areas consisting of agricultural uses, conservation areas, and trees both in urban and unincorporated areas. While this hazard wouldn't affect the built environment, widespread disease could cause economic hardships for both crop and livestock farmers. In an urban setting, trees damaged from disease could lead to an increased risk of damage from trees falling.

## Dam/Levee Failure

### General Description
Dam/Levee failure is the uncontrolled release of water resulting from a structural failure in a dam, wall, dike, berm, or area of elevated soil that causes flooding. Possible causes of the breach could include

flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation, poor construction, vandalism, terrorism, erosion, piping, saturation, or under seepage.

**Dam Profile**

Dams are constructed for a variety of uses, including flood control, erosion control, water supply impoundment, hydroelectric power generation and recreation. The Iowa Department of Natural Resources classifies all dams in Iowa with a height of at least 25 feet or a total storage of at least 50 acre-feet of water. The inventory excludes all dams less than six (6) feet high regardless of storage capacity and dams less than fifteen (15) acre feet of storage regardless of weight. The 3 classifications of risk include: High Hazard, Moderate Hazard and Low Hazard. These classifications do not describe the current condition of the dam, rather the risk of destruction and loss of life if it were to fail. Higher risk dams are required to meet higher standards when being constructed or modified. High Hazard class dams are inspected on a 2 year cycle and are required to meet the state of Iowa's highest level of standards. A dam's classification may change due to development downstream that puts more risk if the dam were to fail. Older dams may not have been built to the standards of its new classification. Below are the hazard classifications defined by Iowa Department of Natural Resources (DNR):

- High Hazard – Dams are classified as High Hazard when it is located in an area where dam failure may create a serious threat of loss of human life.

- Moderate (Significant) Hazard – A Moderate Hazard Dam is where failure may damage isolated homes or cabins, industrial or comercial buildings, moderately traveled roads, interrupt major utility services, but are without substantial risk of loss of human life. Dams are also classified as Moderate Hazard where the dam and its impoundment are themselves of public importance, such as dams associated with public water supply systems, industrial water supply or public recreation or which are an integral feature of a private development complex.

- Low Hazard – Low Hazard dams are classified as such where damages from a failure would be limited to loss of the dam, livestock, farm outbuildings, agricultural lands and lesser used roads and where loss of human life is considered unlikely.

**Levee Profile**

The failure of a levee can be attributed to the loss of structural integrity of a wall, dike, berms, or elevated soil by erosion, piping, saturation, or under seepage causing water to inundate normally dry areas. Levees constructed of compacted clay with a high plasticity tend to crack during cycles of long dry spells, during heavy rainfalls following the dry spells; water fills the cracks and fissures. In addition to increasing the hydrostatic forces, the water is slowly absorbed by the clay causing an increase in the unit weight of the clay as well as a decrease in its shear strength. This results in a simultaneous increase of the slide (driving) forces and a decrease of the resisting (shear strength) forces.

Another way a levee failure can often occur is when the levee overtops the crest of the levee. This happens when the flood waters simply exceed the lowest crest elevation of the levee. An overtopping can lead to significant erosion of the backside of the levee and can result to a breach and thus a levee failure. Levees constructed of compacted clay with a high plasticity tend to crack during cycles of long dry spells. During heavy rainfalls that follow the dry spells, water fills the cracks and fissures. In addition to increasing the hydrostatic forces, the water is slowly absorbed by the clay. The effect of the absorbed water is an increase in the unit weight of the clay as well as a decrease in its shear strength. This results in a simultaneous increase of the slide (driving) forces and a decrease of the resisting (shear strength) forces. Furthermore, the cyclic shrink/swell behavior of the cracked clay zone results in a progressive reduction of the shear strength of the clay, perhaps approaching its residual strength. It also results in deepening of the cracked clay zone. The end result may be a sloughing failure following a heavy rainfall.

## Historical Occurrences

Harrison County is bordered on the west by the Missouri River and has several tributaries that traverse through the county. Because of this, there are numerous levees and dams throughout the county. To determine historical occurrences of this hazard, the planning committee was asked for first-hand knowledge.

**Table 4.3 – Levee Breaches**

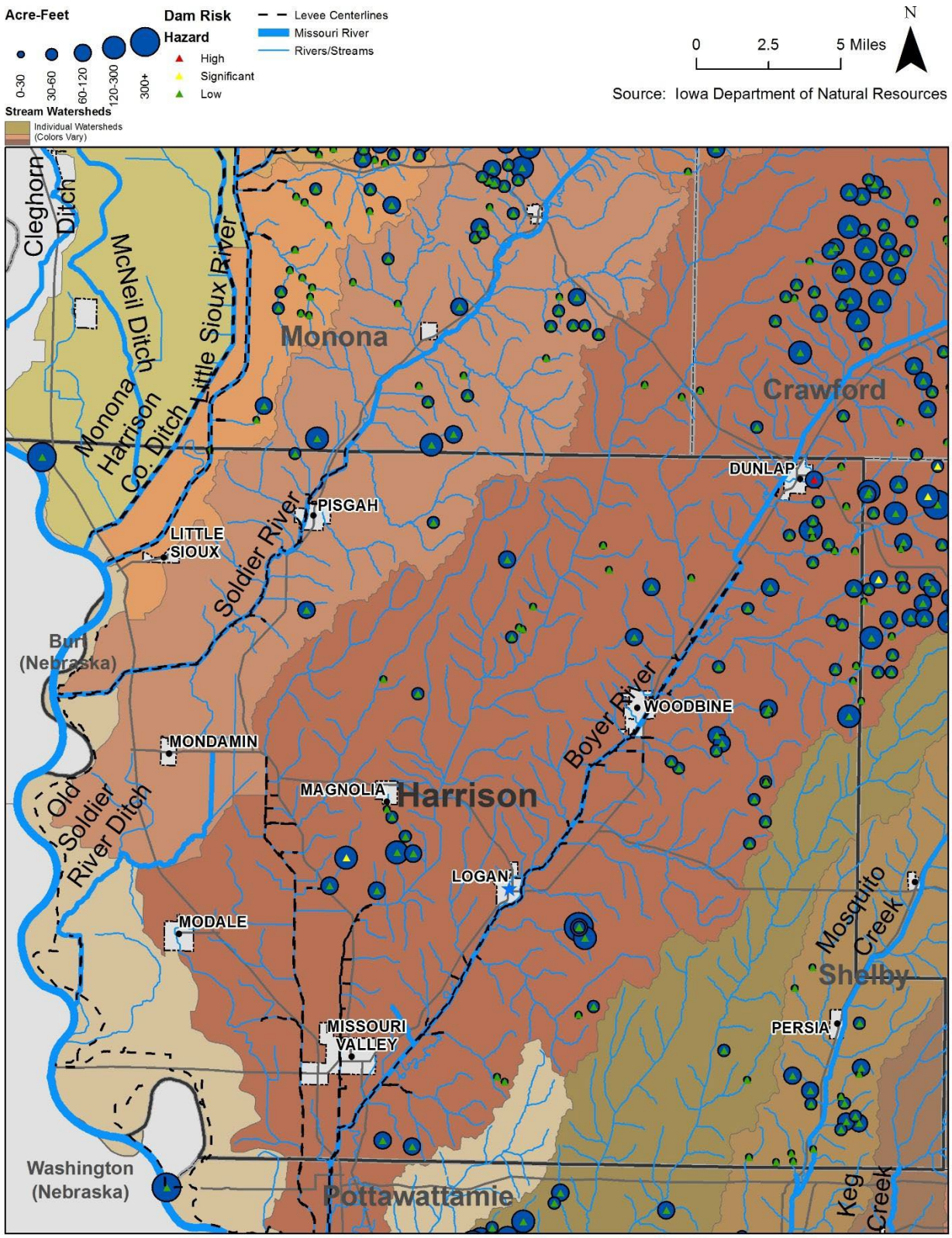
| Jurisdiction | Year | Notes |
|---|---|---|
| Missouri Valley | 1993 | Willow Creek levee breach |
| Missouri Valley | 2007 | Willow Creek levee breach |
| Modale | 2009 | Rand/Peterson levee breach |
| Modale | 2011 | Rand/Peterson levee breach |
| Modale | 2018 | Rand/Peterson levee breach |
| Mondamin | 2011 | Levee breach |

## Location, Probability, and Intensity

The majority of dams and levees located in and around Harrison County are of low risk and outside of urban or developed areas. Four moderate risk dams are also located within unincorporated areas. In the event of a dam or levee failure, this would result in the loss of the dam or levee, agricultural losses and lesser used roads. There is a high-risk dam located on the northeast side of Dunlap which should be monitored. Failure of this dam could lead to property damage or loss of life. The Iowa Department of Natural Resources tracks all dams in the state of Iowa with a height of at least 25 feet or a total storage of at least 50 acre feet of water. The inventory excludes all dams less than 6 feet high regardless of storage capacity and dams less than 15-acre feet of storage regardless of height.

There are numerous levees located throughout the county with several being in or near cities including Little Sioux, Pisgah, Woodbine, Logan, and Missouri Valley. This critical infrastructure helps reduce flooding risks for these cities and failure of the levees could lead to catastrophic results.

**Map 4.1 - Harrison County Dams and Waterways**




Source: Iowa Department of Natural Resources

### Summary of Vulnerability
Most of the vulnerable locations for dam/levee failure would be in unincorporated Harrison County. The cities of Little Sioux, Pisgah, Woodbine, Logan, Missouri Valley and Dunlap are at a higher risk due to the proximity of dams and/or levees. Those closest to the infrastructure or at the lowest points would be at the highest risk. To help mitigate this risk, cities should maintain NFIP compliance and follow floodplain ordinances set by the Iowa DNR.

## Drought

### General Description
Drought is defined as a period of prolonged abnormally low precipitation producing severe dry conditions. Droughts are a normal, reoccurring feature of climate that occurs in all climatic zones, though characteristics vary by region. While droughts are generally associated with extreme heat, droughts can and do occur during cooler months. There are four (4) types of drought conditions relevant to Iowa:

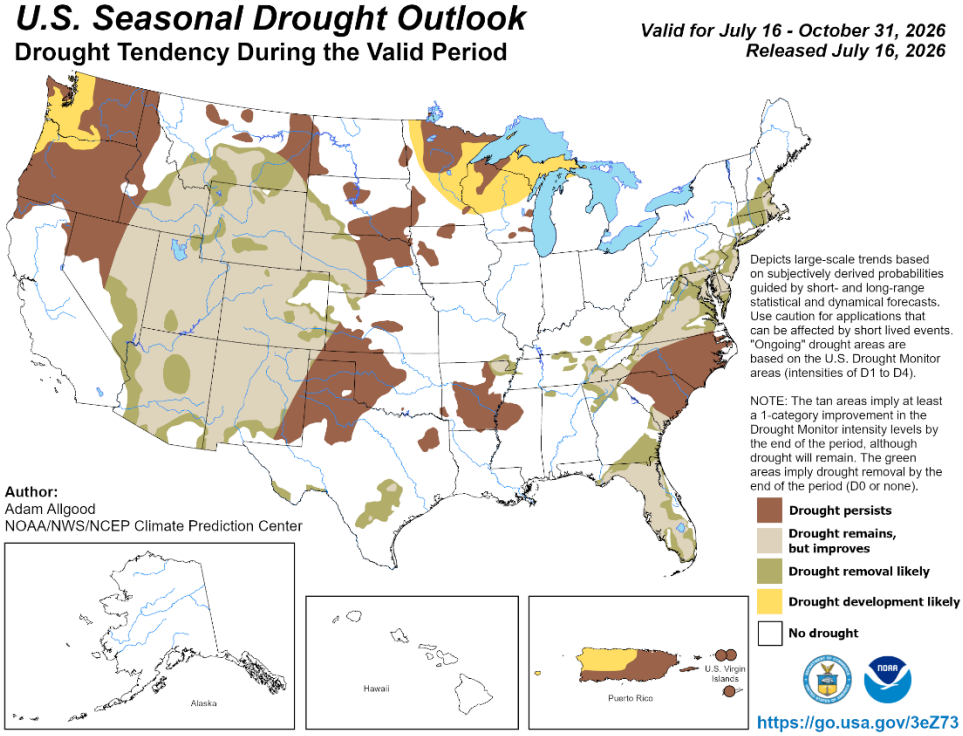
- Meteorological drought, which refers to precipitation deficiency resulting in less percolation and ground water recharge and/or high temperatures with increase evaporation;
- Agricultural drought, which refers to soil water deficiencies;
- Hydrological drought, which refers to declining surface and groundwater supplies;
- Socioeconomic drought, which refers to when physical water shortages begin to affect people directly or indirectly.

### Historical Occurrences
The highest occurrences of drought conditions with recorded events in Iowa are associated with agricultural and meteorological drought as a result of either low soil moisture or a decline in recorded precipitation. Iowa experienced 174 weeks of continuous drought conditions from 2020 to 2024. Conditions improved but again worsened due to dry autumn and winter seasons.

### Location, Probability, and Intensity
Droughts can be spotty or widespread and last from a few weeks to a period of years. Prolonged periods of drought can have a serious impact on a community's water supply and economy when water supplies become low or are depleted. Two conditions that go hand and hand that are the cause of communities running low on their water supplies are; a) when water storage is not planned adequately to accommodate drought conditions, or b) when drought conditions continue long enough to prevent the replenishing of water supplies. In either or both cases, communities may use or be forced to use restrictions on water usage which can cause strain to the health of those living in the community and the community's economy.

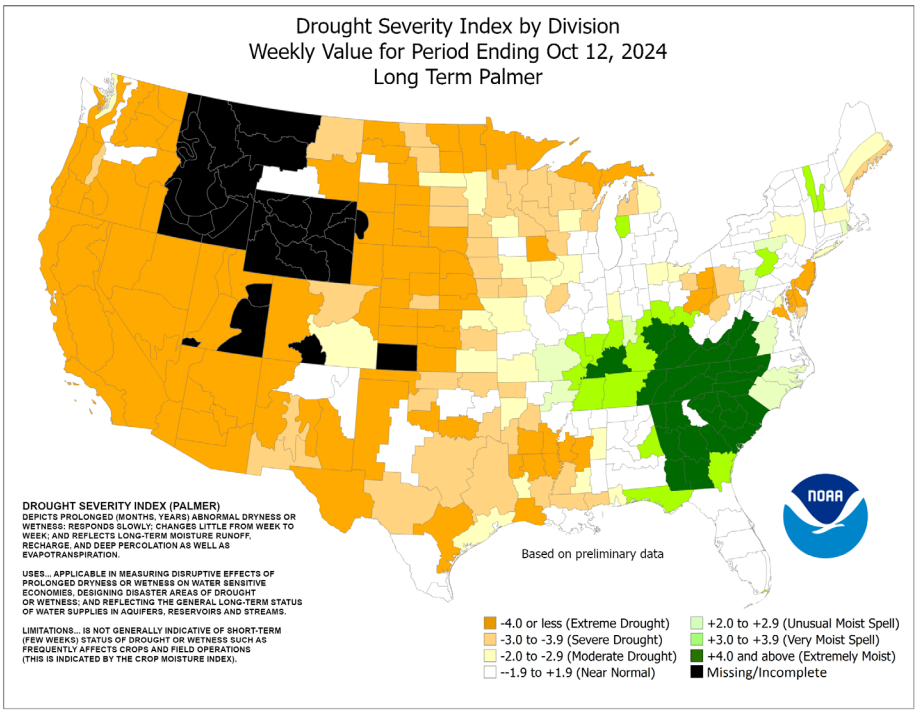
Typically, the Midwest, including Iowa, sees an abundant amount of rainfall, although droughts can occur in the region with an increased number of occurrences in recent years. The large presence of agricultural activity in the county leaves it significantly vulnerable in the event of a drought. The agricultural activity is highly dependent on precipitation to provide water to the crops and maintain water supplies for livestock. Agricultural output may decline if agricultural production is damaged or destroyed by the loss of crops or livestock from a drought. Regional droughts, if both severe and large enough, can even cause food shortages. A severe drought would likely affect, not only Harrison County, but most of Iowa if not the Midwest as a whole. The following map displays the U.S. seasonal drought outlook for July 16-October 31, 2026 followed by the Palmer drought index percentiles based upon historical data.

**Map 4.2 - US Seasonal Drought Outlook for July 16, 2026-October 31, 2026**




Source: NOAA Climate Prediction Center

**Map 4.3 – Palmer Drought Index Percentiles by Division (Weekly Value for Period Ending October 12, 2024 – Records Began in 1895)**




Source: NOAA

The Palmer Drought Severity Index (PDSI) and Crop Moisture Index (CMI) are meteorological drought indices of relative dryness or wetness. PDSI measures the prolonged and abnormal moisture deficiencies while the CMI gives the short-term or current status of a drought or moisture surplus. Both indices indicate general conditions and not local variations. The table illustrates the different classifications of drought measured using the Palmer Drought Index and the possible impacts in the corresponding drought conditions.

**Figure 4.1 - Drought Severity Classifications**

| | | Ranges | | | | | |
|---|---|---|---|---|---|---|---|
| **Category** | **Description** | **Possible Impacts** | **Palmer Drought Index** | **CPC Soil Moisture Model (Percentiles)** | **USGS Weekly Streamflow (Percentiles)** | **Standardized Precipitation Index (SPI)** | **Objective Short and Long-term 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 | 21-30 | 21-30 | -0.5 to -0.7 | 21-30 |
| **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 | 11-20 | 11-20 | -0.8 to -1.2 | 11-20 |
| **D2** | Severe Drought | Crop or pasture losses likely; water shortages common; water restrictions imposed | -3.0 to -3.9 | 6-10 | 6-10 | -1.3 to -1.5 | 6-10 |
| **D3** | Extreme Drought | Major crop/pasture losses; widespread water shortages or restrictions | -4.0 to -4.9 | 3-5 | 3-5 | -1.6 to -1.9 | 3-5 |
| **D4** | Exceptional Drought | Exceptional and widespread crop/pasture losses; shortages of water in reservoirs, streams and wells creating water emergencies | -5.0 or less | 0-2 | 0-2 | -2.0 or less | 0-2 |

Source: NOAA

## Summary of Vulnerability

The highest areas of vulnerability for this hazard would include crop damage and strain to water systems for the region. Drought is typically a widespread issue covering several counties or the entire State of Iowa. Mitigation actions for this hazard could include the education of proper water conservation for residents and drilling wells in the aquifer rather than shallow wells.

# Earthquake

## General Description

An earthquake is any shaking or vibration of the earth caused by the sudden release of energy that may impose a direct threat on life and property. It is a sudden, rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. This shaking can: cause buildings and bridges to collapse; disrupt gas, electric, and phone service; and sometimes trigger landslides, flash floods, and fires.

## Historical Occurrences

There have been very few earthquakes events in the State of Iowa with only 13 recorded events since 1897. The nearest recorded earthquake events, 3 total since 1897, have all been located in Fremont county with the largest measuring a level IV on the Mercalli scale which very rarely causes damage.

## Location, Probability, and Intensity

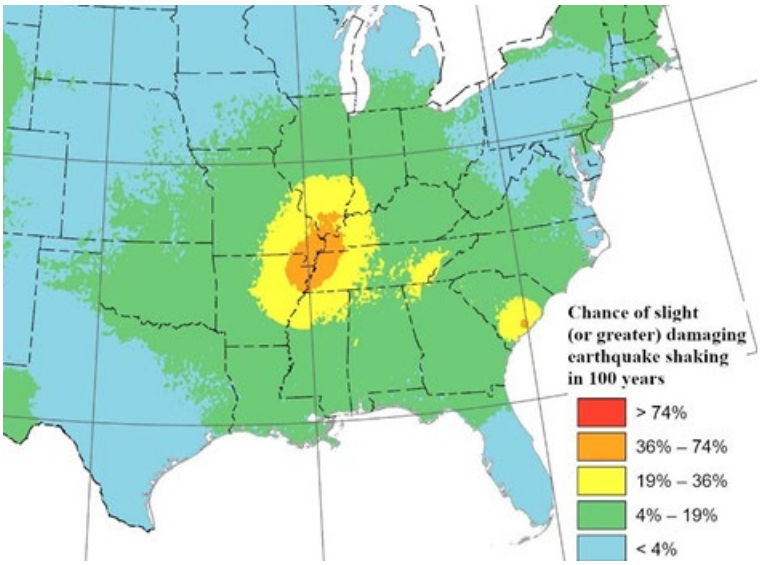
Earthquake intensity is measured using the Modified Mercalli (MW) Intensity Scale. This scale is composed of increasing levels of intensity based off the observed effects of the earthquake.

**Figure 4.2—Modified Mercalli Intensity Scale**

| Intensity | Shaking | Description/Damage |
|---|---|---|
| I | Not felt | Not felt except by a very few under especially favorable conditions. |
| II | Weak | Felt only by a few persons at rest,especially on upper floors of buildings. |
| III | Weak | Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated. |
| IV | Light | Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably. |
| V | Moderate | Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop. |
| VI | Strong | Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight. |
| VII | Very strong | Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken. |
| VIII | Severe | Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. |
| IX | Violent | Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations. |
| X | Extreme | Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent. |

The map below illustrates the probability of having a damaging earthquake on the eastern half of the United States. According to this map the entire State of Iowa has a less than 19% chance of an earthquake producing damaging shaking which would be an intensity of VI or higher on the Modified Mercalli Intensity Scale. The majority of Iowa, including Harrison County, has a less than 4% chance of this happening.

**Map 4:4 – Chance of Damaging Earthquake Shaking in 100 Years**



Source: USGS

### Summary of Vulnerability

The chance of an earthquake being felt in Harrison County is very low and the chance of one causing damage is even lower. Areas at increased risk would be structures that are already in very poor condition such as abandoned houses, but no one area of Harrison County is at a higher risk as the entire county is considered to be at a less than 4% chance of seeing a damaging earthquake.

## Extreme Heat

### General Description

Conditions for extreme heat are defined by weather that is substantially hotter and/or more humid than average for a location at that time of year. While the high temperatures in themselves can cause extreme heat conditions, coupled with high humidity, conditions can impose even greater stress on humans and animals and be even more deadly. The heat index is a number in degrees Fahrenheit that tells how hot it really feels when relative humidity is factored into actual air temperature. Exposure to full sunshine can also increase the heat index by at least 15 degrees. The National Weather Service can issue a Heat Advisory or Excessive Heat Warning.

Heat Advisory - A heat index of 100°F or higher is expected for a period of 3 hours or more. A heat advisory shall be continued through the overnight hours, following a day with excessive heat, if the heat index is not expect to fall below "around 75°F". A heat advisory can be issued for a heat index less than 100°F when the cumulative effect of successive days of near advisory heat leads to potentially life threatening conditions.

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

### Historical Occurrences

Extreme heat is a hazard that has been on the rise in recent years. Records from NOAA storm data for excessive heat starts in 2023 and since then, there have been five reports of excessive heat for Harrison County (Appendix C).

## Location, Probability, and Extent

Extreme heat can impose stress on humans and animals. Health risks arise when a person is over exposed to heat. Heatstroke, sunstroke, cramps, exhaustion and fatigue are possible with prolonged exposure and/or physical activity due to the body's inability to dissipate the heat. Urban areas are particularly at risk because of air stagnation and large quantities of heat absorbing materials such as streets and buildings. Extreme heat can also result in distortion and failure of structures and surfaces such as roadways and railroad tracks. Extreme heat can also pose a threat to livestock and crops. High temperatures have been shown to reduce summer milk production, impair immunological and digestive function of animals and increase mortality of livestock. Soils may become dry due to lack of moisture and affect crop growth. The dry weather can also increase the risk of fire due to the dryness of vegetation and flammable materials.

**Figure 4.3 - Heat Index**

| Relative Humidity (%) \ Temperature (°F) | 80 | 82 | 84 | 86 | 88 | 90 | 92 | 94 | 96 | 98 | 100 | 102 | 104 | 106 | 108 | 110 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 80 | 81 | 83 | 85 | 88 | 91 | 94 | 97 | 101 | 105 | 109 | 114 | 119 | 124 | 130 | 136 |
| 45 | 80 | 82 | 84 | 87 | 89 | 93 | 96 | 100 | 104 | 109 | 114 | 119 | 124 | 130 | 137 | |
| 50 | 81 | 83 | 85 | 88 | 91 | 95 | 99 | 103 | 108 | 113 | 118 | 124 | 131 | 137 | | |
| 55 | 81 | 84 | 86 | 89 | 93 | 97 | 101 | 106 | 112 | 117 | 124 | 130 | 137 | | | |
| 60 | 82 | 84 | 88 | 91 | 95 | 100 | 105 | 110 | 116 | 123 | 129 | 137 | | | | |
| 65 | 82 | 85 | 89 | 93 | 98 | 103 | 108 | 114 | 121 | 128 | 136 | | | | | |
| 70 | 83 | 86 | 90 | 95 | 100 | 105 | 112 | 119 | 126 | 134 | | | | | | |
| 75 | 84 | 88 | 92 | 97 | 103 | 109 | 116 | 124 | 132 | | | | | | | |
| 80 | 84 | 89 | 94 | 100 | 106 | 113 | 121 | 129 | | | | | | | | |
| 85 | 85 | 90 | 96 | 102 | 110 | 117 | 126 | 135 | | | | | | | | |
| 90 | 86 | 91 | 98 | 105 | 113 | 122 | 131 | | | | | | | | | |
| 95 | 86 | 93 | 100 | 108 | 117 | 127 | | | | | | | | | | |
| 100 | 87 | 95 | 103 | 112 | 121 | 132 | | | | | | | | | | |

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution | Extreme Caution | Danger | Extreme Danger

Source: NOAA – National Weather Service

According to the National Oceanic and Atmospheric Administration, heat is one of the leading weather-related causes of deaths in the United States, resulting in hundreds of thousands of fatalities each year. In 1980, a heat wave caused more than 1,250 people to die and in 1995, more than 700 deaths in the Chicago area were attributed to heat. North American summers are hot with one or more parts of the United States seeing heat waves in the summer months. East of the Rocky Mountains, high temperatures tend to combine with high humidity causing extreme heat conditions. The months of July and August are when most extreme heat events occur. These months also have lower amount of precipitation, thus increasing the possibility for a drought event. Periods of high temperatures can make people vulnerable to heatstroke, heat cramps, heat exhaustion, and pose a threat to human life. The populations that are at most risk are young children, elderly, and those working and living in non-air-conditioned environments. Building stock, such as critical facilities, are not at risk; however periods of extreme heat place a significant demand on utilities, such as water and electricity, which can cause a failure in the system. Power loss could occur with the high demand on energy, making an extreme heat event even more dangerous.

The agricultural economy, especially livestock, is highly vulnerable and at great risk during periods of extreme heat. Heat stress in feedlot cattle can cause reduced performance, and in the most severe cases, death of the animals, resulting in millions of dollars in losses to the cattle industry.
Population groups with higher levels of vulnerability to extreme heat include the elderly (65 years and older), residents of nursing homes or care facilities, poor urban elderly, children, those isolated from social interactions, and low-income groups. Elderly people have a lower tolerance for extreme temperatures and can feel the effects more rapidly. Young children under the age of 5 are highly susceptible to the effects of extreme heat. They have a smaller body mass to surface ratio making them more vulnerable to heat-related morbidity and mortality. Children also become dehydrated more quickly than adults, making for greater concern. Low-income people and families may lack resources that mitigate the impacts of extreme heat such as air conditioning.

## Summary of Vulnerability

Excessive heat can impose stress on humans and animals. Heatstroke, sunstroke, cramps, exhaustion, and fatigue are possible with prolonged exposure and/or physical activity due to the body's inability to dissipate the heat. Urban areas are particularly at risk because of air stagnation and large quantities of heat-absorbing materials such as streets and buildings.

Beyond human vulnerability to heat, Iowa is also at risk of losses in transportation, agriculture, energy, and other sectors. Extreme heat can also result in distortion and failure of structures and surfaces such as roadways and railroad tracks. Increased energy demand during excessive heat events can lead to brownouts or blackouts. Engines and machinery, including vehicles, may be susceptible to high heat as well. Certain herbicides are more likely in high heat to vaporize without necessarily dissipating, consequently killing local trees and other plants, including non-immune crops.

Extreme heat can affect everyone to some degree, but certain characteristics make populations more vulnerable than others. An analysis of the deaths caused by heat waves in Chicago and Paris identified two key risk factors positively associated with death: age and social isolation.72 Young children and older adults are especially vulnerable. Specifically, populations over 65, infants under 1 year, the homeless, the poor, people who are socially isolated, people with mobility restrictions or mental impairments, people taking certain medications, people engaged in vigorous outdoor exercise or work, or those under the influence of drugs or alcohol.

## Expansive Soils

### General Description

Soils and soft rock that tend to swell or shrink excessively due to changes in moisture content are commonly known as expansive soils, although they may also be referred to as "shrink-swell soils", "swelling clay soils", or similar names. The more water such soils absorb, the more their volume increases. Expansions of ten percent or more are not uncommon. This change in volume can exert enough force on a building or other structure to cause damage. Expansive soils will also shrink when they dry out. This shrinkage can remove support from buildings or other structures and result in damaging subsidence. Fissures in the soil can also develop. These fissures can facilitate the deep penetration of water when moist conditions or runoff occurs. The effects of expansive soils are most prevalent in regions that typically have moderate to high precipitation, with effects especially felt at times when prolonged periods of drought are followed by long periods of rainfall.

### Historical Occurrences

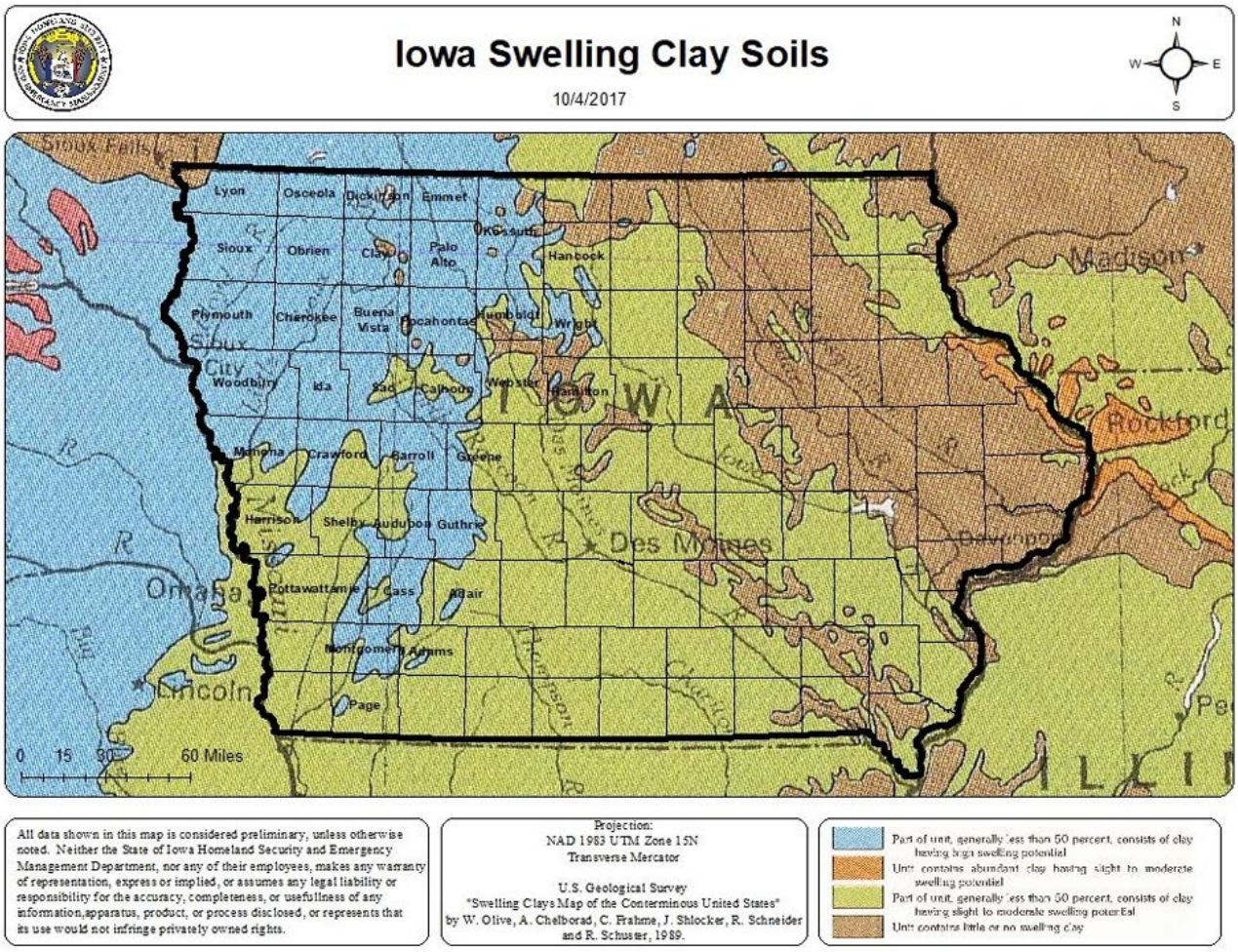
There have been no recorded incidences of expansive soils within Harrison County.

### Location, Probability, and Intensity

Probability and frequency analyses have not been prepared because of the nature of occurrence of this hazard. This is consistent with other geologic hazards that occur slowly over time. As such, the duration of response to expansive soils and their associated risk to public property and loss of life is unknown.

According to the US Geological Survey map below, the majority of Harrison County is comprised of soils having less than 50% clay with slight to moderate swelling potential. Some areas in the northeast and south central are shown to have less than 50% clay with high swelling potential. There is very little area in Iowa where the soil contains abundant clay with swelling potential and that area is located on the eastern border.

**Map 4:5 –USGS Iowa Swelling Clay Soils**




### Summary of Vulnerability

This hazards poses little threat to Harrison County or the State of Iowa so no comprehensive data of losses has been kept. The highest areas of vulnerability would be those marked by blue (generally less than 50% contains clay having high swelling potential) in the map above.

## Flash Flood

### General Description

A flash flood is an event that occurs with little or no warning where water levels rise at an extremely fast rate. Flash flooding results from intense rainfall over a brief period, sometimes combined with rapid snowmelt, ice jam release, frozen ground, saturated soil, or impermeable surfaces. Most flash flooding is caused by slow-moving thunderstorms or thunderstorms repeatedly moving over the same area. Due to the unique characteristics of flash flooding making it an extremely dangerous form of flooding, it has been separated from river flooding which often times can allow for more preparation before its devastating effects.

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 to prepare for such events. Information on soil saturation and rainfall predictions that can help predict regular flooding events are often times not enough to predict flash flood events. Flash flood waters move at very fast speeds and can move boulders, tear out trees, quickly erode channels or even

reroute them, destroy buildings and wipe out bridges. Flash flooding often results in higher loss of life than slower developing river and stream flooding.

### Historical Occurrences

Documentation of flash flooding occurrences is not data that is well kept. Is it up to the jurisdictions to maintain that information so it is largely based on eyewitness accounts. Flash flooding in the unincorporated are of Harrison County tends to go unnoticed. Each jurisdiction was asked about areas of flash flooding within their jurisdiction, but only Missouri Valley noted an area of concern. This area is located along Erie Street and frequently has standing water during heavy rains.

### Location, Probability, and Extent

The National Weather Services has three categories to define the extent of flooding. The definitions for these are located in the table below.

**Table 4.4 – Flooding Stages**

| Flood Stages | Definitions |
|---|---|
| Minor Flood | Some property flooding and public threat may occur. Roadways, trails, park land, and private property near the stream may become flooded. |
| Moderate Flood | Flooding of structures and main roadways may occur. Residences and numerous roadways near the stream may become flooded. Evacuations may be necessary. Disruptions to daily life. |
| Major Flood | Extensive flooding of structures, main roadways, and other critical infrastructure may occur. Schools, hospitals, police stations, fire stations, residences, businesses, and roadways may become flooded. Evacuations may be necessary. Significant disruptions to daily life. |

Floods are the most common and widespread of all-natural disasters except fire. In Iowa, as much as 21 inches of rain has fallen in a 24 hour period.

The effects of flash flooding can be a result of urban development and development of and around streams and rivers. Land that is converted from fields or woodlands to roads and parking lots loses its ability to absorb rainfall. Urbanization increases runoff by two (2) to six (6) times over what would normally occur on natural terrain. Portions of Iowa are developed with significant amounts of impervious surfaces. As more development occurs in the watersheds the amount of runoff produced also increases. Stream and river channelization can also compound the effects of river flooding by allowing water to run more quickly. This again prevents absorption into the ground can make rivers swell more rapidly downstream. Lastly the destruction of natural reservoirs through the development can result in harsher flooding. Natural reservoirs such as lakes, marshes and wetlands hold water in periods of large volumes of precipitation and allow that water to be absorbed rather than running into streams and rivers where it can cause higher levels of flooding.

To reduce runoff (or slow the movement of water), measures need to be taken to protect natural ecosystems and to develop urban systems that can handle and divert water safely so water does not become a problem further downstream. If measures are not taken to reduce the amount of runoff, flash floods will continue to occur and may become more frequent. In certain areas, aging storm sewer systems were not designed to carry the capacity currently needed to handle the increased storm runoff. This combined with rainfall trends that, according to the State Hazard Mitigation Plan, seem to be increasing, will contribute to the likelihood and unpredictable nature of flash flooding.

### Summary of Vulnerability

Areas located at a lower elevation or in a "bowl" may be at higher risk of experiencing flash flooding. Areas of high development with little to no impervious surfaces are also at an increased risk, especially if there are no or inadequate storm sewers. Mitigation actions for this hazard could include the planting of native plants and trees in urban setting, installation of proper storm sewers, and adequate sloping in new development areas.

## Grass or Wild Land Fire

### General Description

A grass or wild-land fire is an uncontrolled fire that threatens life and property in a rural or a wooded area. Grass and wild-land fires are more likely to occur during periods of high temperature, drought or when the vegetation is drier and can be intensified by high winds. Grass or wild land fires differ from other fires in that they are larger and extensive in size, can spread quickly from its original sources, can jump gaps such as roads and rivers and can change directions unexpectedly. A grass fire or wildland fire is not a cropland fire. Damage to crops from fire are often covered by insurance, and are on land that is not "wild."

### Historical Occurrences

Due to the size of the fire departments in Harrison County, detailed records on fire calls and the reasoning behind the fires is not always kept. The majority of fires occurring in the unincorporated areas of vegetation are related to fields of crops or areas of controlled burn.

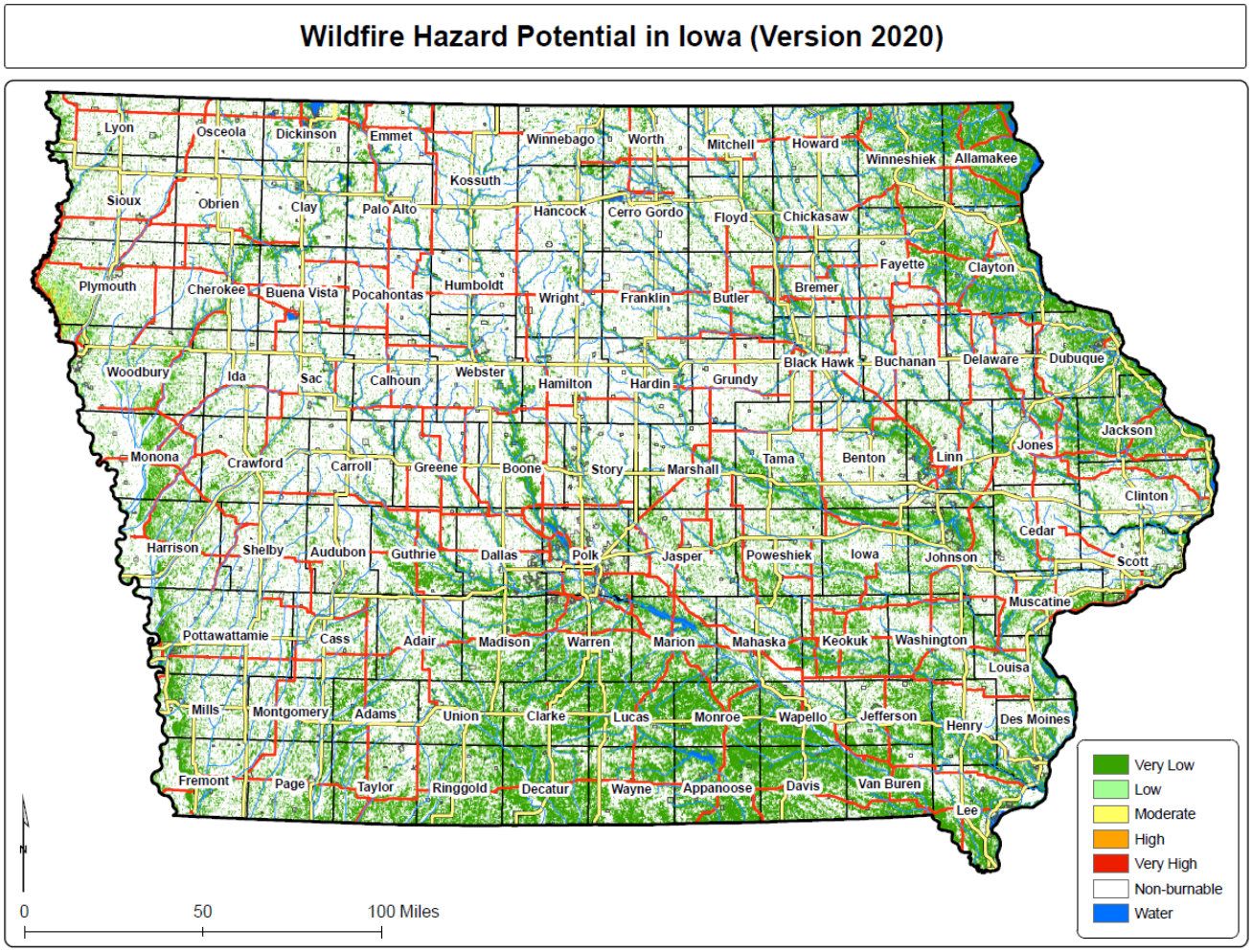
### Location, Probability, and Intensity

Wildfires can cause extensive damage, both to property and human life. The damages caused by wildfires extend past the loss of building stock, recreation areas, timber, forage, wildlife habitat, and scenic views. In addition, the secondary effects of wildfires, including erosion, landslides, introduction of invasive species, and changes in water quality, all increase due to the exposure of bare ground and loss of vegetative cover following a wildfire, are often more disastrous than the fire itself.

This hazard would have an increased probability of affecting unincorporated and undeveloped Harrison County, particularly the area near the Loess Hills. While Harrison County doesn't have a large amount of wild grass land, the combination of continuous droughts mixed with high winds can lead to an increased risk of fires in rural agricultural lands.

The map below shows the fire potential for all of Iowa. When examining Harrison County, the majority, 310,039 acres or 69%, is considered non-burnable. An addition 129,665 acres or 28.8% is considered very low risk. Harrison County has 5,458 acres considered a low risk, 576 acres that are considered a moderate risk, and 18 acres considered a high risk. Combined, that's 1.3% that that has a burn risk above a very low classification.

**Map 4.6 – Fire Lab Wildfire Risk Map**

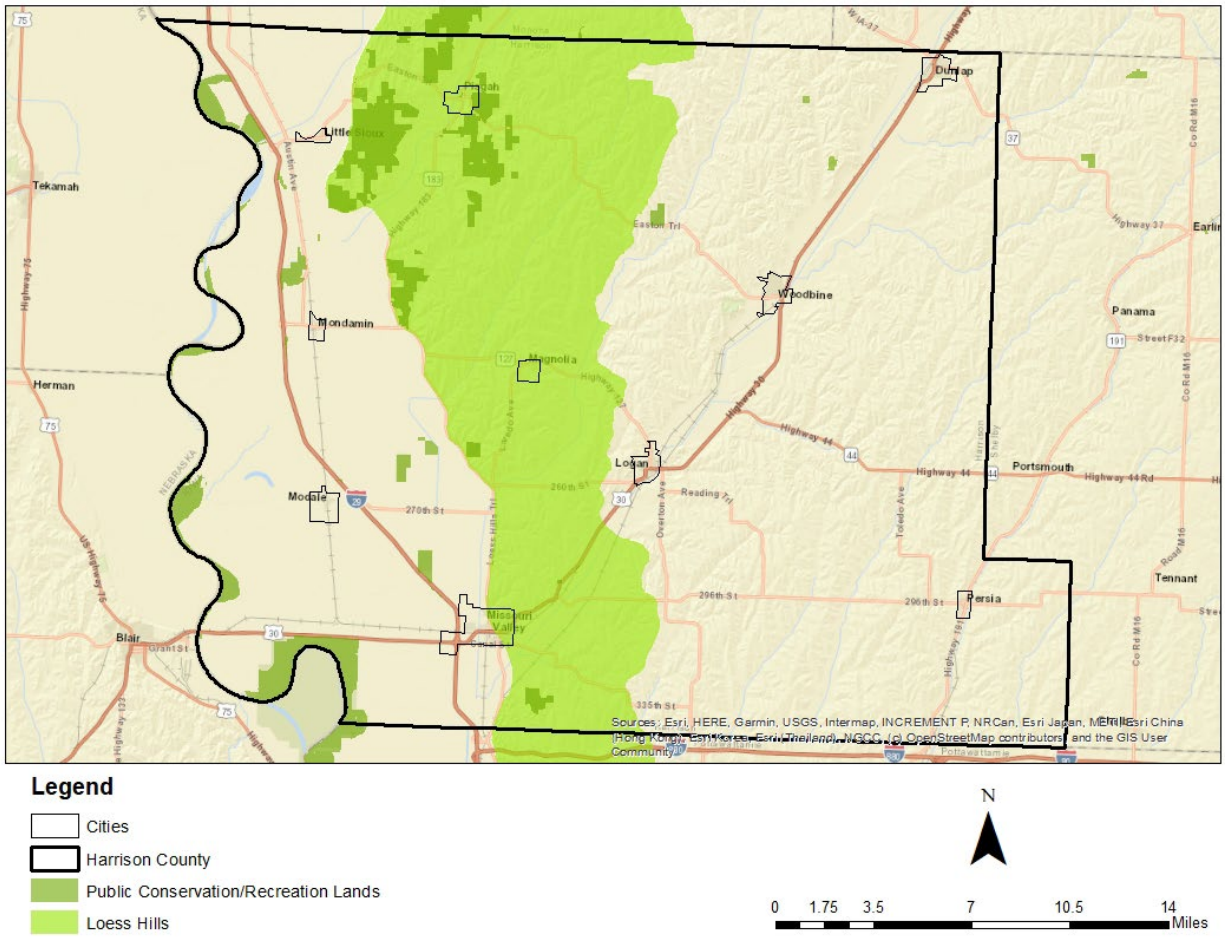


Source: Firelab.org

## Summary of Vulnerability

Iowa and Illinois have the smallest percentage of wild land in all of the United States. Consequently, there is simply less opportunity for wildfires in Iowa than most any other state. Within Harrison County, there is 1.3% of the total land area that has a burn risk above a very low classification. The majority of the area at an increased risk is located within the Loess Hills. The map below shows the location of the Loess Hills along with all conservation areas within Harrison County.

**Map 4.7 – Loess Hills and Conservation Areas**




# Hazardous Materials Incident

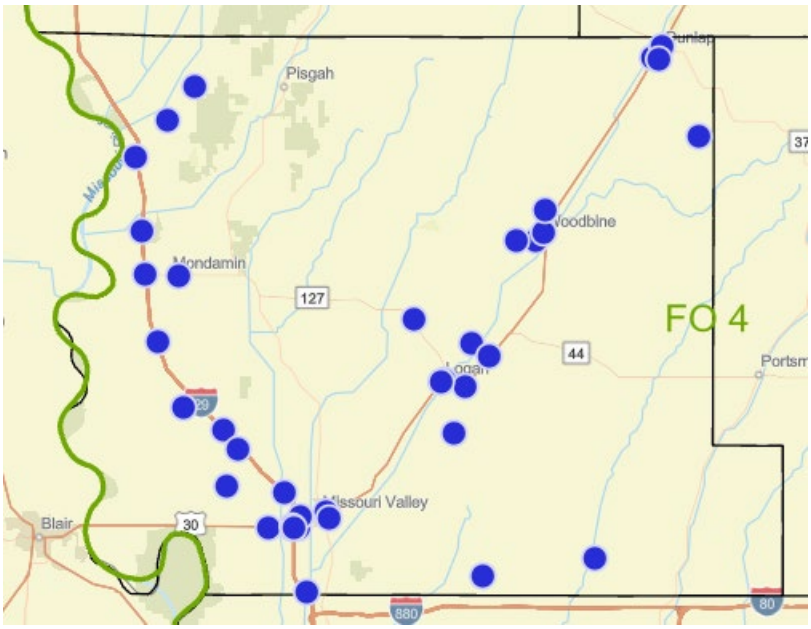
## General Description

Hazardous materials can come in various different forms and are found in almost every jurisdiction in the county. These are materials that could pose a threat to the environment or surrounding people if a leak occurred. Some materials are flammable and could cause an explosion if mistreated leading to possible injuries or death for those nearby.

## Historical Occurrences

From January 2020 to January 2024, there have been 39 incidents reported to the Iowa DNR regarding a hazardous material spill. As indicated in the map below, a large portion of these happened along the interstate or at tier II chemical storage facilities showing a high probability of future occurrences.

**Map 4.8 - Harrison County Reported Hazardous Materials Spills 2020-2024**



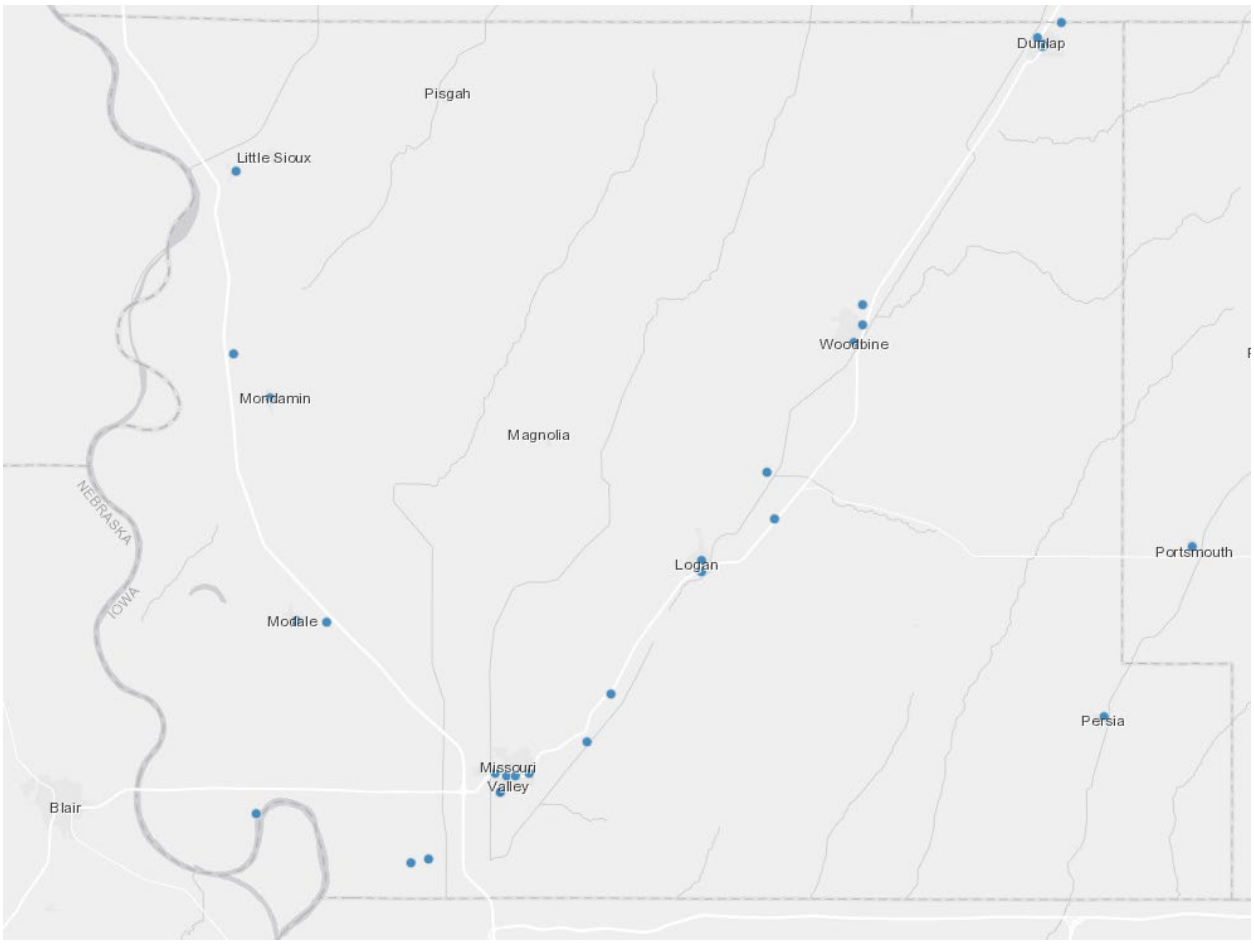
Source: Iowa DNR Spill Report

## Location, Probability, and Intensity

A fixed hazardous materials incident is the accidental release of chemical substances or mixtures which presents a danger to the public health or safety during production or handling at a fixed facility. Fixed hazardous materials incidents usually affect a localized area, and the use of planning and zoning can minimize the area of impact.

The Emergency Planning and Community Right-to-Know Act requires facilities to submit emergency and hazardous chemical inventory forms, also known as Tier II forms, annually to the Iowa DNR and local fire departments if the quantity of chemicals stored is at or over their threshold. Examples of Tier II chemicals include anhydrous ammonia, sulfuric acid, formaldehyde, and hydrogen peroxide. The map below from the Iowa DNR shows that there are 28 locations within Harrison County that store Tier II chemicals.

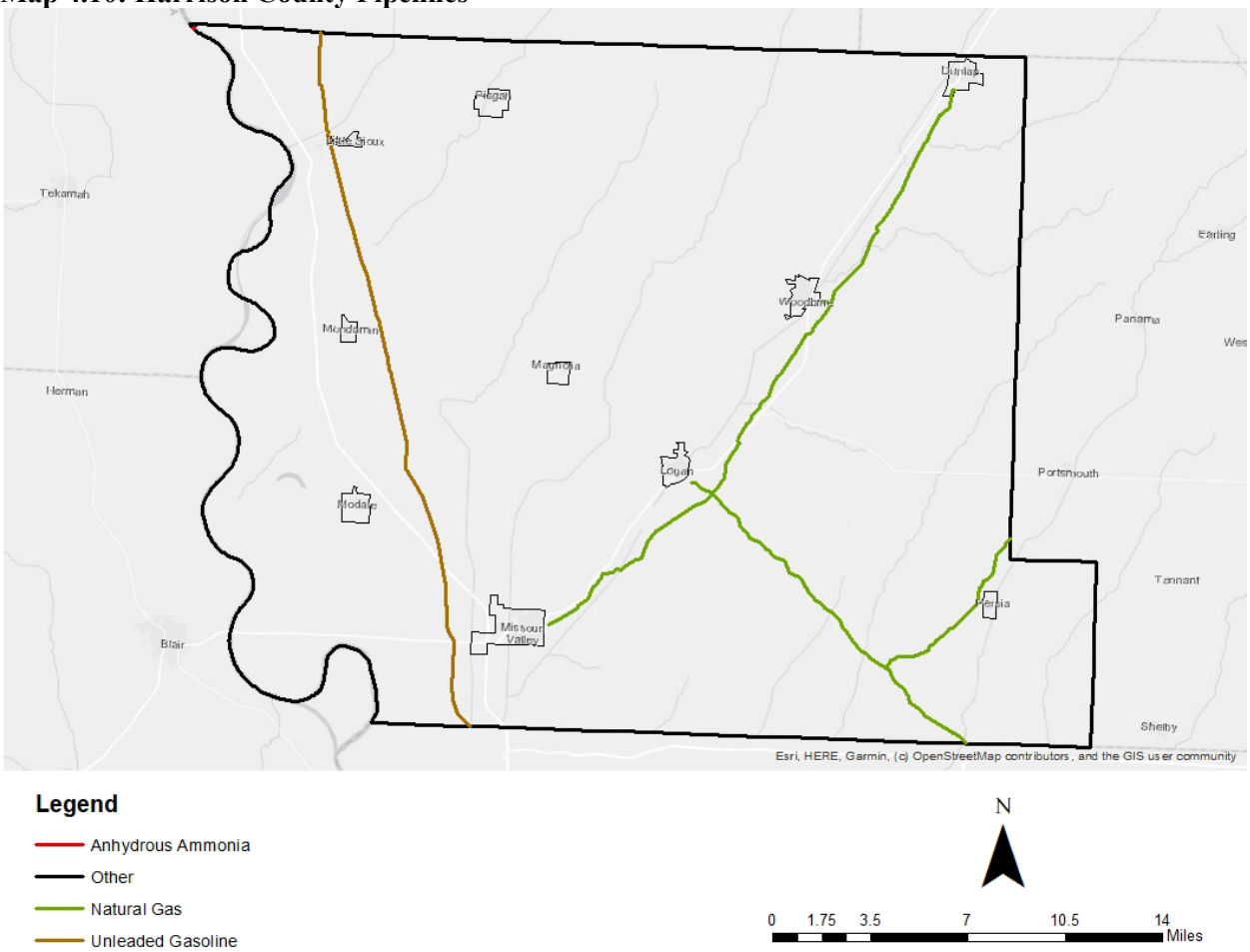
**Map 4.9 - Harrison County Tier II Chemical Storage Facilities**



Source: Iowa DNR, 2026

Hazardous materials can also be found in pipelines running underground. There are multiple pipelines running through the county carrying different commodities including natural gas and unleaded gasoline. Each of these could pose a threat to the health of all living creatures and the environment if a leak occurs.

**Map 4.10: Harrison County Pipelines**




Source: NPMS

### Summary of Vulnerability
Areas within close proximity to Tier II chemical storage facilities, pipelines, or major transportation routes including interstate, US highways, State highways, and railroads, will be at an increased risk of hazard occurrence. Incidents involving hazardous materials can cause both property damage and severe health concerns to both people and the environment. To reduce the effects of this hazard, storage facilities and pipelines should be located away from area of human occupancy such as residential areas, daycares, and hospitals, as well as away from sources of drinking water. These vulnerable locations should also be distanced from major transportation routes that could see a high volume of chemical transportation.

## Human Disease

### General Description
Advances in science, sanitation and hygiene have greatly reduced the spread of diseases within the United States. Diseases that were once rampant have been nearly eliminated due to these advances leading to longer lifespans and healthier citizens. Although great progress has been made, the treat is not completely eradicated, and a disease outbreak could spread through an entire town if not treated properly.

### Historical Occurrences
The Iowa Department of Public Health Center for Acute Disease Epidemiology (CADE) keeps records of disease outbreaks within Iowa. This information is used to better inform the public and health care officials on disease prevention and education opportunities. Annually, the CADE prepares a report of notifiable and other diseases showing how many reports of specific diseases there were per county. The following table shows a summary of the number of reported diseases in Harrison County for a period of 5 years. It should be noted that these counts do not include STIs, TB, or Hepatitis cases.

**Table 4.5: Harrison County Confirmed Reportable Disease Cases 2021-2025**

| Year | |
|---|---|
| | Confirmed Cases |
| **2025** | 5 |
| **2024** | 8 |
| **2023** | 30 |
| **2022** | 370 |
| **2021** | 836 |

Source: Harrison County Public Health, Iowa Department of Health and Human Services

### Location, Probability, and Extent
Human disease is considered a county-wide hazard meaning that jurisdictions helped to establish a county-wise risk score for it that all communities used. Similar to animal and plant disease, higher temperatures and humidity tend to increase the likelihood of epidemic diseases. Some insects carrying viruses not normally seen in the U.S. are likely to find a more hospitable climate, including ticks carrying Lyme disease or mosquitoes carrying West Nile, chikungunya, dengue, yellow fever, and Zika viruses. Additionally, pathogens that thrive in warmer waters, currently affecting primarily southern states, may find Iowa lakes and waterways more hospitable as well. For instance, the “brain-eating amoeba”, Naegleria fowleri, infected and killed a swimmer in Lake of Three Fires in southern Iowa in 2022. This was Iowa’s first case of this amoeba infecting a human.

### Summary of Vulnerability

Vulnerability varies depending on the type of disease. Elderly and immune compromised individuals will be more susceptible to widespread viral diseases such as COVID-19 experienced nationwide in 2020. Other diseases such as Lyme Disease or Naegleria fowleri may be experienced more by those participating in outdoor activities. There is no one location within Cass County that is more vulnerable to diseases. To aid in mitigating this hazard, proper hygiene techniques should be pushed to residents along with timely information regarding any potential diseases seen in the area.

# Infrastructure Failure

## General Description

Infrastructure failure is classified as the complete or partial failure of any public or private infrastructure that could threaten life or property. Common types of infrastructure failure seen in the two Counties could include water main breaks, sewer system backups, bridge failure, power outages or road failures to name a few.

## Historical Occurrences

Due to the nature of these Counties, it is not uncommon for large portions of infrastructure, such as roads, bridges and water/sewer systems, to be decades old and already in need of repairs leading to expedited failure. Failure of infrastructure within the county could be caused by other hazards such as flooding, tornadoes, windstorms, transportation incidents, winter storms or extreme heat. Iowa has dramatic weather changes throughout the year which can add increased wear to infrastructure.

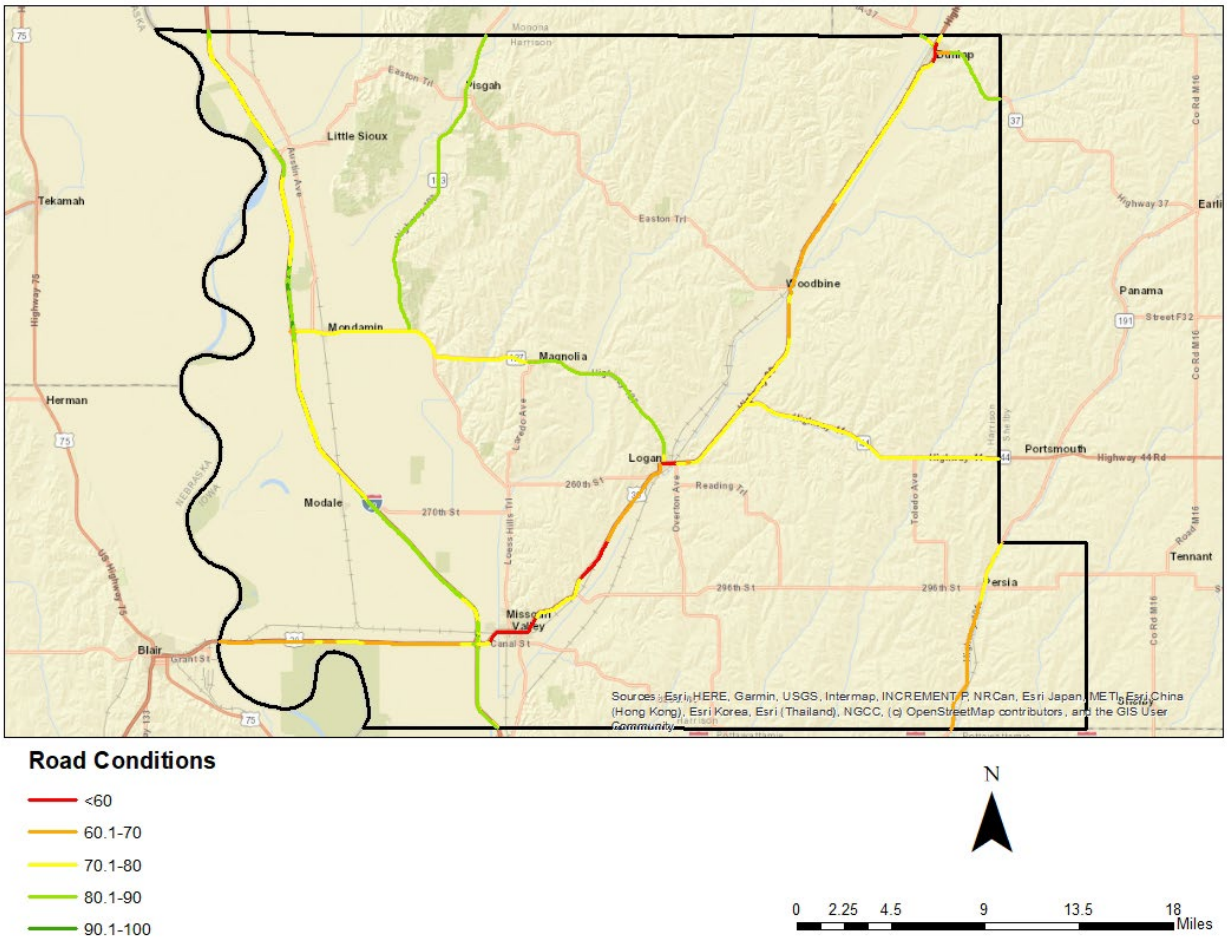
No widespread failures have occurred in Harrison County.

## Location, Probability, and Extent

The location and type of this hazard can vary widely and include things such as bridge failures, communication failures, water/sewer main breaks, road closures, and power outages. Occurrences can be very localized or widespread. Due to the rural nature of Harrison County and the low population and therefore low tax base, infrastructure failures are very common and budgets continue to get tighter with rising costs.

The map below shows the Infrastructure Condition Evaluation (ICE) rating for road segments within Harrison County. This evaluation was done in 2018 by the Iowa DOT. The ICE composite ratings shown in the map below take into account numerous factors including pavement condition, annual average daily traffic, and crash rate. Those with scores under 60 are in the worst condition while those with scores over 90 are in the best condition.

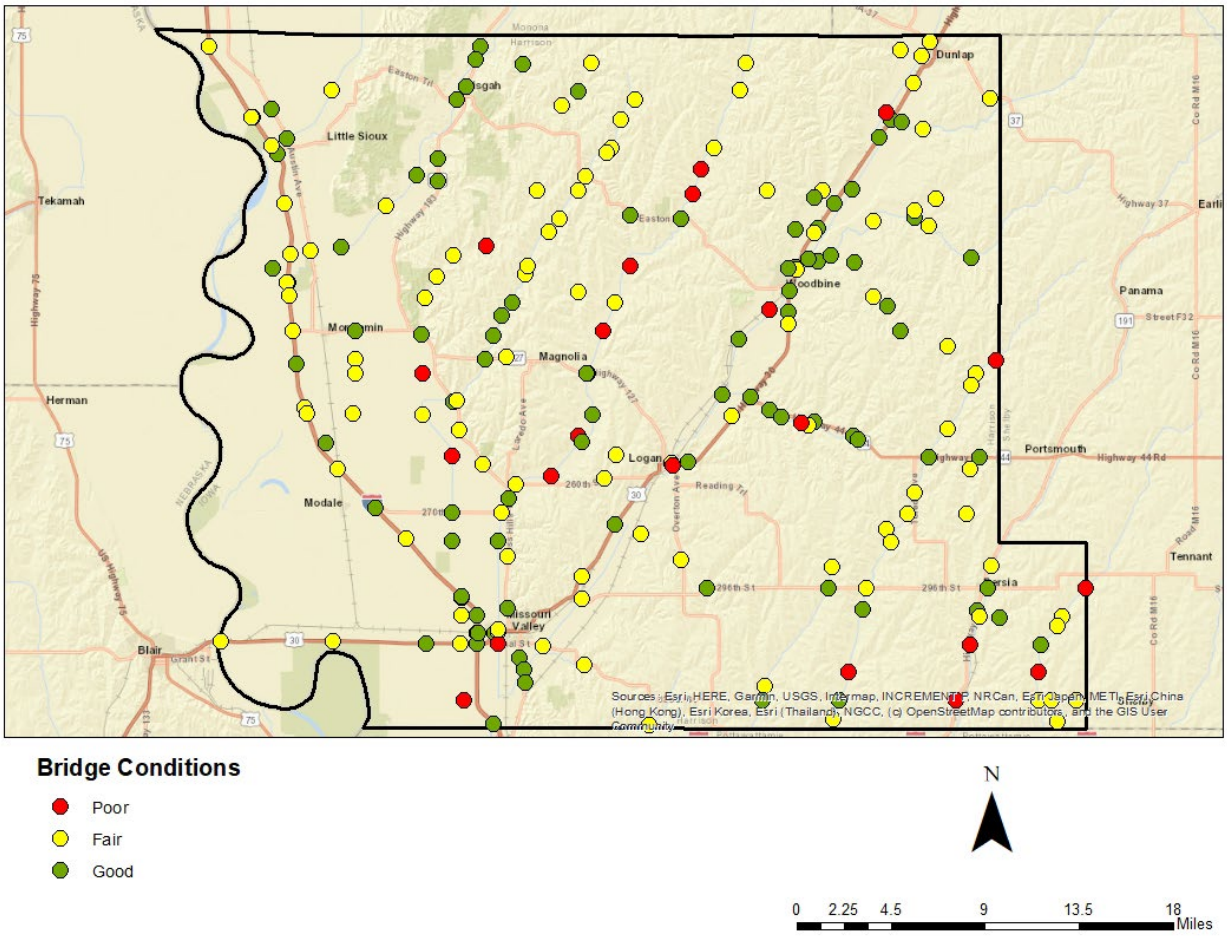
**Map 4.11—Iowa DOT Infrastructure Condition Evaluation Ratings**




Source: Iowa DOT

The map below shows the conditions for all 302 bridges within Cass County. According to this data from the Iowa DOT, 21 bridges (9.5%) are in poor condition, 112 bridges (50.6%) are in fair condition, and 88 bridges (40%) are in good condition.

**Map 4.12—Bridge Conditions**




Source: Iowa DOT

### Summary of Vulnerability

Vulnerability to infrastructure failure is widespread and varies. Infrastructure that is aging or not receiving proper maintenance will be at a higher risk of experiencing failures. This could include infrastructure such as roads, bridges, water/sewer systems, communication systems, internet systems, and electrical systems. It is crucial for jurisdictions to update and follow Capital Improvement Plans to ensure infrastructure is being maintained in a timely and orderly way.

## Landslide

### General Description

A landslide is a geological incident in which a large portion of rock, debris and soil moves or slides down a slope. Gravity is the primary cause of a landslide, though there are other contributing factors such as the slope of the land or moisture content of the soils. Large landslides are commonly found near coastlines and very hilly or mountainous regions. The western portion of Harrison County near the Loess Hills is the most likely area to experience landslides.

### Historical Occurrences

Reporting of landslide events in Iowa is sporadic. No state agency collects and maintains reports of landslides in Iowa. USGS shows no recorded landslides, but also notes that inventories are typically collected and maintained by different agencies. Due to the lack of reporting and record keeping, local

knowledge from the planning committee was used. According to this, there have been no know landslides within Harrison County.

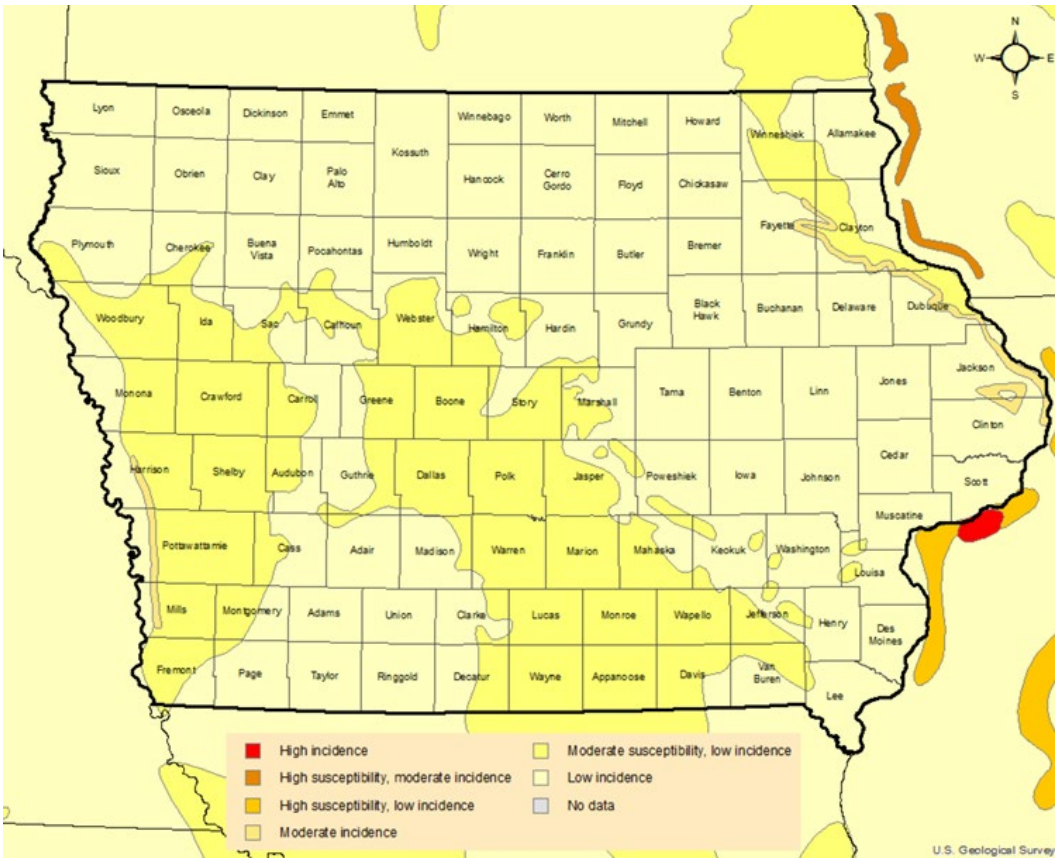
## Location, Probability, and Extent

According to the map below from USGS, most of Harrison County is considered to have a range of low incidence, moderate susceptibility with low incidence, and moderate incidence.

- Susceptibility-landslide susceptibility models analyze different terrain features to determine where landslides are more or less likely to occur
- Incidence-Landslide occurrences

This map shows that the majority of Harrison County is classified as a moderate risk with low incidence. This area is located on the eastern portion of the county on the east side of the Loess Hills. The Loess Hills themselves have a moderate incidence rating, while the flatter area west of the Loess Hills and along the Missouri River, have a low incidence rating.

**Map 4:13 – Landslide Incidence and Susceptibility**



Source: USGS

The Loess Hills is named so because it is comprised of loess which is silt-sized sediment deposited by wind. This sediment has little clay in it and is known to be dusty and can be easily eroded by water.

### Summary of Vulnerability

Areas designated as moderate susceptibility or incidence on the map above would have a higher vulnerability to landslides due to the terrain of the area. According to the map above, this area would include the highest points within Loess Hills. In some parts of Loess Hills, housing development has taken place putting those residents at an increased risk of direct impact from landslides. Continued development within the hills will increase the risk of landslides.

## Radiological

### General Description

A radiological incident is an occurrence resulting in a release of radiological material at a fixed facility or in transit. An incident resulting in a release of radiological material at a fixed facility includes, but is not limited to, power plants, hospitals, and laboratories. Although the term "nuclear accident" has no strict technical definition, it generally refers to events involving the release of significant levels of radiation.

There are currently no nuclear power plants located within Harrison County or within 50 miles of the county. The Fort Calhoun Nuclear Generating Station is located near Blair Nebraska, directly west of the Harrison County boarder. This nuclear power plant was shut down in 2016 due to concerns with the

structure of the building. Although this site has been closed, it takes years for it to be decommissioned and contaminated materials to be removed. This site is expected to be decommission in 2058.

## Historical Occurrences

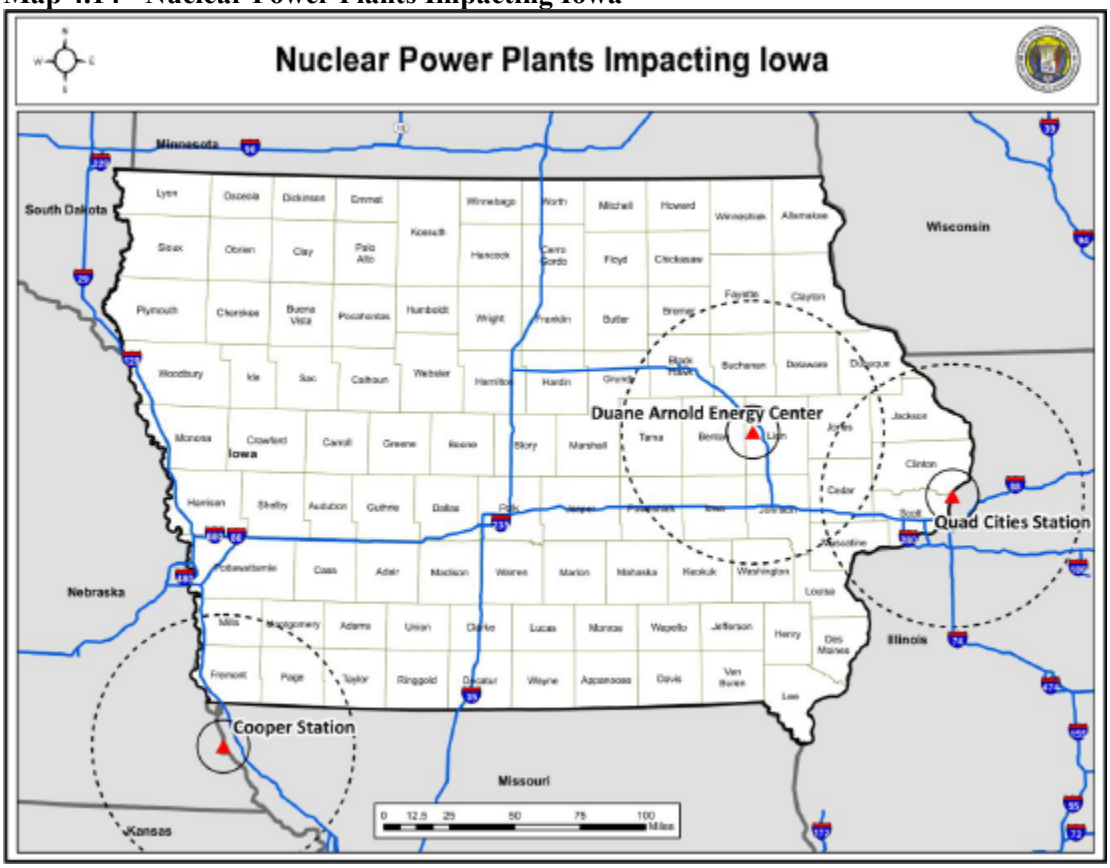
Although little records on the topic are kept, here have been no known occurrences of a radiological event within Harrison County.

## Location, Probability, and Extent

Harrison County is not within 50 miles of an active nuclear power plant, however, the Fort Calhoun Nuclear Power Plant is located directly across the Missouri River between Blair, NE and Fort Calhoun, NE. This nuclear power plant shut down in 2016, but will not be fully decommissioned until 2058 meaning there is still radioactive material on site

.

**Map 4.14 - Nuclear Power Plants Impacting Iowa**




Source: Iowa Homeland Security and Emergency Management

Although construction and operation of nuclear power plants are closely monitored and regulated by the NRC, an accident, though unlikely, is possible. The potential danger from an accident at a nuclear power plant is exposure to radiation. This exposure could come from the release of radioactive material from the plant into the environment, usually characterized by a plume (cloud-like) formation. The area the radioactive release may affect is determined by the amount released from the plant, wind direction and speed and weather conditions (i.e., rain, snow, etc.) which would quickly drive the radioactive material to the ground, hence causing increased deposition of radionuclides. Emergency classifications defined by the United States Nuclear Regulatory Commission are divided into four categories. Each calls for a certain level of response from plant and government personnel. From least to most severe, the classifications are:

- Unusual event
- Alert
- Site area emergency
- General emergency

An unusual event constitutes events that are in process or have occurred which indicate potential degradation in the level of safety of the plant. No release of radioactive material requiring offsite response or monitoring is expected unless further degradation occurs.

If an alert is declared, events are in process or have occurred that involve an actual or potential substantial degradation in the level of safety of the plant. Any releases of radioactive material from the plant are expected to be limited to a small fraction of the U.S. Environmental Protection Agency (EPA) protective action guides (PAG).

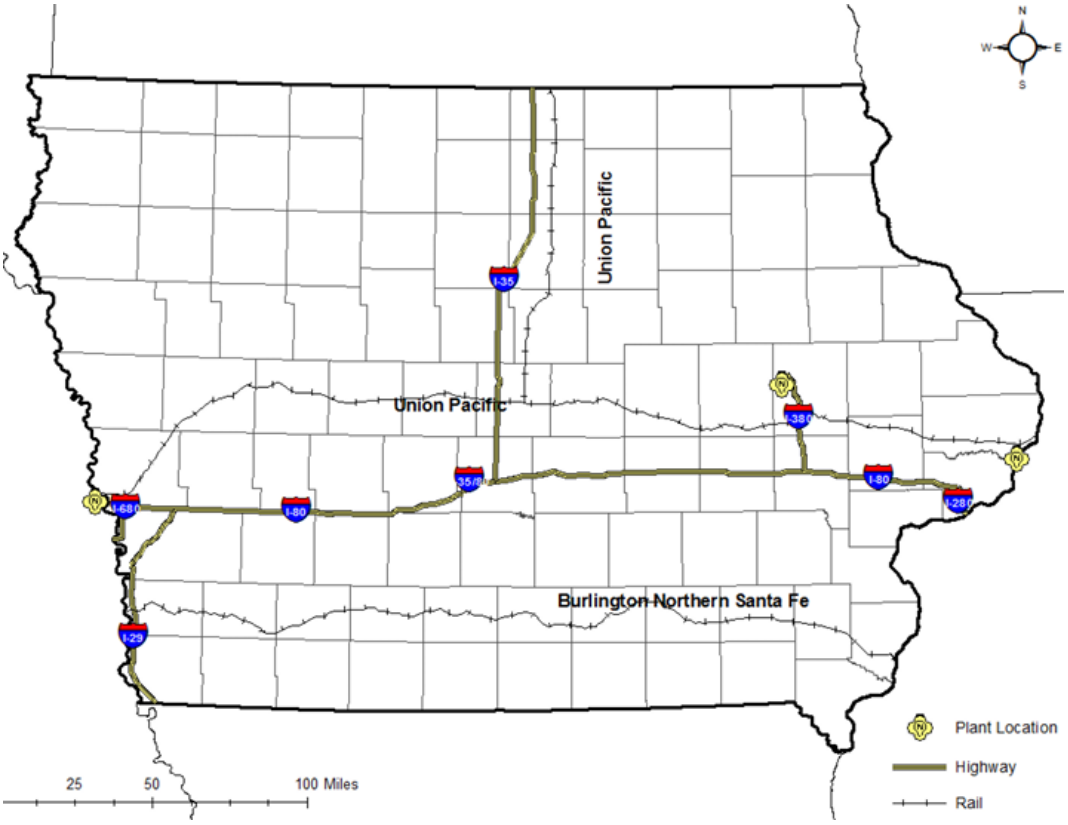
A site area emergency involves events in process or which have occurred that result in actual or likely major failures of plant functions needed for protection of the public. Any releases of radioactive material are not expected to exceed the EPA PAGs except near the site boundary.

A general emergency involves actual or imminent substantial core damage or melting of reactor fuel with the potential for loss of containment integrity. Radioactive releases during a general emergency can reasonably be expected to exceed the EPA PAGs for more than the immediate site area.

Radiological incidents related to transportation are described as an incident resulting in the release of radioactive material during transit. The transportation of radioactive material by any means of transport is licensed and regulated by the federal government. When these materials are moved across Iowa highways, State officials are notified and appropriate escorts are provided. As a rule, there are two categories of radioactive materials that are shipped over the interstate highways.

Low-level waste consists primarily of materials that have been contaminated by low-level radioactive substances but pose no serious threat except through long-term exposure. These materials are shipped in sealed drums within placarded trailers. The danger to the public is no more than that which exists from other hazardous materials. High-level waste, usually in the form of spent fuel from nuclear plants, is transported in specially constructed casks that are built to withstand a direct hit from a locomotive. Potential rail and highway routes for the shipment of radioactive waste have been identified and mapped below. Transportation routes that may affect Harrison County according to the map below would include I-80 and the Union Pacific Railroad.

**Map 4:15 – Nuclear Waste Transportation Map**



Source: Nevada Institute for Nuclear Projects

### Vulnerability Summary

Locations along the interstate or the Union Pacific Railroad are at an increased risk of radiological hazards from transportation related incidents. Due to the current status of the Fort Calhoun Nuclear Power Plant, locations along the Missouri River are also at an increased risk.

## River Flooding

### General Description

River flooding is the rise of river waters that submerges land that is typically dry. Flood events can occur at a local level, affecting only a few people or businesses, or throughout a whole region. Flooding is most commonly caused by excessive rainfall or snowmelt but can also be caused by the obstruction of drainage routes. When drainage routes are obstructed, such as in the case of landslides, ice or debris, water is prevented from flowing downstream which can cause upstream flooding and if the water is released, flooding, or in the case of a sudden release, flash flooding can occur downstream. Floodwaters can be extremely dangerous as the force of moving water of six inches can knock people off their feet and two feet of water can move a car. Different from flash flood, river flooding generally develops over a period of days, though it can still rise quickly enough to cause damage or deaths. Also, unlike flash flooding, a river flood event may occur for a longer period of time, whereas flash floods are shorter in duration to time. Flooding is a naturally occurring event and is expected annually. It is usually restricted to specific streams, rivers or watershed areas and thus not a county-wide issue.

### Historical Occurrences

Due to the location of Harrison County with the Missouri River, and the abundance of waterways throughout the county, river flooding is a frequent occurrence. According to NOAA storm data located in

Appendix C, there have been 5 reported occurrences of river flooding in the last years causing $2.9 in property damage and $31,950 in crop damage. In 2024, Harrison County received five State disaster proclamations for flooding.

## Location, Probability, and Extent

Similar to flash flooding and as mentioned before, the causes of river flooding can be caused or intensified by urban development, channelization of streams and the destruction of natural reservoirs. Urban flooding can also be caused or intensified by aging storm sewer systems not designed to carry the current runoff capacity. To reduce the negative effects of river flooding, natural river and stream ecosystems need to be preserved and development needs to protect against damage from flooding and prevent runoff from affecting other developed areas.

The National Flood Insurance Program (NFIP) Repetitive Loss Properties (REP) report identifies properties vulnerable to multiple flood losses.
The following map shows the areas of potential flooding using mapped FEMA flood zones:

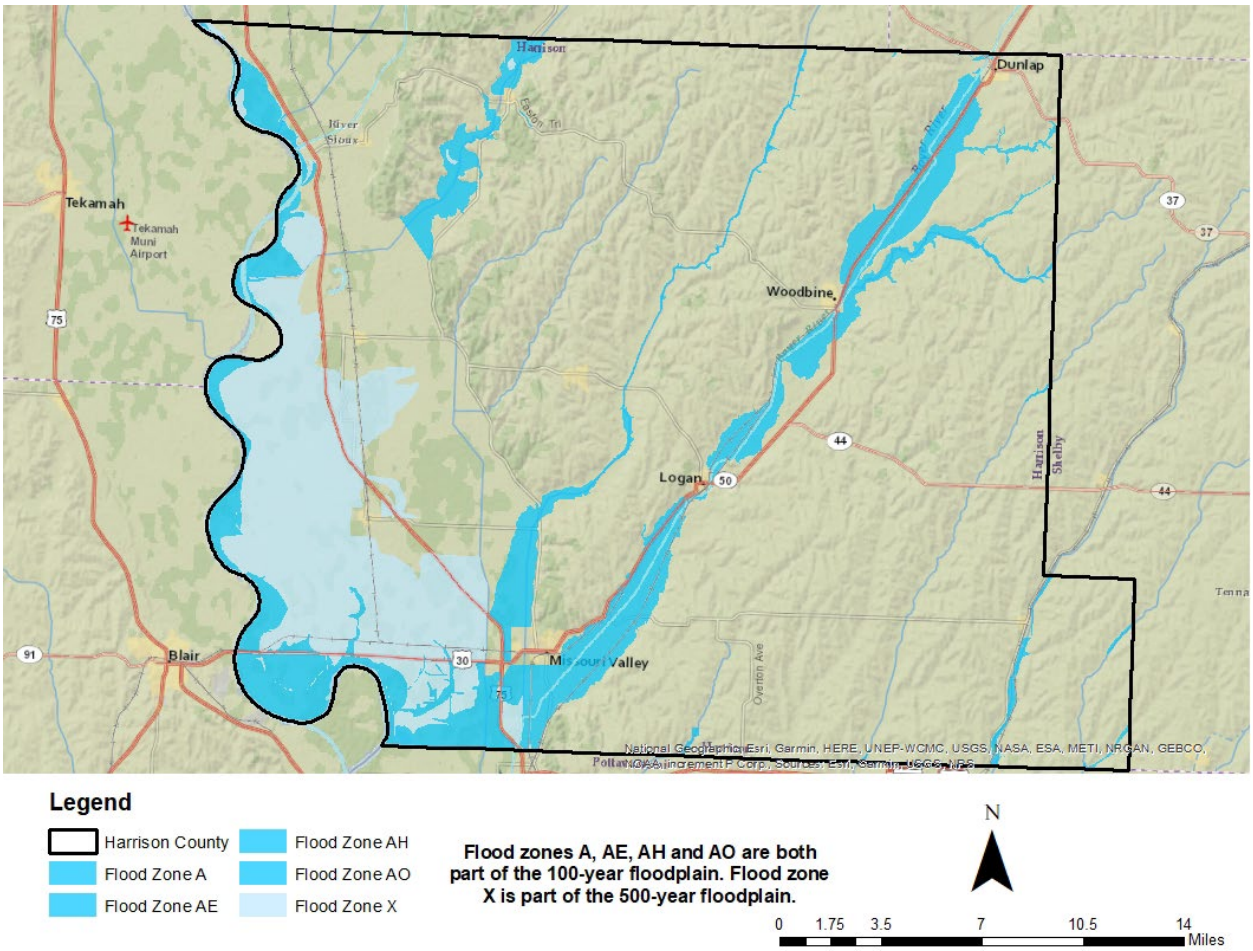
- Zone A - Areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.

- Zone AE and A1-30 - Areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Base Flood Elevations (BFEs) are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.

- Zone X – Areas subject to inundation between the BFE and 0.2-percent-annual-chance flood.

- 0.2 PCT ANNUAL – Areas subject to 0.2-percent-annual-chance flood event.

**Map 4.16 – Harrison County Flood Zone Map**




Source: FEMA

### Summary of Vulnerability

Towns located within a floodplain or adjacent to a floodplain will have the highest vulnerability to this hazard. Those towns that are protected by levees as noted in Map 4.1 such as Missouri Valley, Logan, Woodbine, and Pisgah are also at an increased vulnerability due to the possibility of levee failure. Past occurrences of levee failure within the county have led to major flooding impacts including loss of property and economic impacts.

## Severe Winter Storm

### General Description

Severe winter weather conditions occur during the coldest parts of the year and include blizzard conditions, heavy snow, blowing snow, freezing rain, heavy sleet and extreme cold temperatures. Severe winter weather conditions can disrupt day to day activities and even cause damages and fatalities. Winter storms in Iowa are common during the months of October through April with the harshest months occurring between December and February.

### Historical Occurrences

The State of Iowa sees frequent occurrences of severe winter storms and related conditions typically over the months of December through March. According to NOAA storm data, Harrison County had thirty-two recorded incidents of severe winter weather in the past ten years (Appendix C). Even though there are a high number of occurrences, the NOAA data shows that there were no reported deaths or property damage.

## Location, Probability, and Extent

Overall vulnerability to severe winter storms relative to other hazards is considered high, with significant potential impact to the general population and/or built environment and significant exposure of assets. Winter storms typically involve snow and ice, occasionally accompanied by high winds, which can cause downed trees and power lines, power outages, accidents, and road closures. Transportation networks, communications, and utilities infrastructure are the most vulnerable physical assets in the planning area and affect the jurisdiction equally. The most significant damage during winter storm events occurs when freezing rain and drizzle accumulate on utility poles and power lines causing widespread power outages.

During heavy snow and ice events, the threat to public safety is typically the greatest concern. Lower income and elderly populations are more at risk in cases of power outages during severe winter storms. These storms also impact the local economy by disrupting transportation, school and commercial activities. Travelers on roadways and highways in Cass County, particularly along remote stretches of road, can become stranded, requiring search and rescue assistance and shelter provisions. Agriculture and livestock are also vulnerable to extreme cold temperatures and heavy snow.

The various types of severe winter weather can cause considerable damage. Winter storms can immobilize transportation systems, down trees and power lines, collapse buildings and cause the loss of livestock and wildlife. Blizzard conditions are winter storms lasting at least three hours with sustained winds of 35 mph or more and create reduced visibility of 1/4 mile or less (white out conditions). Heavy snows of more than six inches in a 12 hour period or freezing rain greater than 1/4 inch accumulation can cause hazardous travel conditions in the community which can disrupt or prevent the flow of vital supplies as well as emergency and medical services. In severe winter weather, loose snow begins to drift when wind reaches a speed of 9 to 10 mph under freezing conditions. The potential for drifting snow is substantially higher in the open country than in urban areas where buildings, trees and other features obstruct the wind. Drifting snow can cover roads and make it difficult to travel as well as hide frozen ice on roadways that can often cause accidents on the road. Ice storms are characterized by freezing rain that can cause hazardous transportation conditions as well as result in fallen trees, broken tree limbs, downed power lines and utility poles and fallen communications towers. Severe ice storms can prevent first responders from providing emergency services to people in need of assistance due to the hazardous conditions it creates.

According to the National Oceanic and Atmospheric Administration winter storms regularly move easterly and are commonly a result of the southward plunge of arctic cold air from Canada and the northward flow of moisture from the Gulf of Mexico. The combination of cold air and heavy moisture produce heavy snow and blizzard conditions. Most Iowa counties can expect two or three winter storms a season with an extreme storm, on average, every three to five years.

Hypothermia is a condition when the body loses heat faster than it can produce it, causing dangerously low body temperatures. Frostbite is the condition in which damage is caused to the skin and other tissues due to freezing temperatures. Cold temperatures combined with wind chills can further reduce the perceived air temperature and thus become increasingly dangerous. Hypothermia can affect anyone, though the young and elderly are particularly vulnerable. Water pipes, livestock, fish, wildlife and pets are also affected by the dangers of extremely cold weather. The following chart illustrates the levels and wind speeds at which frostbite can occur.

**Figure 4.4 - Wind Chill Chart**

**Temperature (°F)**

| Wind (mph) | 40 | 35 | 30 | 25 | 20 | 15 | 10 | 5 | 0 | -5 | -10 | -15 | -20 | -25 | -30 | -35 | 40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **5** | 36 | 31 | 25 | 19 | 13 | 7 | 1 | -5 | -11 | -16 | -22 | -28 | -34 | -40 | -46 | -52 | -57 |
| **10** | 34 | 27 | 21 | 15 | 9 | 3 | -4 | -10 | -16 | -22 | -28 | -35 | -41 | -47 | -53 | -59 | -66 |
| **15** | 32 | 25 | 19 | 13 | 6 | 0 | -7 | -13 | -19 | -26 | -32 | -39 | -45 | -51 | -58 | -64 | -71 |
| **20** | 30 | 24 | 17 | 11 | 4 | -2 | -9 | -15 | -22 | -29 | -35 | -42 | -48 | -55 | -61 | -68 | -74 |
| **25** | 29 | 23 | 16 | 9 | 3 | -4 | -11 | -17 | -24 | -31 | -37 | -44 | -51 | -58 | -64 | -71 | -78 |
| **30** | 28 | 22 | 15 | 8 | 1 | -5 | -12 | -19 | -26 | -33 | -39 | -46 | -53 | -60 | -67 | -73 | -80 |
| **35** | 28 | 21 | 14 | 7 | 0 | -7 | -14 | -21 | -27 | -34 | -41 | -48 | -55 | -62 | -69 | -76 | -82 |
| **40** | 27 | 20 | 13 | 6 | -1 | -8 | -15 | -22 | -29 | -36 | -43 | -50 | -57 | -64 | -71 | -78 | -84 |
| **45** | 26 | 19 | 12 | 5 | -2 | -9 | -16 | -23 | -30 | -37 | -44 | -51 | -58 | -65 | -72 | -79 | -86 |
| **50** | 26 | 19 | 12 | 4 | -3 | -10 | -17 | -24 | -31 | -38 | -45 | -52 | -60 | -67 | -73 | -81 | -88 |
| **55** | 25 | 18 | 11 | 4 | -3 | -11 | -18 | -25 | -32 | -39 | -46 | -54 | -61 | -68 | -75 | -82 | -89 |
| **60** | 25 | 17 | 10 | 3 | -4 | -11 | -19 | -26 | -33 | -40 | -48 | -55 | -62 | -69 | -76 | -84 | -91 |

Frostbite Times

30 min  10 min  5 min

Wind Chill (°F) =35.74+0.615T-35.75($V^{0.16}$)+0.4275T($V^{0.16}$)

Where T=Air Temperature (°F)  V=Wind Speed (mph)

Source: NWS; NOAA

### Summary of Vulnerability

Severe winter storms affect the entirety of Harrison County, but certain populations may be at an increased vulnerability. Persons at an increased vulnerability may include the elderly, disabled, those living alone, low-income individuals, and those without access to their own vehicle. These people are more prone to be isolated in their homes and become stranded. Those of low income may have limited funds for heat or housing conditions in poor conditions to ward off the elements.

Of the 14,632 residents of Harrison County, 20% (2,926 people) of them are over the age of 65 and 3.4% (497 people) are over the age of 85. 7.1% (1,038 people) of the population was below poverty level in the last 12 months, and 4.1% (599 people) of the population have no access to a vehicle.

## Sinkholes

### General Description

Sinkholes are the depression or hole in the ground caused by the collapse of the surface layer. Sinkholes may vary in size and depth and may form gradually or suddenly. Common causes of sinkholes are from human activity such as mining of coal or other materials, groundwater or petroleum withdraw and drainage of organic soils, and natural occurrences from limestone erosion. Sinkholes often are found among karst landscapes. The Iowa Geological Survey (IGS) provides this description of karst:

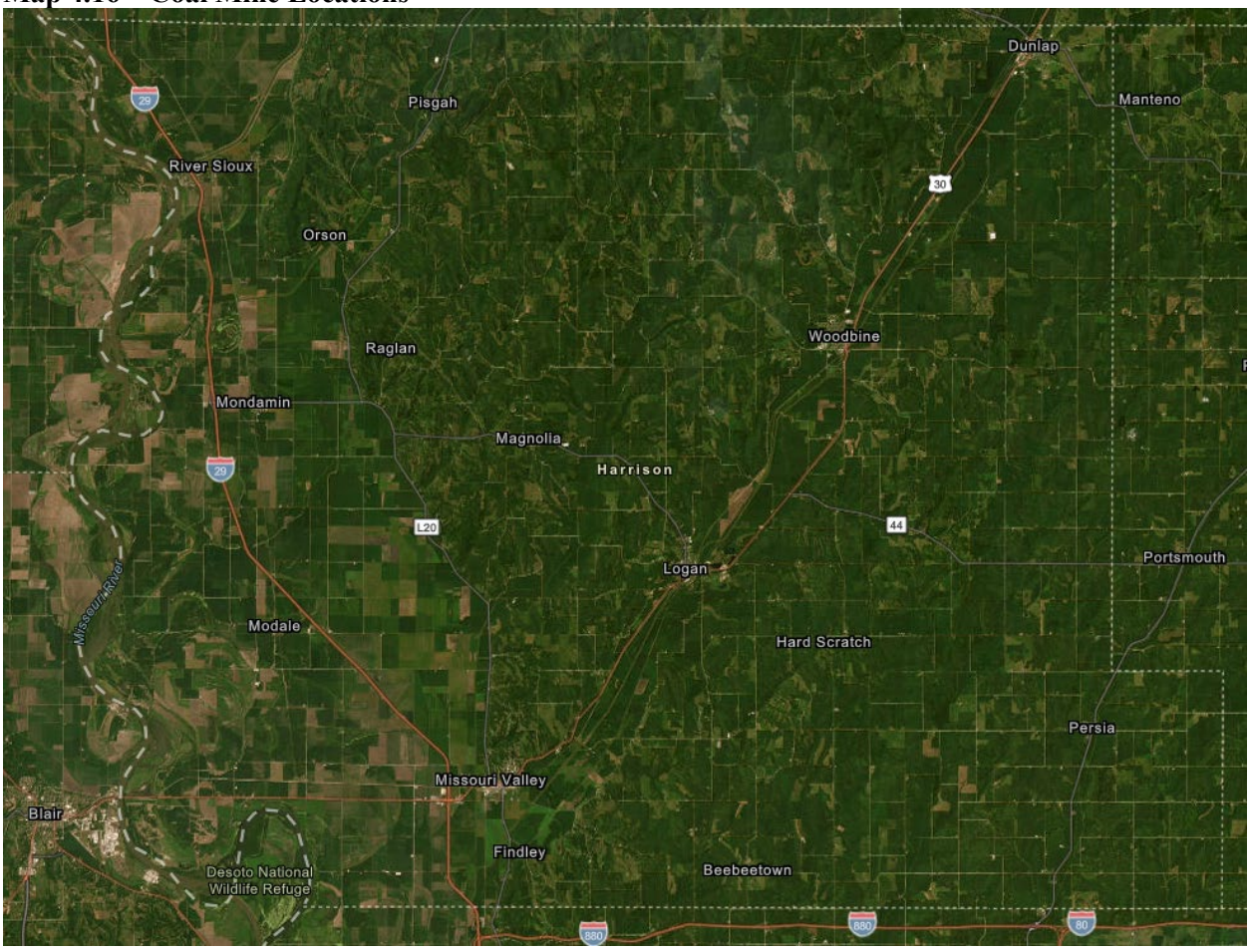
*Karst refers to geologic, hydrologic, and landscape features associated with the dissolution of soluble rocks, such as carbonates and evaporites, sinkholes form when the land surface collapses into subsurface voids formed in the slowly dissolving rock. In Iowa, carbonate rocks form the uppermost bedrock over roughly the eastern half of the state and are mantled with a variable thickness of glacial and other unconsolidated materials. Where these unconsolidated materials are less than 50 feet, and particularly less than 25 feet thick, sinkholes may occur. There are three areas in Iowa where large numbers of sinkholes exist: (1) within the outcrop belt of the Ordovician Galena Group carbonates*

*in Allamakee, Clayton, and Winneshiek counties; (2) in Devonian carbonates in Bremer, Butler, Chickasaw, and particularly Floyd and Mitchell counties; and (3) along the erosional edge of Silurian carbonates in Dubuque and Clayton counties.*

### Historical Occurrences
There have been no occurrences of sinkholes reported to the Iowa DNR within Harrison County.

### Location, Probability, and Extent
According to the Iowa DNR, all sinkhole occurrences in Iowa have happened on the eastern side of the state, particularly the northeast. Additionally, there are no known mine locations in Harrison County according to the map below from the Iowa DNR.

**Map 4.16 – Coal Mine Locations**




Source: Iowa DNR

### Summary of Vulnerability
Harrison County is at a low risk of sink holes due to the lack of historical mining locations.

## Terrorism

### General Description
This hazard encompasses a wide variety of human-caused threats including enemy attack, biological terrorism, agroterrorism, chemical terrorism, conventional terrorism, cyber terrorism, radiological

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

### Historical Occurrences

Historical occurrences of terrorism relies on local knowledge. Based on the planning committee, there have been no know occurrences of terrorism in Harrison County.

### Location, Probability, and Extent

As discussed by jurisdictions, the most common types of terrorism that would be seen in Harrison County are agro-terrorism, cyber terrorism and public disorder. Public knowledge was used for determining the probability of this hazard which was determined to be fairly low.

### Summary of Vulnerability

Areas that may be the most vulnerable to acts of terrorism may include public buildings such as law enforcement buildings, schools, government offices, or municipal utilities. These buildings tend to be easy targets that receive public awareness quickly.

## Thunderstorms, Lightning and Hail

### General Description

Thunderstorms are common in Iowa and can occur singly, in clusters, or in lines. Thunderstorms can result in heavy rains, high winds (reaching or exceeding 58 mph), tornadoes, or hail. Thunderstorms are created from a combination of moisture, rapidly rising warm air, and the lifting mechanism such as that caused when warm and cold air masses collide. Most severe storms cause little damage, but some can be life threatening and cause extensive damage to buildings, trees, utilities, and crops. Tornadoes are relatively common in Iowa, including Cass County, particularly in spring and summer. The potential for tornadoes to occur is county-wide and Iowa is known to have a long history of having a higher rate of tornadoes per square mile than any other state. Lightning can cause damage to electronic equipment located inside buildings. Communications equipment and warning transmitters and receivers could be knocked out by lightning strikes. Hail can cause significant damage to buildings, utilities, and crops. While thunderstorms can produce a number of weather related hazards; many of these were separated into individual hazard categories due to their severity and unique characteristics in the region.

Lightning is an electrical discharge that results from the buildup of positive and negative charges within a thunderstorm. When the buildup becomes strong enough, lightning appears as a “bolt” or flash of light that occurs within the clouds or between the clouds and the ground. A bolt of lightning reaches temperatures approaching 50,000 degrees Fahrenheit in a split second. This rapid heating, expansion, and cooling of air near the lightning bolt creates thunder. Due to the geography and the humid continental climate of the area, there is a possibility that summer storms can turn into severe thunderstorms and cause damage. The proper conditions that often create severe thunderstorms include moisture to form clouds and rain, relatively warm and unstable air that can rise rapidly, and weather fronts and convective systems that lift air masses.

Hailstorms are a product of a severe thunderstorm in which pellets or lumps of ice (of most concern when greater than 1 inch in diameter) fall with rain. Hail is produced in many strong thunderstorms by strong rising currents of air carrying water droplets to a height where freezing occurs, the ice particles grow in size until they are too heavy to be supported by the updraft and fall back to earth. Hail can be smaller than a pea or as large as a softball and can be very destructive to plants and crops. Pets and livestock are particularly vulnerable to hail. Due to historical events there is a possibility of a hailstorm occurrence in any given year.

## Historical Occurrences

Similar to severe winter weather, thunderstorms, lighting, and hail are common occurrences in Iowa. According to NOAA storm data, there were 82 occurrences of this hazard recorded in the last ten years (appendix C). That's roughly eight occurrences per year. There are no recorded property damages or deaths recorded with this hazard, but it is safe to assume that is incorrect and it just wasn't recorded with NOAA. Hail can cause extensive damage to property and crops and thunderstorms are often accompanied by strong winds that can property and crop damage.

## Location, Probability, and Extent

The development of a thunderstorm is classified in three stages: the developing stage, the mature stage and the dissipating stage. The developing stage is marked by a cumulus cloud that is being pushed upward by a rising column of air (updraft). There is little to no rain during this stage but occasional lightning can occur. The thunderstorm enters the mature stage when the updraft continues to feed the storm, but precipitation begins to fall out of the storm creating a column of air pushed downward (downdraft). This stage can produce hail, heavy rain, frequent lightning, strong winds and tornadoes. Eventually a large amount of precipitation (downdraft) is produced overcoming the updraft beginning the dissipating stage. During this stage, rainfall decreases in intensity, but lightning becomes a danger.

Overall, the risk and vulnerability assessment shows that thunderstorms are a high probability hazard, but do not cause as much property damage as tornados. The National Weather Service classifies a thunderstorm as severe if it contains hail that in one in in diameter or larger, or wind gusts of 58 mph or higher. The Tornado and Storm Research Organization (TORRO) Scale is used to classify hail stones and identify typical size and damages expected. The TORRO Scale is below.

**Table 4.6 – TORRO Scale**

| Scale | Intensity category | Typical hail diameter (mm)* | Probable kinetic energy J $m^{-2}$ | Typical damage impacts |
|---|---|---|---|---|
| **H0** | Hard hail | 5 | 0-20 | No damage |
| **H1** | Potentially damaging | 5-15 | >20 | Slight general damage to plants, crops |
| **H2** | Significant | 10-20 | >100 | Significant damage to fruit, crops, vegetation |
| **H3** | Severe | 20-30 | >300 | Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored |
| **H4** | Severe | 25-40 | >500 | Widespread glass damage, vehicle bodywork damage |
| **H5** | Destructive | 30-50 | >800 | Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries |
| **H6** | Destructive | 40-60 | | Bodywork of grounded aircraft dented, brick walls pitted |
| **H7** | Destructive | 50-75 | | Severe roof damage, risk of serious injuries |
| **H8** | Destructive | 60-90 | | (Severest recorded in the British Isles) Severe damage to aircraft bodywork |

| | | | | |
|---|---|---|---|---|
| **H9** | Super Hailstorms | 75-100 | | Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open |

### Summary of Vulnerability

The majority of the damage associated with this hazard will be property damage from wind, hail, or flash flooding. Structures that are not in good shape such as deteriorated housing or other buildings will be highly susceptible to wind damage. Crops will be highly susceptible to damage from hail and wind. Damage from flash flooding will occur in areas that are at a lower elevation, have poor or no storm sewer system, or are covered by impervious surfaces such as concrete in an urban center.

## Tornado and Windstorms

### General Description

Tornadoes and windstorms are extreme weather events where wind speeds can cause damage and destruction. The speed of the wind can tear apart structures, break branches and even lift and carry objects. It is often difficult to separate windstorms and tornado damage when winds get above 64 knots. For this reason the plan combines tornado and windstorm hazards.

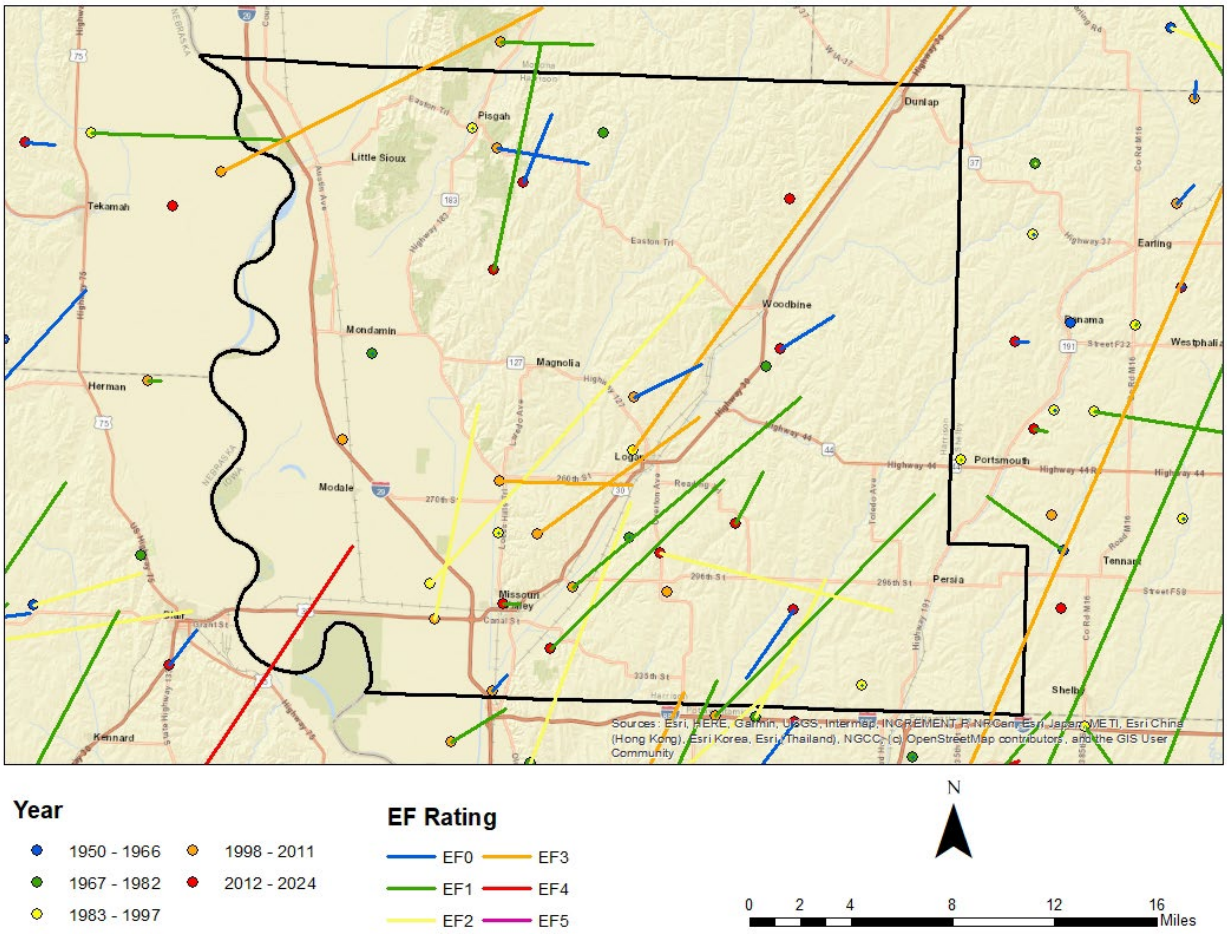
A tornado is a violent whirling wind characteristically accompanied by a funnel shaped cloud extending down from a cumulonimbus cloud that moves along the ground in a narrow, erratic path. The funnel is made visible by the dust sucked up and condensation of water droplets in the center of the funnel. Rotating wind speeds can exceed 300 mph and travel across the ground at average speeds of 25-30 mph. An average tornado is a few hundred yards wide where it touches the ground, though tornadoes can range from a few yards to around a mile wide. A tornado can move over land for many miles and stay on the ground usually no more than 20 minutes.

Windstorms, on the other hand, are extreme winds associated with severe winter storms, severe thunderstorms, downbursts, and very steep pressure gradients. Windstorms occur in all regions of the United States and have a wider area of impact than that of tornadoes. Unlike tornadoes, windstorms may have a destructive path that is miles wide and duration of the event could range from hours to days. Although Iowa does not experience direct impacts from hurricanes, windstorms cause damage similar to how hurricanes can cause damage to buildings and structures. These events can produce straight line winds in excess of 64 knots (73 mph) causing power outages, property damage, impaired visibility, and crop damage.

### Historical Occurrences

According to NOAA storm tracking, there have been 36 tornadoes that have originated in or traveled into Harrison County since 1950, with 12 of those happening within the last ten years. There were no fatalities recorded with any of these occurrences. The map below shows the starting point by year as well as the path of the tornado by EF rating. A full listing of historical occurrences can be found in Appendix C.

**Map 4.17 – Harrison County Recorded Tornado Sightings and Tracks (1950 – 2024)**




Source: NOAA Storm Prediction Center

## Location, Probability, and Extent

Tornadoes have occurred all over the world, but are prevalent in the American Midwest and South. Over a 1000 tornadoes are recorded each year in the US. Tornado season typically occurs within the months of March and April. Most tornadoes occur sometime between noon and midnight. Tornadoes can often strike with little to no warning, though advances in weather technology and prediction has given people more time to seek shelter in the event of a tornado.

Tornadoes are most deadly when they hit communities and urban areas where populations are highly concentrated. The high wind speeds can cause devastation and destruction wherever it descends and has been known to wipe out whole communities. Due to the comparative size between rural and urban places, tornadoes more commonly occur in the rural areas where they can create crop and livestock damage, destroy agricultural buildings and equipment, rural residential homes and pose a threat to the vehicles traveling on highway and interstate roads. Below is a table showing the enhanced Fujita scale showing the wind speeds and damage descriptions associated with the corresponding level.

**Figure 4.5 - Enhanced Fujita Scale and Damage Descriptions**

| EF Rating | Wind Speeds | Expected Damage |
|---|---|---|

| | | |
|---|---|---|
| EF-0 | 65-85 mph | Minor damage: shingles blown off or parts of a roof torn off, damage to gutters/siding, branches broken off trees, shallow rooted trees uprooted |
| EF-1 | 86-110 mph | Moderate Damage: more significant roof damage, windows broken, exterior doors damaged or lost, mobile homes overturned or badly damaged |
| EF-2 | 111-135 mph | Considerable damage: roofs torn off well-constructed homes, homes shifted off their foundation, mobile homes completely destroyed, large trees snapped or uprooted, cars can be tossed |
| EF-3 | 136-165 mph | Severe Damage: entire stories of well-constructed homes destroyed, significant damage done to large buildings, homes with weak foundations can be blown away, trees begin to lose their bark |
| EF-4 | 166-200 mph | Extreme Damage: Well-constructed homes are leveled, cars are thrown significant distances, top story exterior walls of masonry buildings would likely collapse |
| EF-5 | Over 200 mph | Massive/incredible Damage: Well-constructed homes are swept away, steel-reinforced concrete structures are critically damaged, high-rise buildings sustain severe structural damage, trees are usually completely debarked and stripped of branches |

Source: NOAA Storm Prediction Center

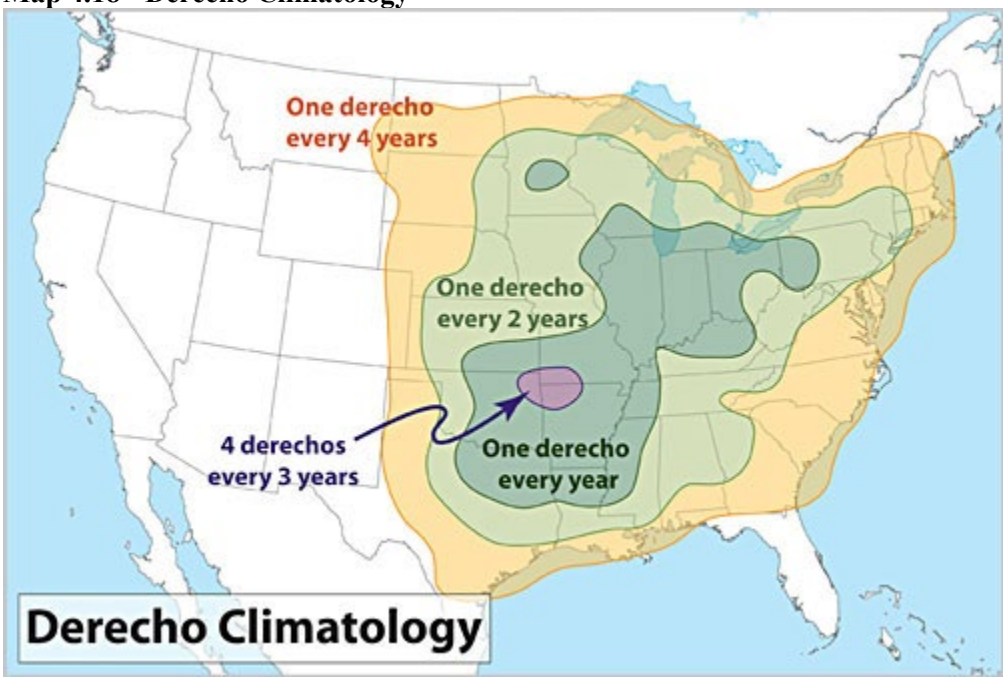
**Figure 4.6 - Beaufort Wind Scale**

| Wind Speed (mph) | Description – Visible Condition |
|---|---|
| 0 | Calm smoke rises vertically |
| 1-4 | Light air direction of wind shown by smoke but not by wind vanes |
| 4-7 | Light breeze wind felt on face; leaves rustle; ordinary wind vane moved by wind |
| 8-12 | Gentle breeze leaves and small twigs in constant motion; wind extends light flag |
| 13-18 | Moderate breeze raises dust and loose paper; small branches are moved |
| 19-24 | Fresh breeze small trees in leaf begin to sway; crested wavelets form on inland water |
| 25-31 | Strong breeze large branches in motion; telephone wires whistle; umbrellas used with difficulty |
| 32-38 | Moderate gale whole trees in motion; inconvenience in walking against wind |
| 39-46 | Fresh gale breaks twigs off trees; generally impedes progress |
| 47-54 | Strong gale slight structural damage occurs; chimney pots and slates removed |
| 55-63 | Whole gale trees uprooted; considerable structural damage occurs |
| 64-72 | Storm very rarely experienced; accompanied by widespread damage |
| 73+ | Hurricane devastation occurs |

Source: NOAA Storm Prediction Center

A derecho is a type of windstorm that is a widespread, long-lived wind storm and are associated with bands of rapidly moving showers or thunderstorms. Severe wind gusts must reach speeds greater than 57 mph along most points of a derecho path. A strong derecho can have wind speeds that exceed 100 mph. Speeds may vary within a derecho. Within the general path of a derecho, stronger winds, produced by what are called downbursts, often occur in irregularly-arranged clusters. A downburst is a concentrated area of strong wind produced by a convective downdraft, have horizontal dimensions of about 4 to 6 miles and may last for several minutes. Downbursts occur when air is chilled high in the atmosphere causing the air to be heavier than the warm air below it. Derechos occur when meteorological conditions support the repeated production of downbursts within the same general area.

**Map 4.18 - Derecho Climatology**




Source: NOAA Storm Prediction Center

### Summary of Vulnerability
Vulnerability to this hazard is not necessarily location based. All of Harrison County is susceptible. Those who live in mobile homes or manufactured homes with no basement or storm shelter nearby and those who are house bound, elderly, or do not have their own transportation, are at an increased risk to this hazard.

## Transportation Incident

### General Description
Transportation incidents can happen at any time with varying degrees of damage making them highly unpredictable. These incidents could cause damage to facilities, infrastructure, disrupt services or even result in serious injury or death. Transportation incidents could be directly related to other hazards common in the area such as winter storms or heavy rain.

### Historical Occurrences
Data regarding transportation incidents was gathered from the Iowa Department of Transportation and the Federal Railroad Administration Office of Safety Analysis. Between January 1, 2020 and December 31, 2025, there were 1,697 roadway crashes and 7 train related incidents within Harrison County.

Between January 1, 2020, and December 31, 2025, there have been 1,697 crashes recorded by the Iowa DOT within Harrison County. These crashes resulted in 217 possible injuries, 256 minor injuries, 100 serious injuries, and 19 fatalities. The majority of these crashes occurred along major transportation routes including I-29, US 30, IA 183, and IA 44.

Between January 1, 2020, and December 31, 2025, there have been seven train related incidents within Harrison County. None of the incidents reported resulted in any injuries.

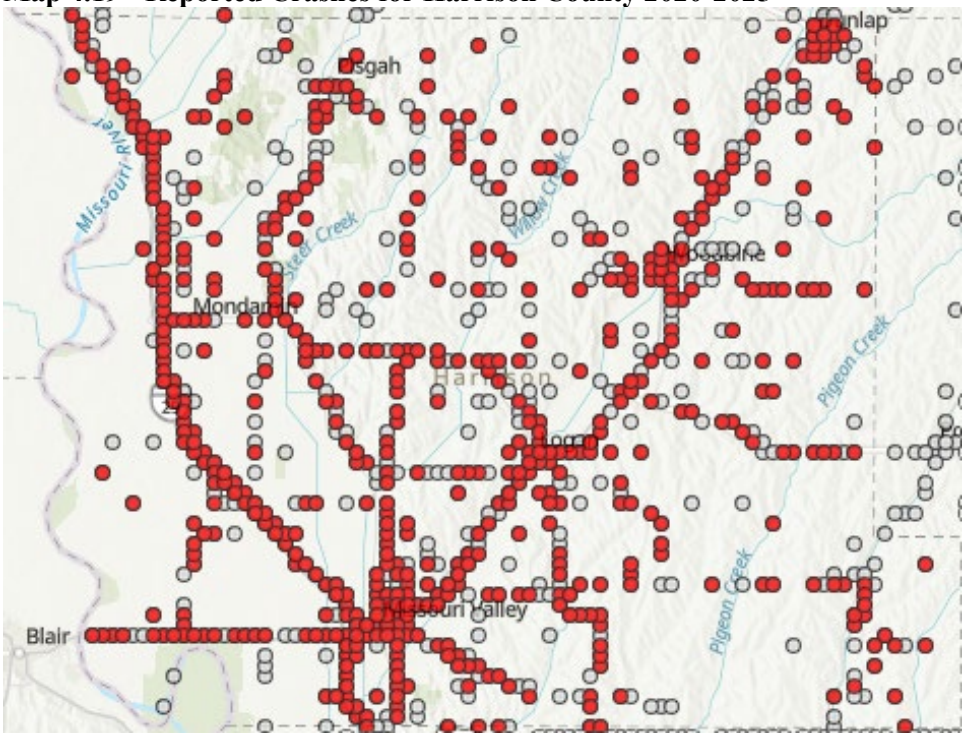
**Table 4.6 – Train Derailments**

| Date | Description |
|---|---|
| June 10, 2020 | MCBPR-10 HAD THE SECOND LOCOMOTIVE, UP5598 ON FIRE, TRAVELING EAST ON BLAIR SUB, MAIN TRACK 2. NO DERAILMENT OR TRACK DAMAGE. |
| March 19, 2022 | THE IG4SE-18 WAS SHOVING EB INTO MT#1 (MP 334.7 BLAIR SUB) AT ALLEN CREEK, TO PERFORM A SET OUT ANDDERAILED 11 INTERMODAL |
| August 26, 2023 | THE GSVSEE-24 WAS COMING DOWN THE WYE FROM THE SIOUX CITY SUB TO THE BLAIR SUBDIVISION, AND HAD THEREAR 2 CARS AND THE DPU DERAIL WHEN THEY TRAVERSED TRACK THAT HAD CROSS LEVEL THAT WAS IRREGULAR. |
| February 26, 2024 | ZG2LT-26 WAS TRAVELING AT 49 MPH WHEN THEY STRUCK A CROSSING PLANK DISPLACED ON TOP OF THE RAIL AT AFARMER CROSSING, DERAILING THE LEAD LOCOMOTIVE FRONT TRUCK AND TRAVELING APPROXIMATELY 7,117 FEET BEFORE GETTING STOPPED. UPON INVESTIGATION CAMERA FOOTAGE WAS REVIEWED OFF THE PREVIOUS TRAIN THAT TRAVERSED THE SAME TRACK AND VERIFIED CROSSING WAS INTACT. DURING THE INVESTIGATION IT APPEARED A FARMEQUIPMENT DISPLACED THE PLANK WHEN TRAVERSING OVER THE CROSSING FROM THE FIELD TO HIGHWAY 30. |
| July 3, 2024 | THE GSMEAL-01 WAS TRAVELING WEST AROUND THE WEST LEG OF THE WYE, COMING OFF THE SIOUX CITY SUB ONTOTHE BLAIR SUB, WHEN THE CREW ON THE MCBSX-03 NOTICED THE REAR CAR WAS DERAILED AND RADIOED TO THE GSMEAL-01 TO STOP. AFTER INSPECTION, THE POD WAS FOUND ON THE CONNECTING WYE TRACK AND DETERMINED AN IRREGULAR TRACK ALIGNMENT WAS THE PRIMARY CAUSE. THE REAR CAR WAS |

| | |
|---|---|
| | DRAGGED APPROXIMATELY 3,400 FT. CARWAS STILL UPRIGHT WITH NO RELEASE. EXTENSIVE TRACK DAMAGE. |
| March 10, 2025 | CNADE-08 WAS TRAVELING EAST AT 26 MPH, CROSSING OVER FROM #1 TO #2 TRACK ON THE BOONE SUB, 3 BOLTS THAT CONNECTED THE SHORT POINT TO LONG POINT ON THE MOVABLE POINT FROG 1ST BOLT WAS SHEERED. 2ND BOLTIS BENT, 3RD BOLT HAS THE THREADS PULLED THROUGHFROM THE FORCES OF THE LOADED RAILCARS PUSHING ON THE RAIL, ALLOWED A WHEEL TO GET BEHIND THE POINT, RESULTING IN DERAILING 3 RAILCARS. CONSIST HAD 280LOADS. |
| June 19, 2025 | TAMPER CAT1206 DERAILED ON CROSSOVER MOVE. |

Source: Federal Railroad Administration Office of Safety Analysis

**Map 4.19 - Reported Crashes for Harrison County 2020-2025**




Source: Iowa DOT Crash Analysis Tool, 2026

## Location, Probability, and Extent

Transportation related incidents happen annually and vary in severity. Roads with the highest AADT counts, such as I-29, US 30, IA 183, and IA 44, are likely to have a higher number of motor vehicle related incidents. Roads that are in a poorer condition or have increased safety risks are also at an increased risk. Map 4.11 shows these road conditions.

Based on the numbers from the Iowa DOT indicating there were an average of 300 automobile related transportation incidents per year in the last five years, there is a 100% probability that this hazard will continue to affect Cass County.

Transportation related incidents are typically localized to the area they occurred and may result in the road being shut down short term for clean up. However, depending on the manner of the incident, the extent

could be much larger. If the vehicles involved are carrying hazardous materials, that can affect a large area and cause additional hazards to the surrounding environment that could cross jurisdictional lines.

### Summary of Vulnerability

The most prevalent form of transportation incident within Cass County comes from automobiles on roadways. Because of this, areas near roadways with high traffic volumes are at an increased risk of experiencing a transportation incident. Areas near airports or railroads are also at an increased risk. Transportation incidents can lead to injury or death for those involved or nearby, road closures, damage to infrastructure, or damage to the environment depending on if hazardous materials are involved.

# Assessing Vulnerability

After identifying the potential hazards within the jurisdiction and creating a profile of each hazard, this portion of the hazard analysis and risk assessment seeks to analyze and identify the total vulnerability of each jurisdiction in the event of a hazard event. First, early in the planning process, critical facilities were identified to determine populations most at risk to any type of hazard or facilities that were crucial to the functions of the community. This process is important to the mitigation strategy as it can greatly influence how the goals, objectives and actions, outlined in the following section, will target the community. Then a Community Assessed Value was calculated to determine a total vulnerability and inventory of a community's assets based on a dollar value for each jurisdiction. In the event of a disaster the value of a community can be used to estimate the potential loss to the community. Knowing the assessed value or estimated loss can help in determining resources needed to prevent or mitigate loss created by a particular hazard or incident.

# Community Lifelines

In 2019, the Federal Emergency Management Agency (FEMA) formally established the concept of Community Lifelines to strengthen emergency management planning, response, and recovery nationwide. Community Lifelines represent the essential services that enable communities to function during and after a disaster. Rather than focusing solely on individual facilities, this framework emphasizes the interconnected systems that sustain public health, safety, security, and economic stability. By organizing critical assets under broader lifeline categories, local jurisdictions can better identify vulnerabilities, prioritize investments, and coordinate response actions.

FEMA identifies seven Community Lifelines: Safety and Security; Food, Water, and Shelter; Health and Medical; Energy (Power & Fuel); Communications; Transportation; and Hazardous Materials. Each lifeline encompasses multiple facilities, infrastructure components, personnel, and support systems. For example, the Health and Medical lifeline includes hospitals, clinics, pharmacies, long-term care facilities, emergency medical services, and supporting supply chains. The Energy lifeline extends beyond power plants to include substations, fuel distribution systems, and backup generation capabilities. Viewing these systems collectively recognizes that disruption to one component can cascade across others.

Incorporating Community Lifelines into the hazard mitigation plan shifts the focus from a static inventory of "critical facilities" to a more dynamic, systems-based approach. This perspective acknowledges that resilience depends not only on protecting individual buildings but also on maintaining service continuity. For example, a hospital may be structurally sound, but without power, water, communications, transportation access, and available staff, it cannot function. The lifelines framework encourages counties and communities to evaluate dependencies, identify single points of failure, and consider redundancy and continuity planning as part of mitigation strategy development.

## Community Value Assessment

In determining a value for each jurisdiction, the number of structures, value of structures, value of crop land and population was gathered. Structure count and value was broken down by land use to illustrate different characteristics of a community that could potentially be impacted by each hazard. County Assessor data

was used to find the dollar value of structures and used to find the total number of structures, the Iowa Department of Natural Resources structure locations was used to help identify information missing from the County Assessor and U.S. Census population data was used to determine the affected population. Due to the importance of agriculture to the county, estimated yearly values for crops and animals were gathered from the United States Department of Agriculture's 2022 Census of Agriculture.

Hazards that had the same area of vulnerability were grouped together, while hazards having specific vulnerable areas were separated and given different values. Hazards that could affect any part of the county include windstorms/tornadoes, severe winter storms, thunderstorm/lightning/hail, drought, extreme heat and flash flooding. River flooding was separated as the areas vulnerable to this hazard are typically in flood plains. Areas, more specifically the number of structures, value of structures and crop totals, vulnerable to river flooding were calculated by overlaying FEMA flood plain data on County Assessor data and Iowa DNR data to calculate the assessed value vulnerable to the hazard.

Due to limitations in data and time to gather data and complete an analysis, the data shown is the closest approximation to the value of the community or jurisdiction. Assessor data often did not include or was missing data on tax exempt buildings and infrastructure. Some of this information was obtained by contacting local governments and organizations and getting insurance values. Also, assessor data was not broken down by land use beyond residential, commercial, industrial and agricultural. When obtaining data from local governments and organizations, data was categorized under the proper land use type under government, education, utilities and an added category of medical and health. It was also impossible to separate the number of people affected by each hazard by the land use. It is difficult to determine those who would be directly impacted by the loss of a structure or building as it would require data on the number of people who either live in or use each structure or building. It is also very likely that a possible event could indirectly impact a large number or most of the population through reduced services of impacted populations. Instead, the community population represents the total number of people that could potentially be impacted.

The following tables show the total assessed value of Harrison County. Individual assessed value for each jurisdiction is located in each jurisdiction's appendix.

In tables below, the following hazard areas designate
A: Tornado/Windstorm, Severe Winter Storm, Thunderstorm/Lightning/Hail, Drought, Extreme Heat, Flash Flooding, Terrorism, Transportation Incidents, Radiological, Human Disease, Infrastructure Failure
B: River Flooding
C: Grass/Wild Fire
D: Hazardous Materials

**Table 4.7 - Harrison County Community Assessment**

| Type of Structures | Quantity | # in Hazard Area (A) | % in Hazard Area (A) | # In Hazard Area (B) | % in Hazard Area (B) | # in Hazard Area (C) | % in Hazard Area (C) | # in Hazard Area (D) | % in Hazard Area (D) |
|---|---|---|---|---|---|---|---|---|---|
| **Agriculture** | 14,862 | 14,862 | 100% | 6,103 | 41.1% | 14,862 | 100% | 5,438 | 36.6% |
| **Commercial** | 1,772 | 1,772 | 100% | 395 | 22.3% | 872 | 49.2% | 1,443 | 81.4% |
| **Industrial** | 25 | 25 | 100% | 1 | 4.0% | 19 | 76% | 25 | 100% |
| **Multi-Residential** | 86 | 86 | 100% | 4 | 4.7% | 8 | 9.3% | 83 | 96.5% |
| **Residential** | 8,012 | 8,012 | 100% | 695 | 8.7% | 3,539 | 44.2% | 6,094 | 76% |
| Total: | **24,757** | **24,757** | **100%** | **7,198** | **29.1%** | **19,300** | **78%** | **13,083** | **52.8%** |

**Source: Harrison County Assessor (2020), FEMA, Iowa DNR**

**Table 4.8 - Harrison County Value of Structures**

| Type of Structures | Value | Value in Hazard Area (A) | % in Hazard Area (A) | Value in Hazard Area (B) | % in Hazard Area (B) | Value in Hazard Area (C) | % in Hazard Area (C) |
|---|---|---|---|---|---|---|---|
| **Agriculture** | $153,051,498 | $153,051,498 | 100% | $32,553,744 | 21.3% | $153,051,498 | 100% |
| **Commercial** | $133,685,023 | $133,685,023 | 100% | $15,898,820 | 11.9% | $58,775,068 | 44% |
| **Industrial** | $8,535,084 | $8,535,084 | 100% | $206,506 | 2.4% | $7,618,716 | 89.3% |
| **Multi-Residential** | $20,176,431 | $20,176,431 | 100% | $158,372 | 0.8% | $741,333 | 3.7% |
| **Residential** | $542,597,983 | $542,597,983 | 100% | $37,677,770 | 6.9% | $298,813,373 | 55.1% |
| Total: | **$858,046,019** | **$858,046,019** | 100% | **$86,495,212** | **10.1%** | **$518,999,988** | **60.5%** |

| Type of Structures | Value | Value in Hazard Area (D) | % in Hazard Area (D) |
|---|---|---|---|
| Agriculture | $153,051,498 | $50,644,477 | 33.1% |
| Commercial | $133,685,023 | $127,397,965 | 95.3% |
| Industrial | $8,535,084 | $8,535,084 | 100% |
| Multi-Residential | $20,176,431 | $19,718,882 | 97.7% |
| Residential | $542,597,983 | $360,812,223 | 66.5% |
| **Total:** | **$858,046,019** | **$567,108,631** | **66.1%** |

**Source: Harrison County Assessor (2020), FEMA, Iowa DNR**

**Table 4.9 – Harrison County Population of Jurisdiction**

| City | Population Estimate (2024) |
|---|---|
| **Dunlap** | 1,170 |
| **Little Sioux** | 129 |
| **Logan** | 1,392 |
| **Magnolia** | 180 |
| **Missouri Valley** | 2,666 |
| **Modale** | 181 |
| **Mondamin** | 403 |
| **Perisa** | 294 |
| **Pisgah** | 255 |
| **Woodbine** | 1,471 |

**Source: U.S. Census, American Community Survey (2024)**

**Table 4.10 - Harrison County Crop and Animal Values**

| Crops and Animals | Estimated Yearly Value |
|---|---|
| Corn | $108,561,000 |
| Soybeans | $65,040,000 |
| Other crops | $1,703,000 |
| Cattle and calves | $19,815,000 |
| Other animals including products | $21,082,000 |

**Source: Census of Agriculture (2017)**

# Section V: Mitigation Strategy

The purpose of the mitigation strategy is to outline potential actions that can be pursued to reduce the losses identified in the risk assessment. The following sections then outlines the community goals, objectives and actions, assess the capabilities of each jurisdiction and provide possible funding sources that are currently available. The goals, objectives and actions are steps that each jurisdiction may follow in order to better protect is citizens. The local capability assessment shows what resources are available to each jurisdiction needed to implement hazard mitigation policies or actions. Lastly, possible or potential funding sources are identified that would help communities accomplish their action and objectives.

## Implementation Strategy

By reviewing each action, each jurisdiction had to consider a number of factors that would make the action feasible and beneficial. These included understanding the costs in time and personnel required as well as a general idea of the funding required and available to implement each action. Each jurisdiction, knowing the resources available to them and the characteristics of the community, were in the best position to determine which actions would be most beneficial in mitigating hazard risk while still within their capacity to implement the action. The categories of the cost/benefit analysis for each action item is as follows:

- Related Hazard – Which hazards the action could/would address.
- Funding Sources – The level at which funds could be obtained to implement the action.
- Estimated Cost – Possible costs that could be associated with implementation to the project.
- Benefit – Possible benefits if the action is implemented.
- Obstacles to Implementation – Possible limitations or obstacles that could prevent the action from being implemented.
- Responsibility – Agency, organization or entity that might be responsible for implementing the action.
- Time Frame – General completion time.
    - Long-term: 5+ years
    - Mid-term: 3-5 years
    - Short-term: 1-3 years
    - Continuous: an ongoing item that has no specific end date

## Update on Previous Actions

During our objectives and actions public meeting, SWIPCO staff gave each participant a list of mitigation actions from the prior plan. Participants reviewed mitigation actions from their prior plans to determine if they had been completed, needed revisions to reflect changes in development, progress in mitigation efforts, or changes in priorities. Participants were not only asked to create their own actions but consider actions from the prior plan that remained relevant to their jurisdictions. Participants were then asked to create a set of their own actions. Each participant could suggest items on the list to include in their plan, repeat actions listed in the prior plan, or add new actions to be created for their respective jurisdiction.

**Table 5.1 – Rural Harrison County Status of Previous Mitigation Actions**

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| Remove dilapidated, abandoned, or dangerous structures that pose or enhance a threat to people | | | | | X | | |
| Adopt / maintain and enforce building codes to ensure new construction and development will not create new risk to the county | | | | | X | | |
| Provide assistance in installing and training of proper usage of fire extinguishers | | | X | | | | |
| Establish or maintain standards and methods that protect power lines and infrastructure from potential risks | | | X | | | | |
| Adopt / maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure. | | | X | | | | |
| Build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand heavy winds and severe weather | | | | X | | | |
| The county, through the responsibility of the utility companies (REC and Mid-American Energy), will establish or maintain standards and methods that protect power lines and infrastructure from potential risks | | | X | | | | |
| Construct a Red Cross certified and FEMA approved safe room/s in a public facility | | | | X | | | |
| Ensure access to safe rooms for students and staff in the event of a hazard incident | | | X | | | | |
| Remove dilapidated, abandoned, or dangerous structures that pose or enhance a threat to people | | | | X | | | |
| Create and implement a plan to maintain road clearing capabilities and repair roads following adverse weather conditions | | | X | | | | |
| Assist residents in obtaining funding for homes that need house repairs and winterization | | | | | X | | |
| Build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand snow loads and prevent roof collapse | | | X | | | | |
| Expand awareness on energy efficient building materials and techniques that adequately protect people from adverse weather conditions | | | | | X | | |
| Construct a new levee / dike / berm that protects the facility from flood damage | | | | X | | | |
| Construct / upgrade / maintain drainage and storm sewer systems (pipes, culverts and channels) to meet proper capacity requirements that provide systems that adequately and safely remove excess water from developed areas | | | X | | | | |
| Maintain compliance / join the National Flood Insurance Program (NFIP) | | | X | | | | |
| Adopt / maintain and enforce codes and ordinances that protects future development from flooding and restricts encroachment of the built environment in the floodplain | | | X | | | | |
| Keep streams, creeks and flood ditches clear of debris and blockages to ensure they flow properly | | | X | | | | |

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|---|---|---|---|---|---|---|---|
| Expand awareness of incentives and disincentives on property or homeowner insurance that promote smart development and reduce hazard risk | | | | X | | | |
| Make weather alert radios available to citizens by identifying and obtaining funding to subsidize the purchase of radios | | | | X | | | |
| Encourage homeowners to install carbon monoxide monitors and alarms | | | X | | | | |
| The jurisdiction will upgrade early warning siren systems to add an additional level of early warning | | | X | | | | |
| Train public staff that are able to provide information relating to severe weather | | | X | | | | |
| Upgrade and maintain the county-wide mass notification early warning systems | | | X | | | | |
| Continue participation in the statewide mass notification system | | | X | | | | |
| Provide outreach and assistance to vulnerable populations to implement hazard mitigation projects and programs. | | | X | | | | |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| Develop or maintain an inventory of equipment available to emergency responders to ensure resources can be easily and quickly identified in an event of a disaster | | | X | | | | |
| Develop a plan to phase purchases of replacement emergency response equipment. | | | X | | | | |
| Investigate resources and funding to obtain the proper and necessary equipment for emergency response personnel | | | X | | | | |
| Partner with or maintain partnership with outside organizations that are able to provide or share emergency response resources and/or equipment | | | X | | | | |
| Maintain and update evacuation plans | | | X | | | | |
| Provide training to emergency response personnel | | | X | | | | |
| Evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations | | | X | | | | |
| Identify, maintain and train volunteer groups that are able to provide assistance or respond in the event of a disaster or emergency | | | | X | | | |
| Create and maintain policies that designate secondary personnel to handle disaster response and recovery | | | | X | | | |
| Build or maintain infrastructure that protects critical facilities such as, but not limited to, levees and berms in floodways | | | | | X | | |
| Maintain, improve and continually test early warning systems (sirens, etc.) | | | X | | | | |
| Designate new or alternative critical facilities that are outside of hazard areas | | | | | X | | |
| Purchase generators for facilities that provide critical services to the county in the event of a power outage | | | | X | | | |
| Establish / maintain mutual aid agreements (28E or other) between all local jurisdictions | | | X | | | | |
| Update and maintain a list of contacts that respond to emergencies | | | X | | | | |
| Regularly test communications equipment between local jurisdictions | | | X | | | | |
| Promote training between emergency response departments | | | X | | | | |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| Support Severe Weather Awareness Week by creating or continuing activities that teach severe weather hazards and proper safety techniques | | | X | | | | |

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|---|---|---|---|---|---|---|---|
| Identify and invite outside organizations that can teach hazard safety to youth | | | X | | | | |
| Conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques | | | X | | | | |
| Create an additional educational program in schools that teach youth hazard safety preparedness and response | | | | X | | | |
| Identify or produce new materials and/or resources to teach youth about hazard risk and proper safety techniques | | | | X | | | |
| Utilize media outlets and other resources to send hazard awareness materials and information to residents | | | X | | | | |
| Train public employees/staff to increase capacity to provide hazard awareness materials and information. | | | | X | | | |
| Create an emailing/mailing list to send materials and information to residents relating to hazard risks. | | | X | | | | |
| Promote and educate county text/phone notification systems available | | | X | | | | |
| Expand awareness of critical facilities available to the public in the event of a hazard | | | X | | | | |
| Expand awareness of evacuation routes and procedures | | | | X | | | |
| Expand awareness of resources that will protect the public from severe weather incidents. | | | X | | | | |

# Goals, Objectives and Actions

The goals, objectives and actions are a series of strategies and steps that the local jurisdictions will follow in order to reduce risk of potential hazards. The purpose of these general guidelines are to eliminate or reduce long-term risks to life and property, reduce disaster response and recovery costs and minimize disruption to the communities. Goals are statements that are written in general terms and do not lay out any specific strategies and are broad in order to cover all potential areas of hazard risks. The hazard mitigation goals created for this plan instead lay a path to achieve results that better the community by reducing the risks of hazards. Objectives are the means in which the goals that were previously set will be met. These are smaller in scope and are targeted to break down and identify specific, measurable areas of the goals that are to be addressed by specific actions. The actions are specific steps that can be accomplished to eventually achieve the objectives and goals.

The goals, objectives and actions were developed in conjunction with SWIPCO staff through meetings and discussions held with the jurisdictions. Participants representing each jurisdiction developed the best set of goals, objectives and actions that related to their jurisdiction. Because the goals and objectives from each jurisdiction were broad and similar, they were developed as shared goals and objectives. It was decided by the participants of these meetings that the goals developed by the State of Iowa in their Hazard Mitigation Plan already represented their goals, so they were directly taken from the state plan. The objective and action items were then discussed amongst the planning members and developed during the meetings held by SWIPCO. The goals, objectives and actions were then reviewed by each jurisdiction in subsequent meetings for adjustments and approval.

- Goal # 1 – Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs and damage to the natural environment caused by a disaster.

- Goal #2 – Ensure government operations, response and recovery are not significantly disrupted by disasters.

- Goal #3 – Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards.

During our objectives and actions public meeting, SWIPCO staff gave each participant a list of general mitigation actions as a reference along with a list of mitigation actions from the prior plan. Participants reviewed mitigation actions from their prior plans to determine if they had been completed, needed revisions to reflect changes in development, progress in mitigation efforts, or changes in priorities. Participants were not only asked to create their own actions, but consider actions from the prior plan that remained relevant to their jurisdictions. Participants were then asked to create a set of their own actions. Each participant could suggest items on the list to include in their plan, repeat actions listed in the prior plan, or add new actions to be created for their respective jurisdiction. After a number of action items were created using feedback from the community meeting, planning teams from each jurisdiction decided on which actions they would each implement by ranking the priority of each action. The ranked action items represent each jurisdiction's implementation strategy to reduce hazard risk.

Each action is listed with the priority of implementation for each action represented as high, medium or low for each jurisdiction. To help determine the priority, jurisdictions were asked to select 3-5 hazards that they considered to be a top concern for their community. These selections were based on their local knowledge of the community, what hazards occur the most and have the most effect of their community, and what their known vulnerabilities are. The priority of each action is as follows:

- (H) High – Addresses a high concern hazard identified by the jurisdiction
- (M) Medium – Does not address a high concern hazard identified by the jurisdiction, but the action item addresses a hazard that is either frequently occurring or still poses a somewhat regular threat to life or property within the jurisdiction
- (L) Low – Does not address a high concern hazard and does not directly mitigate risks associated with a frequently occurring hazard or a hazard that poses a somewhat regular threat to the jurisdiction

Where possible jurisdictions will partner to further each other's goals. If the action is city-specific, the individual jurisdiction will be responsible for implementation and reporting to the emergency management department.

During the community meetings each jurisdiction was provided additional space for certain action items so that additional details could be included with each action item. These additional details were to enable each jurisdiction to personalize the actions. The following tables in this section detail the actions for each jurisdiction.

# Implementation Plan

After mitigation actions were determined, each jurisdiction was asked to develop an implementation plan detailing the implementation process for each action. Jurisdictions looked at aspects such as who would be responsible for implementing the action, the priority, potential obstacles, and possible funding sources. Priority and estimated cost were determined by each individual jurisdiction and are subjective to interpretation by each jurisdiction as something that is a low cost to the county, may be an extremely high cost to a small city.

**Table 5.2 -Rural Harrison County Action Items and Implementation Strategy**

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Source(s) | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| Remove dilapidated, abandoned, or dangerous structures that pose or enhance a threat to people | Grass or Wild Land Fire, Flash Flooding, River Flooding, Thunderstorm/ Lightning/Hail, Tornado/ Windstorm, Infrastructure Failure, Severe Winter Storm | Low | Property Owner | Varies | SWIHTF, owner | Enforcement, owners | Ongoing |
| Adopt / maintain and enforce building codes to regulate building construction to mitigate risk of structure failure and ensure development will not create new risk to the county | Grass or Wild Land Fire, Flash Flooding, River Flooding, Thunderstorm/ Lightning/Hail, Tornado/ Windstorm, Infrastructure Failure, Severe Winter Storm | Low | Board of Supervisors, Cities | Moderate | County General Fund | Enforcement and staff time | Ongoing |
| Provide assistance in installing and training of proper usage of fire extinguishers | Grass or Wild Land Fire | Medium | Local Fire Departments | Low | County or City General Funds | None | Ongoing |
| Establish or maintain standards and methods that protect power lines and infrastructure from potential risks | Extreme Heat, Infrastructure Failure, Severe Winter Storm, Thunderstorm/ Lightning/Hail, Tornado/ Windstorm | Medium | Utility Company with assistance from county or cities | High | Utility Company, PDM | Funding | Ongoing |

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|---|---|---|---|---|---|---|---|
| Build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand heavy winds and severe weather | Thunderstorm/ Lightning/Hail, Tornado/ Windstorm, Severe Winter Weather | Medium | County, City, Utility Company | High | PDM, County General Fund, City General Fund, Utility Company | Funding | Ongoing |
| The county, through the responsibility of the utility companies (REC and Mid-American Energy), will establish or maintain standards and methods that protect power lines and infrastructure from potential risks | Extreme Heat, Infrastructure Failure, Severe Winter Storm, Thunderstorm/ Lightning/Hail, Tornado/ Windstorm | High | Utility Companies, Board of Supervisors | Moderate-High | Utility Companies | Funding | Ongoing |
| Construct a Red Cross certified and FEMA approved safe room/s in a public facility | Thunderstorm/ Lightning/Hail, Tornado/ Windstorm | Medium | Harrison County EMA | High | PDM | Funding | Long term |
| Create and implement a plan to maintain road clearing capabilities and repair roads following adverse weather conditions | Severe Winter Storm | Medium | County Engineer | Moderate | Harrison County Roads Budget | None | Ongoing |
| Assist residents in obtaining funding for homes that need house repairs and winterization | Infrastructure Failure, Severe Winter Storm | High | Harrison County EMA | Low | SWIHTF, CDBG | Public participation | Ongoing |
| Build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand snow loads and prevent roof collapse | Thunderstorm/ Lightning/Hail, Tornado/ Windstorm, Severe Winter Storm | Low | Board of Supervisors | High | PDM, County General Fund | Funding | Ongoing |
| Expand awareness on energy efficient building materials and techniques that adequately protect people from adverse weather conditions | Thunderstorm/ Lightning/Hail, Tornado/ Windstorm, Severe Winter Storm, Extreme Heat | Low | Harrison County EMA | Low | Harrison County EMA General Budget (little to no cost) | Community participation | Ongoing |
| Construct a new levee / dike / berm that protects the facility from flood damage | River Flooding, Flash Flooding | Medium | Levee District | High | USACE, FMA, PDM | Funding | Ongoing |

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|---|---|---|---|---|---|---|---|
| Construct / upgrade / maintain drainage and storm sewer systems (pipes, culverts and channels) to meet proper capacity requirements that provide systems that adequately and safely remove excess water from developed areas | Infrastructure Failure, River Flooding, Flash Flooding | Medium | Harrison County Engineer, Board of Supervisors | High | County General Fund, FMA, PDN, CDBG | Funding | Ongoing |
| Maintain compliance / join the National Flood Insurance Program (NFIP) | Flash Flooding, River Flooding | | | | | | |
| Adopt / maintain and enforce codes and ordinances that protects future development from flooding and restricts encroachment of the built environment in the floodplain | Flash Flooding, Infrastructure Failure, River Flooding | Low | Board of Supervisors | Low | County General Fund | Public Acceptance | Mid-term |
| Keep streams, creeks and flood ditches clear of debris and blockages to ensure they flow properly | Flash Flooding, River Flooding | Medium | Levee Districts, Townships, County Engineer | Varies | Harrison County General Fund | Partnership from responsible parties, funding | Ongoing |
| Expand awareness of incentives and disincentives on property or homeowner insurance that promote smart development and reduce hazard risk | Flash Flooding, River Flooding | Low | Harrison County EMA | Low | Harrison County EMA General Budget | Public participation | Mid-term |
| Make weather alert radios available to citizens by identifying and obtaining funding to subsidize the purchase of radios | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/ Windstorm | Medium | Harrison County EMA | Low | None | None | Ongoing |
| Encourage homeowners to install carbon monoxide monitors and alarms | Extreme Heat, Grass or Wild Land Fire, Hazardous Materials | Medium | Harrison County EMA, Local Fire Departments | Low-none | None | Public Participation | Ongoing |
| Train public staff that are able to provide information relating to severe weather | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River | Medium | Harrison County EMA | Low-None | None | Time commitment | Ongoing |

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| | Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/ Windstorm | | | | | | |
| Upgrade and maintain the county-wide mass notification early warning systems | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/ Windstorm | High | Harrison County EMA | Low-Moderate | Harrison County EMA General Budget | Funding for upgrades | ongoing |
| Continue participation in the statewide mass notification system | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/ Windstorm | High | Harrison County EMA | Low-Moderate | Harrison County EMA General Budget | Public participation | Ongoing |
| Provide outreach and assistance to vulnerable populations to implement hazard mitigation projects and programs. | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/ Windstorm | High | Harrison County EMA, Harrison County Public Health | Moderate | SWIHTF, PDM, HMA, CDBG | Funding and Public Participation | Ongoing |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| Develop or maintain an inventory of equipment available to emergency responders to ensure resources can be easily and quickly identified in an event of a disaster | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, | High | Harrison County EMA | Low | Harrison County EMA General Budget | Time | Ongoing |

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|---|---|---|---|---|---|---|---|
| | Tornado/Windstorm, Transportation Incident | | | | | | |
| Develop a plan to phase purchases of replacement emergency response equipment. | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | Harrison County EMA | Moderate | Harrison County EMA General Budget | Time and Funding | Ongoing |
| Investigate resources and funding to obtain the proper and necessary equipment for emergency response personnel | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | Harrison County EMA | High | PDM, AFGP, LFPEMS, County or City General Fund | Cost | Ongoing |
| Partner with or maintain partnership with outside organizations that are able to provide or share emergency response resources and/or equipment | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, | High | Harrison County EMA | Low-none | None | None | Ongoing |

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|---|---|---|---|---|---|---|---|
| | Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| Maintain and update evacuation plans | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/ Windstorm | High | Harrison County EMA | Low | Harrison County EMA General Budget | None | Ongoing |
| Provide training to emergency response personnel | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | Harrison County EMA, Local Fire Departments, Sheriff, Local Police | Moderate | Harrison County EMA General Budget, Fire Department General Budget, Law Enforcement General Budget, AFGP, LFPEMS | Funding and local department participation | Ongoing |
| Evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, | Medium | Harrison County EMA, Cities, Local Fire Departments | Low | City General Fund, County General Fund | Time | Ongoing |

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|---|---|---|---|---|---|---|---|
| | Tornado/Windstorm, Transportation Incident | | | | | | |
| Identify, maintain and train volunteer groups that are able to provide assistance or respond in the event of a disaster or emergency | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | Harrison County EMA | Low | Harrison County EMA General Budget | Finding volunteers | Short term |
| Create and maintain policies that designate secondary personnel to handle disaster response and recovery | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | Harrison County EMA | Moderate | Harrison County EMA General Budget | Time and personnel commitment | Short term |
| Build or maintain infrastructure that protects critical facilities such as, but not limited to, levees and berms in floodways | Dam/Levee Failure, Flash Flood, River Flooding, Severe Winter Storms, Tornado/ Windostorm | Medium | Levee District | High | FMA, PDM, USACE | Funding | Long term |
| Maintain, improve and continually test early warning systems (sirens, etc.) | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, | High | Harrison County EMA | Moderate | Harrison County EMA General | Funding | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Thunderstorms/ Lightning/Hail, Tornado/ Windstorm | | | | Budget, PDM | | |
| Designate new or alternative critical facilities that are outside of hazard areas | Dam/Levee Failure, Grass/Wild Fire, Flash Flood, River Flooding | Low | Harrison County EMA | Low | Unknown (varies by project) | Funding and Location | Long term |
| Purchase generators for facilities that provide critical services to the county in the event of a power outage | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/ Windstorm | Medium | Harrison County EMA, Board of Supervisors | Moderate | PDM, CDBG (if part of water/sewer), Harrison County General Fund | Funding | Long term |
| Establish / maintain mutual aid agreements (28E or other) between all local jurisdictions | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | Harrison County EMA, Board of Supervisors, Cities, Local Fire Departments, Harrison County Sheriff | Low | Harrison County or City General Fund | None | Ongoing |
| Update and maintain a list of contacts that respond to emergencies | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, | High | Harrison County EMA | Low | Harrison County EMA General Budget | None | Ongoing |

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|---|---|---|---|---|---|---|---|
| | Tornado/Windstorm, Transportation Incident | | | | | | |
| Regularly test communications equipment between local jurisdictions | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/ Windstorm | High | Harrison County EMA | Low | Harrison County EMA General Budget | None | Ongoing |
| Promote training between emergency response departments | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | Harrison County EMA | Low | Harrison County EMA General Budget | None | Ongoing |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| Support Severe Weather Awareness Week by creating or continuing activities that teach severe weather hazards and proper safety techniques | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/ Windstorm | Medium | Harrison County EMA | Moderate | Harrison County EMA General Budget | Funding | Ongoing |
| Identify and invite outside organizations that can teach hazard safety to youth | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/ | Medium | Harrison County EMA | Low | Harrison County EMA General Budget | Organizational Commitment | Short term |

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|---|---|---|---|---|---|---|---|
| | Windstorm | | | | | | |
| Conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/ Windstorm | Low | School Districts | None | None | None | Ongoing |
| Create an additional educational program in schools that teach youth hazard safety preparedness and response | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Terrorism, Tornado/ Windstorm | Low | School Districts | Low | School District Budgets | Funding | Mid-term |
| Identify or produce new materials and/or resources to teach youth about hazard risk, proper safety techniques, and mitigation methods | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | Harrison County EMA | Low | Harrison County EMA General Budget | Availability | Short term |
| Utilize media outlets and other resources to send hazard awareness materials and information to residents | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, | High | Harrison County EMA | Low | Harrison County EMA General Budget | None | Ongoing |

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|---|---|---|---|---|---|---|---|
| | Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| Train public employees/staff to increase capacity to provide hazard awareness materials, response steps, and mitigation efforts | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | Harrison County EMA | Moderate | Harrison County EMA General Budget | Willingness of people | Ongoing |
| Create an emailing/mailing list to send materials and information to residents relating to hazard risks and steps they can take to mitigate potential effects of hazards | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | Harrison County EMA | Low | Harrison County EMA General Budget | None | Ongoing |
| Promote and educate county text/phone notification systems available | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/ Windstorm | High | Harrison County EMA | Low | Harrison County EMA General Budget | Promoting AlertIowa | Ongoing |

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|---|---|---|---|---|---|---|---|
| Expand awareness of critical facilities and resources available to the public in the event of a hazard | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | Harrison County EMA | Low | Harrison County EMA General Budget | None | Ongoing |
| Expand awareness of evacuation routes and/or response procedures | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | Harrison County EMA, Local Fire Departments | Low | Harrison County EMA General Budget, Local Fire Department General Fund | None | Ongoing |
| Expand awareness of resources that will educate the public on severe weather incidents and other hazards and steps to help mitigate the effects of each | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, | High | Harrison County EMA | Low | Harrison County EMA General Budget | Public follow through | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Tornado/Windstorm, Transportation Incident | | | | | | |

# Local Capability Assessment

The local capability assessment determines the resource capabilities accessible to each jurisdiction. This assessment evaluated the planning capabilities, studies and reports completed, the staff and departments, non-governmental organizations (NGOs) and other capabilities available in each jurisdiction. By assessing the capabilities prior to a hazard event, limitations in local capabilities can be addressed to strengthen hazard preparedness. During a hazard event, knowledge of the resources available and the limitations present will allow for a quicker response to disaster recovery. A detailed breakdown of each community's capabilities is located in the appendix. Some of the capabilities of the smaller communities are handled through agreements either with neighboring jurisdictions or with the county to provide services, while other capabilities are handled through informal measures.

Where possible, jurisdictions will integrate mitigation planning into its planning mechanisms. This includes comprehensive planning, capital improvement planning/projects, zoning ordinances and Code of Ordinances updates. The emergency management department will encourage emergency resiliency testing for all planning efforts. As part of its outreach, the emergency management department will provide consulting for planning efforts to incorporate mitigation planning.

## Planning Capabilities

The planning capabilities of a jurisdiction include written plans or documents that have been adopted by the jurisdiction to outline the tools and resources as well as the actions and steps that a community will take to direct future development and provide guidance or strategy in emergency situations or recovery events. These documents provide medium to long range goals to guide community activities. The planning capabilities of each jurisdiction vary by size of the community. The larger communities and jurisdictions, Such as Atlantic, typically have more resources available to develop and write large comprehensive strategies. Communities with fewer resources to develop large comprehensive plans typically rely on informal ways to guide development in their community or rely on larger jurisdictions or partnerships with other communities to provide capabilities.

Planning documents adopted by participating jurisdictions are actively used to support the implementation of the mitigation strategy. These plans guide land use decisions, infrastructure investments, emergency preparedness activities, and post-disaster recovery efforts identified elsewhere in this plan. While the level of formality varies by jurisdiction size and capacity, all jurisdictions rely on one or more adopted plans to inform decision-making related to hazard-prone areas, public facilities, and long-term community development. All cities have at least one of the following plans implemented:

- **Comprehensive Plan** – Provides long-term guidance for land use, housing, transportation, and infrastructure decisions, incorporating hazard mitigation principles to reduce risk and guide development away from hazard-prone areas.
- **Capital Improvement Plan (CIP)** – Prioritizes and schedules public infrastructure investments, allowing communities to fund projects that reduce hazard risks, improve resilience, and protect critical facilities.
- **Local Emergency Plan** – Establishes procedures for preparedness, response, and recovery during hazard events, supporting mitigation by identifying vulnerabilities, coordinating resources, and reducing potential impacts to life and property.
- **Economic Development Plan** – Guides strategies for sustainable economic growth while considering hazard risks, promoting investment in safer locations and supporting recovery and resilience following disaster events.

Table 5.6 summarizes the presence of adopted plans; however, all jurisdictions utilize these planning tools—formally or informally—to guide mitigation-related decisions consistent with their administrative and fiscal capacity.

**Table 5.3 – Plans Pertaining to Hazard Mitigation**

| Ordinance | County | Dunlap | Little Sioux | Logan | Magnolia | Missouri Valley | Modale | Mondamin | Persia | Pisgah | Woodbine |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Comprehensive Plan** | X | X | | X | | X | | | | | X |
| **Capital Improvement Plan** | X | | | | | | | | | | |
| **Local Emergency Plan** | X | | | | | | | | | | |
| **Economic Development Plan** | X | | | | | | | | | | |

## Policies and Ordinances

Land use policies and development regulations are implemented during routine development review, permitting, code enforcement, and infrastructure maintenance activities. These ordinances provide the primary regulatory mechanism for limiting development in hazard-prone areas, ensuring safe construction practices, and reducing future losses. Larger jurisdictions typically administer these regulations directly, while smaller jurisdictions rely on simplified ordinances, county assistance, or state standards to achieve similar mitigation outcomes.

Like the planning capabilities, the larger cities typically have more ordinances. The ordinances identified below collectively support the mitigation strategy by addressing hazard exposure, construction standards, and ongoing maintenance of public and private property.

- **Zoning**- Regulates land use and development patterns to reduce exposure to natural hazards by directing growth away from high-risk areas and separating incompatible land uses.
- **Restricted Residence**- Limits or regulates residential occupancy in certain locations or structures to reduce risk to life and property in areas prone to hazards such as flooding or instability.
- **Subdivision**- Establishes standards for the division and development of land, including lot layout, infrastructure, and access, to ensure new development accounts for hazard risks and emergency response needs.
- **Floodplain**- Governs development within designated flood hazard areas to minimize flood damage, protect flood storage capacity, and reduce risks to life and property.
- **Building Permits**- Provides a mechanism to review proposed construction for compliance with applicable codes and hazard-related regulations before development occurs.
- **Building Codes**- Sets minimum construction standards designed to improve structural integrity and reduce damage from hazards such as wind, flooding, and severe weather events.
- **Nuisance**- Addresses unsafe or hazardous conditions on properties that could contribute to increased risk during hazard events, such as debris, dilapidated structures, or blocked drainage.
- **Tree Trimming**- Regulates vegetation maintenance to reduce hazards from falling limbs or trees that may cause damage to structures, utilities, or transportation corridors during storms.
- **Storm Water**- Manages runoff from precipitation events to reduce flooding, erosion, and infrastructure damage through controlled collection and discharge systems.

- **Drainage**- Ensures proper conveyance of surface water to minimize localized flooding, protect infrastructure, and reduce damage to public and private property.

Specific emergency-related Ordinances include: (1) Snow Removal: Each city has an ordinance pertaining to snow removal requiring residents to park off the street during a Mayoral declared snow emergency. This varies by city to either no street parking or certain sides of the street depending on population density; (2) Police Protection: the cities of Little Sioux, Pisgah, Mondamin, Magnolia, and Persia have 28-E agreements with Harrison County; (3) Fire Protection; each incorporated City within Harrison county has a fire department.

Table 5.3 identifies the presence of key ordinances that support hazard mitigation. While not all jurisdictions maintain the same level of regulatory detail, each jurisdiction utilizes available ordinances and intergovernmental agreements to implement mitigation measures appropriate to local capacity. In addition to the ordinances listed in the table below, the City of Persia has an ordinance specific to the storage of anhydrous ammonia within city limits.

**Table 5.3 – City Ordinances Pertaining to Hazard Mitigation**

| Ordinance | Dunlap | Little Sioux | Logan | Magnolia | Missouri Valley | Modale | Mondamin | Persia | Pisgah | Woodbine |
|---|---|---|---|---|---|---|---|---|---|---|
| **Zoning** | X | | X | | X | | | X | | X |
| **Restricted Residence** | | X | | X | | | X | | X | |
| **Subdivision** | X | X | X | | X | X | X | X | X | X |
| **Floodplain** | X | X | X | | X | | X | | X | |
| **Building Permit** | X | X | X | | X | X | X | X | X | X |
| **Building Codes** | | | | X | X | | X | | | |
| **Nuisance** | X | X | X | X | X | X | X | X | X | X |
| **Tree Trimming** | X | X | X | X | X | X | X | X | X | X |
| **Storm Water** | | | | | | | | | | |
| **Drainage** | | | | | | | | | | |

## Budget Capabilities

Budgetary resources are a key mechanism through which mitigation actions are implemented. County and municipal budgets support routine operations, maintenance activities, and capital improvements that reduce hazard risks identified in the mitigation strategy.

The Harrison County budget includes many items for hazard mitigation. First, the county includes snow removal based on the miles of road maintained including 28E Agreements with individual cities. County Conservation has a budget item for land burning as part of annual maintenance of parks for regulated brush removal.

Each city has a line item in its budget for snow removal. The amount varies based on the miles of road within the city limits and if any portions are maintained by the county. The amount programmed is typically minimal.

Although funding limitations are a significant constraint across jurisdictions, particularly for smaller cities, these budgetary practices demonstrate the ability to support mitigation through ongoing maintenance, targeted capital investments, and intergovernmental agreements. Larger projects are typically pursued incrementally or through coordination with state and federal funding programs.

## Programs

Programs are special or supplemental activities that communities can either join or create to enhance community awareness on a number of issues. These activities and resources can come from a variety of governmental or non-governmental organizations. A majority of the communities are involved in the National Weather Service (NWS) Storm Ready program typically with a warning siren located in or near the community. Many communities also have mutual aid agreements with other local communities or counties to provide a number of services. The most common mutual aid agreements are 28-E agreement for police and fire services.

## Studies, Reports and Maps

Studies, reports and maps are documents created while researching specific characteristics of populations, infrastructure or environments that lead to better knowledge and understanding of the targeted area, thus benefiting those targeted. Assessed capabilities included analysis and risk assessments, insurance studies, facility and population inventories and land use. Most communities have flood insurance maps, have done a critical facilities inventory, vulnerable population inventory and a land use map.

Harrison County and Missouri Valley have both done update to the comprehensive plans within the last 5 years. Dunlap has updated their zoning ordinance within the last 5 years. The cities of Dunlap, Missouri Valley, Modale, Mondamin, and Persia have all update their code of ordinances within the last 5-7 years.

## Staff and Departments

The staff and department capability assessment identifies the personnel and organizational structures responsible for managing local government functions. These range from part-time elected officials in the smallest communities to departments with limited administrative support in larger ones. Due to the small size and limited budgets of many Harrison County jurisdictions, hiring specialized personnel such as emergency managers, planners, or inspectors is often not feasible. Many towns lack full-time staff and rely on shared or contracted services at the county level or through regional partners.

All jurisdictions in Harrison County are members of the Southwest Iowa Planning Council (SWIPCO), the regional Council of Governments (COG), which provides essential technical and administrative services, including plan and grant writing, building inspections, code adoption support, and transportation planning.

Given the structural and financial limitations facing these small communities, the most beneficial and realistic strategy for expanding local mitigation capabilities is to enhance and expand SWIPCO's capacity to support them. Increasing SWIPCO's staffing, training, and resources would provide a shared benefit across jurisdictions—ensuring consistent access to specialized expertise, reducing duplication of effort, and allowing for more proactive and comprehensive mitigation planning.

In lieu of each individual community attempting to independently build in-house capabilities, regional investment in SWIPCO serves as a force multiplier, improving mitigation outcomes across the county in a cost-effective and sustainable way.

The City of Missouri Valley does staff an individual dedicated to zoning/building code enforcement/code enforcement.

## Non-Governmental Organizations (NGOs)

Non-Governmental Organizations (NGOs) are organizations with resources that may be helpful to communities in certain situations. These organizations can offer help in specialized areas. Some of these organizations, if located in one community, often are available to those in surrounding communities. Examples of these organizations can include veteran's groups, chamber of commerce, Lions, Kiwanis, public health, development corporation, humane society, etc.

## School District Capabilities

The school districts serving Harrison County play a critical role in hazard mitigation due to their responsibility for public facilities, student safety, and transportation operations. Each district has independent authority to levy taxes, issue bonds for capital improvement projects, acquire property, and construct or renovate facilities with approval from its respective school board. This authority provides districts with the capacity to invest in mitigation measures that reduce risk to life and property over time.

All school districts maintain dedicated maintenance management staff responsible for routine facility upkeep and infrastructure improvements. These positions support hazard mitigation by addressing building maintenance needs, managing drainage and stormwater concerns on school property, and implementing structural improvements that enhance facility resilience. Capital improvement planning allows districts to incorporate mitigation measures—such as roof upgrades, backup power provisions, and improved building systems—when facilities are renovated or replaced.

Each district has adopted an emergency response plan that outlines staff roles, communication protocols, evacuation procedures, and coordination with local emergency management and first responders during disaster events. These plans support mitigation by improving preparedness, reducing response time, and identifying vulnerabilities within school facilities and transportation systems.

Student transportation is managed independently by each district, allowing districts to assess route vulnerabilities, adjust operations during severe weather, and coordinate with local jurisdictions during emergencies. This operational control provides flexibility to reduce exposure to hazards and improve safety during hazard events.

School districts have the ability to further strengthen their hazard mitigation capabilities through incremental and cost-effective actions. These may include:

- Integrating hazard mitigation considerations into long-range facility planning and capital improvement decisions.
- Coordinating with county emergency management and local jurisdictions during hazard mitigation plan updates to ensure school facilities and operations are reflected in risk assessments.
- Utilizing grant funding and bonding authority, when available, to incorporate mitigation features into new construction and major renovations.
- Periodically reviewing and updating emergency response plans to reflect changing hazards, facilities, and best practices.
- Enhancing coordination with local fire, law enforcement, and public works departments to support preparedness, response, and recovery activities.

Through their governance authority, operational control, and long-term planning responsibilities, school districts possess the capacity to implement and expand hazard mitigation actions in a manner consistent with available resources and community needs.

## Changes in Development

Overall, there have been positive strides in development since the previous plan. In 2019, Harrison County experienced flooding and in turn, was able to capitalize on disaster recovery funding from HUD. From this, the City of Woodbine developed 40 houses all dedicated to low-to-moderate income individuals, with 4 houses being rental and the City of Logan was able to construct 3 houses, also for low-to-moderate income. In addition to housing, the City of Modale was able to complete updates to their lagoon system, the City of Missouri Valley repaired drainage and streets in the Willow Park subdivision, and the City of Woodbine installed a new water tower.

In 2025, the City of Mondamin completed construction of 2 new wells and installed a new water treatment system.

The City of Logan completed 2 commercial building rehabilitation projects, one funded through COVID funds and one through Community Catalyst. The Community Catalyst project also resulted in a new upper story residence.

The City of Missouri Valley is currently working on water main replacements along 4th and 7th Streets. The city continues its work with Iowa DOT to construct a Highway 30 bypass to reroute heavy truck traffic from the downtown.

The City of Little Sioux has recently received CDBG funding to do updates to their water system and that work is currently underway.

Since the last plan approval, Persia and Pisgah have had no significant new residential/commercial/industrial development and no known new development in mapped hazard-prone areas (e.g., floodplain or other locally identified risk areas). Therefore, their vulnerability is unchanged relative to the previous plan update.

# Programs and Funding Sources

## National Flood Insurance Program (NFIP)

In 1968, Congress created the National Flood Insurance Program (NFIP) to help provide a means for property owners to financially protect themselves in the event of flooding. Since standard homeowners' insurance doesn't cover flooding, many property owners require the additional coverage provided through this program. Insurance coverage policy type can be purchased as building coverage only, contents coverage only or both building and contents coverage. NFIP offers flood insurance to homeowners, renters and business owners if their community participates in the NFIP. Participating communities are required to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding. The requirement to adopt and enforce ordinances guides future development away from flood prone areas, thus limiting the risks of flooding.

As of 2020, the NFIP has approximately 5.6 million policies in force, representing $1.3 billion in total coverage. The NFIP is administered by FEMA, which works with nearly 90 private insurance companies to provide coverage for participants. Over 50.6 billion in total payments have been made on claims throughout the nation. Iowa currently has just under 16,000 policies in force with a total of about $2.9 billion in total coverage.

**Table 5.4 – Harrison County NFIP Policies as of 2026**

| Jurisdiction | Policies In-Force | Total Coverage Amount |
|---|---|---|
| **Harrison County** | 55 | $14,355,000 |
| **Dunlap** | 2 | $1,834,000 |
| **Little Sioux** | 14 | $1,113,000 |
| **Logan** | 3 | $1,076,000 |
| **Missouri Valley** | 104 | $24,104,000 |
| **Modale** | 26 | $6,190,000 |
| **Mondamin** | 6 | $1,123,000 |
| **Pisgah** | 4 | $502,000 |
| **Woodbine** | 2 | $364,000 |

*Source: Iowa DNR*

**Table 5.5 – Harrison County Loss Statistics as of March 2026**

| Jurisdiction | Total Losses | Total Payments |
|---|---|---|
| **Harrison County** | 9 | $171,915 |
| **Dunlap** | - | - |
| **Little Sioux** | - | - |
| **Logan** | 2 | $19,480 |
| **Missouri Valley** | 159 | $3,007,103 |
| **Modale** | - | - |
| **Mondamin** | 2 | - |
| **Pisgah** | 3 | $35,977 |
| **Woodbine** | 17 | $156,587 |

*Source: Iowa DNR*

This plan recommends that each participant continue their involvement with the NFIP and remain in good standing. Compliance will ensure communities that resources are available to help with flood mitigation. In addition, communities are encouraged to participate in the Community Rating System as described below.

**Table 5.6 – Harrison County NFIP Participants**

| Jurisdiction | Init FHBM Identified | Init FIRM Identified | Current Effective Map Date |
|---|---|---|---|
| **Harrison County** | - | 08/09/00 | 01/29/21 |
| **Dunlap** | 05/17/74 | 09/18/85 | 01/29/21(M) |
| **Little Sioux** | 10/25/74 | 08/19/85 | 01/29/21(M) |
| **Logan** | 04/12/74 | 09/18/85 | 01/29/21(M) |
| **Missouri Valley** | 04/12/74 | 08/01/77 | 01/29/21 |
| **Modale** | 09/26/75 | 01/29/21 | 01/29/21 |
| **Mondamin** | 10/18/74 | 01/29/21 | 01/29/21 |
| **Persia** | 12/13/74 | 09/04/85 | 01/29/21(M) |
| **Pisgah** | 12/06/74 | 03/07/97 | 01/29/21(M) |
| **Woodbine** | 06/28/74 | 09/04/85 | 01/29/21(M) |
| **(M) No Elevation Determined – All Zone A, C and X**<br>**(L) Original FIRM by Letter – All Zone A, C and X** | | | |

*Source: FEMA/NFIP BureauNet Reporting*

**Community Rating System**

The NFIP Community Rating System is a voluntary incentive program that recognizes and encourages community floodplain management actives that go beyond the minimum NFIP requirements. Communities meeting the three goals: 1) reduce flood damage to insurable property, 2) strengthen and support the insurance aspects of the NFIP and 3) encourage a comprehensive approach to floodplain management have shown their commitment in going beyond NFIP requirements. Flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions. To become eligible, communities must be in full compliance with the NFIP and be in the Regular phase of the program.

The Community Rating System (CRS) is divided into 10 classes with the lowest class (10) rating receiving no discount and the highest class (1) rating receiving the largest premium discount. All communities start at class 10 whether they participate in the program or not. After an application is made and credits achieved are assessed, a classification can be given resulting in the discounted premiums. Credits are awarded for each of the 19 activities recognized as measures for eliminating exposure to floods. Activities are organized under four categories: 1) public information, 2) mapping and regulations, 3) flood damage reduction and 4) warning and response.

**Table 5.7 - Community Rating System Premium Discount by Class**

| Rating Class | SFHA* | Non-SFHA** | Credit Points Required |
|---|---|---|---|
| 1 | 45% | 10% | 4,500 + |
| 2 | 40% | 10% | 4,000 – 4,499 |
| 3 | 35% | 10% | 3,500 – 3,999 |
| 4 | 30% | 10% | 3,000 – 3,499 |
| 5 | 25% | 10% | 2,500 – 2,999 |
| 6 | 20% | 10% | 2,000 – 2,499 |
| 7 | 15% | 5% | 1,500 – 1,999 |
| 8 | 10% | 5% | 1,000 – 1,499 |
| 9 | 5% | 5% | 500 – 999 |
| 10 | 0% | 0% | 0 – 499 |

*Special Flood Hazard Area
**Preferred Risk Policies are available only in B, C and X Zones for properties that are shown to have a minimal risk of flood damage. The Preferred Risk Policy does not receive premium rate credits under the CRS because it already has a lower premium than other policies. The CRS credit for AR and A99 Zones are based on non-Special Flood Hazard Areas (non-SFHAs) (B, C and X Zones). Credits are: classes 1-6, 10% and classes 7-9, 5%. Premium reductions are subject to change.

*Source: FEMA/NFIP Community Rating System*

**Compliance with NFIP**

To remain in good standing with the NFIP program, communities must adopt and enforce floodplain management regulations the meet or exceed the minimum NFIP standards and requirements. These standards are intended to prevent loss of life and property, as well as economic and social hardships that result from flooding. The requirements of a particular community to remain on the program depend on the flood hazard and the level of detail of the data provided by FEMA in the Flood Insurance Rate Maps (FIRMs) and risk assessments.

In order to remain compliant with the NFIP program, participating communities have adopted a number of measures to meet the standards and requirements of the program. These include adopting and implementing as well as enforcing floodplain ordinances, zoning ordinances and building codes to limit building in the flood way or ensuring new development would not be affected by flooding.

**Severe Repetitive Loss Program**

The Severe Repetitive Loss (SRL) grant program was authorized to provide funding to reduce or eliminate the long-term risk of flood damage to severe repetitive loss structures insured under the National Flood Insurance Program. An SRL property is defined as one covered under the NFIP program and has at least four NFIP claim payments (including building and contents) over $5,000, and the cumulative amount of claims payments exceeds $20,000 or at least two separate claims payments (building payments only) have been made with the cumulative amount exceeding the market value of the building. Either one of the claims also must have been made in a ten year period and must be greater than ten days apart. According to the Iowa DNR, there are eight repetitive loss properties located within Harrison County, seven in Missouri Valley and one in Woodbine. The seven structures in Missouri Valley are all residential while the one in Woodbine is commercial.

## Unified Hazard Mitigation Assistance Grant Program

In 2009, the Unified Hazard Mitigation Assistance Grant Program was put together by FEMA as an informative tool in detailing information on five different grant programs offered through FEMA. These programs offer assistance with the goal of reducing the risk of loss of life and property due to natural hazards. The programs are as follows:

- Hazard Mitigation Grant Program (HMGP)
  HMGP is authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (the Stafford Act), Title 42, United States Code (U.S.C.) 5170c. The key purpose of HMGP is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster. HMGP is available, when authorized under a Presidential major disaster declaration, in the areas of the State requested by the Governor. The amount of HMGP funding available to the Applicant is based upon the total Federal assistance to be provided by FEMA for disaster recovery under the Presidential major disaster declaration.

- Pre-Disaster Mitigation (PDM)
  The PDM program is authorized by Section 203 of the Stafford Act, 42 U.S.C. 5133. The PDM program is designed to assist States, Territories, Indian Tribal governments and local communities in implementing a sustained pre-disaster natural hazard mitigation program to reduce overall risk to the population and structures from future hazard events, while also reducing reliance on Federal funding from future disasters.

- The Flood Mitigation Assistance
  The FMA program is authorized by Section 1366 of the National Flood Insurance Act of 1968, as amended (NFIA), 42 U.S.C. 4104c, with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP).

- Severe Repetitive Loss (SRL)
  The SRL program is authorized by Section 1361A of the NFIA, 42 U.S.C. 4102a, with the goal of reducing flood damages to residential properties that have experienced severe repetitive losses under flood insurance coverage and that will result in the greatest amount of savings to the NFIF in the shortest period of time.

**Table 5.8 - Unified Hazard Mitigation Assistance Grant Program Eligible Activities**

| Eligible Activities | HMGP | PDM | FMA | RFC | SRL |
|---|---|---|---|---|---|
| 1. Mitigation Projects | ✓ | ✓ | ✓ | ✓ | ✓ |
| Property Acquisition and Structure Demolition or Relocation | ✓ | ✓ | ✓ | ✓ | ✓ |
| Structure Elevation | ✓ | ✓ | ✓ | ✓ | ✓ |
| Mitigation Reconstruction | | | | | ✓ |
| Dry Flood proofing of Historic Residential Structures | ✓ | ✓ | ✓ | ✓ | ✓ |
| Dry Flood proofing of Non-residential Structures | ✓ | ✓ | ✓ | ✓ | |
| Minor Localized Flood Reduction Projects | ✓ | ✓ | ✓ | ✓ | ✓ |
| Structural Retrofitting of Existing Buildings | ✓ | ✓ | | | |
| Non-structural Retrofitting of Existing Buildings and Facilities | ✓ | ✓ | | | |
| Safe Room Construction | ✓ | ✓ | | | |
| Infrastructure Retrofit | ✓ | ✓ | | | |
| Soil Stabilization | ✓ | ✓ | | | |
| Wildfire Mitigation | ✓ | ✓ | | | |
| Post-disaster Code Enforcement | ✓ | | | | |
| 5% Initiative Projects | ✓ | | | | |
| 2. Hazard Mitigation Planning | ✓ | ✓ | ✓ | | |
| 3. Management Costs | ✓ | ✓ | ✓ | ✓ | ✓ |

Source: FEMA

**Cost Sharing**

In general, HMA funds may be used to pay up to 75 percent of the eligible activity costs. The remaining 2 percent of eligible costs are derived from non-Federal sources. The table below outlines the Federal and State cost share requirements.

**Table 5.9 - Hazard Mitigation Assistance Cost Sharing by Program**

| Programs | Mitigation Activity Grant (Percent of Federal/Non-Federal Share |
|---|---|
| HMGP | 75/25 |
| PDM | 75/25 |
| PDM (sub-grantee is a small impoverished community) | 90/10 |
| PDM (Tribal grantee is a small impoverished community) | 90/10 |
| FMA | 75/25 |
| FMA (severe repetitive loss property with Repetitive Loss Strategy) | 90/10 |
| RFC | 100/0 |
| SRL | 75/25 |
| SRL (with Repetitive Loss Strategy) | 90/10 |

Source: FEMA

**Eligible Applicants and Sub-applicants**

States, Territories and Indian Tribal governments are eligible HMA Applicants. Each State, Territory and Indian Tribal government shall designate one agency to serve as the Applicant for each HMA program. All

interested sub-applicants must apply to the Applicant. The table below identifies, in general, eligible sub-applicants.

**Table 5.10 - Eligible Sub-applicants by HMA Program**

| Sub-applicants | HMGP | PDM | FMA | RFC | SRL |
|---|---|---|---|---|---|
| State agencies | ✓ | ✓ | ✓ | ✓ | ✓ |
| Indian Tribal governments | ✓ | ✓ | ✓ | ✓ | ✓ |
| Local governments/communities | ✓ | ✓ | ✓ | ✓ | ✓ |
| Private non-profit organizations (PNPs) | ✓ | | | | |

Source: FEMA

Individuals and businesses are not eligible to apply for HMA funds, however, an eligible sub-applicant may apply for funding to mitigate private structures. RFC funds are only available to sub-applicants who cannot meet the cost share requirements of the FMA program.

# Section VI: Plan Maintenance

## Monitoring, Evaluating and Updating the Plan

The purpose of this section is to provide information regarding how this document is to be maintained after its adoption. The process of monitoring, evaluation and updating the plan is to keep this document relevant to the activities in the jurisdiction and to address any new developments that may relate to the jurisdiction. By updating the plan, information in this document will be current and hazard mitigation planning will not cease once it has been adopted. Each jurisdiction may prioritize hazard mitigation projects based on individual need with suggestions and input from the public, property owners and business owners.

Harrison County jurisdictions will be responsible for monitoring, evaluating and updating the Harrison County Multi-Jurisdictional Plan. Updates to this plan will be completed annually. If additions to the plan are to be made, amendments may be proposed and considered separate from the annual review or any other proposed plan amendments. Amendments will be written and provide a report providing applicable information with a recommended action. Proposed amendments to this plan will be submitted to the Harrison County Emergency Management Coordinator's office. The amendments will be reviewed annually and the coordinator shall recommend action on the proposed amendments. Review and update of this Plan will occur, at a minimum, every five years as required by FEMA. In order to conduct a thorough review when updating the plan, the following questions should be addressed:

- Are the goals and objectives still relevant?
- Do the goals and objectives reflect expected conditions?
- If any projects have been completed, did they have the anticipated impact on the goal under which they were identified? If not, why?
- Have any of the risks changed due to nature, magnitude and/or type?
- Have there been any plan implementation difficulties? If so, what and how should they be addressed?
- Are current resources available to implement the plan?
- Did the plan accomplish the expected outcomes?
- Are there other agencies that should be involved in the revision process? If so, what agencies?

To ensure continued plan support and input from stakeholders and local residents, notices for public meetings involving discussion of or action on plan updates should be published and posted within the jurisdiction with reasonable advance notice. Notices for public meetings concerning discussion or action on hazard mitigation plan updates will be published and posted for the public two weeks in advance. Public notices may be published or posted using the following:

- Local newspapers
- Radio or television
- Websites
- Public spaces or buildings within the community.

## Monitoring Progress and Assessment of Mitigation Activities

Hazard mitigation plans are a requirement of the Disaster Mitigation Act of 2000 and are administered by FEMA. Once a jurisdiction is part of a FEMA-approved plan, it may become eligible for up to 75 percent cost-share for a wide variety of projects that have been identified in the plan. Corresponding jurisdictions shall be responsible for the monitoring and reporting of mitigation activities.

Homeland Security and Emergency Management has implemented record keeping and financial reporting for each grant awarded. Grantees are required to submit quarterly reports providing information necessary for effective monitoring activities.

A summary of each project completed will be written and attached to this plan to assist in monitoring the plan. Information in the summary will include a detailed timeline, agencies involved, total funding and sources of funding, etc. Other information to be reported shall include which implementation processes worked best, any difficulties, success of coordination efforts and which strategies need revision.

# Incorporation into Existing Planning Mechanisms

Each jurisdiction will be responsible for making certain that the goals and objectives of this plan are incorporated into appropriate planning mechanisms such as comprehensive plans, zoning, and code of ordinances. This plan should act as a tool and resource for any future planning activities and be reviewed by those involved in the planning process.

Cities, Counties, and local Council of Governments should incorporate this plan into any existing and future plans where appropriate. These could include the following:

- City and County code of ordinances
- City and County comprehensive plans
- Strategic planning
- Watershed planning
- Trails and parks and recreation plans

Because incorporation of hazard mitigation principles into local planning mechanisms is so vital, inclusion of planning agencies and organizations in future hazard mitigation plan updates is recommended.

Due to the size of many of the communities in Harrison County, the most common method of incorporating goals and objectives from this plan into local planning mechanisms is by adding related ordinances to their code of ordinances. Those participating in the NFIP have added in the appropriate floodplain regulation ordinances. Many also have ordinances aimed at hazard mitigation such as dangerous building ordinances, snow removal ordinances, tree trimming ordinances, and various nuisance ordinances. It is also critical to the county that the local SWIF plans remain updated and in compliance with the Army Corps of Engineers.

Currently, the cities of Dunalp and Mondamin are going through an update of their code of ordinances and will be ensuring that up-to-date ordinances that promote mitigation are included, including the most up to date floodplain ordinance as required by the Iowa DNR. Many cities within the county are due for updates to their codes of ordinances. As those get updated, ordinances related to mitigation measures will be discussed. Harrison County recently updated their comprehensive plan and consideration of hazard mitigation was taken into account, particularly when it comes to development and future land use around the Loess Hills and preventing erosion/landslides.

# Appendix A: Individual Jurisdictions

## Unincorporated Harrison County

### Community Capabilities

| | Date/Time | Location |
|---|---|---|
| Board of Supervisors Meetings | Thursdays @ 9am | Harrison County Courthouse |

### Utilities and Services

| Service | Provider |
|---|---|
| Electricity | REC, Mid-American Energy |
| Gas | Northern Natural Gas |
| Water | Private wells |
| Phone Services | Windstream, Longlines, Walnutel |
| Law Enforcement | Harrison County Sheriff's Office |
| Fire Protection | 10 Incorporated Cities |
| Cable/Internet | Windstream, Longlines, Western Iowa Wireless, |
| Warning System | Mass notification system, outdoor warning sirens |
| HAZMAT Assistance | Tri County Special Operations Unit |
| Landfill | Harrison County Landfill |
| Recycling | Harrison County Landfill |
| Public Transit | SWITA |
| Emergency Medical Services | 9 of 10 Incorporated cities |
| Medical Clinic/Hospital | CHI/Missouri Valley |
| Tornado Shelter | |

### Plans/Ordinances

| | Yes/No | Year Approved | Comments |
|---|---|---|---|
| Comprehensive/land use Plan | Yes | 2026 | |
| Capital Improvement Plan | | | |
| Local Emergency Plan | Yes | Annually | HSEMD approved |
| Economic Development Plan | | | |
| Transportation Plan | Yes | | LRTP through RPA-18 |
| Flood Mitigation Assistance Plan | | | |
| Zoning Ordinance | Yes | | |
| Restricted Residential District Ordinance | No | | |
| Subdivisions Ordinance | | | |
| Floodplain Ordinance | Yes | | |
| Building Permit Ordinance | Yes | | |
| Tree Trimming Ordinance | No | | |

| | | | |
|---|---|---|---|
| Nuisance Ordinance | Yes | | |
| Storm Water Ordinance | | | |
| Drainage Ordinance | | | |

| | Yes/No | If yes, with who? |
|---|---|---|
| Mutual Aid Agreements | Yes | Pottawattamie/Shelby County EMA's, Fire/Rescued departments |

**Boards/Staff/Departments**

| | Yes/No | Title | Comments |
|---|---|---|---|
| Building Code Official | | | |
| Building Inspector | | | |
| Public Works Official | | | |
| NFIP Floodplain Administrator | Yes | | |
| Zoning Commission | Yes | | |
| Board of Adjustments | Yes | | |
| Nuisance Abatement Official | | | |

## Hazards of Top Concern

Unincorporated Harrison County identified drought, flooding, sever winter storms, tornadoes/windstorms, and grass/wild land fires as hazards of top concern.

| Hazard #1: Drought |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| Several years of low precipitation amount have left Harrison County with low water tables for drinking water wells, water for fire protection including training, and drier than usual vegetation, increasing fire risk. Regional Water issues for customers around Persia. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Fire prevention announcements to prevent open burning at times of extreme fire conditions. Work with Regional Water to relay information to the public. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Water conservation practice when needs arise. Plan to aid farmers in livestock watering when conditions dictate |

| Hazard #2: Severe Winter Storms |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| March 2024 blizzard cause power outages, utility lines down, roadways blocked for extended time |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Above ground utilities, such as powerlines, exposed to the elements |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Utility companies complete repairs as needed |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Back up electric generator, shelter/warming station, burry power lines, continue good working relationship with Red Cross and other non-profits/stakeholders |

| Hazard #3: Flooding |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| Major floods in 1993, 2011, 2019, and 2024. Levee failures, homes and businesses destroyed or damaged |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| With the Missouri, Soldier, and Boyer Rivers along with numerous creeks and tributary runoffs near major infrastructure, flood mitigation has to be continually maintained and improved. This includes drainage. |
| **Have you completed any projects to reduce the effect to this hazard?** |

| |
|---|
| Rand Peterson Levee District has done repair and maintenance. USACE working on long term plan for Missouri River Levee improvement. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Continued levee and drainage improvement and maintenance |

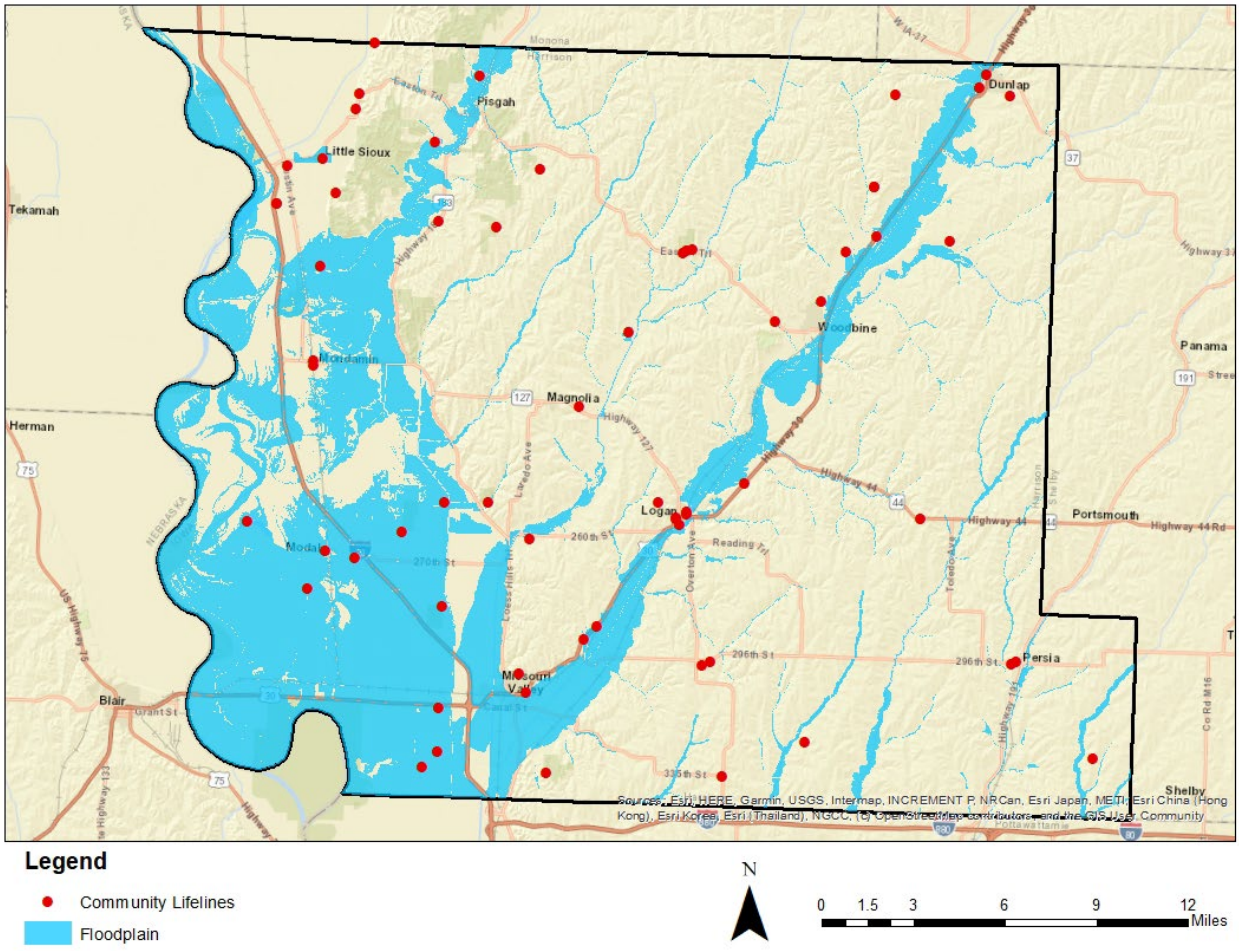
| Hazard #4: Tornadoes/Windstorm |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| March 2024, eastern Harrison County effected by tornado |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Early warning and shelter improvements/availability |
| **Have you completed any projects to reduce the effect to this hazard?** |
| |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Assist in upgrade of towns' early warning systems and continue public education. |

| Hazard #5: Grass/Wild Fire |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| Numerous field/grass/wild fires in the last 2 years, made worse by continued droughts. Some vehicles and structures damaged by fires that couldn't be contained. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Harrison County is a rural/agricultural county and has the Loess Hills which contains the county's largest concentration of wild/conservation land. The Loess Hills border several incorporated cities. Houses have also been allowed to be built in and near the hills. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Upgrade equipment for fire departments. Training and certification for fire suppression. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Continued training opportunities for fire departments. Public education of the risks of fires and how drought conditions play into fire risk. |

## Community Lifelines

| Name | Address or Location | Type of Lifeline | Shelter (Y/N) | Generator (Y/N) | Medical Supplies (Y/N) | Food/ Water (Y/N) |
|---|---|---|---|---|---|---|
| Harrison County Courthouse | 111 N 2nd Ave, Logan | Safety/Security | Y | Y | N | N |
| Courthouse Annex | 204 E 6th St, Logan | Safety/Security | Y | N | N | N |
| Law Enforcement Center | 111 S 1st Ave, Logan | Safety/Security | Y | Y | N | N |
| Engineer's Building | 301 N 6th Ave | Safety/Security | Y | | N | N |
| County Roads Shed | | Safety/Security | N | N | N | N |
| 911 Communication Towers | | Communication | Y | Y | N | N |
| Fertilizer Plants | | Hazardous Materials | | | | |

## Flood Maps




**Legend**

- Community Lifelines
- Floodplain

N

0 1.5 3 6 9 12 Miles

## Adoption Resolution

# City of Dunlap

## Community Capabilities

| | Date/Time | Location |
|---|---|---|
| Council Meetings | 2nd Wednesday @ 7pm | City Hall, 716 Iowa Ave |

### Utilities and Services

| Service | Provider |
|---|---|
| Electricity | MidAmerican Energy and Harrison County REC |
| Gas | MidAmerican Energy and Black Hills Energy |
| Water | City of Dunlap |
| Phone Services | Kinetic and FMTC |
| Law Enforcement | Dunlap Police Department |
| Fire Protection | Dunlap Fire and Rescue |
| Cable/Internet | FMTC and Kinetic |
| Newspaper | Harrison County Times |
| Warning System (sirens, text alerts, etc.) | Sirens, text, reverse 911 |
| HAZMAT Assistance | Council Bluffs |
| Emergency Medical Services | |
| Medical Clinic/Hospital | CHI |
| Tornado Shelter (FEMA approved) | |

### Utility Questions

| | |
|---|---|
| If operating a municipal water system, where is you water sourced from? (shallow well, aquifer, river, etc.) | Shallow well |
| Sewer or private septic? | Sewer |
| Do you have a water treatment facility? | Yes |
| Do you have a wastewater treatment facility? | Yes-lagoons/lift station |
| Do you have any current DNR violations with your drinking water or wastewater? | No |

### Plans/Ordinances

| | Yes/No | Year Approved | Comments |
|---|---|---|---|
| Comprehensive/land use Plan | Yes | | |

| | | | |
|---|---|---|---|
| Capital Improvement Plan | No | | |
| Local Emergency Plan (not the countywide hazard mitigation plan) | Yes | 2021 | |
| Flood Mitigation Assistance Plan | No | | |
| Zoning Ordinance | Yes | 2025 | |
| **Most recent code of ordinances update** | | | |
| Restricted Residential District Ordinance | No | | |
| Subdivisions Ordinance | Yes | | |
| Floodplain Ordinance | Yes | | |
| Building Permit Ordinance | Yes | | |
| Building Codes—if yes, what year/edition? | No | | |
| Tree Trimming Ordinance | Yes | | |
| Nuisance Ordinance | Yes | | |
| Storm Water Ordinance | No | | |
| Drainage Ordinance | No | | |

**Boards/Staff/Departments**

| | Yes/No | Title | Comments |
|---|---|---|---|
| Building Code Official | No | | |
| Building Inspector | Yes | Public Works | |
| Public Works Official | Yes | | |
| NFIP Floodplain Administrator (if you participate in NFIP, you have a floodplain administrator) | Yes | Mayor | |
| Zoning Commission | Yes | | |
| Board of Adjustments | Yes | | |
| Nuisance Abatement Official | Yes | Police Chief | |

**What projects, plans or changes, if any, has your jurisdiction completed in the last five years?**
Got a generator for pump house. New booster station with generator

**Does your jurisdiction have any available resources to expand your capabilities to address hazard mitigation? Resources could include additional staff or staff time, available funding, knowledge or expertise held by city officials, or community/cultural resources.**

_____

_____

## Hazards of Top Concern

The City of Dunlap selected infrastructure failure, severe winter storms and tornadoes/windstorms as hazards of highest concerns.

| Hazard #1: Infrastructure Failure |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| Blizzards 2025, power interruptions at lagoons/lift stations |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Water loss is our biggest concern at the time of the blizzard we only had one generator that was portable and has to go between the lift station and the pump house |
| **Have you completed any projects to reduce the effect to this hazard?** |
| We did get a generator for our pump house. Also have a generator at City Hall for a warming station. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Install more generators |

| Hazard #2: Severe Winter Storms |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| Blizzard 2025-No power for portions of town, moving equipment (generators) around to lift station |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| During storms staffing is an issue with being a small town. Staff moves the generators around still trying to keep the roads cleared of snow/trees. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Installed a permanent generator at the pump house |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| More generators-lift station and city shed |

| Hazard #3: Tonradoes and Windstorms |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| Trees down, power lines down |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Wind seems to be more common, staffing during these events is tough |
| **Have you completed any projects to reduce the effect to this hazard?** |

| |
|---|
| Install a generator at City Hall so public has a safe place with power |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Get a safe location for the community-storm shelter |

## Community Lifelines

| Name | Address or Location | Type of Lifeline | Shelter (Y/N) | Generator (Y/N) | Medical Supplies (Y/N) | Food/ Water (Y/N) |
|---|---|---|---|---|---|---|
| Fire Station | 715 Iowa Ave | Safety/Security | N | Y | Y | N |
| Water Tower | 1411 Harrison Rd | Water System | N | N | N | N |
| Well #3/pump house | 512 Hwy 30 | Water System | N | Y | N | N |
| Well #4 | 512 Hwy 30 | Water System | N | N | N | N |
| City Hall | 716 Iowa Ave | Safety/Security | N | Y | N | N |
| Police Station | 716 Iowa Ave | Safety/Security | N | Y | N | N |
| Lagoons | Off of West Remsen | Water System | N | N | N | N |
| Lift Station | West Remsen | Water System | N | Y | N | N |
| City Shed | 402 1st St | Safety/Security | N | N | N | N |
| Booster Station | Harrison Rd | Water System | N | Y | N | N |

## Loss Estimates

Hazard: Tornado/Windstorm, Severe Winter Storm, Thunderstorm/Lightning/Hail, Drought, Extreme Heat, Flash Flooding, Terrorism, Transportation Incidents, Radiological, Human Disease, Infrastructure Failure

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 566 | 566 | 100% | $56,636,610,848 | $56,636,610,848 | 100% |
| Multi-Residential | 7 | 7 | 100% | $680,887 | $680,887 | 100% |
| Commercial | 202 | 202 | 100% | $20,938,967 | $20,938,967 | 100% |
| Industrial | 8 | 8 | 100% | $2,337,631 | $2,337,631 | 100% |
| Agricultural | 27 | 27 | 100% | $6,976 | $6,976 | 100% |
| Total | 810 | 810 | 100% | $56,660,575,309 | $56,660,575,309 | 100% |

Hazard: River Flooding

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 566 | 3 | 0.5% | $56,636,610,848 | $413,965 | 7.3% |
| Multi-Residential | 7 | 0 | 0% | $680,887 | $0 | 0% |
| Commercial | 202 | 15 | 7.4% | $20,938,967 | $1,101,884 | 5.3% |
| Industrial | 8 | 7 | 87.5% | $2,337,631 | $2,248,768 | 96.2% |
| Agricultural | 27 | 20 | 74.1% | $6,976 | $6,976 | 100% |
| Total | 810 | 45 | 5.6% | $56,660,575,309 | $3,771,593 | 6.7% |

Hazard: Grass/Wild Fire

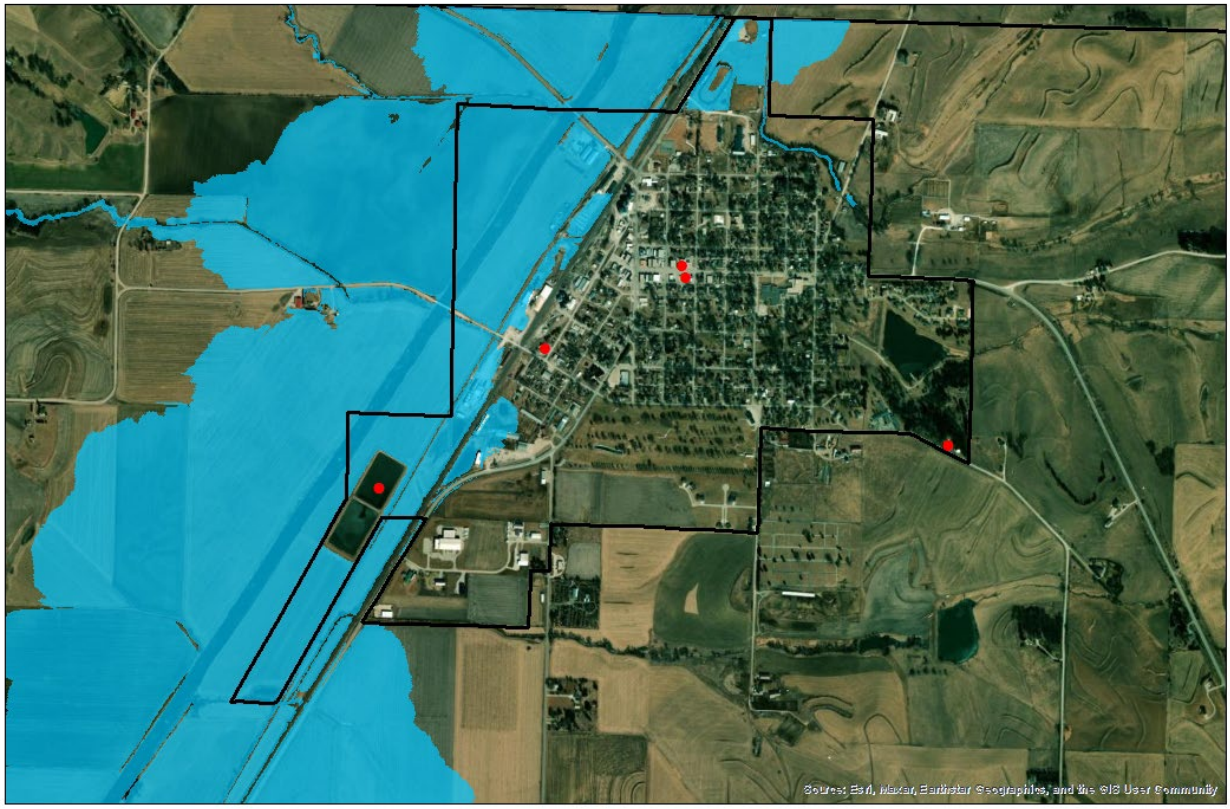
| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 566 | 67 | 11.8% | $56,636,610,848 | $5,617,357 | 9.9% |
| Multi-Residential | 7 | 0 | 0% | $680,887 | $0 | 0% |
| Commercial | 202 | 38 | 18.8% | $20,938,967 | $8,682,758 | 41.5% |
| Industrial | 8 | 7 | 87.5% | $2,337,631 | $2,248,768 | 96.2% |
| Agricultural | 27 | 27 | 100% | $6,976 | $6,976 | 100% |
| Total | 810 | 139 | 17.2% | $56,660,575,309 | $16,555,859 | 2.9% |

Hazard: Hazardous Materials (Tier II Chemicals and Pipelines)

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 566 | 566 | 100% | $56,636,610,848 | $56,636,610,848 | 100% |
| Multi-Residential | 7 | 7 | 100% | $680,887 | $680,887 | 100% |
| Commercial | 202 | 202 | 100% | $20,938,967 | $20,938,967 | 100% |
| Industrial | 8 | 8 | 100% | $2,337,631 | $2,337,631 | 100% |
| Agricultural | 27 | 27 | 100% | $6,976 | $6,976 | 100% |
| Total | 810 | 810 | 100% | $56,660,575,309 | $56,660,575,309 | 100% |

Source: Harrison County Assessor (2020), FEMA, Iowa DNR, Iowa State University Extension and Outreach

## Flood Maps


Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Legend
Community Lifelines
Floodplain
N
0 0.1 0.2 0.4 0.6 0.8
Miles

## Status of Previous Mitigation Actions

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| The Community anticipates removing two dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community. | | | X | | | | |
| The community will maintain and enforce building codes to ensure new construction and development will not create new risk to the community. | | | X | | | | |
| The community will establish or maintain standards and methods that protect power lines and infrastructure from potential risks by maintaining and enforcing a tree pruning and removal ordinance. | | | X | | | | |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure. | | | X | | | | |
| The community will build, upgrade or maintain infrastructure that protects city hall, the lift station and city wells retrofitting structures to withstand heavy winds and severe weather. | | X | X | | | | |
| The community will create and implement a plan to maintain road clearing capabilities and repair roads following adverse weather conditions. | | | X | | | | |
| The community will build, upgrade or maintain infrastructure that protects the city hall and lift stations by retrofitting structures to withstand snow loads and prevent roof collapse. | X | | X | | | | |
| The community will maintain compliance with the National Flood Insurance Program (NFIP) | X | | X | | | | |
| The community will maintain and enforce codes and ordinances that protects future development from flooding and restricts encroachment of the build environment in floodplain | | | X | | | | |
| The community will keep all streams, creeks and flood ditches from the watershed near the edge of the town clear of debris and blockages to ensure they flow properly | | | X | | | | |
| The community will expand awareness of incentives and disincentives on property or homeowner insurance that promote smart development and reduce hazard risk by using utility bills to send materials and info | | | X | | | | |
| The community will continue participation in the statewide (Alert Iowa System) mass notification | | | X | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will provide outreach and assistance to vulnerable populations in elderly housing to obtain and use weather warning systems and home safety systems | | | X | | | | |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The community will develop or maintain an inventory of equipment available to emergency responders to ensure resources can be easily and quickly identified in an event of a disaster | | | X | | | | |
| The community will develop a plan to phase purchases of replacement equipment | | | X | | | | |
| The community will investigate resources and funding to obtain person protective equipment, radios and pagers for emergency response personnel | | | X | | | | |
| The community will partner with or maintain partnerships with the American Red Cross to provide or share emergency response resources and/or equipment | | | X | | | | |
| The community will provide NIMS training as needed to emergency response personnel and CPR training to city employees | | | X | | | | |
| The community will evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations | | | X | | | | |
| The community will build or maintain infrastructure that protects critical facilities such as, but not limited to, levees and berms in floodways or retrofitting structures to withstand snow loads and prevent roof collapse | | | X | | | | |
| The community will maintain, improve and continually test early warning systems (sirens, ect) | | | X | | | | |
| The community will designate new or alternative critical facilities that are outside of hazard areas | | | X | | | | |
| The community will purchase generators to prevent disruption of city services in the event of a power outage for the city water wells and lift station which provide critical services to the community | | | X | | | | |
| The community will maintain mutual aid agreements (28E or other) between Harrison County, County Sheriff and police department of surrounding local communities | | | X | | | | |
| The community will update and maintain a list of contacts that respond to emergencies. | | | X | | | | |
| The community will regularly test communications, such as cell phones and radio equipment, between local jurisdictions | | | X | | | | |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| The community will support Severe Weather Awareness Week by coordinating announcements with the Harrison County EMA that teach severe weather hazards and proper safety techniques | | | X | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will identify and invite the fire department to teach hazard and fire safety to youth during fire safety week | | | X | | | | |
| The community will distribute material with utility bills to send hazard awareness materials and information to residents | | | X | | | | |
| The community will promote and educate county text/phone notification systems available (Everbridge, Alert Iowa System) through information distribute with utility bills | | | X | | | | |
| The community will expand awareness of community critical facilities available to the public in the event of a hazard through information distributed with utility bills | | | X | | | | |
| The community will expand awareness of evacuation routes and procedures through information on the radio | | | X | | | | |
| The community will expand awareness of Harrison County EMA system that will protect the public from severe weather incidents through contacting people on landlines or cellphones, posts information on utility bills and post information on doors | | | X | | | | |

## Action Plan

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Source(s) | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| The Community anticipates removing two dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community. | Grass or Wild Land Fire, Infrastructure Failure, Severe Winter Storm, Thunderstorm/Lightning/Hail/ Tornado/Windstorm | Moderate | City of Dunlap | Moderate | SWIPCO | Owners not wanting to give up property | Continuous |
| The community will maintain and enforce building codes to ensure new construction and development will not create new risk to the community. | Grass or Wild Land Fire, Infrastructure Failure, Severe Winter Storm, Thunderstorm/Lightning/Hail/ Tornado/Windstorm | Moderate | City of Dunlap | Minimal | SWIPCO, City Capital Improvement fund | Enforcement | Continuous |
| The community will establish or maintain standards and methods that protect power lines and infrastructure from potential risks by maintaining and enforcing a tree pruning and removal ordinance. | Infrastructure Failure, Severe Winter Storm, Thunderstorm/Lightning/Hail/ Tornado/Windstorm | Moderate | City of Dunlap/ MidAmerican Energy | Low | MidAmerican Energy | Homeowners not complying | Continuous |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure. | Infrastructure Failure, Severe Winter Storm, Thunderstorm/Lightning/Hail/ Tornado/Windstorm | Moderate | City of Dunlap | Minimal | SWIPCO, City Capital Improvement fund | Enforcement | Continuous |
| The community will build, upgrade or maintain infrastructure that protects city hall, the lift station and city wells retrofitting structures to withstand heavy winds and severe weather. | Infrastructure Failure, Severe Winter Storm, Thunderstorm/Lightning/Hail/ Tornado/Windstorm | Moderate | City of Dunlap | Minimal | City of Dunlap | | Continuous |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will create and implement a plan to maintain road clearing capabilities and repair roads following adverse weather conditions. | Severe Winter Storm | Moderate | City of Dunlap | Moderate | City operating budget | Cost of Road Repair | Continuous |
| The community will build, upgrade or maintain infrastructure that protects the city hall and lift stations by retrofitting structures to withstand snow loads and prevent roof collapse. | Infrastructure Failure, Severe Winter Storm, Thunderstorm/Lightning/Hail/ Tornado/Windstorm | Moderate | City of Dunlap | Minimal | City operating budget | none | Continuous |
| The community will maintain compliance with the National Flood Insurance Program (NFIP) | Flash Flooding, River Flooding | Moderate | City of Dunlap/NFIP | Low | City operating budget | none | |
| The community will maintain and enforce codes and ordinances that protects future development from flooding and restricts encroachment of the build environment in floodplain | Flash Flooding, River Flooding | Moderate | City of Dunlap | Low | City operating budget | None | Continuous |
| The community will keep all streams, creeks and flood ditches from the watershed near the edge of the town clear of debris and blockages to ensure they flow properly | Flash flood, River flooding, Infrastructure Failure | Moderate | City of Dunlap | Low | City operating budget | None | Continuous |
| The community will expand awareness of incentives and disincentives on property or homeowner insurance that promote smart development and reduce hazard risk by using utility bills to send materials and info | Flash flood, river flooding, Severe Winter Storms, dam/levee failure, Extreme heat, Grass/Wild land fire, Thunderstorms/Lightning/Hail, Tornado/Windstorms | Moderate | City of Dunlap | Low | City operating budget | None | Continuous |
| The community will continue participation in the statewide (Alert Iowa System) mass notification | Flash flood, river flooding, Severe Winter Storms, dam/levee failure, Extreme heat, Grass/Wild land fire, Thunderstorms/Lightning/Hail, Tornado/Windstorms | Moderate | City of Dunlap | Low | City operating budget | Older residents struggle figuring out how to get the alerts | Continuous |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will provide outreach and assistance to vulnerable populations in elderly housing to obtain and use weather warning systems and home safety systems | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm | Moderate | Dunlap Fire & Rescue/ City of Dunlap | Low | City operating budget | None | Continuous |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The community will develop or maintain an inventory of equipment available to emergency responders to ensure resources can be easily and quickly identified in an event of a disaster | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Moderate | Dunlap Fire & Rescue/ City of Dunlap | Low | City operating budget | None | Continuous |
| The community will develop a plan to phase purchases of replacement equipment | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Moderate | Dunlap Fire & Rescue/ City of Dunlap | Moderate | City/fire dept. operating budget | Cost of equipment | Continuous |
| The community will investigate resources and funding to obtain person protective equipment, radios and pagers for emergency response personnel | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, | Moderate | Dunlap Fire & Rescue/ City of Dunlap | Moderate | City/Fire Dept. operating budget | Cost | Continuous |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| The community will partner with or maintain partnerships with the American Red Cross to provide or share emergency response resources and/or equipment | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Moderate | American Red Cross/ City of Dunlap | Low | City operating budget | None | Continuous |
| The community will provide NIMS training as needed to emergency response personnel and CPR training to city employees | Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Moderate | Dunlap Fire & Rescue Department | Low | Fire dept. operating budget | None | Continuous |
| The community will evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Moderate | Dunlap Fire & Rescue Department | Low | Fire Dept. operating budget | None | Continuous |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will build or maintain infrastructure that protects critical facilities such as, but not limited to, levees and berms in floodways or retrofitting structures to withstand snow loads and prevent roof collapse | Dam/Levee Failure, Flash Flood, River Flooding, Severe Winter Storm, Thunderstorm/ Lightning/Hail, Tornado/ Windstorm, Infrastructure Failure | Moderate | City of Dunlap | Moderate | City operating budget | None | Continuous |
| The community will maintain, improve and continually test early warning systems (sirens, ect) | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hair, Tornado/Windstorm | Moderate | City of Dunlap/ Dunlap Fire & Rescue | Low | City/ Fire Dept. operating budgets | None | Continuous |
| The community will designate new or alternative critical facilities that are outside of hazard areas | Dam/Levee Failure, Flash Flood, River Flooding, | Moderate | City of Dunlap | Moderate | City operating budgets | None | Continuous |
| The community will purchase generators to prevent disruption of city services in the event of a power outage for the city water wells and lift station which provide critical services to the community | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hair, Tornado/Windstorm | Completed | | | | | |
| The community will maintain mutual aid agreements (28E or other) between Harrison County, County Sheriff and police department of surrounding local communities | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Moderate | City of Dunlap/ Dunlap Fire & Rescue/ | Minimal | City / Fire Dept. | None | Continuous |
| The community will update and maintain a list of contacts that respond to emergencies. | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, | Moderate | City of Dunlap/ | Minimal | City of Dunlap | None | Continuous |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | Dunlap Fire & Rescue | | | | |
| The community will regularly test communications, such as cell phones and radio equipment, between local jurisdictions | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hair, Tornado/Windstorm | Moderate | City of Dunlap/ Dunlap Fire & Rescue | Minimal | City/ Fire Dept. operating budget | None | Continuous |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| The community will support Severe Weather Awareness Week by coordinating announcements with the Harrison County EMA that teach severe weather hazards and proper safety techniques | Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hair, Tornado/Windstorm | Moderate | City of Dunlap | Minimal | City operating budget | None | Continuous |
| The community will identify and invite the fire department to teach hazard and fire safety to youth during fire safety week | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hair, Tornado/Windstorm | Moderate | City of Dunlap/ Dunlap Fire & Rescue | Low | City operating budget | None | Continuous |
| The community will distribute material with utility bills to send hazard awareness materials and information to residents | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, | Moderate | City of Dunlap | Low | City operating budgets | None | Continuous |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| The community will promote and educate county text/phone notification systems available (Everbridge, Alert Iowa System) through information distribute with utility bills | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hair, Tornado/Windstorm | Moderate | City of Dunlap | Minimal | City operating budget | None | Continuous |
| The community will expand awareness of community critical facilities available to the public in the event of a hazard through information distributed with utility bills | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hair, Tornado/Windstorm | Moderate | City of Dunlap | Minimal | City operating budget | None | Continuous |
| The community will expand awareness of evacuation routes and procedures through information on the radio | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hair, Tornado/Windstorm | Moderate | City of Dunlap | Minimal | City operating budget | None | Continuous |
| The community will expand awareness of Harrison County EMA system that will protect the public from severe weather incidents through contacting people on landlines or cellphones, posts information on utility bills and post information on doors | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hair, Tornado/Windstorm | Moderate | City of Dunlap/ Harrison County EMA | Minimal | City operating budget | None | Continuous |

## Adoption Resolution

# City of Little Sioux

## Community Capabilities

| | Date/Time | Location |
|---|---|---|
| Council Meetings | 7pm 1st Monday of Month except holidays and first 3 days of the month | 407 1st St. Little Sioux (City Hall) |

### Utilities and Services

| Service | Provider |
|---|---|
| Electricity | MidAmerican Energy |
| Gas | NA |
| Water | City of Little Sioux |
| Phone Services | Windstream & Cellular |
| Law Enforcement | Harrison County Sherif's office |
| Fire Protection | Little Sioux Volunteer Fire Department |
| Cable/Internet | Windstream & Cellular |
| Newspaper | Missouri Valley Times |
| Warning System (sirens, text alerts, etc.) | Fire hall Siren & Alert Iowa |
| HAZMAT Assistance | Little Sioux Fire Dept/ Tri County Hazmat |
| Emergency Medical Services | |
| Medical Clinic/Hospital | CHI Missouri Valley |
| Tornado Shelter (FEMA approved) | N/A |

### Utility Questions

| | |
|---|---|
| If operating a municipal water system, where is you water sourced from? (shallow well, aquifer, river, etc.) | **Shallow well** |
| Sewer or private septic? | Sewer |
| Do you have a water treatment facility? | Yes |
| Do you have a wastewater treatment facility? | No |
| Do you have any current DNR violations with your drinking water or wastewater? | No |

### Plans/Ordinances

| | Yes/No | Year Approved | Comments |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Comprehensive/land use Plan | No | | |
| Capital Improvement Plan | No | | |
| Local Emergency Plan (not the countywide hazard mitigation plan) | No | | |
| Flood Mitigation Assistance Plan | No | | |
| Zoning Ordinance | | | |
| **Most recent code of ordinances update** | | | |
| Restricted Residential District Ordinance | No | | |
| Subdivisions Ordinance | No | | |
| Floodplain Ordinance | No | | |
| Building Permit Ordinance | Yes | | |
| Building Codes—if yes, what year/edition? | Yes | 2024 | New Build Only |
| Tree Trimming Ordinance | Yes | unk | |
| Nuisance Ordinance | Yes | unk | Currently updating. |
| Storm Water Ordinance | No | | |
| Drainage Ordinance | No | | |

**Boards/Staff/Departments**

| | Yes/No | Title | Comments |
|---|---|---|---|
| Building Code Official | No | | |
| Building Inspector | No | | |
| Public Works Official | | | |
| NFIP Floodplain Administrator (if you participate in NFIP, you have a floodplain administrator) | No | | |
| Zoning Commission | No | | |
| Board of Adjustments | No | | |
| Nuisance Abatement Official | No | | |

**What projects, plans or changes, if any, has your jurisdiction completed in the last five years?**
Installed generator at water treatment plant in 2023.

**Does your jurisdiction have any available resources to expand your capabilities to address hazard mitigation? Resources could include additional staff or staff time, available funding, knowledge or expertise held by city officials, or community/cultural resources.**

## Hazards of Top Concern

The City of Little Sioux identified tornado/windstorm, severe winter storms, river flooding, and infrastructure failure as top concerns for the city.

| Hazard #1: Tornado/Wind Storm |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| Harrison County experienced multiple FEMA-declared severe weather events in 2024, including DR-4779 (April 26, 2024) involving tornadoes and heavy rain, and DR-4784 (May 20, 2024) involving a tornado and derecho. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| These events caused widespread regional damage, power outages, and emergency response activity, demonstrating vulnerability to high-wind events. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| |

| Hazard #2: Severe Winter Storms |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| On March 19, 2024, a severe winter blizzard caused widespread power outages beginning around 8:00 AM. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Little Sioux, Mondamin, and Pisgah experienced outages exceeding 110 hours, with restoration occurring around 11:00 PM on Saturday. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| |

| Hazard #3: River Flooding |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| Major Missouri River flooding events in 2011 and 2019 disrupted transportation and regional access. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| The 2011 flood resulted in closure of Interstate 29, directly impacting Little Sioux's economy. In 2024, Little Sioux River flooding impacted communities north of Little Sioux, affecting access and regional operations. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| |

| What projects would the jurisdiction like to complete to mitigate risks to this hazard? |
| --- |
| |

| Hazard #4: Infrastructure Failure |
| --- |
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| 2024 Blizzard-power outage, 2024 Tornadoes-power outage, 2024 Derecho-power outage |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Severe weather events have caused cascading infrastructure failures, including prolonged power outages impacting water, wastewater, communications, and emergency services. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| The city has mitigated these risks through generator installations. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| |

## Community Lifelines

| Name | Address or Location | Type of Lifeline | Shelter (Y/N) | Generator (Y/N) | Medical Supplies (Y/N) | Food/ Water (Y/N) |
|---|---|---|---|---|---|---|
| Nealy Hall | 86 Vine St, Little Sioux, IA 51545 | Shelter | Y | N | N | N |
| Water Plant | 209 Walnut St. Little, IA 51545 | Water System | N | Y | N | Y |
| Fire Hall | 507 1st St, Little Sioux, IA 51545 | Communications/ Safety & Security | N | N | N | N |
| Vine St. Lift Station | 59 Vine St, Little Sioux, IA 51545 | Water System | N | Y | N | N |
| Main St. Lift Station | 205 Main St, Mondamin, IA 51557 | Water System | N | Y | N | N |

## Loss Estimates

Hazard: Tornado/Windstorm, Severe Winter Storm, Thunderstorm/Lightning/Hail/Freezing Rain, Drought, Extreme Heat, Flash Flooding, Terrorism, Transportation Incidents, Radiological, Human Disease, Infrastructure Failure

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 193 | 193 | 100% | $3,022,479 | $3,022,479 | 100% |
| Multi-Residential | 1 | 1 | 100% | $92,651 | $92,651 | 100% |
| Commercial | 17 | 17 | 100% | $289,163 | $289,163 | 100% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 28 | 28 | 100% | $60,320 | $60,320 | 100% |
| Total | 239 | 239 | 100% | $3,464,613 | $3,464,613 | 100% |

Hazard: River Flooding

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 193 | 193 | 100% | $3,022,479 | $3,022,479 | 100% |
| Multi-Residential | 1 | 1 | 100% | $92,651 | $92,651 | 100% |
| Commercial | 17 | 17 | 100% | $289,163 | $289,163 | 100% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 28 | 28 | 100% | $60,320 | $60,320 | 100% |
| Total | 239 | 239 | 100% | $3,464,613 | $3,464,613 | 100% |

Hazard: Grass/Wild Fire

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 193 | 193 | 100% | $3,022,479 | $3,022,479 | 100% |
| Multi-Residential | 1 | 1 | 100% | $92,651 | $92,651 | 100% |
| Commercial | 17 | 17 | 100% | $289,163 | $289,163 | 100% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 28 | 28 | 100% | $60,320 | $60,320 | 100% |
| Total | 239 | 239 | 100% | $3,464,613 | $3,464,613 | 100% |

Hazard: Hazardous Materials (Tier II Chemicals and Pipelines)

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 193 | 193 | 100% | $3,022,479 | $3,022,479 | 100% |
| Multi-Residential | 1 | 1 | 100% | $92,651 | $92,651 | 100% |
| Commercial | 17 | 17 | 100% | $289,163 | $289,163 | 100% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 28 | 28 | 100% | $60,320 | $60,320 | 100% |
| Total | 239 | 239 | 100% | $3,464,613 | $3,464,613 | 100% |

Source: Harrison County Assessor (2020), FEMA, Iowa DNR, Iowa State University Extension and Outreach

# Flood Maps

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Legend
Community Lifelines
Floodplain
N
0 0.05 0.1 0.2 0.3 0.4
Miles

## Status of Previous Mitigation Actions

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1: Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster.** | | | | | | | |
| Objective #1: Communities will mitigate or remove risk of fire hazards by ten percent in the next ten years | | | | | | | |
| The community will remove two dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community | X | | | | | | |
| The community will maintain and enforce building codes to ensure new construction and development will not create new risk to the community | | X | | | | | |
| Objective #2: Communities will mitigate or remove risk of tornado, windstorms, and thunderstorms/lightning damage by ten percent in the next ten years | | | | | | | |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure | | | X | | | | |
| Objective #3: Communities will mitigate the effects of severe winter weather damage by completing two programs in the next five years | | | | | | | |
| The community will create and implement a plan to maintain road clearing capabilities and repair roads following adverse weather conditions | | | X | | | | |
| The community will expand awareness on energy efficient building materials and techniques that adequately protect people from adverse weather conditions | | | | | | X | |
| Objective #4: Communities will reduce flood risk to residents and businesses of Harrison County by completion of an infrastructure upgrade project in the next ten years | | | | | | | |
| The community will maintain drainage and storm sewer systems (pipes, culverts and channels) along main street to meet proper capacity requirements that provide systems that adequately and safely remove excess water from developed areas | | | X | | | | |
| Objective #5: Communities will reduce flood risk to residents and businesses of Harrison County by completion of two programs in the next five years | | | | | | | |
| The community will maintain compliance the National Flood Insurance Program (NFIP) | | | X | | | | |
| The community will maintain and enforce codes and ordinances that protects future development from flooding and restricts encroachment of the built environment in the floodplain | | | | | | X | |
| Objective #6: Communities of Harrison County will be able to provide an additional level of early warning system or education to residents in the next five years. | | | | | | | |
| The community will upgrade early warning siren systems by installing a new siren | | | | | | X | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will train public staff that are able to provide information relating to severe weather | | | X | | | | |
| The county will upgrade and maintain the county-wide Everbridge mass notification early warning systems | | | | | | | X |
| The county will continue participation in the statewide (Alert Iowa System) mass notification system | | | X | | | | |
| Objective #7: Communities will be able to provide an additional level of safety to vulnerable populations in five years. | | | | | | | |
| The community will provide outreach and assistance to vulnerable populations to implement hazard mitigation projects and programs | | | | | | X | |
| **Goal #2: Ensure government operations, response, and recovery are not significantly disrupted by disasters.** | | | | | | | |
| Objective #1: Communities will implement two new programs that ensure their emergency response teams and departments are adequately equipped to respond to any emergency situation in three years. | | | | | | | |
| The community will develop or maintain an inventory of equipment available to emergency responders to ensure resources can be easily and quickly identified in an event of a disaster | | | X | | | | |
| The community will develop a plan to phase purchases of replacement equipment | | | | | | X | |
| The community will partner with or maintain partnership with local fire departments and the Tri-County Emergency Response to provide or share emergency response resources and/or equipment | | | X | | | | |
| Objective #2: Communities will implement two new programs to ensure emergency response teams and departments are adequately staffed and prepared in three years to handle any emergency situations. | | | | | | | |
| The community will provide training to emergency response personnel | | | X | | | | |
| The community will evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations | | | X | | | | |
| The community will identify, maintain and train volunteer groups that are able to provide assistance or respond in the event of a disaster or emergency | | | | | | X | |
| The community will create and maintain policies that designate secondary personnel to handle disaster response and recovery | | | | | | X | |
| Objective #3: Communities will ensure facilities/infrastructure that are critical to the community and supply essential services are operational during a hazard event by implementing one project in five years. | | | | | | | |
| The community will maintain, improve and continually test early warning systems (sirens, etc.) | | | | | | X | |
| The community will designate new or alternative critical facilities that are outside of hazard areas | | | | | | X | |
| Objective #4: Communities will ensure communications between governments, organizations, citizens and emergency response personnel are adequately prepared for all disaster situations by implementing or maintaining all actions within five years | | | | | | | |
| The community will maintain mutual aid agreements (28E or other) between all local jurisdictions | | | X | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will update and maintain a list of contacts that respond to all emergencies | | | | | | X | |
| The community will regularly test communications equipment between local jurisdictions | | | | | | X | |
| The community will promote training between emergency response departments | | | X | | | | |
| **Goal #3: Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards.** | | | | | | | |
| Objective #1: Communities will implement three new programs in public schools that encourage safe hazard preparedness and response practices in five years. | | | | | | | |
| The community will support Severe Weather Awareness Week by creating or continuing activities that teach severe weather hazards and proper safety techniques | | | X | | | | |
| The community will identify and invite outside organizations that can teach hazard safety to youth | | | | | | X | |
| The community will conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques | | | | | | X | |
| The community will create an additional educational programs in schools that teach youth hazard safety preparedness and response | | | X | | | | |
| The community will identify or produce new materials and/or resources to teach youth about hazard risk and proper safety techniques | | | | | | X | |
| Objective #2: Communities will identify and implement one new program that expands public awareness of resources that help teach public safety and/or provide early warning of severe weather events in 5 years | | | | | | | |
| The community will train public employees/staff to increase capacity to provide hazard awareness materials and information | | | | | | X | |
| The community will create an emailing/mailing list to send materials and information to residents relating to hazard risks | | | | | | X | |
| Objective #3: Communities will implement a program that educates the residents on available resources that help protect them from tornado, windstorms or other severe weather incidents. | | | | | | | |
| The community will expand awareness of community critical facilities available to the public in the event of a hazard | | | | | | X | |
| The community will expand awareness of evacuation routes and procedures | | | | | | X | |

## Action Plan

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Source(s) | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| The community will remove two dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community | Infrastructure Failure, Thunderstorm/Lightning/Hail, Severe Winter Storms, Tornado/Windstorm, Hazardous Materials, Terrorism, Grass/Wild Land Fire | High | City of Little Sioux | High | City of Little Sioux General Fund, SWIHTF | File court paper to gain control of property | Ongoing |
| The community will maintain and enforce building codes to ensure new construction and development will not create new risk to the community | Infrastructure Failure, Thunderstorm/Lightning/Hail, Severe Winter Storms, Tornado/Windstorm, Hazardous Materials, Terrorism, Grass/Wild Land Fire | High | City of Little Sioux | Moderate | City of Little Sioux General fund, BRIC | Compliance with Council | Ongoing |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure | Infrastructure Failure, Flash Flood, River Flood, Thunderstorm/Lightning/Hail, Severe Winter Storms, Tornado/Windstorm, Hazardous Materials, Terrorism, Grass/Wild Land Fire | High | City of Little Sioux | Moderate | City of Little Sioux General fund, BRIC | Gaining possession of properties | Ongoing |
| The community will create and implement a plan to maintain road clearing capabilities and repair roads following adverse weather conditions | River Flooding, Flash Floods, Infrastructure Failure, Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm, Dam/Levee Failure | Med | City of Little Sioux | High | City of Little Sioux General fund, BRIC, PDM | Locating affordable Equipment. | Mid-term |
| The community will expand awareness on energy efficient building materials and techniques | River Flooding, Flash Floods, Extreme Heat, Infrastructure Failure, | Low | City of Little Sioux | Low | City of Little Sioux General fund | Adopting building codes and | Mid-term |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| that adequately protect people from adverse weather conditions | Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm | | | | | implementing them. | |
| The community will maintain drainage and storm sewer systems (pipes, culverts and channels) along main street to meet proper capacity requirements that provide systems that adequately and safely remove excess water from developed areas | Dam/Levee Failure, Flash Floods, River Flooding | Medium | City of Little Sioux | Moderate | City of Little Sioux General Fund, CDBG, BRIC | Funding | Mid-term |
| The community will maintain compliance the National Flood Insurance Program (NFIP) | Flash Flooding, River Flooding, Dam/Levee Failure | High | City of Little Sioux | Low | City of Littler Sioux General Fund | None | Ongoing |
| The community will maintain and enforce codes and ordinances that protects future development from flooding and restricts encroachment of the built environment in the floodplain | Flash Flooding, River Flooding, Dam/Levee Failure | High | City of Little Sioux | Moderate | City of Little Sioux General fund, BRIC | Time | Ongoing |
| The community will upgrade early warning siren systems by installing a new siren | Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm, Infrastructure Failure, Terrorism, Radiological, Grass/Wild Land Fire, Flash Floods, River Flooding, Dam/Levee Failure | High | City of Little Sioux | High | City of Little Sioux General fund, BRIC | Funding | Long term |
| The community will train public staff that are able to provide information relating to severe weather | Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Human Disease, Landslide, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm | Low | City of Little Sioux | Low | City of Little Sioux General Fund | Time and personnel | Mid-term |
| The community will provide outreach and assistance to vulnerable populations to implement hazard mitigation projects and programs | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, | Medium | City of Little Sioux, Little Sioux | Low | City of Little Sioux General Fund | Time and Personnel | Mid-term/ ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | Fire Department | | | | |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The community will develop or maintain an inventory of equipment available to emergency responders to ensure resources can be easily and quickly identified in an event of a disaster | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Little Sioux, Little Sioux Fire Department | Low | City of Little Sioux General Fund | Time and Personnel | Short-term/ ongoing |
| The community will develop a plan to phase purchases of replacement equipment | Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm, Infrastructure Failure, Terrorism, Radiological, Grass/Wild Land Fire, Flash Floods, River Flooding, Dam/Levee Failure, Drought, Extreme Heat, Transportation Incident, | Medium | City of Little Sioux, Little Sioux Fire Department | Low | City of Little Sioux General Fund | Time and Personnel | Short-term/ ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Hazardous Materials, Landslide, Earthquake, Sinkhole | | | | | | |
| The community will partner with or maintain partnership with local fire departments and the Tri-County Emergency Response to provide or share emergency response resources and/or equipment | Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm, Infrastructure Failure, Terrorism, Radiological, Grass/Wild Land Fire, Flash Floods, River Flooding, Dam/Levee Failure, Drought, Extreme Heat, Expansive Soils, Transportation Incident, Hazardous Materials, Landslide, Earthquake, Sinkhole | Medium | City of Little Sioux | Low | City of Little Sioux General Fund | Time and Personnel | Short-term/ ongoing |
| The community will provide training to emergency response personnel | Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm, Infrastructure Failure, Terrorism, Radiological, Grass/Wild Land Fire, Flash Floods, River Flooding, Dam/Levee Failure, Drought, Extreme Heat, Transportation Incident, Hazardous Materials, Landslide, Earthquake, Sinkhole | High | City of Little Sioux, Little Sioux Fire Department | Low | City of Little Sioux General Fund | Time and Personnel | Short-term/ ongoing |
| The community will evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations | Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm, Infrastructure Failure, Terrorism, Radiological, Grass/Wild Land Fire, Flash Floods, River Flooding, Dam/Levee Failure, Drought, Extreme Heat, Transportation Incident, Hazardous Materials, Landslide, Earthquake, Sinkhole | High | City of Little Sioux, Little Sioux Fire Department | Varies | City of Little Sioux General Fund | Time and Personnel | Short-term/ ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will identify, maintain and train volunteer groups that are able to provide assistance or respond in the event of a disaster or emergency | Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm, Infrastructure Failure, Terrorism, Radiological, Grass/Wild Land Fire, Flash Floods, River Flooding, Dam/Levee Failure, Drought, Extreme Heat, Transportation Incident, Hazardous Materials, Landslide, Earthquake, Sinkhole | Medium | City of Little Sioux, Little Sioux Fire Department | Low | City of Little Sioux General Fund | Time and Personnel | Short-term/ ongoing |
| The community will maintain, improve and continually test early warning systems (sirens, etc.) | Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm, Grass/Wild Land Fire, Flash Floods, River Flooding, | High | City of Little Sioux, Little Sioux Fire Department | Low | City of Little Sioux General Fund | Time and Personnel | Short-term/ ongoing |
| The community will designate new or alternative critical facilities that are outside of hazard areas | Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm, Infrastructure Failure, Terrorism, Radiological, Grass/Wild Land Fire, Flash Floods, River Flooding, Dam/Levee Failure, Drought, Extreme Heat, Transportation Incident, Hazardous Materials, Landslide, Earthquake, Sinkhole | Low | City of Little Sioux | High | City of Little Sioux General Fund, CDBG, USDA, SRF, BRIC | Funding | Long term |
| The community will maintain mutual aid agreements (28E or other) between all local jurisdictions | Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm, Infrastructure Failure, Terrorism, Radiological, Grass/Wild Land Fire, Flash Floods, River Flooding, Dam/Levee Failure, Drought, Extreme Heat, Transportation Incident, Hazardous Materials, | High | City of Little Sioux | Low | City of Little Sioux General Fund | None | ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Landslide, Earthquake, Sinkhole | | | | | | |
| The community will update and maintain a list of contacts that respond to all emergencies | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Little Sioux | Low | City of Little Sioux General Fund | Time and Personnel | Short-term/ ongoing |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| The community will support Severe Weather Awareness Week by creating or continuing activities that teach severe weather hazards and proper safety techniques | Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm, Infrastructure Failure, Terrorism, Radiological, Grass/Wild Land Fire, Flash Floods, River Flooding, Dam/Levee Failure, Drought, Extreme Heat, Transportation Incident, Hazardous Materials, Landslide, Earthquake, Sinkhole | Low | City of Little Sioux | Low | City of Little Sioux General Fund | Time and Personnel | Short-term/ ongoing |
| The community will identify and invite outside organizations that can teach hazard safety to youth | Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm, Infrastructure Failure, Terrorism, Radiological, Grass/Wild Land Fire, Flash Floods, | Low | City of Little Sioux | Low | City of Little Sioux General Fund | Time and Personnel | Short-term/ ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | River Flooding, Dam/Levee Failure, Drought, Extreme Heat, Transportation Incident, Hazardous Materials, Landslide, Earthquake, Sinkhole | | | | | | |
| The community will conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques | Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm, Infrastructure Failure, Terrorism, Radiological, Grass/Wild Land Fire, Flash Floods, River Flooding, Dam/Levee Failure, Drought, Extreme Heat, Transportation Incident, Hazardous Materials, Landslide, Earthquake, Sinkhole | Low | City of Little Sioux | Low | City of Little Sioux General Fund | Time and Personnel | Short-term/ ongoing |
| The community will create an emailing/mailing list to send materials and information to residents relating to hazard risks, potential mitigation projects, and proper hazard response | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Little Sioux | Low | City of Little Sioux General Fund | Time and Personnel | Short-term/ ongoing |

## Adoption Resolution

# City of Logan

## Community Capabilities

| | Date/Time | Location |
|---|---|---|
| Council Meetings | 1st and 3rd Mondays | 108 W 4th St |

### Utilities and Services

| Service | Provider |
|---|---|
| Electricity | MidAmerican |
| Gas | MidAmerican |
| Water | City of Logan |
| Phone Services | Windstream/Uniti |
| Law Enforcement | Harrison County Sheriff |
| Fire Protection | Logan Volunteer Fire and Rescue |
| Cable/Internet | Longlines, Windstream, WIW, Nextlink |
| Newspaper | Harrison County Times Reporter |
| Warning System (sirens, text alerts, etc.) | Tornado/Fire & Rescue siren, Everbridge |
| HAZMAT Assistance | Tri-County Special Operations Unit |
| Emergency Medical Services | Community Memorial Hospital-MoVal |
| Medical Clinic/Hospital | Logan CHI Health Clinic |
| Tornado Shelter (FEMA approved) | NA |

### Utility Questions

| | |
|---|---|
| If operating a municipal water system, where is you water sourced from? (shallow well, aquifer, river, etc.) | **4 shallow, gravel packed wells** |
| Sewer or private septic? | Both. 3 cell control discharge lagoon |
| Do you have a water treatment facility? | Yes |
| Do you have a wastewater treatment facility? | 3 cell control discharge lagoon |
| Do you have any current DNR violations with your drinking water or wastewater? | No |

### Plans/Ordinances

| | Yes/No | Year Approved | Comments |
|---|---|---|---|
| Comprehensive/land use Plan | Yes | 2000 | |

| | | | |
|---|---|---|---|
| Capital Improvement Plan | No | | |
| Local Emergency Plan (not the countywide hazard mitigation plan) | No | | |
| Flood Mitigation Assistance Plan | No | | |
| Zoning Ordinance | Yes | 2000 | |
| **Most recent code of ordinances update** | | | |
| Restricted Residential District Ordinance | No | | |
| Subdivisions Ordinance | Yes | 2000 | |
| Floodplain Ordinance | Yes | 2020 | |
| Building Permit Ordinance | Yes | 2020 | |
| Building Codes—if yes, what year/edition? | Yes | 1997 | Uniform Building Code |
| Tree Trimming Ordinance | Yes | | |
| Nuisance Ordinance | Yes | | |
| Storm Water Ordinance | Yes | | |
| Drainage Ordinance | No | | |

**Boards/Staff/Departments**

| | Yes/No | Title | Comments |
|---|---|---|---|
| Building Code Official | Yes | Building Official | |
| Building Inspector | Yes | Building Official | |
| Public Works Official | Yes | Utility Superintendent | |
| NFIP Floodplain Administrator (if you participate in NFIP, you have a floodplain administrator) | Yes | Building Official | |
| Zoning Commission | Yes | | |
| Board of Adjustments | Yes | | |
| Nuisance Abatement Official | Yes | Building Official | |

## Hazards of Top Concern

The City of Logan identified river flooding, tornadoes/windstorms, severe winter storms and lighting and hail as top hazards for the city.

| Hazard #1: River Flooding |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| Certain parts of Logan has flooded many times due to the Boyer River. The school athletic field, some city owned buildings on South 7th Ave near the river and city owned lift station on North 6th Ave and flooded at least 3 times in the last 25 years. The athletic fields needed extensive repairs including new buildings, dugouts and fencing. The lift station needed a new generator. Other city storage buildings needed cleaned out. Two roads at city owned buildings needed all new rock. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Being located on the Boyer River makes the city vulnerable. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Purchased the old fire hall building to relocate city equipment to higher ground. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Stop using and demolish city owned storage buildings near Boyer River. Currently store salt in a building near the river so if it floods salt will be lost. |

| Hazard #2: Tornadoes and Windstorms |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| In 1999 a tornado struck very near Logan and 2 people were killed and several homes destroyed. No damage inside city limits. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| It is a top concern as Iowa has many tornadoes every year. Specific vulnerabilities would be the water tower, water plant, lift stations and city hall. Elderly population that may not be able to take shelter if needed. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Installed a new siren in 2025 to better warn residents. It is louder and rotates to reach further. Working to install backup generator at city hall/community center. If there were a large scale power outage due to storms, the community center could be used as a storm shelter. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| |

| Hazard #3: Sever Winter Storms |
|---|

| Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed. |
| --- |
| In March 2025, during an extremely cold time, most of Logan was without power due to a power grid failure within MidAmerican Energy. The outage lasted 12 hours but initially was projected to last longer. The city had to rent a generator to bring the water plant back online. We also had severe storms and snow storms that have caused wide spread power outages. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| It is a top concern due to the unpredictability of the weather. We have many overhead power lines and an aging electrical line system that is prone to large outages during ice storms and blizzards. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| We have installed a backup generator at the wellfield. We are installing a backup generator at city hall/community center. We are designing a new water treatment facility that will have a backup generator. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| New power lines/substation upgrades from MidAmerican Energy. Bury powerlines. |

| Hazard #4: Hail and Lightning |
| --- |
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| In March 2011 a severe hail storm damaged all roofs of city owned buildings. All roofs needed new shingles. We've also had lightning strikes that have damaged water plant controls as well as office equipment at city hall. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Top concern due to how often hail and lightning happen in Iowa. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Outfit roofs with class 4 shingles. |

## Community Lifelines

| Name | Address or Location | Type of Lifeline | Shelter (Y/N) | Generator (Y/N) | Medical Supplies (Y/N) | Food/ Water (Y/N) |
|---|---|---|---|---|---|---|
| Logan Volunteer Fire and Rescue | 115 S 3rd Ave | Safety/Security | Y | Y | Y | N |
| Logan City Hall/ Community Center | 108 W 4th St | Safety/Security | Y | Y | N | N |
| West Central Development | 107 N 4th Ave | Food/Hydration | N | N | N | Y |
| Harrison County Courthouse | 111 N 2nd Ave | Safety/Security | N | N | N | N |
| Harrison County Law Enforcement | 111 S 1st Ave | Safety/Security, Communication | N | Y | Y | Y |
| CHI Health Clinic | 118 S 1st Ave | Health/Medical | N | | Y | N |
| St. Ames Catholic Church | 112 W 3rd St | Food/Shelter | Y | N | N | N |
| Logan Christian Church | 205 E 8th St | Food/Shelter | Y | N | N | N |
| Logan-Magnolia CSD | 1200 N 2nd Ave | Food/Shelter | Y | N | N | Y |
| Logan Water Plant | 404 E 8th St | Water System | N | N | N | N |
| Logan Water Tower | 685 N Tower Rd | Water System | N | N | N | N |
| Well Field | 2925 Hwy 30 | Water System | N | Y | N | N |
| Lagoons | | Water System | N | N | N | N |
| Harrison County Public Health | 122 W 8th St | Health/Medical | N | N | Y | N |
| Yesway Gas Station | 121 W 7th St | Energy | N | N | N | N |
| Harrison County EMA | 116 N 2nd Ave | Communications | N | N | N | N |
| Agriland | 404 S 3rd Ave | Hazardous Material, Energy | N | N | N | N |
| Cogdill | | Energy | N | | | |
| City Shops | | Safety/Security | N | | | |
| Union Pacific RR | | Transportation | N | N | N | N |
| Canadian National RR | | Transportation | N | N | N | N |

## Loss Estimates

Hazard: Tornado/Windstorm, Severe Winter Storm, Thunderstorm/Lightning/Hail/Freezing Rain, Drought, Extreme Heat, Flash Flooding, Terrorism, Transportation Incidents, Radiological, Human Disease, Infrastructure Failure

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 644 | 644 | 100% | $51,736,166 | $51,736,166 | 100% |
| Multi-Residential | 13 | 13 | 100% | $2,072,011 | $2,072,011 | 100% |
| Commercial | 164 | 164 | 100% | $2,328,238 | $2,328,238 | 100% |
| Industrial | 2 | 2 | 100% | $629,540 | $629,540 | 100% |
| Agricultural | 27 | 27 | 100% | $224,909 | $224,909 | 100% |
| Total | 850 | 850 | 100% | $5,306,600 | $5,306,600 | 100% |

Hazard: River Flooding

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 644 | 9 | 1.4% | $51,736,166 | $245,016 | 0.5% |
| Multi-Residential | 13 | 0 | 0% | $2,072,011 | $0 | 0% |
| Commercial | 164 | 26 | 15.9% | $23,428,238 | $7,663,546 | 32.7% |
| Industrial | 2 | 2 | 100% | $629,540 | $629,540 | 100% |
| Agricultural | 27 | 14 | 51.9% | $224,909 | $0 | 0% |
| Total | 850 | 51 | 6.0% | $78,090,864 | $8,598,102 | 11.0% |

Hazard: Grass/Wild Fire

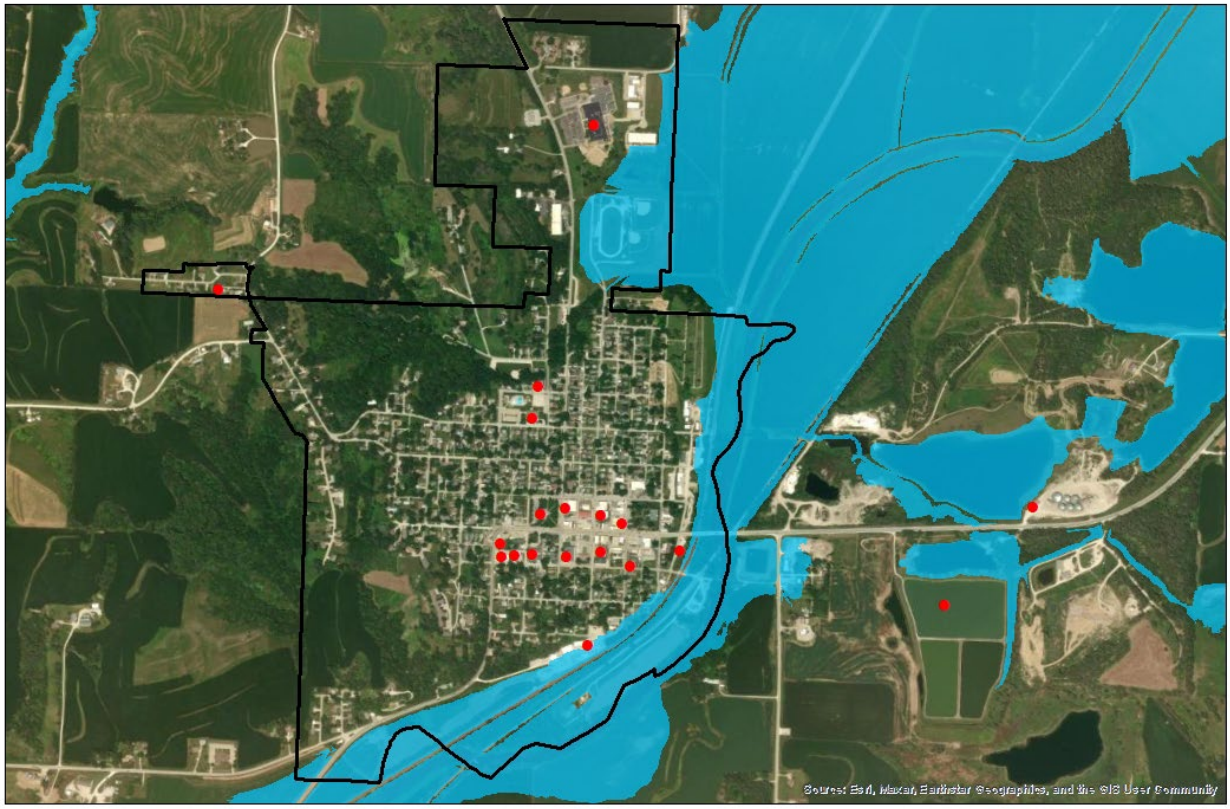
| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 644 | 105 | 16.3% | $51,736,166 | $224,909 | .4% |
| Multi-Residential | 13 | 0 | 0% | $2,072,011 | $0 | 0% |
| Commercial | 164 | 28 | 17.1% | $2,328,238 | $9,007,402 | 3.9% |
| Industrial | 2 | 2 | 100% | $629,540 | $629,540 | 100% |
| Agricultural | 27 | 27 | 100% | $224,909 | $224,909 | 100% |
| Total | 850 | 162 | 19.1% | $5,306,600 | $19,806,641 | 3.7% |

Hazard: Hazardous Materials (Tier II Chemicals and Pipelines)

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 644 | 644 | 100% | $51,736,166 | $51,736,166 | 100% |
| Multi-Residential | 13 | 13 | 100% | $2,072,011 | $2,072,011 | 100% |
| Commercial | 164 | 164 | 100% | $2,328,238 | $2,328,238 | 100% |
| Industrial | 2 | 2 | 100% | $629,540 | $629,540 | 100% |
| Agricultural | 27 | 27 | 100% | $224,909 | $224,909 | 100% |
| Total | 850 | 850 | 100% | $5,306,600 | $5,306,600 | 100% |

Source: Harrison County Assessor (2020), FEMA, Iowa DNR, Iowa State University Extension and Outreach

## Flood Maps


Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Legend
Community Lifelines
Floodplain
N
0 0.1 0.2 0.4 0.6 0.8
Miles

## Status of Previous Mitigation Actions

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| **Objective #1:** Logan will mitigate or remove risk of fire hazards by ten percent in the next ten years | | | | | | | |
| The community anticipates removing dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community | | | X | | | | |
| The community will maintain and enforce building codes to ensure new construction and development will not create new risk to the community | | | X | | | | |
| **Objective #2:** The city will mitigate or remove risk of tornado, windstorms, and thunderstorms/lightning damage by ten percent in the next ten years | | | | | | | |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk or structure failure. | | | X | | | | |
| The community will build, upgrade or maintain infrastructure that protects city hall, the lift station, and city wells by retrofitting structures to withstand heavy winds and severe weather. | | | X | | | | |
| **Objective #3:** Communities will mitigate the effects of severe winter weather damage by completing two programs in the next five years | | | | | | | |
| The community will create and implement a plan to maintain road clearing capabilities and repair roads following adverse weather conditions. | | | | | X | | |
| The community will build, upgrade or maintain infrastructure that protects the city hall and lift stations by retrofitting structures to withstand snow loads and prevent roof collapse. | | | | | X | | |
| **Objective #4:** Communities will reduce flood risk to residents and businesses of Harrison County by completion of 2 programs in the next five years | | | | | | | |
| The community will maintain compliance with the National Flood Insurance Program (NFIP) | | | X | | | | |
| The community will maintain and enforce codes and ordinances that protects future development from flooding and restricts encroachment of the built environment in the floodplain. | | | X | | | | |
| **Objective #5:** Communities of Harrison County will be able to provide an additional level of early warning system or education to residents in the next five years. | | | | | | | |
| The community will train the public works staff, city hall staff and librarian to be able to provide information relating to severe weather. | | | X | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will upgrade and maintain the county-wide Everbridge mass notification early warning systems. | | | X | | | | |
| **Objective #6:** Communities will be able to provide an additional level of safety to vulnerable populations in 5 years. | | | | | | | |
| The community will provide outreach and assistance to vulnerable populations in elderly housing to obtain and use weather warning systems and home safety systems. | | | X | | | | |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| **Objective #1:** Communities will implement two new programs that ensure their emergency response teams and departments are adequately equipped to respond to any emergency situation in three years. | | | | | | | |
| The community will investigate resources and funding to obtain personal protective equipment, radios and pagers for emergency response personnel. | | | X | | | | |
| The community will partner with or maintain partnerships with the American Red Cross and Harrison County to provide or share emergency response resources and/or equipment. | | | X | | | | |
| **Objective #2:** Communities will implement two new programs to ensure emergency response teams and departments are adequately staffed and prepared in three years to handle any emergency situations. | | | | | | | |
| The community will evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations. | | | X | | | | |
| **Objective #3:** Communities will ensure facilities/infrastructure that are critical to the community and supply essential services are operational during a hazard event by implementing one project in five years. | | | | | | | |
| The community will purchase generators to prevent disruptions of city services in the event of a power outage for the city water wells, water plant, city hall and police department, which provide critical services to the community. | | X | | | | | |
| **Objective #4:** Communities will ensure communications between governments, organizations, citizens and emergency response personnel are adequately prepared for all disaster situations by implementing or maintaining all actions within 5 years | | | | | | | |
| The community will maintain mutual aid agreements (28E or other) between Harrison County, County Sheriff and police departments of surrounding local communities. | | | X | | | | |
| The community will update and maintain a list of contacts that respond to all emergencies. | | | X | | | | |
| The community will regularly test communications, such as cell phones and radio equipment, between local jurisdictions. | | | X | | | | |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| **Objective #1:** Communities will implement three new programs in public schools that encourage safe hazard preparedness and response practices in five years. | | | | | | | |
| The community will support Severe Weather Awareness Week by coordinating announcements with the Harrison County EMA that teach severe weather hazards and proper safety techniques. | | | X | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will identify and invite the fire department to teach hazard and fire safety to youth during fire safety week. | | | X | | | | |
| **Objective #2:** Communities will identify and implement one new program that expands public awareness of resources that help teach public safety and/or provide early warning of severe weather events in five years | | | | | | | |
| The community will distribute materials with utility bills to send hazard awareness materials and information to residents. | | | X | | | | |
| **Objective #3:** Communities will implement a program that educates the residents on available resources that help protect them from tornado, windstorms or other severe weather incidents. | | | | | | | |
| The community will promote and educate county text/phone notification systems available (Everbridge, Alert Iowa System) through information distributed with utility bills. | | | X | | | | |
| The community will expand awareness of community critical facilities available to the public in the event of a hazard through information distributed with utility bills. | | | X | | | | |
| The community will expand awareness of the Harrison County EMA system that will protect the public from severe weather incidents through contacting people on landlines or cellphones, post information on utility bills and post information on doors. | | | X | | | | |

## Action Plan

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Source(s) | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| The community anticipates removing dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community | Grass/Wild land Fire, Infrastructure Failure, Thunderstorm/Lightning/ Hail, Tornado/Wind Storm, Severe Winter Storm | High | City of Logan | Low | City of Logan General Fund, SWIHTF | Funding, Obtaining ownership | Ongoing |
| The community will maintain and enforce building codes to ensure new construction and development will not create new risk to the community | Grass/Wild land Fire, Flash Flood, Infrastructure Failure, River Flooding, Severe Winter Storms, Thunderstorm/lightning/hail, Tornado/Windstorm | High | City of Logan | Minimal | City of Logan General Fund, BRIC | Personnel, time | Ongoing |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk or structure failure. | Grass/Wild land Fire, Flash Flood, Infrastructure Failure, River Flooding, Severe Winter Storms, Thunderstorm/lightning/hail, Tornado/Windstorm | Medium | City of Logan | Minimal | City of Logan General Fund | Personnel, time | Ongoing |
| The community will build, upgrade or maintain infrastructure that protects city hall, the lift station, and city wells by retrofitting structures to withstand heavy winds and severe weather. | Infrastructure Failure, Severe Winter Storms, Thunderstorm/Lightning/Hail, Tornado/Windstorms | Medium | City of Logan | Moderate | City of Logan Capital Improvement Fund, CDBG, SRF, USDA, LOST | Funding | |
| The community will create and implement a plan to maintain road clearing capabilities and repair | Flash flood, River Flooding, Sinkholes, Infrastructure Failure, Severe Winter Storms, | Medium | City of Logan | Moderate | City of Logan General Fund and | Ongoing | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| roads following adverse weather conditions. | Thunderstorm/Lightning/Hail, Tornado/Windstorms | | | | Capital Improvement Fund | | |
| The community will build, upgrade or maintain infrastructure that protects the city hall and lift stations by retrofitting structures to withstand snow loads and prevent roof collapse. | Infrastructure Failure, Severe Winter Storm | Medium | City of Logan | Moderate | Sewer Revenue, City of Logan Capital Improvement Fund | Funding | Ongoing |
| The community will maintain compliance with the National Flood Insurance Program (NFIP) | Flash Flooding, River Flooding | High | City of Logan | Low | City of Logan General Fund | None | Ongoing |
| The community will maintain and enforce codes and ordinances that protects future development from flooding and restricts encroachment of the built environment in the floodplain. | Flash Flooding, River Flooding | Medium | City of Logan | Low | City of Logan General Fund | None | Ongoing |
| The community will train the public works staff, city hall staff and librarian to be able to provide information relating to severe weather preparedness, mitigation, and response | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Thunderstorm/ Lightning/Hail, Tornado/Windstorm | Medium | City of Logan | Low | City of Logan General Fund | None | Ongoing |
| The community will upgrade and maintain the county-wide Everbridge mass notification early warning systems. | Severe Winter Storms, Thunderstorm/Lightning/Hail, Tornado/Windstorms, Flash Flood, River Flooding | Medium | City of Logan | Low | City of Logan General Fund | Knowledge barriers regarding technology | Ongoing |
| The community will provide outreach and assistance to vulnerable populations in elderly housing to obtain and use weather warning systems and home safety systems. | Severe Winter Storms, Thunderstorm/Lightning/Hail, Tornado/Windstorms | Medium | Logan Volunteer Fire and Rescue | Moderate | City of Logan General Fund, Logan Volunteer Fire and Rescue | none | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | operating budget | | |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The community will investigate resources and funding to obtain personal protective equipment, radios and pagers for emergency response personnel. | Grass/Wild land fire, Flash flood, River Flooding, Dam/Levee Failure, Severe Winter Storm, Tornados/Windstorm, Infrastructure Failure, Hazardous Materials, Thunderstorm/Lightning/Hail, Transportation Incident | Medium | Logan Volunteer Fire and Rescue, City of Logan | Moderate | LFPEMS, Assistance to Firefighters, Logan Volunteer Fire and Rescue Operating Budget | Funding | Ongoing |
| The community will partner with or maintain partnerships with the American Red Cross and Harrison County to provide or share emergency response resources and/or equipment. | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Logan | Low | City of Logan General Fund | None | Ongoing |
| The community will evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations. | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, | Medium | Logan Volunteer Fire and Rescue | Low | Logan Volunteer Fire and Rescue operating budget | none | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Tornado/Windstorm, Transportation Incident | | | | | | |
| The community will purchase generators to prevent disruptions of city services in the event of a power outage for the city water wells, water plant, city hall and police department, which provide critical services to the community. | Grass/Wild land fire, Flash flood, River Flooding, Dam/Levee Failure, Extreme Heat, Severe Winter Storm, Tornados/Windstorm, Infrastructure Failure, Hazardous Materials, Thunderstorm/Lightning/Hail | High | City of Logan | High | BRIC, PDM, LFPEMS, CDBG | Funding | Mid-Term |
| The community will maintain mutual aid agreements (28E or other) between Harrison County, County Sheriff and police departments of surrounding local communities. | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Logan, Harrison County EMA, Logan Volunteer Fire and Rescue | Low | City of Logan General Fund | None | Ongoing |
| The community will update and maintain a list of contacts that respond to all emergencies. | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Logan, Logan Volunteer Fire and Rescue | Low | City of Logan General Fund | None | Ongoing |
| The community will regularly test communications, such as cell | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, | Medium | City of Logan, Harrison | Low | City of Logan | None | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| phones and radio equipment, between local jurisdictions. | Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | County EMA, Logan Volunteer Fire and Rescue | | General Fund | | |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| The community will support Severe Weather Awareness Week by coordinating announcements with the Harrison County EMA that teach severe weather hazards and proper safety techniques. | Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm | Medium | Logan Volunteer Fire and Rescue | Minimal | Logan Volunteer Fire and Rescue operating budget | None | Ongoing |
| The community will identify and invite the fire department to teach hazard and fire safety/mitigation/response to youth during fire safety week. | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | Logan Volunteer Fire and Rescue | Minimal | Logan Volunteer Fire and Rescue operating budget | None | Ongoing |
| The community will distribute materials with utility bills to send hazard awareness materials and information to residents including ways to mitigate hazards as well as responding to hazards. | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, | Medium | City of Logan | Low | City of Logan General Fund, City of Logan water and | None | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | sewer funds | | |
| The community will promote and educate county text/phone notification systems available (Everbridge, Alert Iowa System) through information distributed with utility bills. | Grass/Wild land fire, Flash flood, River Flooding, Dam/Levee Failure, Severe Winter Storm, Tornados/Windstorm, Infrastructure Failure, Hazardous Materials, Thunderstorm/Lightning/Hail | Medium | City of Logan | Minimal | City of Logan General Fund, City of Logan water and sewer funds | None | Ongoing |
| The community will expand awareness of community critical facilities available to the public in the event of a hazard through information distributed with utility bills. | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Logan | Minimal | City of Logan General Fund, City of Logan water and sewer funds | None | Ongoing |
| The community will expand awareness of the Harrison County EMA system that will protect the public from severe weather incidents through contacting people on landlines or cellphones, post information on utility bills and post information on doors. | Extreme Heat, Grass/Wild land fire, Flash flood, River Flooding, Dam/Levee Failure, Severe Winter Storm, Tornados/Windstorm, Thunderstorm/Lightning/Hail | Medium | City of Logan, Harrison County EMA | Low | City of Logan General Fund | None | Ongoing |

## Adoption Resolution

# City of Magnolia

## Community Capabilities

| | Date/Time | Location |
|---|---|---|
| Council Meetings | 3rd Wednesday @ 6:30pm | City Hall |

### Utilities and Services

| Service | Provider |
|---|---|
| Electricity | MidAmerican |
| Gas | |
| Water | City |
| Phone Services | |
| Law Enforcement | Harrison County Sheriff |
| Fire Protection | Magnolia Volunteer |
| Cable/Internet | |
| Newspaper | Missouri Valley Times |
| Warning System (sirens, text alerts, etc.) | Harrison County text and phone alerts |
| HAZMAT Assistance | |
| Emergency Medical Services | |
| Medical Clinic/Hospital | CHI |
| Tornado Shelter (FEMA approved) | |

### Utility Questions

| | |
|---|---|
| If operating a municipal water system, where is you water sourced from? (shallow well, aquifer, river, etc.) | **Well** |
| Sewer or private septic? | Septic |
| Do you have a water treatment facility? | Yes |
| Do you have a wastewater treatment facility? | No |
| Do you have any current DNR violations with your drinking water or wastewater? | No |

### Plans/Ordinances

| | Yes/No | Year Approved | Comments |
|---|---|---|---|
| Comprehensive/land use Plan | No | | |

| | | | |
|---|---|---|---|
| Capital Improvement Plan | No | | |
| Local Emergency Plan (not the countywide hazard mitigation plan) | No | | |
| Flood Mitigation Assistance Plan | No | | |
| Zoning Ordinance | | | |
| **Most recent code of ordinances update** | | 2017 | |
| Restricted Residential District Ordinance | Yes | | |
| Subdivisions Ordinance | | | |
| Floodplain Ordinance | | | |
| Building Permit Ordinance | | | |
| Building Codes—if yes, what year/edition? | | | |
| Tree Trimming Ordinance | | | |
| Nuisance Ordinance | | | |
| Storm Water Ordinance | | | |
| Drainage Ordinance | | | |

**Boards/Staff/Departments**

| | Yes/No | Title | Comments |
|---|---|---|---|
| Building Code Official | Yes | | |
| Building Inspector | No | | |
| Public Works Official | | | |
| NFIP Floodplain Administrator (if you participate in NFIP, you have a floodplain administrator) | No | | |
| Zoning Commission | | | |
| Board of Adjustments | No | | |
| Nuisance Abatement Official | No | | |

## Hazards of Top Concern

The City of Magnolia identified tornadoes/wind storms, lightning/hail, and transportation incidents as top concerns for the city.

| Hazard #1: Tornadoes/Wind Storm |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| Mostly tree damage and power outage |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| |
| **Have you completed any projects to reduce the effect to this hazard?** |
| |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Removal of dead and dying trees that would cause issues |

| Hazard #2: Lightning and Hail |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| |
| **Have you completed any projects to reduce the effect to this hazard?** |
| |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| |

| Hazard #3: Transportation Incident |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| The transportation of farm chemicals, propane, and any other hazardous materials that may be transported on Hwy 127 |
| **Have you completed any projects to reduce the effect to this hazard?** |
| |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| |

## Community Lifelines

| Name | Address or Location | Type of Lifeline | Shelter (Y/N) | Generator (Y/N) | Medical Supplies (Y/N) | Food/ Water (Y/N) |
|---|---|---|---|---|---|---|
| Water Tower | corner of First Street and Laredo Ave | Water System | N | N | N | N |
| Water Plant | Corner of 3rd and Elm | Water System | N | Y | N | N |
| Fire Station | 372 Magnolia St | Safety | N | N | Y | N |
| Storm Shelter | 531 3rd Street | Safety | Y | N | N | N |

## Loss Estimates

Hazard: Tornado/Windstorm, Severe Winter Storm, Thunderstorm/Lightning/Hail/Freezing Rain, Drought, Extreme Heat, Flash Flooding, Terrorism, Transportation Incidents, Radiological, Human Disease, Infrastructure Failure

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 163 | 163 | 100% | $5,121,403 | $5,121,403 | 100% |
| Multi-Residential | 0 | 0 | 0% | $0 | $0 | 100% |
| Commercial | 24 | 24 | 100% | $157,947 | $157,947 | 100% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 52 | 52 | 100% | $343,272 | $343,272 | 100% |
| Total | 239 | 239 | 100% | $5,622,622 | $5,622,622 | 100% |

Hazard: River Flooding

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 163 | 0 | 0% | $5,121,403 | 0 | 0% |
| Multi-Residential | 0 | 0 | 0% | $0 | 0 | 0% |
| Commercial | 24 | 0 | 0% | $157,947 | 0 | 0% |
| Industrial | 0 | 0 | 0% | $0 | 0 | 0% |
| Agricultural | 52 | 0 | 0% | $343,272 | 0 | 0% |
| Total | 239 | 0 | 0% | $5,622,622 | 0 | 0% |

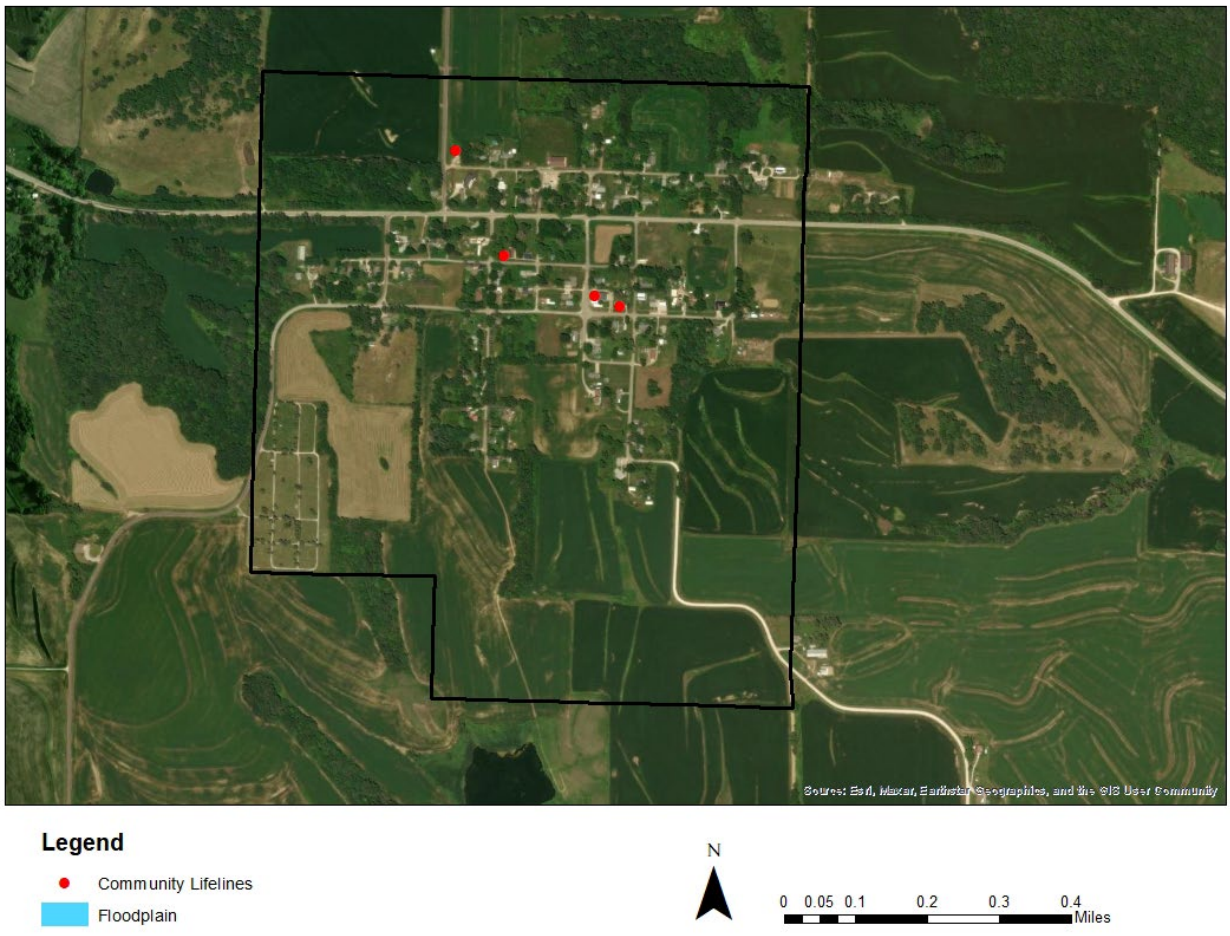
Hazard: Grass/Wild Fire

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 163 | 112 | 68.7% | $5,121,403 | $3791,820 | 6.7% |
| Multi-Residential | 0 | 0 | 0% | $0 | $0 | 0% |
| Commercial | 24 | 14 | 58.3% | $157,947 | $100,376 | 63.6% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 52 | 52 | 100% | $343,272 | $343,272 | 100% |
| Total | 239 | 178 | 74.5% | $5,622,622 | $4,235,568 | 75.3% |

Hazard: Hazardous Materials (Tier II Chemicals and Pipelines)

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 163 | 0 | 0% | $5,121,403 | 0 | 0% |
| Multi-Residential | 0 | 0 | 0% | $0 | 0 | 0% |
| Commercial | 24 | 0 | 0% | $157,947 | 0 | 0% |
| Industrial | 0 | 0 | 0% | $0 | 0 | 0% |
| Agricultural | 52 | 0 | 0% | $343,272 | 0 | 0% |
| Total | 239 | 0 | 0% | $5,622,622 | 0 | 0% |

# Flood Maps


Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Legend
Community Lifelines
Floodplain
N
0 0.05 0.1 0.2 0.3 0.4
Miles

## Status of Previous Mitigation Actions

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| **Objective 1**: Communities will mitigate or remove risk of fire hazards by ten percent in the next ten years | | | | | | | |
| The community will maintain and enforce building codes to ensure new construction and development will not create new risk to the community | | | X | | | | |
| **Objective 2**: Communities will mitigate or remove risk of tornado, windstorms, and thunderstorms/lightning damage by ten percent in the next ten years | | | | | | | |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure | | | | | X | | |
| **Objective 3**: Communities will mitigate the effects of severe winter weather damage by completing two programs in the next five years | | | | | | | |
| The community will create and implement a plan to maintain road clearing capabilities and repair roads following adverse weather conditions | | | X | | | | |
| **Objective**: Communities will reduce flood risk to residents and businesses of Harrison County by completion of two programs in the next five years | | | | | | | |
| The community will join the National Flood Insurance Program (NFIP) | | | | | X | | |
| **Objective 4**: Communities of Harrison County will be able to provide an additional level of early warning system or education to residents in the next five years. | | | | | | | |
| The community will upgrade early warning siren systems to give additional warning time before a hazard event | | | | | X | | |
| **Objective 7**: Communities will be able to provide an additional level of safety to vulnerable populations in five years. | | | | | | | |
| The community will provide outreach and assistance to vulnerable populations to implement hazard mitigation projects and programs | | | X | | | | |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| **Objective #1**: Communities will implement two new programs that ensure their emergency response teams and departments are adequately equipped to respond to any emergency situation in three years. | | | | | | | |
| The community will develop or maintain an inventory of equipment available to emergency responders to ensure resources can be easily and quickly identified in an event of a disaster | | | X | | | | |
| The community will develop a plan to phase purchases of replacement equipment | | | X | | | | |
| The community will investigate resources and funding to obtain the proper and necessary equipment for emergency response personnel | | | X | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will partner with or maintain partnership with outside organizations that are able to provide or share emergency response resources and/or equipment<br>List organizations: Neighboring communities' emergency response organizations | | | X | | | | |
| The community will maintain and update evacuation plans | | | X | | | | |
| **Objective #2**: Communities will implement two new programs to ensure emergency response teams and departments are adequately staffed and prepared in three years to handle any emergency situations. | | | | | | | |
| The community will provide training to emergency response personnel | | | X | | | | |
| The community will evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations | | | X | | | | |
| The community will identify, maintain, and train volunteer groups that are able to provide assistance or respond in the event of a disaster or emergency | | | X | | | | |
| The community will create and maintain policies that designate secondary personnel to handle disaster response and recovery | | | X | | | | |
| **Objective #3**: Communities will ensure facilities/infrastructure that are critical to the community and supply essential services are operational during a hazard event by implementing one project in five years. | | | | | | | |
| The community will build or maintain infrastructure that protects critical facilities such as, but not limited to, levees and berms in floodways or retrofitting structures to withstand snow loads and prevent roof collapse | | | X | | | | |
| The community will maintain, improve and continually test early warning systems (sirens, etc.) | | | X | | | | |
| The community will designate new or alternative critical facilities that are outside of hazard areas | | | | | X | | |
| **Objective #4:** Communities will ensure communications between governments, organizations, citizens and emergency response personnel are adequately prepared for all disaster situations by implementing or maintaining all actions within five years | | | | | | | |
| The community will update and maintain a list of contacts that respond to all emergencies | | | X | | | | |
| The community will regularly test communications equipment between local jurisdictions | | | X | | | | |
| The community will promote training between emergency response departments | | | X | | | | |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| **Objective #1:** Communities will implement three new programs in public schools that encourage safe hazard preparedness and response practices in five years. | | | | | | | |
| The community will support Severe Weather Awareness Week by creating or continuing activities that teach severe weather hazards and proper safety techniques | | | X | | | | |
| The community will identify and invite outside organizations that can teach hazard safety to youth | | | X | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques | | | X | | | | |
| **Objective #2:** Communities will identify and implement one program new program that expands public awareness of resources that help teach public safety and/or provide early warning of severe weather events in five years | | | | | | | |
| The community will train public employees/staff to increase capacity to provide hazard awareness materials and information | | | X | | | | |
| The community will create an emailing/mailing list to send materials and information to residents relating to hazard risks | | | | | X | | |
| **Objective #3:** Communities will implement a program that educates the residents on available resources that help protect them from tornado, windstorms or other severe weather incidents. | | | | | | | |
| The community will expand awareness of community critical facilities available to the public in the event of a hazard | | | X | | | | |

## Action Plan

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Source(s) | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| The community will maintain and enforce building codes to ensure new construction and development will not create new risk to the community | Flash Flooding, Infrastructure Failure, River Flooding, Severe Winter Storm, Thunderstorm/Lightning/Hail /Tornado/Windstorm | Medium | City of Magnolia, Building Inspector | Low | City of Magnolia General Budget, BRIC | Time, Personnel | Ongoing |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure | Flash Flooding, Infrastructure Failure, River Flooding, Severe Winter Storm, Thunderstorm/Lightning/Hail /Tornado/Windstorm | Medium | City of Magnolia, Building Inspector | Low | City of Magnolia General Budget, BRIC | Time, Personnel | Ongoing |
| The community will create and implement a plan to maintain road clearing capabilities and repair roads following adverse weather conditions | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Ha il/Tornado/Windstorm | High | City of Magnolia, Harrison County EMA | Moderate | City of Magnolia General Budget | Time, personnel, resources, equipment | Ongoing |
| The community will join the National Flood Insurance Program (NFIP) | Flash Flood, River Flooding, Dam/Levee Failure | High | City of Magnolia | Low | City of Magnolia General Budget | Time, personnel | Ongoing |
| The community will upgrade early warning siren systems to give additional warning time before a hazard event | Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Ha il/Tornado/Windstorm | High | City of Magnolia, Harrison County EMA, City of Magnolia Fire Department | Moderate | City of Magnolia General Budget, BRIC, PDM | Funding | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will provide outreach and assistance to vulnerable populations to implement hazard mitigation projects and programs | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, Human Disease, Infrastructure Failure, Radiological, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail/Tornado/Windstorm | Medium | City of Magnolia, Harrison County EMA | Low | City of Magnolia General Budget, BRIC, PDM, HMGP | Time and Personnel | Ongoing |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The community will develop or maintain an inventory of equipment available to emergency responders to ensure resources can be easily and quickly identified in an event of a disaster | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | City of Magnolia, Harrison County EMA, Magnolia Fire Department | Low | City of Magnolia General Budget, Magnolia Fire Department General Budget | Time and personnel | Ongoing |
| The community will develop a plan to phase purchases of replacement equipment | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail/Tornado/Windstorm | Medium | City of Magnolia, Harrison County EMA, Magnolia Fire Department | Low | City of Magnolia General Budget, Magnolia Fire Department General Budget | Time and personnel | Ongoing |
| The community will investigate resources and funding to obtain the proper and necessary | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, | Medium | City of Magnolia, Harrison County EMA, | Low | City of Magnolia General Budget, | Time and personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| equipment for emergency response personnel | Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | Magnolia Fire Department | | Magnolia Fire Department General Budget | | |
| The community will partner with or maintain partnership with outside organizations that are able to provide or share emergency response resources and/or equipment | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | City of Magnolia, Harrison County EMA, Magnolia Fire Department | Low | City of Magnolia General Budget, Magnolia Fire Department General Budget | Time and personnel | Ongoing |
| The community will maintain and update evacuation plans | Dam/Levee Failure, Earthquake, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail/Tornado/Windstorm | Medium | City of Magnolia, Harrison County EMA, Magnolia Fire Department | Low | City of Magnolia General Budget, Magnolia Fire Department General Budget | Time and personnel | Ongoing |
| The community will provide training to emergency response personnel | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, | Medium | City of Magnolia, Harrison County EMA, | Low | City of Magnolia General Budget, | Time and personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | Magnolia Fire Department | | Magnolia Fire Department General Budget | | |
| The community will evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | City of Magnolia, Harrison County EMA, Magnolia Fire Department | Low | City of Magnolia General Budget, Magnolia Fire Department General Budget | Time and personnel | Ongoing |
| The community will identify, maintain, and train volunteer groups that are able to provide assistance or respond in the event of a disaster or emergency | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, | Medium | City of Magnolia, Harrison County EMA, Magnolia Fire Department | Low | City of Magnolia General Budget, Magnolia Fire Department General Budget | Time and personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| The community will create and maintain policies that designate secondary personnel to handle disaster response and recovery | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Magnolia, Fire Department | Low | City of Magnolia General Budget | Time and personnel | Ongoing |
| The community will build or maintain infrastructure that protects critical facilities such as, but not limited to, levees and berms in floodways or retrofitting structures to withstand snow loads and prevent roof collapse | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/ Hail/Tornado/Windstorm | High | City of Magnolia, Harrison County EMA | High | City of Magnolia General Budget, BRIC, PDM, HMGP, CDBG | Funding | Ongoing |
| The community will maintain, improve and continually test early warning systems (sirens, etc.) | Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/ Hail/Tornado/Windstorm | Medium | City of Magnolia, Harrison County EMA | Moderate | City of Magnolia General Budget | Time and personnel | Ongoing |
| The community will designate new or alternative critical facilities that are outside of hazard areas | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/ Hail/Tornado/Windstorm | Medium | City of Magnolia | Varies | City of Magnolia General Budget, BRIC, PDM | Funding | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will update and maintain a list of contacts that respond to all emergencies | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | City of Magnolia, Harrison County EMA | Minimal | City of Magnolia General Budget | Time | Ongoing |
| The community will regularly test communications equipment between local jurisdictions | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | City of Magnolia, Harrison County EMA, Magnolia Fire Department | Low | City of Magnolia General Budget | Time and personnel | Ongoing |
| The community will promote training between emergency response departments | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, | Medium | City of Magnolia, Harrison County EMA, Magnolia Fire Department | Low | City of Magnolia General Budget | Time and personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| The community will support Severe Weather Awareness Week by creating or continuing activities that teach severe weather hazards and proper safety techniques | Drought, Earthquake, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail/Tornado/Windstorm | Medium | City of Magnolia, Harrison County EMA, Magnolia Fire Department | Low | City of Magnolia General Budget | Time and personnel | Ongoing |
| The community will identify and invite outside organizations that can teach hazard safety to youth | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Hazardous Materials, Human Disease, Infrastructure Failure, Flash Flood, Grass or Wild Land Fire, Landslide, Radiological, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail/Tornado/Windstorm, Terrorism, Transportation Incident | Medium | City of Magnolia, Harrison County EMA, Magnolia Fire Department | Low | City of Magnolia General Budget | Time and personnel | Ongoing |
| The community will conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques | Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail/Tornado/Windstorm | Medium | City of Magnolia, Harrison County EMA, Magnolia Fire Department | Low | City of Magnolia General Budget | Time and personnel | Ongoing |
| The community will train public employees/staff to increase capacity to provide hazard | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, | High | City of Magnolia, Harrison County EMA, | Low | City of Magnolia General Budget | Time and personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| awareness materials and information | Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | Magnolia Fire Department | | | | |
| The community will create an emailing/mailing list to send materials and information to residents relating to hazard risks and mitigation efforts | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Magnolia, Harrison County EMA, Magnolia Fire Department | Low | City of Magnolia General Budget | Time and personnel | Ongoing |
| The community will expand awareness of community critical facilities available to the public in the event of a hazard | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, | High | City of Magnolia, Harrison County EMA, Magnolia Fire Department | Low | City of Magnolia General Budget | Time and personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |

## Adoption Resolution

# City of Missouri Valley

## Community Capabilities

| | Date/Time | Location |
|---|---|---|
| Council Meetings | 1st & 3rd Tuesdays | Rand Community Center |

### Utilities and Services

| Service | Provider |
|---|---|
| Electricity | MidAmerican Energy |
| Gas | MidAmerican Energy |
| Water | City of Missouri Valley |
| Phone Services | Century Link, Long Lines, Verizon |
| Law Enforcement | Missouri Valley Police Department |
| Fire Protection | Missouri Valley Fire Department |
| Cable/Internet | Next Link, Longlines |
| Newspaper | Harrison County Reporter |
| Warning System (sirens, text alerts, etc.) | Windstream, Siren |
| HAZMAT Assistance | Tri County, MVFD |
| Emergency Medical Services | Missouri Valley EMS |
| Medical Clinic/Hospital | Missouri Valley CHI |
| Tornado Shelter (FEMA approved) | |

### Utility Questions

| | |
|---|---|
| If operating a municipal water system, where is you water sourced from? (shallow well, aquifer, river, etc.) | Aquifer |
| Sewer or private septic? | Sewer |
| Do you have a water treatment facility? | Yes |
| Do you have a wastewater treatment facility? | Lagoons |
| Do you have any current DNR violations with your drinking water or wastewater? | Yes |

### Plans/Ordinances

| | Yes/No | Year Approved | Comments |
|---|---|---|---|
| Comprehensive/land use Plan | Yes | 2026 | |
| Capital Improvement Plan | No | | |

| | | | |
|---|---|---|---|
| Local Emergency Plan (not the countywide hazard mitigation plan) | No | | |
| Flood Mitigation Assistance Plan | Unknown | | |
| Zoning Ordinance | Yes | | |
| **Most recent code of ordinances update** | | | |
| Restricted Residential District Ordinance | No | | |
| Subdivisions Ordinance | Yes | 1997 | |
| Floodplain Ordinance | Yes | | |
| Building Permit Ordinance | Yes | 2010 | |
| Building Codes—if yes, what year/edition? | Yes | ICC 2015 | |
| Tree Trimming Ordinance | Yes | 2010 | |
| Nuisance Ordinance | Yes | 2010 | |
| Storm Water Ordinance | Yes | 2010 | |
| Drainage Ordinance | Yes | 2010 | |

**Boards/Staff/Departments**

| | Yes/No | Title | Comments |
|---|---|---|---|
| Building Code Official | Yes | Code Enforcer | |
| Building Inspector | Yes | Code Enforcer | |
| Public Works Official | Yes | Public Works Director | |
| NFIP Floodplain Administrator (if you participate in NFIP, you have a floodplain administrator) | Yes | | |
| Zoning Commission | Yes | | 5 members |
| Board of Adjustments | Yes | | 5 members |
| Nuisance Abatement Official | Yes | Code Enforcer | |

**What projects, plans or changes, if any, has your jurisdiction completed in the last five years?**

- New well #6, 2024
- Water Main 1st & Michigan, 2022
- Street improvements, 2022
- Water treatment control improvements, 2024
- Interstate waster main, 2022
- Pool Filter update, 2023

**Does your jurisdiction have any available resources to expand your capabilities to address hazard mitigation? Resources could include additional staff or staff time, available funding, knowledge or expertise held by city officials, or community/cultural resources.**

Don't have available funding. Available staff time could be a yes. Knowledge and experience would depend on the hazard.

## Hazards of Top Concern

The City of Missouri Valley identified dam/levee failure/flooding, hazardous materials incidents, tornadoes/wind storms, grass/wild fire, and infrastructure failure as top concerns for the city.

| Hazard #1: Dam/Levee Failure/Flooding |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| 1993 Willow Levee Break-flooded 1st Street through west end of town; 2007 Willow Levee Break-flooded north of town that flood city park; 2011 Missouri River flooding caused backup of Boyer River and Willow, closed I-29 south, HWY 30 west to Blair was sandbagged to keep water back; 2019 Missouri River flooded and closed HWY 29 south to Omaha/CB; 2024 Missouri River flooded impacted water plant and pumps for lift station |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Low lying city with large percentage in FEMA floodplain. In the past 50 years we've had multiple flood events and preparation for flood events. Major highways and interstates shut down due to flooding. Highway 183 closed due to semi traffic diverted from interstate closure. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Surveys through USACE, city tried to get flood gates installed but railroad wouldn't allow it. Increased height of Willow levee. Better levee maintenance. Code that regulates construction in floodplains. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Bypass of HWY 30 should provide better protection from Boyer River flooding. Protection of Willow levee break north of Missouri Valley |

| Hazard #2: Hazardous Materials Incident |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| TCE in groundwater from old missel base. Railroad through town carrying potentially hazardous material. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| We would not have access to our lifelines should a hazardous material spill occur. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Increased water testing to once a year for TCE contamination. Following DNR regulations. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Railroad to stop transporting hazardous materials through town. DNR and/or government pay for TCE testing and clean up. |

| Hazard #3: Tornadoes/Wind Storms |
|---|

| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
|---|
| August 2025-high winds caused major tree damage in town and within district and downed power lines; Spring 2025-blizzard winds caused tree damage and downed power lines; Spring 2024-derecho cause tree and structural damage and downed power lines |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Frequently occurring hazard that causes power outages and damages from wind or trees falling on buildings. Transportation routes shut down. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Tree removal in town |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Bury power lines |

| **Hazard #4: Grass/Wild Fire** |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| 2022 field/grass fires north of Missouri Valley with high winds; 2026 field/grass fires north of Missouri Valley with high winds |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Loss of structures and vegetation from fires. Loess Hills impact and inability of emergency services to get to certain areas. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Controlled burns and burn bans |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Continue with controlled burns |

| **Hazard #5: Infrastructure Failure** |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| Water main breaks that undermine the streets/sidewalks, foundation. Power plant loss of power at water plant and lift stations |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Aging infrastructure and loess soil erodes easily |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Fixing water mains as they break. When city replaces a street we're replacing the water main and moving it from under the street. $2 million HWY 30 water main, new well and water control system ungraded at water plant |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| |

## Community Lifelines

| Name | Address or Location | Type of Lifeline | Shelter (Y/N) | Generator (Y/N) | Medical Supplies (Y/N) | Food/ Water (Y/N) |
|---|---|---|---|---|---|---|
| Fire Station | 300 E Erie St | Safety/Security | N | | Y | N |
| Hospital | 631 N 8th St | Health/Medical | N | | Y | N |
| Highway 30 | | Transportation | N | | N | N |
| Highway 183 | | Transportation | N | | N | N |
| Interstate 29 | | Transportation | N | | N | N |
| Railroad | | Transportation | N | | N | N |
| Water Tower | N 6th St | Water System | N | | N | Y |
| Lagoons | Canal St | Water System | N | | N | Y |
| Police Department | | Safety/Security | N | | Y | N |
| Power Grid | South 6th St | Energy | N | | N | N |
| Food Pantry | 2102 Liberty Ave | Food | N | | N | Y |
| Rand Center | 100 S 4th St | Shelter | Y | | Y | Y |
| MVCSD Schools | 607 E Lincoln Hwy | Shelter | Y | | N | Y |
| Water Plant | 524 W Huron | Water System | N | | N | Y |
| DOT Maintenance Shed | 2308 Hwy 30 | Safety/Security | N | | N | N |

## Loss Estimates

Hazard: Tornado/Windstorm, Severe Winter Storm, Thunderstorm/Lightning/Hail/Freezing Rain, Drought, Extreme Heat, Flash Flooding, Terrorism, Transportation Incidents, Radiological, Human Disease, Infrastructure Failure

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 1,267 | 445 | 35.1% | $81,074,361 | $18,444,276 | 22.7% |
| Multi-Residential | 40 | 11 | 27.5% | $10,777,845 | $1,490,605 | 13.8% |
| Commercial | 330 | 184 | 55.8% | $40,084,074 | $15,587,814 | 38.9% |
| Industrial | 7 | 5 | 71.4% | $2,080,523 | $1,072,432 | 51.5% |
| Agricultural | 69 | 59 | 85.5% | $497,614 | $90,404 | 18.2% |
| Total | 1,713 | 704 | 41.1% | $143,514,417 | $36,685,531 | 25.6% |

Hazard: River Flooding

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 1,267 | 9 | .7% | $81,074,361 | $220,339 | .3% |
| Multi-Residential | 40 | 0 | 0% | $10,777,845 | $0 | 0% |
| Commercial | 330 | 18 | 5.5% | $40,084,074 | $1,510,790 | 3.8% |
| Industrial | 7 | 1 | 14.3% | $2,080,523 | $475,790 | 22.9% |
| Agricultural | 69 | 37 | 53.6% | $497,614 | $89,980 | 18.1% |
| Total | 1,713 | 65 | 3.8% | $143,514,417 | $2,296,899 | 1.6% |

Hazard: Grass/Wild Fire

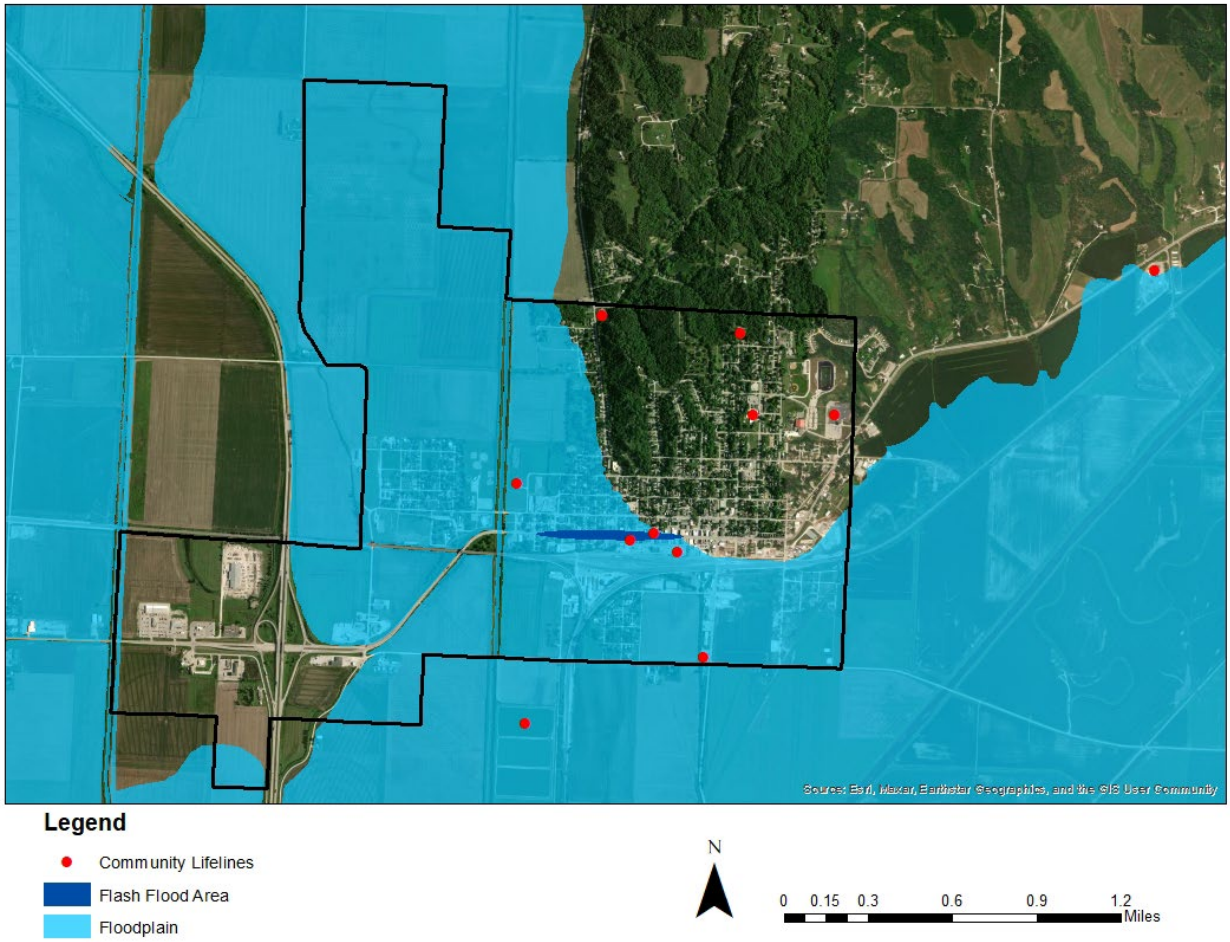
| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 1,267 | 123 | 9.7% | $81,074,361 | $4,716,937 | 5.8% |
| Multi-Residential | 40 | 2 | 5% | $10,777,845 | $283,421 | 2.6% |
| Commercial | 330 | 83 | 25.2% | $40,084,074 | $12,962,302 | 32.3% |
| Industrial | 7 | 5 | 71.4% | $2,080,523 | $2,015,169 | 96.9% |
| Agricultural | 69 | 69 | 100% | $497,614 | $497,614 | 100% |
| Total | 1,713 | 282 | 16.5% | $143,514,417 | $20,475,443 | 14.3% |

Hazard: Hazardous Materials (Tier II Chemicals and Pipelines)

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 1,267 | 1,267 | 100% | $81,074,361 | $81,074,361 | 100% |
| Multi-Residential | 40 | 40 | 100% | $10,777,845 | $10,777,845 | 100% |
| Commercial | 330 | 330 | 100% | $40,084,074 | $40,084,074 | 100% |
| Industrial | 7 | 7 | 100% | $2,080,523 | $2,080,523 | 100% |
| Agricultural | 69 | 69 | 100% | $497,614 | $497,614 | 100% |
| Total | 1,713 | 1,713 | 100% | $143,514,417 | $143,514,417 | 100% |

Source: Harrison County Assessor (2020), FEMA, Iowa DNR, Iowa State University Extension and Outreach

# Flood Maps


Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Legend
Community Lifelines
Flash Flood Area
Floodplain
N
0 0.15 0.3 0.6 0.9 1.2
Miles

## Status of Previous Mitigation Actions

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| **Objective #1:** Communities will mitigate or remove risk of fire hazards by ten percent in the next ten years | | | | | | | |
| The community will remove dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community | | | X | | | | |
| The community will maintain and enforce building codes to ensure new construction and development will not create new risk to the community | | | X | | | | |
| **Objective #2:** Communities will mitigate or remove risk of tornado, windstorms, and thunderstorms/lightning damage by ten percent in the next ten years | | | | | | | |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure | | | X | | | | |
| The community will build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand heavy winds and severe weather | | | X | | | | |
| Community will continue to trim and remove dead trees in the ROW | | | X | | | | |
| **Objective #3:** Communities will mitigate the effects of severe winter weather damage by completing two programs in the next five years | | | | | | | |
| The community will create and implement a plan to maintain road clearing capabilities and repair roads following adverse weather conditions | | | X | | | | |
| **Objective #4:** Communities will reduce flood risk to residents and businesses of Harrison County by completion of an infrastructure upgrade project in the next ten years | | | | | | | |
| The community will construct a new levee and dike that protects a critical facility from flood damage | | | | X | | | |
| The community will maintain drainage and storm sewer systems (pipes, culverts and channels) throughout the city to meet proper capacity requirements that provide systems that adequately and safely remove excess water from developed areas | | | X | | | | |
| **Objective #5:** Communities will reduce flood risk to residents and businesses of Harrison County by completion of 2 programs in the next five years | | | | | | | |
| The community will maintain compliance with the National Flood Insurance Program (NFIP) | | | X | | | | |
| The community will maintain and enforce codes and ordinances that protects future development from flooding | | | X | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| and restricts encroachment of the built environment in the floodplain | | | | | | | |
| The community will keep streams, creeks and flood ditches clear of debris and blockages to ensure they flow properly | | | | | X | | |
| **Objective #6:** Communities of Harrison County will be able to provide an additional level of early warning system or education to residents in the next five years. | | | | | | | |
| The community will encourage homeowners to install carbon monoxide monitors and alarms | | | X | | | | |
| The community will train public staff that are able to provide information relating to severe weather | | | X | | | | |
| The county will continue participation in the statewide (Alert Iowa System) mass notification system | | | X | | | | |
| **Objective #7:** Communities will be able to provide an additional level of safety to vulnerable populations in five years. | | | | | | | |
| The community will provide outreach and assistance to elderly and disabled populations to implement hazard mitigation projects and programs | | | X | | | | |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| **Objective #1:** Communities will implement two new programs that ensure their emergency response teams and departments are adequately equipped to respond to any emergency situation in three years. | | | | | | | |
| The community will develop a plan to phase purchases of replacement equipment | | | X | | | | |
| The community will investigate resources and funding to obtain the proper and necessary equipment for emergency response personnel | | | X | | | | |
| The community will partner with or maintain partnership with the American Red Cross and Harrison County EMA to provide or share emergency response resources and/or equipment | | | X | | | | |
| **Objective #2:** Communities will implement two new programs to ensure emergency response teams and departments are adequately staffed and prepared in three years to handle any emergency situations. | | | | | | | |
| The community will provide training to emergency response personnel | | | X | | | | |
| The community will evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations | | | X | | | | |
| The community will identify, maintain and train volunteer groups that are able to provide assistance or respond in the event of a disaster or emergency | | | | X | | | |
| **Objective #3:** Communities will ensure facilities/infrastructure that are critical to the community and supply essential services are operational during a hazard event by implementing one project in five years. | | | | | | | |
| The community will build or maintain infrastructure that protects critical facilities such as, but not limited to, levees and berms in floodways or retrofitting structures to withstand snow loads and prevent roof collapse | | | X | | | | |
| The community will maintain, improve and continually test early warning systems (sirens, etc.) | | | X | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will purchase generators for facilities that provide critical services to the community in the event of a power outage by purchasing and/or maintaining generators | | | X | | | | |
| **Objective #4:** Communities will ensure communications between governments, organizations, citizens and emergency response personnel are adequately prepared for all disaster situations by implementing or maintaining all actions within five years | | | | | | | |
| The community will maintain mutual aid agreements (28E or other) between the county law enforcement and county fire departments | | | X | | | | |
| The community will update and maintain a list of contacts that respond to all emergencies | | | X | | | | |
| The community will regularly test communications equipment between local jurisdictions | | | X | | | | |
| The community will promote training between emergency response departments | | | X | | | | |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| **Objective #1:** Communities will implement three new programs in public schools that encourage safe hazard preparedness and response practices in five years. | | | | | | | |
| The community will support Severe Weather Awareness Week by creating and distributing flyers that teach severe weather hazards and proper safety techniques | | | X | | | | |
| The community will utilize the fire department to teach hazard safety to youth | | | X | | | | |
| The community will conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques | | | X | | | | |
| The community will create an additional educational programs about fire safety in schools that teach youth hazard safety preparedness and response | | | X | | | | |
| The community will use existing resources or produce fire safety booklets and materials to teach youth about hazard risk and proper safety techniques | | | | X | | | |
| **Objective #2:** Communities will identify and implement one new program that expands public awareness of resources that help teach public safety and/or provide early warning of severe weather events in five years | | | | | | | |
| The community will train public employees/staff to increase capacity to provide hazard awareness materials and information on river flooding, FEMA information and fire safety | | | | X | | | |
| **Objective #3:** Communities will implement a program that educates the residents on available resources that help protect them from tornado, windstorms or other severe weather incidents. | | | | | | | |
| The community will promote and educate county text/phone notification systems available (Everbridge, Alert Iowa System) | | | X | | | | |
| The community will expand awareness of community critical facilities available to the public in the event of a hazard through social media, postings, and handouts | | | | X | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will expand awareness of evacuation routes and procedures through social media, postings, and handouts | | | | X | | | |

## Action Plan

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Source(s) | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| The community will remove dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community | Grass/ Wild Land Fire, Flash Flood, River Flooding, Infrastructure Failure, Severe Winter Storm, Thunderstorm/ Lightning/ Hail, Tornado/ Windstorm | Medium | City of Missouri Valley | Moderate | SWIHTF, City General Fund | Enforcement and Funding | Ongoing |
| The community will maintain and enforce building codes to ensure new construction and development will not create new risk to the community | Grass/ Wild Land Fire, Flash Flood, River Flooding, Infrastructure Failure, Severe Winter Storm, Thunderstorm/ Lightning/ Hail, Tornado/ Windstorm | Medium | City of Missouri Valley, SWIPCO | Low-Moderate | City General Fund | Enforcement | Ongoing |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure | Infrastructure Failure, Severe Winter Storm, Thunderstorm/ Lightning/ Hail, Tornado/ Windstorm | High | City of Missouri Valley | Low | City General Fund | Enforcement | Ongoing |
| The community will build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand heavy winds and severe weather | Infrastructure Failure, Severe Winter Storm, Thunderstorm/ Lightning/ Hail, Tornado/ Windstorm | High | City of Missouri Valley | Moderate-High | City General Fund, BRIC, PGM, HMGP | Funding | Ongoing |
| Community will continue to trim and remove dead trees in the ROW | Severe Winter Storm, Thunderstorm/ Lightning/ Hail, Tornado/ Windstorm | Moderate | City of Missouri Valley | Low | Local Option Sales Tax | None | Ongoing |
| The community will create and implement a plan to maintain road clearing capabilities and repair roads following adverse weather conditions | Severe Winter Storm, Thunderstorm/ Lightning/ Hail, Tornado/ Windstorm | Moderate | City of Missouri Valley | Low | Road Use | None | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will construct a new levee and dike that protects a critical facility from flood damage | Flash Flooding, River Flooding, Infrastructure Failure | High | City of Missouri Valley, USACE | High | BRIC, PDM, HMGP, City General Fund | Funding | Long term |
| The community will maintain drainage and storm sewer systems (pipes, culverts and channels) throughout the city to meet proper capacity requirements that provide systems that adequately and safely remove excess water from developed areas | Flash Flooding, River Flooding, Infrastructure Failure | High | City of Missouri Valley | High | BRIC, PDM, HMGP, City General Fund, Road Use, CDBG | Funding | Long term |
| The community will maintain compliance with the National Flood Insurance Program (NFIP) | Flash Flooding, River Flooding | High | City of Missouri Valley | Low | City General Fund | Enforcement | Ongoing |
| The community will maintain and enforce codes and ordinances that protects future development from flooding and restricts encroachment of the built environment in the floodplain | Flash Flooding, River Flooding | High | City of Missouri Valley | Low | City General Fund | Enforcement | Ongoing |
| The community will keep streams, creeks and flood ditches clear of debris and blockages to ensure they flow properly | Flash Flooding, River Flooding | High | City of Missouri Valley | Low | City General Fund | None | Ongoing |
| The community will encourage homeowners to install carbon monoxide monitors and alarms | Grass and wild land fire, Infrastructure Failure, Hazardous Materials Incident | Moderate | Missouri Valley Fire Department | None | None | None | Ongoing |
| The community will train public staff that are able to provide information relating to severe weather | \Drought, Earthquake, Extreme Heat, Flash Flood, Grass or Wild Land Fire, Landslide, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail , Tornado/ Windstorm, | Low | City of Missouri Valley | Minimal | City General Fund | None | Ongoing |
| The county will continue participation in the statewide (Alert Iowa System) mass notification system | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials | Medium | City of Missouri Valley and Harrison County | Minimal | City General Fund | None | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | | | | | | |
| The community will provide outreach and assistance to elderly and disabled populations to implement hazard mitigation projects and programs | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | High | City of Missouri Valley and Missouri Valley Fire Department | Minimal | City General Fund | None | Ongoing |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The community will develop a plan to phase purchases of replacement equipment | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | High | Missouri Valley Fire Department | Moderate | Fire Department General Budget, BRIC, PDM, HMGP, LFPEMS, AFG | Funding | Ongoing |
| The community will investigate resources and funding to obtain the | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash | High | Missouri Valley Fire Department | Moderate | Fire Department General | Funding | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| proper and necessary equipment for emergency response personnel | Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail , Tornado/ Windstorm, Transportation Incident | | | | Budget, BRIC, PDM, HMGP, LFPEMS, AFG | | |
| The community will partner with or maintain partnership with the American Red Cross and Harrison County EMA to provide or share emergency response resources and/or equipment | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail , Tornado/ Windstorm, Transportation Incident | High | City of Missouri Valley | Minimal | City General Fund | None | Ongoing |
| The community will provide training to emergency response personnel | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail , Tornado/ Windstorm, Transportation Incident | High | Missouri Valley Fire Department | Low | Fire Department Operating Budget | None | Ongoing |
| The community will evaluate to ensure emergency response personnel are adequately staffed | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land | High | Missouri Valley Fire Department | Low | Fire Department Operating Budget | Staffing | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| and able to respond to emergency situations | Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | | | | | | |
| The community will identify, maintain and train volunteer groups that are able to provide assistance or respond in the event of a disaster or emergency | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | High | Missouri Valley Fire Department | Low | Fire Department Operating Budget | Staffing | Ongoing |
| The community will build or maintain infrastructure that protects critical facilities such as, but not limited to, levees and berms in floodways or retrofitting structures to withstand snow loads and prevent roof collapse | Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Infrastructure Failure, Landslide, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | Medium | City of Missouri Valley | High | City Operating Budget, City Capital Fund, BRIC, PDM, CDBG | Funding | Long Term |
| The community will maintain, improve and continually test early warning systems (sirens, etc.) | Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | Medium | City of Missouri Valley | Minimal | City Operating Budget | None | Ongoing |
| The community will purchase generators for facilities that provide critical services to the community in the event of a power | Earthquake, Flash Flood, Grass or Wild Land Fire, Infrastructure Failure, Landslide, River Flooding, Severe Winter Storm, | Medium | City of Missouri Valley | Moderate | City Operating Budget, City Capital Fund, BRIC, PDM | Funding | Long Term |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| outage by purchasing and/or maintaining generators | Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm | | | | | | |
| The community will maintain mutual aid agreements (28E or other) between the county law enforcement and county fire departments | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | High | City of Missouri Valley | Minimal | City General Fund | None | Ongoing |
| The community will update and maintain a list of contacts that respond to all emergencies | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | Medium | City of Missouri Valley and Fire Department | Minimal | City General Fund | None | Ongoing |
| The community will regularly test communications equipment between local jurisdictions | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail | Medium | City of Missouri Valley, Fire Department, Harrison County | Minimal | City General Fund | None | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | , Tornado/ Windstorm, Transportation Incident | | | | | | |
| The community will promote training between emergency response departments | Animal/Plant/Crop Disease, Drought, Earthquake, Expansive Soils, Extreme Heat, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail , Tornado/ Windstorm, Transportation Incident | Medium | City of Missouri Valley, Fire Department, Harrison County | Minimal | City General Fund | None | Ongoing |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| The community will support Severe Weather Awareness Week by creating and distributing flyers that teach severe weather hazards and proper safety techniques | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail , Tornado/ Windstorm, Transportation Incident | Medium | City of Missouri Valley and Fire Department | Minimal | City General Fund | None | Ongoing |
| The community will utilize the fire department to teach hazard safety to youth | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River | Medium | City of Missouri Valley and Fire Department | Minimal | City General Fund | None | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | | | | | | |
| The community will conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques | Earthquake, Extreme Heat, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Radiological, River Flooding, Severe Winter Storm, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | Medium | City of Missouri Valley, Fire Department, Missouri Valley CSD | Minimal | City General Fund | None | Ongoing |
| The community will train public employees/staff to increase capacity to provide hazard awareness materials and information on river flooding, FEMA information and fire safety | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | Medium | City of Missouri Valley and Fire Department | Minimal | City General Fund | Staffing and time | Ongoing |
| The community will promote and educate county text/phone notification systems available (Everbridge, Alert Iowa System) | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/ | High | City of Missouri Valley | Minimal | City General Fund | None | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Windstorm, Transportation Incident | | | | | | |
| The community will expand awareness of community critical facilities available to the public in the event of a hazard through social media, postings, and handouts | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/ Windstorm, Transportation Incident | Medium | City of Missouri Valley and Fire Department | Minimal | City General Fund | None | Ongoing |
| The community will expand awareness of evacuation routes and procedures through social media, postings, and handouts | Earthquake, Extreme Heat, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | Medium | City of Missouri Valley and Fire Department | Minimal | City General Fund | None | Ongoing |

## Adoption Resolution

# City of Modale

## Community Capabilities

| | Date/Time | Location |
|---|---|---|
| Council Meetings | 2nd Monday @ 7pm | |

### Utilities and Services

| Service | Provider |
|---|---|
| Electricity | MidAmerican Energy |
| Gas | NA |
| Water | City of Modale |
| Phone Services | |
| Law Enforcement | Harrison County Sheriff |
| Fire Protection | Modale Fire Department |
| Cable/Internet | Windstream |
| Newspaper | Harrison County Times-Reporter |
| Warning System (sirens, text alerts, etc.) | Siren |
| HAZMAT Assistance | Harrison County |
| Emergency Medical Services | Mondamin and Missouri Valley Rescue |
| Medical Clinic/Hospital | MCH and CMH |
| Tornado Shelter (FEMA approved) | Legion Hall 102 E Palmer |

### Utility Questions

| | |
|---|---|
| If operating a municipal water system, where is you water sourced from? (shallow well, aquifer, river, etc.) | Aquifer |
| Sewer or private septic? | Sewer |
| Do you have a water treatment facility? | Yes |
| Do you have a wastewater treatment facility? | No |
| Do you have any current DNR violations with your drinking water or wastewater? | No |

### Plans/Ordinances

| | Yes/No | Year Approved | Comments |
|---|---|---|---|
| Comprehensive/land use Plan | No | | |
| Capital Improvement Plan | No | | |

| | | | |
|---|---|---|---|
| Local Emergency Plan (not the countywide hazard mitigation plan) | No | | |
| Flood Mitigation Assistance Plan | Yes | FEMA | |
| Zoning Ordinance | Yes | | |
| **Most recent code of ordinances update** | | | |
| Restricted Residential District Ordinance | No | | |
| Subdivisions Ordinance | No | | |
| Floodplain Ordinance | No | | |
| Building Permit Ordinance | Yes | 2023 | |
| Building Codes—if yes, what year/edition? | No | | |
| Tree Trimming Ordinance | No | | |
| Nuisance Ordinance | Yes | 2023 | |
| Storm Water Ordinance | No | | |
| Drainage Ordinance | No | | |

**Boards/Staff/Departments**

| | Yes/No | Title | Comments |
|---|---|---|---|
| Building Code Official | No | | |
| Building Inspector | No | | |
| Public Works Official | Yes | Superintendent | |
| NFIP Floodplain Administrator (if you participate in NFIP, you have a floodplain administrator) | No | | |
| Zoning Commission | No | | |
| Board of Adjustments | No | | |
| Nuisance Abatement Official | No | | |

## Hazards of Top Concern

The City of Modale has identified infrastructure failure, transportation incidents, tornadoes/wind sotrms, dam/levee failures, and radiological incidents as top concerns for the city.

| Hazard #1: Infrastructure Failure |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| Water mains are aging and deteriorating. Power system failure 3 times last winters totaling 6.5 days. 21 hours of power failure last summer. Railroad from New Orleans to Sioux City through the city approx. 1980 tank cars derailed. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Without generators we could see loss of lives due to extreme temperatures. Unite Western COOP has a 100,000 gallon propane tank within 100 ft of railroad tracks. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| MidAmerican Energy put their lines underground like REC has. Would like to see the COOP tank removed. |

| Hazard #2: Transportation Incident |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| Ongoing damage caused by heavy truck traffic. Surface is cracking. This damage started when State mandated 95,000 pound vehicles could use this route. The bridge by 510 S Main is severely damaged due to heavy traffic. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| This is the main interstate detour. The loss of the bridge would be devastating. City has no say over the bridge. Trucks don't abide by speed limits. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Get State and County funding to replace both culvert with small bridges. |

| Hazard #3: Tornadoes/Wind Storm |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| Tornadoes have passed by mainly causing wind and debris damage. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Eminent warning time and the possible loss of lives and property damage |
| **Have you completed any projects to reduce the effect to this hazard?** |

| |
|---|
| Now have the Legion Hall as a FEMA approved shelter. After storm passes we have the possibility of 3 other shelters after structural integrity is checked. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Improve warning time and secure and train more spotters. |

| Hazard #4: Dam/Levee Failure |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| 2009, 2011, 2018 levee failures on the Rand/Peterson Levee. Patches done to strengthen the levee. Gavins Point Dam has a crack at the base. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| We have no jurisdiction to either concern. We are subject to possible major flooding at any time. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| |

| Hazard #5: Radiological |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| None yet but we have transportation through the community at times |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Limited training with radiological transportation. Safety requirements and what to do in an emergency. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Not really our jurisdiction |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| |

## Community Lifelines

| Name | Address or Location | Type of Lifeline | Shelter (Y/N) | Generator (Y/N) | Medical Supplies (Y/N) | Food/ Water (Y/N) |
|---|---|---|---|---|---|---|
| City Hall | 310 E Palmer | Safety/Security | N | Y | Y | N |
| Fire Hall | 511 N Main | Safety/Security | N | Y | Y | N |
| Methodist Church | 108 E Haley | Shelter | N | N | N | Y |

## Loss Estimates

Hazard: Tornado/Windstorm, Severe Winter Storm, Thunderstorm/Lightning/Hail/Freezing Rain, Drought, Extreme Heat, Flash Flooding, Terrorism, Transportation Incidents, Radiological, Human Disease, Infrastructure Failure

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 193 | 193 | 100% | $8,066,988 | $8,066,988 | 100% |
| Multi-Residential | 0 | 0 | 0% | $0 | $0 | 0% |
| Commercial | 38 | 38 | 100% | $1,311,180 | $1,311,180 | 100% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 38 | 38 | 100% | $597,784 | $597,784 | 100% |
| Total | 269 | 269 | 100% | $9,975,952 | $9,975,952 | 100% |

Hazard: River Flooding

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 193 | 161 | 83.4% | $8,066,988 | $6,778,544 | 84.0% |
| Multi-Residential | 0 | 0 | 0% | $0 | $0 | 0% |
| Commercial | 38 | 30 | 78.9% | $1,311,180 | $1,165,212 | 88.9% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 38 | 37 | 97.4% | $597,784 | $504,541 | 84.4% |
| Total | 269 | 228 | 84.6% | $9,975,952 | $8,448,297 | 84.7% |

Hazard: Grass/Wild Fire

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 193 | 104 | 53.9% | $8,066,988 | $4,452,807 | 55.2% |
| Multi-Residential | 0 | 0 | 0% | $0 | $0 | 0% |
| Commercial | 38 | 10 | 26.3% | $1,311,180 | $71,373 | 6.4% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 38 | 38 | 100% | $597,784 | $597,784 | 100% |
| Total | 269 | 152 | 56.5% | $9,975,952 | $5,121,964 | 51.3% |

Hazard: Hazardous Materials (Tier II Chemicals and Pipelines)

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 193 | 193 | 100% | $8,066,988 | $8,066,988 | 100% |
| Multi-Residential | 0 | 0 | 0% | $0 | $0 | 0% |
| Commercial | 38 | 38 | 100% | $1,311,180 | $1,311,180 | 100% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 38 | 38 | 100% | $597,784 | $597,784 | 100% |
| Total | 269 | 269 | 100% | $9,975,952 | $9,975,952 | 100% |

Source: Harrison County Assessor (2020), FEMA, Iowa DNR, Iowa State University Extension and Outreach

## Flood Maps

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Legend
Community Lifelines
Floodplain
N
0 0.075 0.15 0.3 0.45 0.6
Miles

## Status of Previous Mitigation Actions

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| The community will remove six dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community | | | X | | | | |
| The community will provide assistance in installing and training of proper usage of fire extinguishers | | | | | X | | |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure | | | X | | | | |
| Communities will construct a Red Cross certified and FEMA approved safe room/s in a public facility | X | | | | | | |
| The community will build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand snow loads and prevent roof collapse | | | | X | | | |
| The community will construct a new levee, dike, or berm that protects the facility from flood damage | | | | | X | | |
| The community will maintain and enforce codes and ordinances that protects future development from flooding and restricts encroachment of the built environment in the floodplain | | | | | X | | |
| The community will keep streams, creeks and flood ditches clear of debris and blockages to ensure they flow properly within the drainage district | | | | | X | | |
| The community will encourage homeowners to install carbon monoxide monitors and alarms in approximately 150 homes | | | X | | | | |
| The community will upgrade early warning siren systems to connect to the county-wide system | | | | | X | | |
| The community will train the fire department to be able to provide information relating to severe weather | | | X | | | | |
| The community will provide outreach and assistance to vulnerable populations to implement hazard mitigation projects and programs in public parks and elderly housing | | | X | | | | |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The community will provide NIMS and CPR training to emergency response personnel | | | X | | | | |
| The community will evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations | | | X | | | | |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will distribute hazard awareness materials and information with utility bills to residents | | | X | | | | |

## Action Plan

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Source(s) | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| The community will remove six dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community | Grass or Wild Land Fire, Infrastructure Failure, Thunderstorm/ Lightning/Hail, Tornado/Wind Storm, Severe Winter Storm | High | City of Modale | High | City of Modale General Fund, SWIHTF, STRLF | Funding, public input | Ongoing |
| The community will provide assistance in installing and training of proper usage of fire extinguishers | Grass or Wild Land Fire | Medium | Modale Fire Department | High | City of Modale General Fund, AFGP | Time, personnel | Short term |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure | Grass or Wild Land Fire, Flash Flood, Infrastructure Failure, River Flood, Thunderstorm/ Lightning/Hail, Tornado/Wind Storm, Severe Winter Storm | High | City of Modale | Low | City of Modale General Fund, BRIC | Time and personnel | Ongoing |
| The community will build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand snow loads and prevent roof collapse | Infrastructure Failure, Thunderstorm/ Lightning/Hail, Tornado/ Windstorm, Severe Winter Storm | High | City of Modale, Harrison County EMA | High | City of Modale General Fund, CDBG, BRIC, PDM | Funding | Ongoing |
| The community will maintain and enforce codes and ordinances that protects future development from flooding and restricts encroachment of the built environment in the floodplain | Flash Flooding, River Flooding | Low | City of Modale, Drainage District | Low | Drainage District operating budget | Time and personnel | Ongoing |
| The community will keep streams, creeks and flood ditches clear of debris and blockages to ensure they flow properly within the drainage district | Flash Flooding, Infrastructure Failure, River Flooding | Low | City of Modale, Drainage District | Medium | Drainage District operating budget | Time and personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will encourage homeowners to install carbon monoxide monitors and alarms in approximately 150 homes | Extreme Heat, Grass or Wild Land Fire | Low | City of Modale Fire Department | Low | City of Modale Fire Department operating budget | Time and personnel | Ongoing |
| The community will upgrade early warning siren systems to connect to the county-wide system | Dam/Levee Failure, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/ Windstorm | High | City of Modale, City of Modale Fire Department, Harrison County EMA | High | City of Modale general fund, BRIC, PDM | Funding | Short term |
| The community will train the fire department to be able to provide information relating to severe weather and other hazardous events | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | City of Modale, Modale Fire Department | Medium | City of Modale General Fund, Modale Fire Department Operating Budget, LFPEMS, AFGP | Funding, personnel | Ongoing |
| Remove propane tank that is in the railroad right of way | Hazardous Materials | High | Union Pacific Railroad, Heartland Coop | High | Union Pacific, Heartland Coop, EPA, DNR | Cooperation between the organizations, funding | Long term |
| The community will provide outreach and assistance to vulnerable populations to implement hazard mitigation projects and programs in public parks and elderly housing | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials | High | City of Modale | Low | City of Modale General Fund | Time, personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| Clean up Modale drainage ditch to reduce flooding | Flash Flood, Infrastructure Failure, River Flooding | Medium | Drainage District | High | Drainage District, IDALS, WQI | Funding | Long term |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The community will provide NIMS and CPR training to emergency response personnel | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | City of Modale, Modale Fire Department | Low | City of Modale General Fund, Modale Fire Department Operating Budget | Funding, personnel, time | Ongoing |
| The community will evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, | High | City of Modale, Modale Fire Department | Medium | City of Modale General Fund, Modale Fire Department Operating Budget, LFPEMS, AFGP | Funding, personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| The community will distribute hazard awareness materials and information with utility bills to residents detailing the risks of various hazards, how to mitigate the risks, and proper response | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | City of Modale, Modale Fire Department | Low | City of Modale General Fund, Modale Fire Department Operating Budget | Time | Ongoing |

## Adoption Resolution

# City of Mondamin

## Community Capabilities

| | Date/Time | Location |
|---|---|---|
| Council Meetings | 1st Monday at 7pm | City Hall – 120 S Main St. |

**Utilities and Services**

| Service | Provider |
|---|---|
| Electricity | MidAmerican |
| Gas | Heartland Co-op |
| Water | City-owned and operated with PeopleService |
| Phone Services | Windstream |
| Law Enforcement | Harrison County Sheriff's Office |
| Fire Protection | Mondamin Fire - City |
| Cable/Internet | Western Iowa Wireless or Nextlink |
| Newspaper | Harrison County Times Reporter |
| Warning System (sirens, text alerts, etc.) | Harrison County Communications Center |
| HAZMAT Assistance | Emergency Management / Mondamin Fire & Rescue |
| Emergency Medical Services | Mondamin Rescue |
| Medical Clinic/Hospital | CHI – Missouri Valley, Burgess – Onawa, MCH - Blair |
| Tornado Shelter (FEMA approved) | None |

**Utility Questions**

| | |
|---|---|
| If operating a municipal water system, where is you water sourced from? (shallow well, aquifer, river, etc.) | Wells |
| Sewer or private septic? | Sewer lagoon |
| Do you have a water treatment facility? | Yes |
| Do you have a wastewater treatment facility? | No |
| Do you have any current DNR violations with your drinking water or wastewater? | No |

**Plans/Ordinances**

| | Yes/No | Year Approved | Comments |
|---|---|---|---|
| Comprehensive/land use Plan | NO | | |
| Capital Improvement Plan | NO | | |
| Local Emergency Plan (not the countywide hazard mitigation plan) | NO | | |

| | | | |
|---|---|---|---|
| Flood Mitigation Assistance Plan | NO | | |
| Zoning Ordinance | NO | | |
| **Most recent code of ordinances update** | | | |
| Restricted Residential District Ordinance | YES | 2024 | |
| Subdivisions Ordinance | NO | | |
| Floodplain Ordinance | YES | 2024 | |
| Building Permit Ordinance | YES | 2024 | |
| Building Codes—if yes, what year/edition? | YES | 2024<br>1. International Building Code, 2018 Edition<br>2. International Residential Code 2018 Edition<br>3. International Existing Building Code 2018 Edition<br>4. International Fire Code 2018 Edition<br>5. International Mechanical Code 2021 Edition<br>6. International Property Maintenance Code 2018 Edition<br>7. National Electrical Code 2020 Edition<br>8. Uniform Plumbing Code 2021 Edition | |
| Tree Trimming Ordinance | YES | 2024 | |
| Nuisance Ordinance | YES | 2024 | |
| Storm Water Ordinance | NO | | |
| Drainage Ordinance | NO | | |

**Boards/Staff/Departments**

| | **Yes/No** | **Title** | **Comments** |
|---|---|---|---|
| Building Code Official | YES | Property Maintenance Inspector – John Harrison | |
| Building Inspector | YES | Property Maintenance Inspector – John Harrison | |
| Public Works Official | YES | Superintendent of Public Works - Mike Kelley | |
| NFIP Floodplain Administrator (if you participate in NFIP, you have a floodplain administrator) | NO | | |
| Zoning Commission | NO | | |
| Board of Adjustments | NO | | |
| Nuisance Abatement Official | YES | Property Maintenance Inspector – John Harrison | |

## Hazards of Top Concern

The City of Mondamin identified tornado/windstorms, severe winter storms, thunderstorms/lightning/hail, and river flooding as top concerns for the city.

| Hazard #1: Tornado/Windstorm |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| July 28, 2025-Winds up to 70mph causing roof damage to historical building |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Our area is known for strong, sometimes threatening winds. There isn't much we can do except make sure our buildings and infrastructure are in good shape. Even then, high winds can come unexpectedly and with great force. This will be a continuous hazard for us. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Removal of dead/dying trees |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Plan to install new, more secure siding on City Hall |

| Hazard #2: Severe Winter Storm |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| March 19, 2025. This storm brought widespread heavy snow, freezing temperatures, and high winds, causing power outages across multiple counties and severe damage. The city was without power, water, and heat for several days. In addition to many downed power lines, the roof of the city maintenance shed blew off, and many trees fell onto properties. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Being without water and heat was very difficult. The roads were so bad that travel was impossible. The only good thing was that weather warnings for this terrible storm were issued days in advance. At the time, we did not have a generator to power the water plant. It took days to bring one in. The city learned a lot from this storm about preparedness. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Yes, we now have a generator for our water plant facility. We also have other maintenance equipment for operations. We have also set up an alert messaging system to contact our residents with important information. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Having the equipment and resources to set up a warming station. |

| Hazard #3: Thunderstorm/Lightning/Hail |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |

| |
|---|
| July 23, 2022. Due to a thunderstorm that produced high winds and hail, the roof of our city maintenance shed was ripped off. Siding and shingles were also removed from our old water plant facility, and trees had fallen on other homes, damaging properties. The Governor issued a disaster proclamation for this storm. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Our area is known for strong, sometimes threatening winds. There isn't much we can do except make sure our buildings and infrastructure are in good shape. Even then, high winds can come unexpectedly and with great force. This will be a continuous hazard for us. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Not at the time, we didn't, but we have since and continue to remove dead debris and secure infrastructure for city buildings and structures. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| We removed many dead or dying trees. Also, this fall we plan to install new, more secure siding at City Hall. |

| Hazard #4: River Flooding |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| May through August 2011. Farmland was submerged due to breached levees. Total losses to roads, culverts, and homes. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| We are located near the Missouri River, and flooding happens. Mondamin is in the floodplain. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| We built our new water treatment plant on high ground to prevent any damage from flooding. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| As we build new infrastructure, we will continue to build on higher ground to prevent any losses during major flooding. |

## Community Lifelines

| CITY OF MONDAMIN | Address or Location | Type of Lifeline | Shelter (Y/N) | Generator (Y/N) | Medical Supplies (Y/N) | Food/ Water (Y/N) |
|---|---|---|---|---|---|---|
| Mondamin Fire & Rescue | 602 Maple Street | Health & Medical, Safety & Security | Y | Y | Y | Y |
| West Harrison School | 410 Pine Street | Food/Hydration/Shelter | Y | Y | Y | Y |
| Community Center | 200 Maple Steet | Food/Hydration/Shelter | Y | N | Y | Y |
| City Hall | 120 S Main Street | Communications | N | N | N | N |
| Water Treatment Plant | 504 Cedar Street | Water Systems | N | Y | N | N |

## Loss Estimates

Hazard: Tornado/Windstorm, Severe Winter Storm, Thunderstorm/Lightning/Hail/Freezing Rain, Drought, Extreme Heat, Flash Flooding, Terrorism, Transportation Incidents, Radiological, Human Disease, Infrastructure Failure

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 215 | 215 | 100% | $11,041,104 | $11,041,104 | 100% |
| Multi-Residential | 0 | 0 | 0% | $0 | $0 | 0% |
| Commercial | 67 | 67 | 100% | $5,975,302 | $5,975,302 | 100% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 26 | 26 | 100% | $4,885 | $4,885 | 100% |
| Total | 308 | 308 | 100% | $17,021,291 | $17,021,291 | 100% |

Hazard: River Flooding

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 215 | 29 | 13.5% | $11,041,104 | $1,350,354 | 12.2% |
| Multi-Residential | 0 | 0 | 0% | $0 | $0 | 0% |
| Commercial | 67 | 8 | 11.9% | $5,975,302 | $2,860,731 | 47.9% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 26 | 13 | 50.0% | $4,885 | $2,573 | 52.7% |
| Total | 308 | 50 | 16.2% | $17,021,291 | $4,213,658 | 24.8% |

Hazard: Grass/Wild Fire

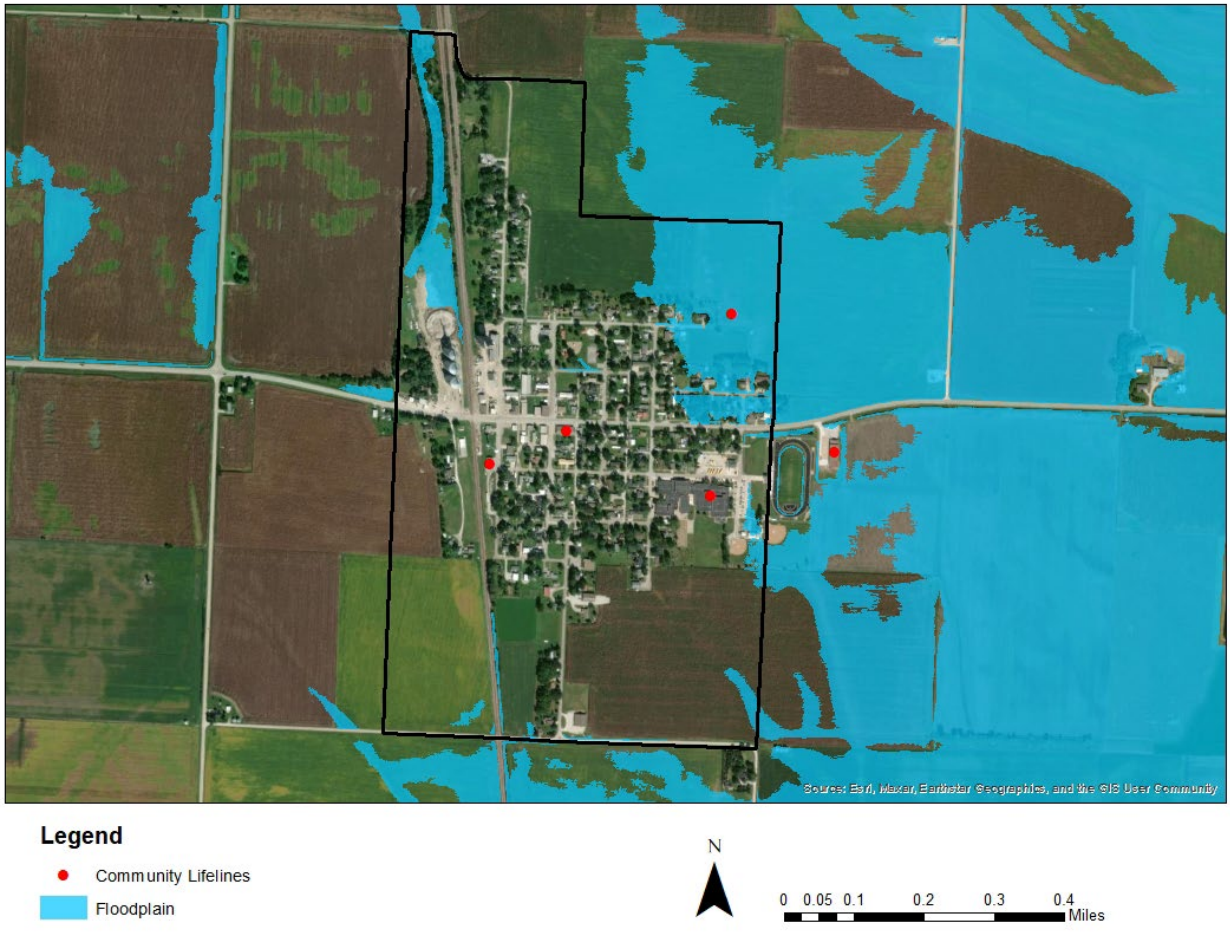
| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 215 | 80 | 37.2% | $11,041,104 | $4,080,941 | 37% |
| Multi-Residential | 0 | 0 | 0% | $0 | $0 | 0% |
| Commercial | 67 | 16 | 23.9% | $5,975,302 | $3,255,090 | 54.5% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 26 | 26 | 100% | $4,885 | $4,885 | 100% |
| Total | 308 | 122 | 39.6% | $17,021,291 | $7,340,916 | 43.1% |

Hazard: Hazardous Materials (Tier II Chemicals and Pipelines)

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 215 | 215 | 100% | $11,041,104 | $11,041,104 | 100% |
| Multi-Residential | 0 | 0 | 0% | $0 | $0 | 0% |
| Commercial | 67 | 67 | 100% | $5,975,302 | $5,975,302 | 100% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 26 | 26 | 100% | $4,885 | $4,885 | 100% |
| Total | 308 | 308 | 100% | $17,021,291 | $17,021,291 | 100% |

Source: Harrison County Assessor (2020), FEMA, Iowa DNR, Iowa State University Extension and Outreach

## Flood Maps


Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Legend
Community Lifelines
Floodplain
N
0 0.05 0.1 0.2 0.3 0.4
Miles

## Status of Previous Mitigation Actions

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety, and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| **Objective #1:** Communities will mitigate or remove risk of fire hazards by 10% in the next ten years | | | | | | | |
| The community will remove seven dilapidated, abandoned, or dangerous structures that pose or enhance a threat to the community | | | X | | | | |
| The community will maintain and enforce building codes to ensure new construction and development will not create new risk to the community | | | X | | | | |
| **Objective #2:** Communities will mitigate or remove risk of tornado, windstorms, and thunderstorms/lightning damage by 10% in the next ten years | | | | | | | |
| The community will establish or maintain standards and methods that protect power lines and infrastructure from potential risks such as tree pruning, ordinance adoption and removal hazard trees | | | X | | | | |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure | | | X | | | | |
| The community will build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand heavy winds and severe weather (school, community center, library, and city hall) | | | X | | | | |
| Communities will construct a Red Cross certified and FEMA approved safe room/s in a public facility (school or fire hall) | | | | X | | | |
| **Objective #3:** Communities will mitigate the effects of severe winter weather damage by completing two programs in the next five years | | | | | | | |
| The community will assist residents in obtaining funding for six homes that need house repairs and winterization. | | | | X | | | |
| The community will build, upgrade, or maintain infrastructure that protects critical facilities by retrofitting structures to withstand snow loads and prevent roof collapse (community center, retirement house) | | | | | | | X |
| **Objective #4:** Communities will reduce flood risk to residents and businesses of Harrison County by completion of an infrastructure upgrade project in the next 10 years | | | | | | | |
| The community will upgrade drainage and storm sewer systems to meet proper capacity requirements that provide systems that adequately and safely remove excess water from drainage east of town. | | | X | | | | |
| **Objective #5:** Communities will reduce flood risk to residents and businesses of Harrison County by completion of 2 programs in the next 5 years | | | | | | | |
| The community will maintain and enforce codes and ordinances that protect future development from flooding and | | | | | | | X |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| restricts encroachment of the built environment in the floodplain | | | | | | | |
| **Objective #6:** Communities of Harrison County will be able to provide an additional level of early warning system or education to residents in the next 5 years. | | | | | | | |
| The community will make weather alert radios available to citizens by identifying and obtaining funding to subsidize the purchase of 50 radios | | | | X | | | |
| The community will encourage homeowners to install 50 carbon monoxide monitors and alarms | | | | X | | | |
| The community will train library, city maintenance, and fire department spotters' public staff that are able to provide information relating to severe weather | | | X | | | | |
| **Objective #7:** Communities will be able to provide an additional level of safety to vulnerable populations in 5 years. | | | | | | | |
| The community will provide outreach and assistance to vulnerable populations to implement hazard mitigation projects and programs | | | X | | | | |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| **Objective #1:** Communities will implement two new programs that ensure their emergency response teams and departments are adequately equipped to respond to any emergency in three years. | | | | | | | |
| The community will develop or maintain an inventory of equipment available to emergency responders to ensure resources can be easily and quickly identified in an event of a disaster | | | X | | | | |
| The community will develop a plan to phase purchases of replacement equipment | | | X | | | | |
| The community will investigate resources and funding to obtain the proper and necessary equipment for emergency response personnel to include fire trucks, PPE, radios, and medical equipment. | | | X | | | | |
| The community will partner with or maintain partnership with outside organizations that are able to provide or share emergency response resources and/or equipment to include Harrison County Emergency Management | | | X | | | | |
| The community will maintain and update evacuation plans | | | X | | | | |
| **Objective #2:** Communities will implement two new programs to ensure emergency response teams and departments are adequately staffed and prepared in three years to handle any emergency situations. | | | | | | | |
| The community will provide CPR and NIMS training to emergency response personnel | | | | X | | | |
| The community will evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations | | | | X | | | |
| The community will identify, maintain, and train volunteer groups that are able to aid or respond in the event of a disaster or emergency | | | | X | | | |
| The community will create and maintain policies that designate secondary personnel to handle disaster response and recovery | | | | | | | X |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Objective #3:** Communities will ensure facilities/infrastructure that are critical to the community and supply essential services are operational during a hazard event by implementing one project in five years. | | | | | | | |
| The community will build or maintain infrastructure that protects critical facilities such as, but not limited to, levees and berms in floodways or retrofitting structures to withstand snow loads and prevent roof collapse | | | | | X | | |
| The community will designate new or alternative critical facilities that are outside of hazard areas | | | | X | | | |
| **Objective #4:** Communities will ensure communications between governments, organizations, citizens and emergency response personnel are adequately prepared for all disaster situations by implementing or maintaining all actions within five years | | | | | | | |
| The community will regularly test communications equipment between local jurisdictions | | | X | | | | |
| The community will promote training between emergency response departments to included scheduled training sessions/drills at county and state level | | | X | | | | |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| **Objective #1:** Communities will implement three new programs in public schools that encourage safe hazard preparedness and response practices in five years. | | | | | | | |
| The community will support Severe Weather Awareness Week by creating or continuing activities that teach severe weather hazards and proper safety techniques to include a drawing contest, drills, assemblies, spotter classes. | | | | X | | | |
| The community will identify and invite outside organizations that can teach hazard safety to youth to include fire disaster response teams. | | | | X | | | |
| The community will conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques to include the following drills: tornado, ALICE, spotter classes, fire drills | | | | X | | | |
| The community will create an additional educational program in schools that teach youth hazard safety preparedness and response to include CPR classes, mock traffic/disaster drill | | | | | | | X |
| **Objective #2:** Communities will identify and implement one new program that expands public awareness of resources that help teach public safety and/or provide early warning of severe weather events in five years | | | | | | | |
| The community will use media outlets and other resources to send hazard awareness materials and information to residents to include weather alters to cell phones, utility bills, social media, and newspapers. | | | X | | | | |
| The community will train public employees/staff to increase capacity to provide hazard awareness materials and information. | | | | X | | | |
| **Objective #3:** Communities will implement a program that educates the residents on available resources that help protect them from tornado, windstorms, or other severe weather incidents. | | | | | | | |
| The community will promote and educate county text/phone notification systems available. Everbride – Amber Alert | | | X | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will expand awareness of community critical facilities available to the public in the event of a hazard using cell alerts, utility bills, radio, TV, social media. | | | X | | | | |

## Action Plan

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Source(s) | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety, and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| The community will work to remove dilapidated, abandoned, or dangerous structures that pose or enhance a threat to the community | Grass/Wildland Fire, Hazardous Materials, Infrastructure Failure, Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm | High | City of Mondamin, Code Inspector | High | City of Mondamin General Fund, SWIHTF, DNR Derelict Building Grant | Owners of properties, Funding | Ongoing |
| The community will maintain codes to ensure new construction and development will not create new risk | Flash Flooding, Grass/Wildland Fire, Hazardous Materials, Infrastructure Failure, River Flooding, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Severe Winter Storm | Low | City of Mondamin, Code Inspector | Low | City of Mondamin General Fund | Funding, Time, personnel | Ongoing |
| The community will establish or maintain standards and methods that protect power lines and infrastructure from potential risks such as tree pruning, ordinance adoption and removal of hazard trees | Infrastructure Failure, Severe Winter Storms, Thunderstorm/Lightning/Hail, Tornado/Windstorms, Grass/Wild Land Fire, Tornado/Windstorm | Medium | City of Mondamin | High | City of Mondamin General Fund, BRIC, PDM | Funding | Ongoing |
| The community will maintain and enforce all building codes that regulate | Flash Flooding, Grass/Wildland Fire, | Low | City of Mondamin, Code Inspector | Low | City of Mondamin | Funding, time, personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| building construction and remove or mitigate risk of structure failure as well as preventing floodplain development and encroachment into the floodplain | Hazardous Materials, Infrastructure Failure, River Flooding Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm | | | | General Fund | | |
| The community will build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand severe weather and man-made threats | Infrastructure Failure, Severe Winter Storms, Thunderstorm/Lightning/Hail, Tornado/Windstorms, Grass/Wild Fires, Terrorism | High | City of Mondamin | High | City of Mondamin General Fund, BRIC, PDM, CDBG | Funding | Ongoing |
| Communities will construct a Red Cross certified and FEMA approved safe room/s in a public facility (school or fire hall) | Severe Winter Storms, Thunderstorm/Lightning/Hail, Tornado/Windstorms | Low | City of Mondamin | High | City of Mondamin General Fund, BRIC, PDM | Funding | Long Term |
| The community will assist residents in obtaining funding for homes that need house repairs and weatherization | Extreme Heat, Infrastructure Failure, Severe Winter Storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm | Low | City of Mondamin | Low | City of Mondamin General Fund, CDBG, SWIHTF | Funding | Ongoing |
| The community will upgrade drainage and storm sewer systems to meet proper capacity requirements that provide systems that adequately and safely remove excess water from drainage east of town. | River Flooding, Flash Floods | High | City of Mondamin | Moderate | City of Mondamin General Fund, CDBG | Funding | Long Term |
| The community will make weather alert radios available to citizens by identifying and obtaining funding to subsidize the | Severe Winter Storms, Thunderstorm/Lightning/Hail, Tornado/Windstorms | Low | City of Mondamin | Low | City of Mondamin General Fund, | Funding | Mid-Term |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| purchase | | | | | BRIC, PDM | | |
| The community will encourage homeowners to install carbon monoxide monitors and alarms | Grass/Wild Land Fires, Hazardous Materials | Low | City of Mondamin | Low | City of Mondamin General Fund, BRIC, PDM | Community Involvement<br><br>Funding | Mid-Term |
| The community will train library, city maintenance, and fire department spotters' public staff that are able to provide information relating to severe weather | Severe Winter Storms, Thunderstorm/Lightning/Hail, Tornado/Windstorms | Low | Mondamin Fire & Rescue<br><br>Harrison County EMA | Low | City of Mondamin General Fund | Time | Ongoing |
| The community will provide outreach and assistance to residents on hazards that may affect them, potential hazard mitigation projects, and the importance of implementing them | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | City of Mondamin, SWIPCO, Harrison County EMA | Low | City of Mondamin General Fund | Time, personnel | Ongoing |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The community will develop or maintain an inventory of equipment available to emergency responders to ensure resources can be easily and | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, | Low | City Public Works<br><br>Mondamin Fire & Rescue | Low | City of Mondamin General Fund | Time, personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| quickly identified in the event of a disaster | Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| The community will develop a plan to phase purchases of replacement equipment | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | City of Mondamin, Mondamin Fire & Rescue | Low | City of Mondamin General Fund | Time, personnel | Short Term |
| The community will investigate resources and funding to obtain the proper and necessary equipment for emergency response personnel | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | City of Mondamin, Mondamin Fire & Rescue | High | City of Mondamin General Fund, BRIC, PDM, LFPEMS, Assistance to Fire Fighters | Funding | Ongoing |
| The community will partner with or maintain partnership with outside organizations that are able to provide or share emergency response resources and/or equipment | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, | High | City of Mondamin, Mondamin Fire & Rescue, Harrison County EMA, Harrison County Sheriff's Dept.. | Low | City of Mondamin General Fund | None | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| to include Harrison County Emergency Management | River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| The community will maintain and update evacuation plans | Dam/Levee Failure, Earthquake, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Mondamin, Mondamin Fire & Rescue, Harrison County EMA, Harrison County Sheriff's Dept. | Low | City of Mondamin General Fund | Time, personnel | Ongoing |
| The community will provide CPR and NIMS training to emergency response personnel | Severe Winter Storms, Thunderstorm/Lightning/Hail, Tornado/Windstorms, River Flooding, Flash Floods, Grass/Wild Land Fire, Hazardous Materials, Drought, Extreme Heat, Transportation Incident, Dam/Levee Failure | High | Mondamin Fire & Rescue, Harrison County EMS | Low | City of Mondamin General Fund | Time, personnel | Ongoing |
| The community will evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | City of Mondamin, Mondamin Fire & Rescue, Harrison County EMA, Harrison County Sheriff's Dept. | Low | City of Mondamin General Fund | Willingness of volunteers | Ongoing |
| The community will identify, maintain, and train volunteer groups that are able to aid or respond in the | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, | High | City of Mondamin, Mondamin Fire & Rescue, Harrison County EMA, | Low | City of Mondamin General Fund | Willingness of volunteers, time, personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| event of a disaster or emergency | Human Disease, Infrastructure Failure, Landslide, River Flooding, Severe Winter Storm, Sinkholes, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | Harrison County Sheriff's Dept. | | | | |
| The community will build or maintain infrastructure that protects critical facilities/community lifelines | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | City of Mondamin, Harrison County | High | City of Mondamin General Fund, BRIC, CDBG, PDM | Funding | Ongoing |
| The community will designate new or alternative critical facilities that are outside of hazard areas | Dam/Levee Failure, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Mondamin, Harrison County | High | City of Mondamin General Fund, BRIC, CDBG, PDM, USDA | Funding | Ongoing |
| The community will regularly test communications equipment between local jurisdictions | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, | High | City of Mondamin, Harrison County EMA | Low | City of Mondamin General Fund | None | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| The community will promote training between emergency response departments to include scheduled training sessions/drills at the county and state level | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | City of Mondamin, Mondamin Fire & Rescue, Harrison County EMA, Harrison County Sheriff's Dept. | Low | City of Mondamin General Fund | Schedules/Time | Ongoing |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| The community will support Severe Weather Awareness Week by creating or continuing activities that teach severe weather hazards, proper safety techniques, and potential mitigation projects | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | City of Mondamin, Harrison County EMA | Low | City of Mondamin General Fund | Time, personnel | Ongoing |
| The community will identify and invite outside organizations that can teach hazard safety to youth as well as potential mitigation steps they can take to reduce risks | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, | Low | Mondamin Fire & Rescue, Harrison County EMA, Harrison County Sheriff's Dept. | Low | City of Mondamin General Fund | Time, personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| The community will conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques | Grass/Wild Land Fire, Severe Winter Storm, Terrorism, Thunderstorm/Lightning/Hail, Tornado/Windstorm | High | West Harrison CSD, Harrison County Sheriff's Dept., Mondamin Fire & Rescue | Low | No Cost | None | Ongoing |
| The community will use media outlets and other resources to send hazard awareness materials and information to residents, including mitigation efforts residents can implement | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | City of Mondamin | Low | City of Mondamin General Fund | Time, personnel | Ongoing |
| The community will train public employees/staff to increase capacity to provide hazard awareness materials and information. | Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | City of Mondamin, Mondamin Fire & Rescue, Harrison County EMA, Harrison County Sheriff's Dept. | Low | City of Mondamin General Fund | Time, personnel | Ongoing |
| The community will promote and educate county text/phone notification systems available—Alert Iowa | Severe Winter Storms, Thunderstorm/Lightning/Hail, Tornado/Windstorms, River Flooding, Flash Floods, Grass/Wild Land Fire, Hazardous Materials, Drought, | High | City of Mondamin, Harrison County EMA | Low | No Cost | Time, personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Extreme Heat, Transportation Incident, Dam/Levee Failure | | | | | | |
| The community will expand awareness of community critical facilities available to the public in the event of a hazard using cell alerts, utility bills, radio, TV, social media. | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | City of Mondamin, Harrison County EMA | Low | City of Mondamin General Fund | Time, personnel | Ongoing |

## Adoption Resolution

# City of Persia

## Community Capabilities

| | Date/Time | Location |
|---|---|---|
| Council Meetings | 2nd Monday @ 7pm | Persia City Hall |

### Utilities and Services

| Service | Provider |
|---|---|
| Electricity | MidAmerican Energy |
| Gas | MidAmerican Energy |
| Water | Regional Water |
| Phone Services | Windstream, Uniti Group |
| Law Enforcement | Harrison County Sheriff |
| Fire Protection | Persia Fire Department |
| Cable/Internet | Windstream |
| Newspaper | Avoca Journal Herald |
| Warning System (sirens, text alerts, etc.) | Sire, EMS ComCenter |
| HAZMAT Assistance | Council Bluffs |
| Emergency Medical Services | Persia Fire Department, Portsmouth Fire Department |
| Medical Clinic/Hospital | |
| Tornado Shelter (FEMA approved) | |

### Utility Questions

| | |
|---|---|
| If operating a municipal water system, where is you water sourced from? (shallow well, aquifer, river, etc.) | NA |
| Sewer or private septic? | NA |
| Do you have a water treatment facility? | NA |
| Do you have a wastewater treatment facility? | NA |
| Do you have any current DNR violations with your drinking water or wastewater? | NA |

### Plans/Ordinances

| | Yes/No | Year Approved | Comments |
|---|---|---|---|
| Comprehensive/land use Plan | Yes | 2022 | |

| | | | |
|---|---|---|---|
| Capital Improvement Plan | No | | |
| Local Emergency Plan (not the countywide hazard mitigation plan) | No | | |
| Flood Mitigation Assistance Plan | No | | |
| Zoning Ordinance | Yes | 2022 | |
| **Most recent code of ordinances update** | | | |
| Restricted Residential District Ordinance | | | |
| Subdivisions Ordinance | Yes | 2022 | |
| Floodplain Ordinance | Yes | 2022 | |
| Building Permit Ordinance | Yes | 2022 | |
| Building Codes—if yes, what year/edition? | | | |
| Tree Trimming Ordinance | Yes | 2022 | |
| Nuisance Ordinance | Yes | 2022 | |
| Storm Water Ordinance | No | | |
| Drainage Ordinance | | | |

**Boards/Staff/Departments**

| | Yes/No | Title | Comments |
|---|---|---|---|
| Building Code Official | No | | |
| Building Inspector | No | | |
| Public Works Official | No | | |
| NFIP Floodplain Administrator (if you participate in NFIP, you have a floodplain administrator) | No | | |
| Zoning Commission | No | | |
| Board of Adjustments | No | | |
| Nuisance Abatement Official | No | | |

**What projects, plans or changes, if any, has your jurisdiction completed in the last five years?**
Removal of dilapidated buildings.

**Does your jurisdiction have any available resources to expand your capabilities to address hazard mitigation? Resources could include additional staff or staff time, available funding, knowledge or expertise held by city officials, or community/cultural resources.**
No known resources.

## Hazards of Top Concern

The City of Persia identified drought, excessive heat, hail/lightning, severe winter storms, and tornadoes/wind storms as top concerns for the city.

| Hazard #1: Drought |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Drought has caused limited water supply. Low water pressure has resulted in accordion effect of water lines backing into system requiring boil advisory/unsafe water. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Regional Water repaired stack on tower giving the town water storage again. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| |

| Hazard #2: Excessive Heat |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Persia has an elderly population on fixed incomes as well as many other families with low to moderate income. Excessive heat for many of these individuals who cannot afford electricity bulls to run air conditioning put them at greater risk for heat related illness and emergencies. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Possibly working with someone to develop a box fan donation/distribution system |

| Hazard #3: Hail and Lightning |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| 4-19-23 hail damage to multiple city owned properties |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| |
| **Have you completed any projects to reduce the effect to this hazard?** |
| |

| What projects would the jurisdiction like to complete to mitigate risks to this hazard? |
| --- |
| |

| Hazard #4: Severe Winter Storms |
| --- |
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| |
| **Have you completed any projects to reduce the effect to this hazard?** |
| |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| |

| Hazard #5: Tornadoes/Wind Storms |
| --- |
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| 3/19/25 storm damage-high winds cause ballfield light pole to fall on field and fence. Pole needed to be replaced and new lights purchased as well as fence repair. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| This is a public park area. Residents use the are frequently in spring and summer. Someone could have been hurt. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| The pole was replaced and remaining poles were inspected. Plan to get remaining light poles replaced. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Replace remaining poles at the field. Tornado shelter at the parks. |

## Community Lifelines

| Name | Address or Location | Type of Lifeline | Shelter (Y/N) | Generator (Y/N) | Medical Supplies (Y/N) | Food/ Water (Y/N) |
|---|---|---|---|---|---|---|
| Persia Fire Hall | 3833 296th Street Persia | Shelter/Safety | Y | Y | Y | N |
| Water Tower | 301 4th St. Persia | Water Systems | N | N | N | Y |
| Lagoons | Hwy 191 and 305th St. Persia | Water Systems | N | N | N | N |
| Pump House | 3840 296th St Persia | Water Systems | N | N | N | N |
| Sirens | 117 Main St. and 203 6th Avenue Persia | Communications | N | N | N | N |
| Gas Station | 200 Railway St Persia | Energy | N | N | N | N |
| Post Office | 105 Main St. Persia | Communications | N | N | N | N |

## Loss Estimates

Hazard: Tornado/Windstorm, Severe Winter Storm, Thunderstorm/Lightning/Hail/Freezing Rain, Drought, Extreme Heat, Flash Flooding, Terrorism, Transportation Incidents, Radiological, Human Disease, Infrastructure Failure

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 163 | 163 | 100% | $8,043,577 | $8,043,577 | 100% |
| Multi-Residential | 2 | 2 | 100% | $172,202 | $172,202 | 100% |
| Commercial | 39 | 39 | 100% | $1,004,079 | $1,004,079 | 100% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 17 | 17 | 100% | $52,554 | $52,554 | 100% |
| Total | 221 | 221 | 100% | $9,272,412 | $9,272,412 | 100% |

Hazard: River Flooding

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 163 | 0 | 0% | $8,043,577 | $0 | 0% |
| Multi-Residential | 2 | 0 | 0% | $172,202 | $0 | 0% |
| Commercial | 39 | 1 | 2.6% | $1,004,079 | $925 | 9.2% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 17 | 7 | 41.2% | $52,554 | $0 | 0% |
| Total | 221 | 8 | 3.6% | $9,272,412 | $925 | 10.0% |

Hazard: Grass/Wild Fire

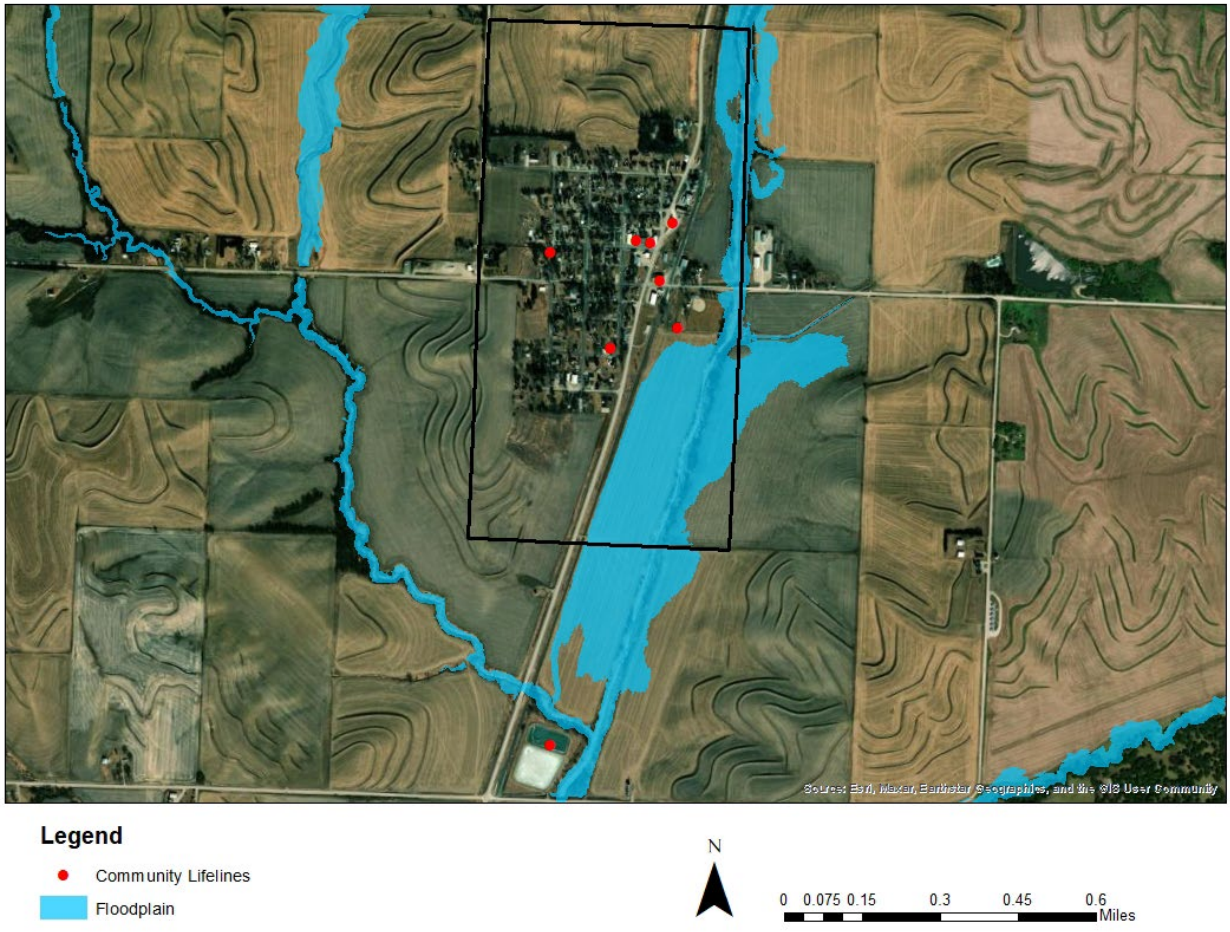
| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 163 | 47 | 28.8% | $8,043,577 | $2,421,241 | 30.1% |
| Multi-Residential | 2 | 0 | 0% | $172,202 | $0 | 0% |
| Commercial | 39 | 18 | 46.2% | $1,004,079 | $342,526 | 34.1% |
| Industrial | 0 | 0 | 0% | $0 | 0 | 0% |
| Agricultural | 17 | 17 | 100% | $52,554 | $52,554 | 100% |
| Total | 221 | 82 | 37.1% | $9,272,412 | $2,816,321 | 30.4% |

Hazard: Hazardous Materials (Tier II Chemicals and Pipelines)

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 163 | 163 | 100% | $8,043,577 | $8,043,577 | 100% |
| Multi-Residential | 2 | 2 | 100% | $172,202 | $172,202 | 100% |
| Commercial | 39 | 39 | 100% | $1,004,079 | $1,004,079 | 100% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 17 | 17 | 100% | $52,554 | $52,554 | 100% |
| Total | 221 | 221 | 100% | $9,272,412 | $9,272,412 | 100% |

Source: Harrison County Assessor (2020), FEMA, Iowa DNR, Iowa State University Extension and Outreach

## Flood Maps


Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Legend
Community Lifelines
Floodplain
N
0 0.075 0.15 0.3 0.45 0.6
Miles

## Status of Previous Mitigation Actions

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety, and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster | | | | | | | |
| **Objective #1:** Persia will mitigate or remove risk of fire hazards by ten percent in the next ten years | | | | | | | |
| The community will remove three dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community | | | X | | | | |
| The community will maintain and enforce building codes to ensure new construction and development will not create new risk to the community | | | X | | | | |
| The community will provide assistance in installing and training of proper usage of fire extinguishers in twenty five locations | | | | | X | | |
| **Objective #2:** Communities will mitigate or remove risk of tornado, windstorms, and thunderstorms/lightning damage by ten percent in the next ten years | | | | | | | |
| The community will establish or maintain standards and methods that protect power lines and infrastructure from potential risks by enforcing a tree pruning ordinance and removing hazardous trees | | | X | | | | |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure | | | X | | | | |
| The community will build, upgrade or maintain infrastructure that protects the fire hall, and churches by retrofitting structures to withstand heavy winds and severe weather | | | | | X | | |
| **Objective #3:** Communities will mitigate the effects of severe winter weather damage by completing two programs in the next five years | | | | | | | |
| The community will create and implement a plan to maintain road clearing capabilities and repair roads following adverse weather conditions | | | X | | | | |
| The community will assist residents in obtaining funding for twenty homes that need house repairs and winterization | | | | | X | | |
| The community will expand awareness on energy efficient building materials and techniques that adequately protect people from adverse weather conditions | | | | | X | | |
| **Objective #4:** Communities will reduce flood risk to residents and businesses of Harrison County by completion of an infrastructure upgrade project in the next ten years | | | | | | | |
| The community will upgrade and maintain drainage and storm sewer systems (pipes, culverts and channels) along F58 from Highway 191 to Mosquito Creek to meet proper capacity requirements that provide systems that adequately and safely remove excess water from developed areas | | | X | | | | |
| **Objective #5:** Communities will reduce flood risk to residents and businesses of Harrison County by completion of 2 programs in the next five years. | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will maintain compliance with the National Flood Insurance Program (NFIP) | | | X | | | | |
| The community will maintain and enforce codes and ordinances that protects future development from flooding and restricts encroachment of the built environment in the floodplain | | | X | | | | |
| The community will keep streams, creeks and flood ditches along F58 from Highway 191 to Mosquito Creek clear of debris and blockages to ensure they flow properly | | | X | | | | |
| The community will expand awareness of incentives and disincentives on property or homeowner insurance that promote smart development and reduce hazard risk by distributing materials with utility bills, on the radio, TV, social media/internet and in newspapers | | | | | X | | |
| **Objective #6:** Communities of Harrison County will be able to provide an additional level of early warning system or education to residents in the next five years. | | | | | | | |
| The community will make 100 weather alert radios available to citizens by identifying and obtaining funding to subsidize the purchase of radios | | | | | X | | |
| The community will encourage homeowners to install carbon monoxide monitors and alarms and pursue funding to subsidize 100 carbon monoxide monitors for residents | | | | | X | | |
| The community will upgrade early warning siren systems and fire department radios | | | X | | | | |
| The community will train the volunteer fire department to be able to provide information relating to severe weather | | | X | | | | |
| The county will upgrade and maintain the county-wide Everbridge mass notification early warning systems | | | X | | | | |
| The county will continue participation in the statewide (Alert Iowa System) mass notification system | | | X | | | | |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| **Objective #1:** Communities will implement two new programs that ensure their emergency response teams and departments are adequately equipped to respond to any emergency situation in three years. | | | | | | | |
| The community will develop or maintain an inventory of equipment available to emergency responders to ensure resources can be easily and quickly identified in the event of a disaster | | | X | | | | |
| The community will develop a plan to phase purchases of replacement equipment | | | X | | | | |
| The community will investigate resources and funding to obtain the proper and necessary equipment for emergency response personnel which includes 30 radios and/or pagers, 30 self-contained breathing apparatus', 30 bunker, and 1 ambulance | | | X | | | | |
| The community will partner with or maintain partnership with the county EMA, medivac and Midwest medical to provide or share emergency response resources and/or equipment | | | X | | | | |
| **Objective #2:** Communities will implement two new programs to ensure emergency response teams and departments are adequately staffed and prepared in three years to handle any emergency situations. | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will provide NIMS, CPR, EMT, FFI training to emergency response personnel | | | X | | | | |
| The community will evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations | | | X | | | | |
| The community will identify, maintain and train 30 volunteers that are able to provide assistance or respond in the event of a disaster or emergency | | | X | | | | |
| The community will create and maintain policies that designate secondary personnel to handle disaster response and recovery | | | | X | | | |
| **Objective #3:** Communities will ensure facilities/infrastructure that are critical to the community and supply essential services are operational during a hazard event by implementing one project in five years. | | | | | | | |
| The community will maintain, improve and continually test early warning systems (sirens, etc.) | | | X | | | | |
| The community will designate new or alternative critical facilities that are outside of hazard areas | | | | | X | | |
| The community will purchase generators to prevent disruption of city services in the event of a power outage for the fire hall, churches, and Tri-Center School which provide critical services to the community | | | X | | | | |
| **Objective #4:** Communities will ensure communications between governments, organizations, citizens and emergency response personnel are adequately prepared for all disaster situations by implementing or maintaining all actions within five years. | | | | | | | |
| The community will maintain mutual aid agreements (28E or other) between Harrison County Sheriff and the Humane Society | | | X | | | | |
| The community will update and maintain a list of contacts that respond to all emergencies | | | X | | | | |
| The community will regularly test radio and siren communications equipment between local jurisdictions | | | X | | | | |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination, and communication to build a more resilient community against all hazards | | | | | | | |
| **Objective #1:** Communities will implement three new programs in public schools that encourage safe hazard preparedness and response practices in five years. | | | | | | | |
| The community will support Severe Weather Awareness Week by testing early warning sirens | | | X | | | | |
| The community will utilize the fire department to teach hazard safety to youth | | | | | X | | |
| **Objective #2:** Communities will identify and implement one new program that expands public awareness of resources that help teach public safety and/or provide early warning of severe weather events in five years. | | | | | | | |
| The community will train public employees/staff to increase capacity to provide fire safety awareness materials and information | | | | | X | | |
| The community will create an emailing/mailing list to send winter weather, fire risk and other warning materials and information to residents relating to hazard risks | | | | | X | | |
| **Objective #3:** Communities will implement a program that educates the residents on available resources that help protect them from tornado, windstorms, or other severe weather incidents. | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will promote and educate county text/phone notification systems available (Everbridge, Alert Iowa System) by including information materials with utility bills, on local postings and TV | | | X | | | | |
| The community will expand awareness of community critical facilities available to the public in the event of a hazard through newspapers, TV, and local postings | | | | | X | | |

## Action Plan

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Source(s) | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety, and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster | | | | | | | |
| The community will remove three dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community | Grass or Wild Land Fire, Infrastructure Failure, Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm | Low | City Council, Public Works Director, Board of Supervisors, County Engineer | High | City of Persia General Fund, SWIHTF | Time, Personnel, funding, legal procedures | Long Term |
| The community will maintain and enforce building codes to ensure new construction and development will not create new risk to the community | Flash Flood, Grass or Wild Land Fire, Infrastructure Failure, Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm | Low | City Council, Board of Supervisors, County Engineer, County Building Inspector | Low | City of Persia General Fund, BRIC | Time, personnel, funding, enforcement | Short Term/Continuous |
| The community will provide assistance in installing and training of proper usage of fire extinguishers in twenty-five locations | Grass or Wild Land Fire | Low | Fire Chief | Low | City of Persia General Fund | Time, personnel, funding | Continuous |
| The community will establish or maintain standards and methods that protect power lines and infrastructure from potential risks by enforcing a tree pruning ordinance and removing hazardous trees | Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Severe Winter Storm | Medium | City Council, Public Works Director, Board of Supervisors, County Engineer | Moderate | City of Persia General Fund | Time, funding, personnel | Short Term |
| The community will build, upgrade or maintain infrastructure that protects the fire hall, and churches by retrofitting structures to | Infrastructure Failure, Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm | Low | City Council, Public Works Director, Board of Supervisors, County Engineer | Varying depending on project | City of Persia General Fund, BRIC, PDM, CDBG | Time, personnel, funding, | Long Term |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| withstand heavy winds and severe weather | | | | | | | |
| The community will create and implement a plan to maintain road clearing capabilities and repair roads following adverse weather conditions | Thunderstorm/Lightning/Hail, Tornado/ Windstorm, Severe Winter Storm | High | City Council, Public Works Director, Board of Supervisors, County Engineer | Low | City of Persia General Fund | Time, Personnel, funding | Continuous |
| The community will assist residents in obtaining funding for twenty homes that need house repairs and winterization | Infrastructure Failure, Thunderstorm/Lightning/Hail, Tornado/ Windstorm, Severe Winter Storm | Low | City Council, Board of Supervisors | Varying depending on project | City of Persia General Fund, CDBG, SWIHTF | Time, personnel, funding | Long Term |
| The community will expand awareness on energy efficient building materials and techniques that adequately protect people from adverse weather conditions | Extreme Heat, Infrastructure Failure, Thunderstorm/Lightning/Hail, Tornado/ Windstorm, Severe Winter Storm | Low | City Council, Public Works Director, Board of Supervisors, County Engineer | Low | City of Persia General Fund | Time, personnel, funding | Continuous |
| The community will upgrade and maintain drainage and storm sewer systems (pipes, culverts and channels) along F58 from Highway 191 to Mosquito Creek to meet proper capacity requirements that provide systems that adequately and safely remove excess water from developed areas | Flash Flooding, River Flooding | Low | Public Works Director, County Engineer, | Varying depending on project | City of Persia General Fund, BRIC, PDM, FMA | Time, personnel, funding | Long Term |
| The community will maintain compliance with the National Flood Insurance Program (NFIP) | Flash Flooding, River Flooding | High | City Council, Board of supervisors | Low | City of Persia General Fund | Time, personnel, funding | Continuous |
| The community will maintain and enforce codes and ordinances that protects future development from flooding and restricts encroachment of the | Flash Flooding, River Flooding | Medium | City Council, Board of supervisors, Zoning Administrator | Low | City of Persia General Fund, | Time, personnel, funding, enforcement | Short Term |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| built environment in the floodplain | | | | | | | |
| The community will keep streams, creeks and flood ditches along F58 from Highway 191 to Mosquito Creek clear of debris and blockages to ensure they flow properly | Flash Flooding, River Flooding | Medium | Public Works Director, County Engineer, Emergency Management Director | Varying depending on project | City of Persia General Fund | Time, personnel, funding, | Continuous |
| The community will expand awareness of incentives and disincentives on property or homeowner insurance that promote smart development and reduce hazard risk by distributing materials with utility bills, on the radio, TV, social media/internet and in newspapers | Flash Flooding, River Flooding | Low | Emergency Management Director | Low | City of Persia General Fund | Time, personnel, funding, | Continuous |
| The community will make 100 weather alert radios available to citizens by identifying and obtaining funding to subsidize the purchase of radios | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/Windstorm | Low | Fire Chief, emergency Management Director | High | City of Persia General Fund, | Time, personnel, funding, | Short Term |
| The community will encourage homeowners to install carbon monoxide monitors and alarms and pursue funding to subsidize 100 carbon monoxide monitors for residents | Extreme Heat, Grass or Wild Land Fire, Hazardous Materials | Low | Fire Chief, emergency Management Director | High | City of Persia General Fund | Time, personnel, funding, homeowner awareness | Long Term |
| The community will upgrade early warning siren systems and fire department radios | Dam/Levee Failure, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ | Medium | Fire Chief, Emergency Management Director | High | City of Persia General Fund, BRIC, PDM, LFPEMS | Time, personnel, funding, | Long Term |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Lightning/Hail, Tornado/Windstorm | | | | | | |
| The community will train the volunteer fire department to be able to provide information relating to severe weather | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/Windstorm | Medium | Emergency Management Director | Low | City of Persia General Fund | Time, personnel, commitment | Continuous |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The community will develop or maintain an inventory of equipment available to emergency responders to ensure resources can be easily and quickly identified in the event of a disaster | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | Fire Chief, County Sheriff, Emergency Management Director | Moderate | City of Persia General Fund, Persia Fire Department Operating Budget | Time, personnel, | Short Term/ Continuous |
| The community will develop a plan to phase purchases of replacement equipment | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/Windstorm | Medium | City Council, Board of Supervisors | High | City of Persia General Fund, Persia Fire Department Operating Budget | Time, personnel, | Continuous |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will investigate resources and funding to obtain the proper and necessary equipment for emergency response personnel which includes 30 radios and/or pagers, 30 self-contained breathing apparatus', 30 bunker, and 1 ambulance | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | Fire Chief, Police chief, County Sheriff, Emergency Management Director | Low | City of Persia General Fund, Persia Fire Department Operating Budget | Time, personnel, funding | Continuous |
| The community will partner with or maintain partnership with the county EMA, medivac and Midwest medical to provide or share emergency response resources and/or equipment | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | Fire Chief, Police chief, County Sheriff, Emergency Management Director | Low | City of Persia General Fund | Time, personnel, funding, organization opportunities | Short Term/Continuous |
| The community will provide NIMS, CPR, EMT, FFI training to emergency response personnel | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, | Medium | City Council, Board of Supervisors, Emergency Management Director | Moderate | City of Persia General Fund | Time, personnel, funding, commitment | Continuous |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| The community will evaluate to ensure emergency response personnel are adequately staffed and able to respond to emergency situations | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City Council, Board of Supervisors, Emergency Management Director | Low | City of Persia General Fund, Persia Fire Department Operating Budget | Time, personnel, funding, commitment | Continuous |
| The community will identify, maintain and train 30 volunteers that are able to provide assistance or respond in the event of a disaster or emergency | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | City Council, Board of Supervisors | Low | City of Persia General Fund, Persia Fire Department Operating Budget | Time, personnel, funding, commitment | Continuous |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will create and maintain policies that designate secondary personnel to handle disaster response and recovery | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | City Council, Board of Supervisors | Low | City of Persia General Fund | Time, personnel, funding, commitment | Continuous |
| The community will maintain, improve and continually test early warning systems (sirens, etc.) | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/Windstorm | Medium | Fire Chief, Police Chief, County Sheriff, Emergency Management Director | Varying based on needed maintenanc e | City of Persia General Fund, BRIC, PDM | Time, personnel, funding, | Continuous |
| The community will designate new or alternative critical facilities that are outside of hazard areas | Dam/Levee Failure, Flash Flood, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/Windstorm | Low | City Council, Board of Supervisors, Emergency Management Director | Low | City of Persia General Fund | Time, personnel, funding, | Short Term |
| The community will purchase generators to prevent disruption of city services in the event of a power outage for the fire hall, churches, and Tri-Center School which provide critical services to the community | Dam/Levee Failure, Drought, Extreme Heat, Infrastructure Failure, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/Windstorm | Low | City Council, Board of Supervisors | High | City of Persia General Fund, BRIC, PDM, Tri-Center CSD | Time, personnel, funding, | Long Term |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will maintain mutual aid agreements (28E or other) between Harrison County Sheriff and the Humane Society | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | Emergency Management Director, City Council, Board of Supervisors | Low | City of Persia General Fund | Time, personnel, funding, | Continuous |
| The community will update and maintain a list of contacts that respond to all emergencies | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | Emergency Management Director, Fire Chief, Police Chief, County Sheriff, School Superintendent | Low | City of Persia General Fund | Time, personnel, funding, | Continuous |
| The community will regularly test radio and siren communications equipment between local jurisdictions | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, | Medium | Emergency Management Director, Fire Chief, Police Chief, County Sheriff, School Superintendent | Low | City of Persia General Fund | Time, personnel, funding, | Continuous |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination, and communication to build a more resilient community against all hazards | | | | | | | |
| The community will support Severe Weather Awareness Week by coordinating announcements with the Harrison County EMA that teach severe weather hazards and proper safety techniques | Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/ Hair, Tornado/Windstorm | Low | Fire Chief, Police Chief, County Sheriff, Emergency Management Director | Low | City of Persia General Fund | Time, personnel, funding, | Continuous |
| The community will identify and invite the fire department to teach hazard and fire safety to youth during fire safety week | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/ Hair, Tornado/Windstorm | Low | School Superintendent, Emergency Management Director | Low | City of Persia General Fund | Time, personnel, funding, organization opportunities | Continuous |
| The community will train public employees/staff to increase capacity to provide fire safety awareness materials and information | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/Windstorm | Low | City Council, Board of Supervisors | Low | City of Persia General Fund | Time, personnel, funding, | Continuous |
| The community will create an emailing/mailing list to send winter weather, fire risk and other warning materials and information to residents relating to hazard risks and mitigation methods | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials | Low | City clerk, County Auditor, School Superintendent | Low | City of Persia General Fund | Time, personnel, funding, | Continuous |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| The community will promote and educate county text/phone notification systems available (Everbridge, Alert Iowa System) by including information materials with utility bills, on local postings and TV | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/Windstorm | Low | Emergency Management Director, Fire Chief, Police Chief, County sheriff | Low | City of Persia General Fund | Time, personnel, funding, | Continuous |
| The community will expand awareness of community critical facilities available to the public in the event of a hazard through newspapers, TV, and local postings | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/Windstorm | Low | City Council, Board of Supervisors | Moderate | City of Persia General Fund | Time, personnel, funding, | Continuous |

## Adoption Resolution

# City of Pisgah

## Community Capabilities

| | Date/Time | Location |
|---|---|---|
| Council Meetings | 1st Wednesday @ 6pm | |

### Utilities and Services

| Service | Provider |
|---|---|
| Electricity | MidAmerican |
| Gas | NA |
| Water | City |
| Phone Services | NA |
| Law Enforcement | Harrison County Sheriff |
| Fire Protection | Modale Fire Dept mutual aid |
| Cable/Internet | Windstream |
| Newspaper | MoVal Times Reporter |
| Warning System (sirens, text alerts, etc.) | City of Modale |
| HAZMAT Assistance | |
| Emergency Medical Services | Mondamin and MoVal Rescue |
| Medical Clinic/Hospital | MCH and CMH |
| Tornado Shelter (FEMA approved) | Legion Hall 102 E Palmer |

### Utility Questions

| | |
|---|---|
| If operating a municipal water system, where is you water sourced from? (shallow well, aquifer, river, etc.) | Auqifer |
| Sewer or private septic? | Sewer |
| Do you have a water treatment facility? | Yes |
| Do you have a wastewater treatment facility? | No |
| Do you have any current DNR violations with your drinking water or wastewater? | No |

### Plans/Ordinances

| | Yes/No | Year Approved | Comments |
|---|---|---|---|
| Comprehensive/land use Plan | No | | |

| | | | |
|---|---|---|---|
| Capital Improvement Plan | No | | |
| Local Emergency Plan (not the countywide hazard mitigation plan) | No | | |
| Flood Mitigation Assistance Plan | Yes | | |
| Zoning Ordinance | Yes | | |
| **Most recent code of ordinances update** | | 2023 | |
| Restricted Residential District Ordinance | No | | |
| Subdivisions Ordinance | No | | |
| Floodplain Ordinance | No | | |
| Building Permit Ordinance | Yes | 2023 | |
| Building Codes—if yes, what year/edition? | No | | |
| Tree Trimming Ordinance | No | | |
| Nuisance Ordinance | Yes | 2023 | |
| Storm Water Ordinance | No | | |
| Drainage Ordinance | No | | |

## Boards/Staff/Departments

| | Yes/No | Title | Comments |
|---|---|---|---|
| Building Code Official | No | | |
| Building Inspector | No | | |
| Public Works Official | Yes | Superintendent | |
| NFIP Floodplain Administrator (if you participate in NFIP, you have a floodplain administrator) | No | | |
| Zoning Commission | No | | |
| Board of Adjustments | No | | |
| Nuisance Abatement Official | No | | |

## Hazards of Top Concern

The City of Pisgah identified severe winter storms, tornadoes/wind storms, river flooding, and infrastructure failure as top concerns for the city.

| Hazard #1: Severe Winter Storms |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| March 2025-strong winds and heavy snows damaged power lines. Town was without power for 5 days 1.5 days into the storm, our generator for utilities had an electrical failure that could not be repaired quickly. We also had extensive tree damage. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| It was cold and people were without power and water. We did supply water and some resources to people at our fire department but that building was without power as well. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Our generator has been repaired. We have applied for a USDA water project that would add a new generator for our water plant. This is approved and moving forward. We also applied for a grant to install a backup generator for our fire hall. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| We need a plan to have backup employees or contractors for clean up. Also need equipment for cleanup and repairs such as a tractor grapple. |

| Hazard #2: Tornadoes/Wind Storms |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| March 2025-strong winds and heavy snows damaged power lines. Town was without power for 5 days 1.5 days into the storm, our generator for utilities had an electrical failure that could not be repaired quickly. We also had extensive tree damage. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| It was cold and people were without power and water. We did supply water and some resources to people at our fire department but that building was without power as well. We don't have a tornado shelter. Storm siren does not have a back up generator or battery |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Our generator has been repaired. We have applied for a USDA water project that would add a new generator for our water plant. This is approved and moving forward. We also applied for a grant to install a backup generator for our fire hall. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| We would like to add a storm shelter as well as update our storm siren |

| Hazard #3: River Flooding |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| In 1996 the Solider River flooded parts of the town. Damage to city properties and residences. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| While we have a strong levee system out town is mostly in the FEMA floodplain. Our buildings and infrastructure are vulnerable to damage if a flood occurs. We do not have materials for sandbagging and do not have any large pumps. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Would be good to have sandy, more sand bags and equipment to address this issue. Would also be important to have a large PTO pump to remove trapped water after a flood. |

| Hazard #4: Infrastructure Failure |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| We had a fire at out water plant in 2024 that destroyed all of the electrical components. Made temporary repairs to operate it manually. In 2020 our sewer plant was struck by lightning temporary repairs we made to run it manually. |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| Sewer and water are utilities our residents rely on. Both examples above show that you never know what can happen. Its good to have as many back up plans as possible. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| We are working on a water project for another backup generator. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| |

## Community Lifelines

| Name | Address or Location | Type of Lifeline | Shelter (Y/N) | Generator (Y/N) | Medical Supplies (Y/N) | Food/ Water (Y/N) |
|---|---|---|---|---|---|---|
| Pisgah Fire Hall | 208 E Main St | Safety/Security | Y | N | Y | Y |
| Pisgah City Hall | 206 E Main St | Shelter | Y | N | N | N |
| Water Plant and Wells #1 and #2 | 208 Dewey St | Water System | N | N | N | N |
| City Park | Park St | Shelter | Y | N | N | Y |
| City Shop | 202 W Main St | Safety/Security | N | Y | N | N |

## Loss Estimates

Hazard: Tornado/Windstorm, Severe Winter Storm, Thunderstorm/Lightning/Hail/Freezing Rain, Drought, Extreme Heat, Flash Flooding, Terrorism, Transportation Incidents, Radiological, Human Disease, Infrastructure Failure

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 187 | 187 | 100% | $6,186,485 | $6,186,485 | 100% |
| Multi-Residential | 1 | 1 | 100% | $120,619 | $120,619 | 100% |
| Commercial | 71 | 71 | 100% | $964,825 | $964,825 | 100% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 41 | 41 | 100% | $354,340 | $354,340 | 100% |
| Total | 300 | 300 | 100% | $7,626,269 | $7,626,269 | 100% |

Hazard: River Flooding

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 187 | 146 | 78.1% | $6,186,485 | $4,823,220 | 78.0% |
| Multi-Residential | 1 | 1 | 100% | $120,619 | $120,619 | 100% |
| Commercial | 71 | 66 | 93.0% | $964,825 | $932,145 | 96.6% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 41 | 30 | 73.2% | $354,340 | $99,507 | 28.1% |
| Total | 300 | 243 | 81.0% | $7,626,269 | $5,975,491 | 78.4% |

Hazard: Grass/Wild Fire

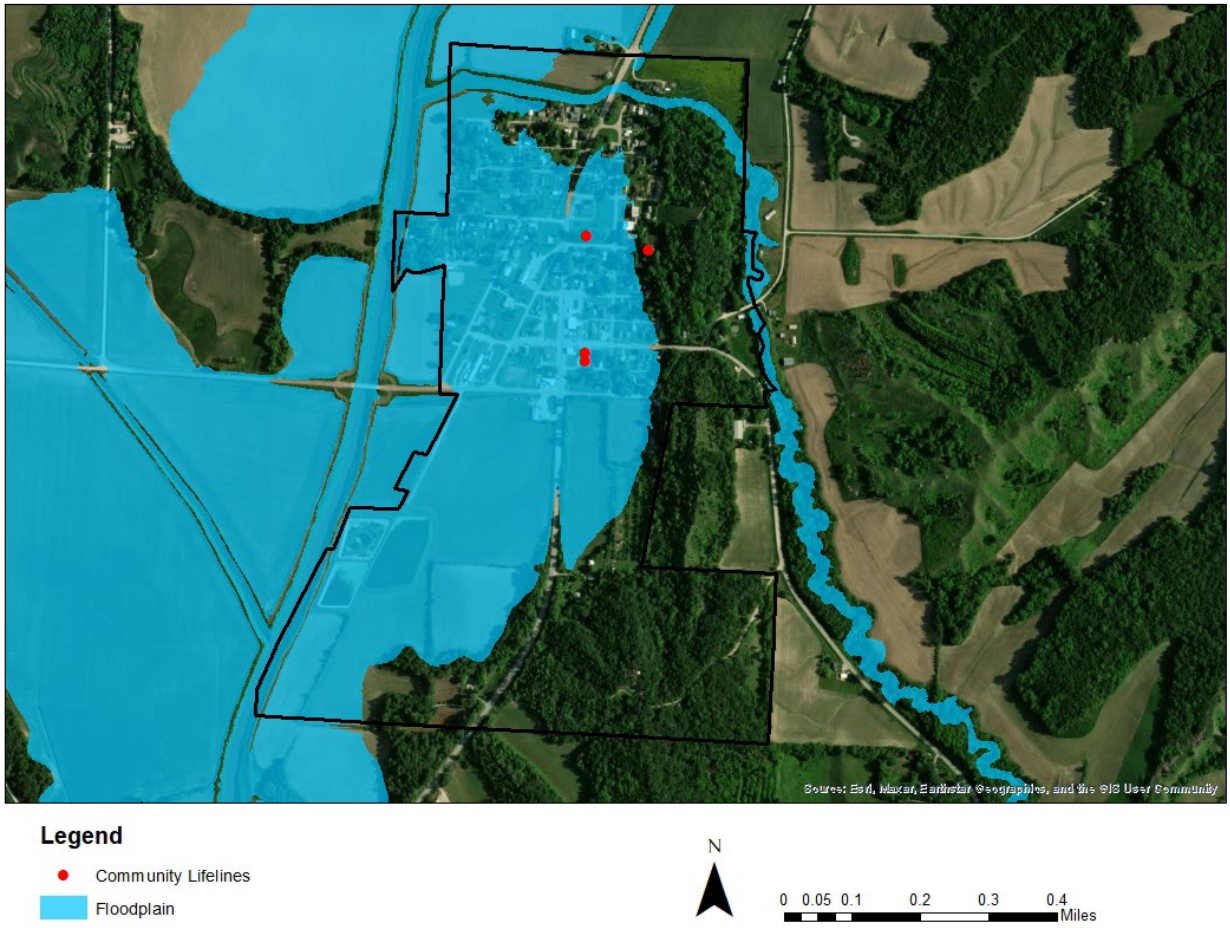
| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 187 | 77 | 41.2% | $6,186,485 | $2,663,228 | 43% |
| Multi-Residential | 1 | 0 | 0% | $120,619 | $0 | 0% |
| Commercial | 71 | 22 | 31% | $964,825 | $91,084 | 9.4% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 41 | 41 | 100% | $354,340 | $354,340 | 100% |
| Total | 300 | 140 | 46.7% | $7,626,269 | $3,108,652 | 40.8% |

Hazard: Hazardous Materials (Tier II Chemicals and Pipelines)

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 187 | 187 | 100% | $6,186,485 | $6,186,485 | 100% |
| Multi-Residential | 1 | 1 | 100% | $120,619 | $120,619 | 100% |
| Commercial | 71 | 71 | 100% | $964,825 | $964,825 | 100% |
| Industrial | 0 | 0 | 0% | $0 | $0 | 0% |
| Agricultural | 41 | 41 | 100% | $354,340 | $354,340 | 100% |
| Total | 300 | 300 | 100% | $7,626,269 | $7,626,269 | 100% |

Source: Harrison County Assessor (2020), FEMA, Iowa DNR, Iowa State University Extension and Outreach

## Flood Maps


Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Legend
Community Lifelines
Floodplain
N
0 0.05 0.1 0.2 0.3 0.4
Miles

## Status of Previous Mitigation Actions

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| Encourage construction of FEMA approved safe rooms in each community and school district and ensure existing shelters are Red Cross certified | | | | X | | | |
| The community will build, upgrade or maintain infrastructure that protects the lift station and water pumping station by retrofitting structures to withstand heavy winds and severe weather | | X | | | | | |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The community will develop a plan to phase purchases of replacement equipment | | | X | | | | |
| The community will purchase generators for the lift station and water pump houses to provide critical services to the community in the event of a power outage | X | X | | | | | |
| Build or maintain infrastructure that protects critical facilities | | | X | | | | |

## Action Plan

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Source(s) | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| Encourage construction of FEMA approved safe rooms in each community and school district and ensure existing shelters are Red Cross certified | Grass or Wild Land Fire, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm | High | City of Pisgah | High | BRIC, PDM | Funding | Mid-term |
| The community will build, upgrade or maintain infrastructure that protects the lift station and water pumping station by retrofitting structures to withstand heavy winds and severe weather | Grass or Wild Land Fire, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm | High | City of Pisgah | High | City of Pisgah water fund, CDBG, USDA, SRF, WTFAP, BRIC | Funding | Short-term |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The community will develop a plan to phase purchases of replacement equipment | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Pisgah, Pisgah Fire Department | High | City of Pisgah General Fund, Fire Department Operating Budget, LFPEMS, Assistance to Firefighters | Funding | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will purchase generators for the lift station and water pump houses to provide critical services to the community in the event of a power outage | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, Infrastructure Failure, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm | High | City of Pisgah | High | CDBG, USDA, BRIC, SRF | Funding | Short-term |
| Build or maintain infrastructure that protects critical facilities | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, Infrastructure Failure, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail, Tornado/ Windstorm | High | City of Pisgah | Moderate | City of Pisgah General Fund, BRIC, PDM | Funding | Ongoing |
| The community will distribute material with utility bills to send hazard awareness materials and potential mitigation steps to residents | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | City of Pisgah | Low | City of Pisgah General Fund | Funding, time | Ongoing |

## Adoption Resolution

# City of Woodbine

## Community Capabilities

| | Date/Time | Location |
|---|---|---|
| Council Meetings | 2nd Tuesday @ 6:30pm | 517 Walker St |

### Utilities and Services

| Service | Provider |
|---|---|
| Electricity | Woodbine Municipal Light and Power, REC |
| Gas | City of Woodbine |
| Water | Woodbine Municipal Light and Power |
| Phone Services | Windstream, Western IA Wireless |
| Law Enforcement | City of Woodbine Police |
| Fire Protection | City of Woodbine Volunteer Fire Department |
| Cable/Internet | Windstream, Longlines, Western IA Wireless |
| Newspaper | Harrison County Times |
| Warning System (sirens, text alerts, etc.) | Siren, Alert IA |
| HAZMAT Assistance | |
| Emergency Medical Services | City of Woodbine Volunteer EMS |
| Medical Clinic/Hospital | CHI Health |
| Tornado Shelter (FEMA approved) | |

### Utility Questions

| | |
|---|---|
| If operating a municipal water system, where is you water sourced from? (shallow well, aquifer, river, etc.) | Shallow Wells |
| Sewer or private septic? | Sewer, few septic |
| Do you have a water treatment facility? | No |
| Do you have a wastewater treatment facility? | Lagoons |
| Do you have any current DNR violations with your drinking water or wastewater? | Ammonia limits and chlorine limits in wastewater discharge |

### Plans/Ordinances

| | Yes/No | Year Approved | Comments |
|---|---|---|---|
| Comprehensive/land use Plan | Yes | 2016 | |

| | | | |
|---|---|---|---|
| Capital Improvement Plan | No | | |
| Local Emergency Plan (not the countywide hazard mitigation plan) | No | | |
| Flood Mitigation Assistance Plan | No | | |
| Zoning Ordinance | Yes | 2009 | Currently updating |
| **Most recent code of ordinances update** | | | |
| Restricted Residential District Ordinance | | | |
| Subdivisions Ordinance | Yes | 2009 | |
| Floodplain Ordinance | Yes | 2020 | |
| Building Permit Ordinance | Yes | 2009 | |
| Building Codes—if yes, what year/edition? | Yes | | 2015 IBC, IPMC, IRC |
| Tree Trimming Ordinance | Yes | 2015 | |
| Nuisance Ordinance | Yes | 2020 | |
| Storm Water Ordinance | Yes | 2020 | |
| Drainage Ordinance | | | |

**Boards/Staff/Departments**

| | Yes/No | Title | Comments |
|---|---|---|---|
| Building Code Official | No | | |
| Building Inspector | No | | |
| Public Works Official | Yes | Public Works Director | |
| NFIP Floodplain Administrator (if you participate in NFIP, you have a floodplain administrator) | Yes | City Administrator | |
| Zoning Commission | Yes | | 5 members |
| Board of Adjustments | Yes | | 5 members |
| Nuisance Abatement Official | Yes | City Administrator, Chief of Police | |

**What projects, plans or changes, if any, has your jurisdiction completed in the last five years?**
Annexed and added Harvest Hills Phase 1 and 2 subdivisions. Updated pumphouses, built

new water tower and removed 2 old towers. CREW wellness center.

**Does your jurisdiction have any available resources to expand your capabilities to address hazard mitigation? Resources could include additional staff or staff time, available funding, knowledge or expertise held by city officials, or community/cultural resources.**
No, we would have to use current staff.

## Hazards of Top Concern

The City of Woodbine identified hazardous materials incidents, tornadoes/windstorms, and severe winter storms as top concerns for the city.

| Hazard #1: Hazardous Materials Incidents |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| None |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| The railroad runs through both of our main entrances into town. Several trains run through city limits daily and at all hours of the day, regularly carrying hazardous materials. An incident could close both accesses to HWY 30 and delay emergency access for fire and EMS. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| No |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| |

| Hazard #2: Tornadoes/Windstorms |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| Derecho December 2021 |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |
| A tornado could destroy property, critical facilities, down trees, disrupt electrical services, and take months/years to recover from. Day-to-day operations could be interrupted or stopped. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Generator installed at city hall so it could be a command center for a disaster if not taken out by tornado. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Like to install generators at other critical facilities such as fire department and facilities that could be used for shelter after the storm such as school, CREW Center, Ignite Center, and Library. |

| Hazard #3: Severe Winter Storms |
|---|
| **Describe past events which have impacted your community including the date of the event, what kind of damages, and any repairs that were needed.** |
| |
| **Why do you consider this hazard as a top concern for your jurisdiction? What specific vulnerabilities does your jurisdiction have to this hazard?** |

| |
|---|
| Heavy snow and ice can cause delays in getting streets open for emergency services. Some areas can take 2-3 days to clear. |
| **Have you completed any projects to reduce the effect to this hazard?** |
| Purchased new snow removal equipment to aid in clearing snow and ice. Hired an additional employee to operate equipment. |
| **What projects would the jurisdiction like to complete to mitigate risks to this hazard?** |
| Continue to update and purchase equipment to help in quicker removal of snow and ice. |

## Community Lifelines

| Name | Address or Location | Type of Lifeline | Shelter (Y/N) | Generator (Y/N) | Medical Supplies (Y/N) | Food/ Water (Y/N) |
|---|---|---|---|---|---|---|
| City Hall | 517 Walker St | Safety/Security | N | Y | N | N |
| Fire Station | 68 Bus Brown Dr | Safety/Security | N | N | Y | N |
| Police Station | 6 W 7th St | Safety/Security | N | N | N | N |
| Water Tower | Ridgeline Rd | Water System | N | N | N | N |
| Pump Houses (4) | North of Bus Brown Dr | Water System | N | N | N | N |
| Lagoons | Rawlins Ave | Water System | N | N | N | N |
| Lift Station 1 | Rawlins Ave | Water System | N | N | N | N |
| Lift Station 2 | Brookview | Water System | N | N | N | N |
| Substation | | Energy | N | N | N | N |
| Merry Brook Museum and Office | 210 Lincolnway | Safety/Security | N | N | N | N |
| Shop | Enterprise Dr | Safety/Security | N | N | N | N |
| Main Street Station | 313 Walker St | Safety/Security | N | N | N | N |
| Food Pantry | 76 5th St | Food | N | N | N | Y |
| Library | 58 5th St | Safety/Security | N | N | N | N |
| Woodbine CSD | 501 Weare | Safety/Security | N | N | N | N |
| CHI Health Clinic | 518 Lincolnway | Safety/Security | N | N | Y | N |
| CREW | 601 Snyder Rd | Safety/Security | N | N | N | N |
| Ignite | 6 W 7th St | Safety/Security | N | N | N | N |

## Loss Estimates

Hazard: Tornado/Windstorm, Severe Winter Storm, Thunderstorm/Lightning/Hail/Freezing Rain, Drought, Extreme Heat, Flash Flooding, Terrorism, Transportation Incidents, Radiological, Human Disease, Infrastructure Failure

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 683 | 683 | 100% | $54,115,911 | $54,115,911 | 100% |
| Multi-Residential | 15 | 15 | 100% | $5,617,179 | $5,617,179 | 100% |
| Commercial | 185 | 185 | 100% | $15,302,798 | $15,302,798 | 100% |
| Industrial | 5 | 5 | 100% | $3,174,073 | $3,174,073 | 100% |
| Agricultural | 37 | 37 | 100% | $35,156 | $35,156 | 100% |
| Total | 925 | 925 | 100% | $78,245,117 | $78,245,117 | 100% |

Hazard: River Flooding

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 683 | 11 | 1.6% | $54,115,911 | $231,355 | 0.4% |
| Multi-Residential | 15 | 0 | 0% | $5,617,179 | $0 | 0% |
| Commercial | 185 | 29 | 15.7% | $15,302,798 | $1,080,021 | 7.1% |
| Industrial | 5 | 1 | 20.0% | $3,174,073 | $2,224,231 | 70.1% |
| Agricultural | 37 | 23 | 62.2% | $35,156 | $17,321 | 49.3% |
| Total | 925 | 64 | 6.9% | $78,245,117 | $3,552,928 | 4.5% |

Hazard: Grass/Wild Fire

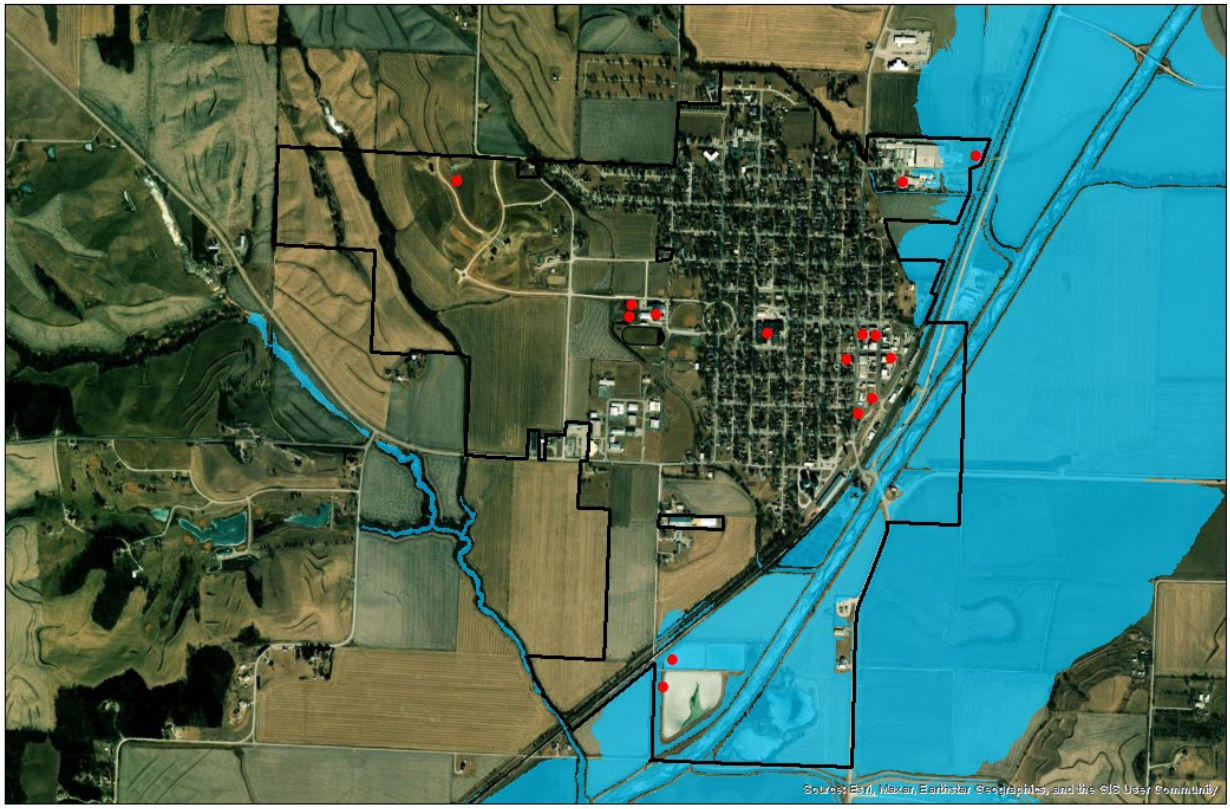
| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 683 | 143 | 21% | $54,115,911 | $13,159,628 | 24.3% |
| Multi-Residential | 15 | 1 | 6.7% | $5,617,179 | $151,805 | 2.7% |
| Commercial | 185 | 54 | 29.2% | $15,302,798 | $3,517,007 | 23% |
| Industrial | 5 | 2 | 40% | $3,174,073 | $2,411,922 | 76% |
| Agricultural | 37 | 37 | 100% | $35,156 | $35,156 | 100% |
| Total | 925 | 237 | 25.6% | $78,245,117 | $19,275,518 | 24.6% |

Hazard: Hazardous Materials (Tier II Chemicals and Pipelines)

| | Number of Structures | | | Value of Structures | | |
|---|---|---|---|---|---|---|
| Type of Structures | # in Community | # in Hazard Area | % in Hazard Area | $ Value in Community | $ Value in Hazard Area | % in Hazard Area |
| Residential | 683 | 683 | 100% | $54,115,911 | $54,115,911 | 100% |
| Multi-Residential | 15 | 15 | 100% | $5,617,179 | $5,617,179 | 100% |
| Commercial | 185 | 185 | 100% | $15,302,798 | $15,302,798 | 100% |
| Industrial | 5 | 5 | 100% | $3,174,073 | $3,174,073 | 100% |
| Agricultural | 37 | 37 | 100% | $35,156 | $35,156 | 100% |
| Total | 925 | 925 | 100% | $78,245,117 | $78,245,117 | 100% |

Source: Harrison County Assessor (2020), FEMA, Iowa DNR, Iowa State University Extension and Outreach

# Flood Maps


Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Legend
Community Lifelines
Floodplain
N
0 0.1 0.2 0.4 0.6 0.8
Miles

## Status of Previous Mitigation Actions

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| **Objective #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| The community will remove one dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community | | | X | | | | |
| The community will maintain and enforce building codes to ensure new construction and development will not create new risk to the community | | | X | | | | |
| **Objective #2:** Communities will mitigate or remove risk of tornado, windstorms, and thunderstorms/lightning damage by ten percent in the next ten years | | | | | | | |
| The community will establish or maintain standards and methods that protect power lines and infrastructure from potential risks by removing hazardous trees, trimming limbs and burying power lines | | | X | | | | |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure | | | X | | | | |
| The community will build, upgrade or maintain infrastructure that protects the school by retrofitting structures to withstand heavy winds and severe weather | | | | | X | X | |
| **Objective #3:** Communities will mitigate the effects of severe winter weather damage by completing two programs in the next five years | | | | | | | |
| The community will create and implement a plan to maintain road clearing capabilities and repair roads following adverse weather conditions | | | X | | | | |
| The community will assist residents in obtaining funding for homes through the CDBG rehabilitation grant that need house repairs and winterization | | | | | X | X | |
| The community will expand awareness on energy efficient building materials and techniques that adequately protect people from adverse weather conditions | | | | | X | X | |
| **Objective #5:** Communities will reduce flood risk to residents and businesses of Harrison County by completion of two programs in the next five years | | | | | | | |
| The community will maintain compliance with the National Flood Insurance Program (NFIP) | | | X | | | | |
| The community will maintain and enforce codes and ordinances that protects future development from flooding and restricts encroachment of the built environment in the floodplain | | | X | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will keep the Boyer River, ditch along 1st Street and ditch along Bus Brown Drive clear of debris and blockages to ensure they flow properly | | | X | | | | |
| **Objective #6:** Communities of Harrison County will be able to provide an additional level of early warning system or education to residents in the next five years. | | | | | | | |
| The community will make weather alert radios available to citizens by identifying and obtaining funding to subsidize the purchase of radios for 700 residents | | | | | X | | X |
| The community will upgrade early warning siren systems to enhance the warning for residents in the event of a severe or hazardous incident | X | | | | | | |
| **Objective #7:** Communities will be able to provide an additional level of safety to vulnerable populations in 5 years. | | | | | | | |
| The community will provide outreach and assistance to residents of nursing homes and assisted living homes to obtain early warning radios | | | | | X | | X |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| **Objective #1:** Communities will implement two new programs that ensure their emergency response teams and departments are adequately equipped to respond to any emergency situation in three years. | | | | | | | |
| The community will develop a plan to phase purchases of replacement equipment | | | X | | | | |
| The community will investigate resources and funding to obtain medical equipment for an ambulance | | | X | | | | |
| The fire department will identify, maintain and train 25 volunteers that are able to provide assistance or respond in the event of a disaster or emergency | | | X | | | | |
| **Objective #3:** Communities will ensure facilities/infrastructure that are critical to the community and supply essential services are operational during a hazard event by implementing one project in five years. | | | | | | | |
| The community will maintain, improve and continually test early warning systems (sirens, etc.) | | | X | | | | |
| **Objective #4:** Communities will ensure communications between governments, organizations, citizens and emergency response personnel are adequately prepared for all disaster situations by implementing or maintaining all actions within five years | | | | | | | |
| The community will maintain mutual aid agreements (28E or other) between all local jurisdictions | | | X | | | | |
| The community will promote fire drills and police response drills between emergency response departments | | | X | | | | |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| **Objective #1:** Communities will implement three new programs in public schools that encourage safe hazard preparedness and response practices in five years. | | | | | | | |
| The community will support Severe Weather Awareness Week by making announcements that teach severe weather hazards and proper safety techniques | | | X | | | | |
| The community will utilize the fire department to teach hazard safety to youth | | | X | | | | |
| The community will conduct fire drills and tornado drills in schools and public facilities to promote hazard response and teach proper safety techniques | | | X | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will create an additional educational programs in schools that teach youth hazard safety preparedness and response through fire safety classes and winter weather awareness | | | X | | | | |
| **Objective #2:** Communities will identify and implement one new program that expands public awareness of resources that help teach public safety and/or provide early warning of severe weather events in five years | | | | | | | |
| The community will utilize utility bills, the TV access channel and newspapers to send hazard awareness materials and information to residents | | | X | | | | |
| The community will train public employees/staff to increase capacity to provide hazard awareness materials and information on fire safety and winter weather | | | X | | | | |
| The community will create an emailing/mailing list to send materials and information to residents relating to hazard risks | | | X | | | | |
| **Objective #3:** Communities will implement a program that educates the residents on available resources that help protect them from tornado, windstorms or other severe weather incidents. | | | | | | | |
| The community will expand awareness of community critical facilities available to the public in the event of a hazard through information included in utility bills, on social media and internet and in the newspapers | | | X | | | | |
| The community will expand awareness of evacuation routes and procedures | | | X | | | | |

## Action Plan

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Source(s) | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| The community will remove one dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community | Infrastructure Failure, Severe Winter Storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm | Low | City of Woodbine, Building Inspector, City Administrator | Low | City General Fund, SWIHTF, LMI Funds | Time, Personnel, Enforcement, Cost | Ongoing |
| The community will maintain and enforce building codes to ensure new construction and development will not create new risk to the community | Flash Flood, Infrastructure Failure, River Flooding, Severe Winter Storm, Thunderstorm/Lightning/Hail/Tornado/Windstorm | Moderate | City of Woodbine, Building Inspector, City Administrator | Low | City General Fund | Time, Personnel, Enforcement, Cost | Ongoing |
| The community will establish or maintain standards and methods that protect power lines and infrastructure from potential risks by removing hazardous trees, trimming limbs and burying power lines | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Infrastructure Failure, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail/Tornado/ Windstorm | High | City of Woodbine, Harrison County EMA, Fire Department, Public Works, Utilities | Moderate | City General Fund | Time, Personnel, Equipment | Ongoing |
| The community will maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Infrastructure Failure, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail/Tornado/Windstorm | High | City of Woodbine, Fire Department, Public Works, Utilities | Moderate | City General Fund, BRIC | Time, Personnel, Equipment, Funding | Ongoing |
| The community will build, upgrade or maintain infrastructure that protects the school by retrofitting | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Infrastructure Failure, Grass | High | City of Woodbine, Woodbine | Low | City of Woodbine General | Time, Personnel, Resources, Equipment | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| structures to withstand heavy winds and severe weather | or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail/Tornado/Windstorm | | CSD, Fire Department, Harrison County EMA | | Fund, BRIC, PDM | | |
| The community will create and implement a plan to maintain road clearing capabilities and repair roads following adverse weather conditions | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail/Tornado/Windstorm | High | City of Woodbine, Public Works, Fire Department | Moderate | City of Woodbine General Fund, RPA-13 | Time, Personnel, Resources, Equipment, Funding | Ongoing |
| The community will assist residents in obtaining funding for homes for house repairs and winterization | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Infrastructure Failure, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/ Lightning/Hail/Tornado/Windstorm | Medium | City of Woodbine, Building Inspector, City Administrator | Low | CDBG, SWIHTF | Time, Personnel | Ongoing |
| The community will expand awareness on energy efficient building materials and techniques that adequately protect people from adverse weather conditions | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass or Wild Land Fire, Infrastructure Failure, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/ Hail/Tornado/Windstorm | Low | City of Woodbine, Harrison County EMA | Low | City of Woodbine General Fund | Time, Personnel, Resources | Ongoing |
| The community will maintain compliance with the National Flood Insurance Program (NFIP) | Flash Flood, River Flooding, Dam/Levee Failure | Medium | City of Woodbine | Minimal | City of Woodbine General Fund | Time, Personnel | Ongoing |
| The community will maintain and enforce codes and ordinances that protects future development from flooding and restricts encroachment of the built environment in the floodplain | Flash Flood, River Flooding, Dam/Levee Failure, Infrastructure Failure | Medium | City of Woodbine, Building Inspector | Low | City of Woodbine General Fund | Time, Personnel | Ongoing |
| The community will keep the Boyer River, ditch along 1st Street and ditch along Bus Brown Drive clear | Flash Flood, River Flooding, Dam/Levee Failure, Infrastructure Failure | High | City of Woodbine, Public Works, | Low | City of Woodbine General Fund | Time, Personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| of debris and blockages to ensure they flow properly | | | Fire Department | | | | |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The community will develop a plan to phase purchases of replacement equipment | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Woodbine | High | City of Woodbine General Fund, BRIC, PDM, AFG, LFPEMS | Funding | Ongoing |
| The community will investigate resources and funding to obtain medical equipment for an ambulance | Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Woodbine | High | City of Woodbine General Fund, AFG, LFPEMS | Funding | Ongoing |
| The fire department will identify, maintain and train 25 volunteers that are able to provide assistance or respond in the event of a disaster or emergency | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials | Medium | City of Woodbine, Fire Department | Low | City of Woodbine General Fund, AFG, LFPEMS, SAFER | Funding | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| The community will maintain, improve and continually test early warning systems (sirens, etc.) | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail/Tornado/Windstorm | Medium | City of Woodbine, Harrison County EMA | Moderate | City of Woodbine General Fund, BRIC, PDM | Personnel, Time, Funding | Ongoing |
| The community will maintain mutual aid agreements (28E or other) between all local jurisdictions | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Woodbine, Harrison County EMA, Harrison County | Minimal | City of Woodbine General Fund | Personnel, Time | Ongoing |
| The community will promote fire drills and police response drills between emergency response departments | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail/Tornado/Windstorm | Medium | City of Woodbine, Fire Department, Police, Harrison County EMA | Minimal | City of Woodbine General Fund | Time, Personnel | Ongoing |

| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will support Severe Weather Awareness Week by making announcements that teach severe weather hazards and proper safety techniques | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail/Tornado/Windstorm | Medium | City of Woodbine, Woodbine CSD, Harrison County EMA | Minimal | City of Woodbine General Fund | Time, Personnel | Ongoing |
| The community will utilize the fire department to teach hazard safety to youth | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Terrorism, Thunderstorms/Lightning/Hail/Tornado/Windstorm | Medium | City of Woodbine, Fire Department | Minimal | City of Woodbine General Fund | Time, Personnel | Ongoing |
| The community will conduct fire drills and tornado drills in schools and public facilities to promote hazard response and teach proper safety techniques | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail/Tornado/Windstorm | Medium | City of Woodbine, Fire Department, Harrison County EMA | Minimal | City of Woodbine General Fund | Time, Personnel | Ongoing |
| The community will create an additional educational programs in schools that teach youth hazard safety preparedness, response procedures, and mitigation efforts | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Woodbine, Fire Department, Harrison County EMA, Woodbine CSD | Low | City of Woodbine General Fund | Time, Personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will utilize utility bills, the TV access channel and newspapers to send hazard awareness materials and information to residents | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Woodbine | Moderate | City of Woodbine General Fund | Time, Personnel, Funding | Ongoing |
| The community will train public employees/staff to increase capacity to provide hazard awareness materials and information on fire safety and winter weather | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Woodbine, Harrison County EMA | Moderate | City of Woodbine General Fund | Time, Personnel, Funding | Ongoing |
| The community will create an emailing/mailing list to send materials and information to residents relating to hazard risks and mitigation efforts | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, | Medium | City of Woodbine | Low | City of Woodbine General Fund | Time, Personnel, Funding | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | | | | | | |
| The community will expand awareness of community critical facilities available to the public in the event of a hazard through information included in utility bills, on social media and internet and in the newspapers | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Woodbine, Harrison County EMA | Low | City of Woodbine General Fund | Time, Personnel, Funding | Ongoing |
| The community will expand awareness of evacuation routes and response procedures | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | City of Woodbine, Harrison County EMA | Low | City of Woodbine General Fund | Time, Personnel, Funding | Ongoing |

## Adoption Resolution

# Boyer Valley CSD

## Community Capabilities

| | Date/Time | Location |
|---|---|---|
| School Board Meeting | Varies | Boyer Valley HS |

**Services**

| Service | Yes | No | Comments |
|---|---|---|---|
| Tornado Shelter | Y | | |
| Fire Escape Route | Y | | |
| Routine Fire/Tornado Drills | Y | | Yes, quarterly. |
| Active Shooter Plan | Y | | |
| Security Cameras | Y | | New in 2024 |
| Single Entrance | N | | |
| Intercom System | Y | | New in 2024 |
| Alarm System | Y | | New in 2023 |

**Staff**

| | Yes | No | Comments |
|---|---|---|---|
| School Nurse | x | | |
| School Resource Officer | x | | New agreement in 2025. |
| School Counselor | x | | |

## Status of Previous Mitigation Actions

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| The school district will remove dilapidated, abandoned, or dangerous structures that pose or enhance a threat to school property | | | | | | | X |
| The community will expand on energy efficient building materials and techniques that adequately protect people from adverse weather conditions | | | X | | | | |
| The school district will ensure the community maintains compliance with the National Flood insurance Program (NFIP) | | | | | | | X |
| The school district will expand awareness of incentives and disincentives on property insurance that promote smart development and reduce hazard risk | | | | | | | X |
| The school district will ensure existing carbon monoxide monitors and alarms are working and install new monitors where needed | | | X | | | | |
| The school district will upgrade early warning siren systems to provide an additional level of early warning | | | X | | | | |
| The school district will train staff to be able to provide information relating to severe weather | | | | | | | X |
| The school district will participate in the county-wide Everbridge mass notification early warning system | | | | | | | X |
| The school district will participate in the statewide (Alert IA System) mass notification system | | | | | | | X |
| The school district will provide outreach and assistance to vulnerable populations to implement hazard mitigation projects and programs | | | | | | | X |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The school district will develop or maintain an inventory of equipment available to staff and emergency responders to ensure resources can be easily and quickly identified in the event of a disaster | | | X | | | | |
| The school district will develop a plan to phase purchases of replacement equipment | | | X | | | | |
| The school district will investigate resources and funding to obtain the proper and necessary equipment for staff and emergency response personnel | | | X | | | | |
| The school district will partner with or maintain partnership with the American Red Cross and the City | | | X | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| and County emergency responders to provide or share emergency response resources and/or equipment | | | | | | | |
| Objective #2: The school district will implement two new programs to ensure emergency response teams and departments are adequately staffed and prepared in three years to handle any emergency situations. | | | | | | | |
| The school district will create and maintain policies that designate secondary personnel to handle disaster response and recovery | | | | | | | X |
| Objective #3: The school district will ensure facilities/infrastructure that are critical to the community and supply essential services are operational during a hazard event by implementing one project in five years. | | | | | | | |
| The school district will maintain, improve, and continually test early warning systems (sirens, etc.) | | | X | | | | |
| Objective #4: The school district will ensure communications between governments, organizations, citizens and emergency response personnel are adequately prepared for all disaster situations by implementing or maintaining all actions within five years. | | | | | | | |
| The school district will establish or maintain mutual aid agreements (28E or other) between all local jurisdictions | | | X | | | | |
| The school district will update and maintain a list of contracts that respond to all emergencies | | | X | | | | |
| The school district will promote training between emergency response departments | | | | | | | X |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| The school district will support Severe Weather Awareness Week by creating flyers and making announcements that teach severe weather hazards and proper safety techniques | | | X | | | | |
| The school district will utilize the fire department and sheriff department to teach hazard safety to youth | | | X | | | | |
| The school district will conduct fire drills, tornado drills, and AICI training in schools to promote hazard response and teach proper safety techniques | | | X | | | | |
| The school district will create fire safety and storm and winter weather educational programs in schools that teach youth hazard safety preparedness and response | | | X | | | | |
| The school district will identify or produce new materials and/or resources to teach youth about hazard risk and proper safety techniques | | | X | | | | |
| The school district will utilize media outlets and other resources to send hazard awareness materials and information to residents | | | X | | | | |
| The school district will train public employees/staff to increase capacity to provide hazard awareness materials and information | | | X | | | | |
| The school system will promote and educate county text/phone notification systems available (Everbridge, Alert IA System) through email, text, phone, and its website | | | X | | | | |

## Action Plan

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Source(s) | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| The community will expand on energy efficient building materials and techniques that adequately protect people from adverse weather conditions | Flash Flooding, Infrastructure Failure, River Flooding, Thunderstorm/Lightning/Hail/ Tornado/Windstorm/Severe Winter Storm | High | Boyer Valley CSD | High | Boyer Valley CSD Operating Budget, BRIC, PDM | Funding | Ongoing |
| The school district will ensure existing carbon monoxide monitors and alarms are working and install new monitors where needed | Extreme Heat, Grass or Wild Land Fire, Hazardous Materials Incident | Low | Boyer Valley CSD | None | Boyer Valley CSD Operating Budget | None | Ongoing |
| The school district will upgrade early warning systems to provide an additional level of early warning | Grass or Wild Land Fire, Severe Winter Storm, Terrorism, Thunderstorms/Lightning/Hail/ Tornado/Windstorm | Medium | Boyer Valley CSD | None | Boyer Valley CSD Operating Budget | None | Ongoing |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The school district will develop or maintain an inventory of equipment available to staff and emergency responders to ensure resources can be easily and quickly identified in the event of a disaster | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail/ Tornado/Windstorm | High | Boyer Valley CSD | Low | Boyer Valley CSD Operating Budget | Time | Short-Term/ Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The school district will develop a plan to phase purchases of replacement equipment | | High | Boyer Valley CSD | Low | Boyer Valley CSD Operating Budget | Time | Short-Term/ Ongoing |
| The school district will investigate resources and funding to obtain the proper and necessary equipment for staff and emergency response personnel | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail/ Tornado/Windstorm | High | Boyer Valley CSD | Low | Boyer Valley CSD Operating Budget | Time | Short-Term/ Ongoing |
| The school district will partner with or maintain partnership with the American Red Cross and the City and County emergency responders to provide or share emergency response resources and/or equipment | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail/ Tornado/Windstorm | Med | Boyer Valley CSD | None | Boyer Valley CSD Operating Budget | None | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The school district will establish or maintain mutual aid agreements (28E or other) between all local jurisdictions | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail/ Tornado/Windstorm | High | Boyer Valley CSD | None | Boyer Valley CSD Operating Budget | None | Ongoing |
| The school district will update and maintain a list of contracts that respond to all emergencies | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | Boyer Valley CSD | None | Boyer Valley CSD Operating Budget | Time | Ongoing |

| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
|---|---|---|---|---|---|---|---|
| The school district will support Severe Weather Awareness Week by creating flyers and making announcements that teach severe weather hazards and proper safety techniques | Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm | Medium | Boyer Valley CSD | Low | Boyer Valley CSD Operating Budget | Time | Ongoing |
| The school district will utilize the fire department and sheriff department to teach hazard safety to youth | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | Boyer Valley CSD | Low | Boyer Valley CSD Operating Budget | None | Ongoing |
| The school district will conduct fire drills, tornado drills, and AICI training in schools to promote hazard response and teach proper safety techniques | Grass or Wild Land Fire, Terrorism, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm | High | Boyer Valley CSD | Low | Boyer Valley CSD Operating Budget | None | Ongoing |
| The school district will create fire safety and storm and winter weather educational programs in schools that teach youth hazard safety preparedness and response | Grass or Wild Land Fire, Terrorism, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm | High | Boyer Valley CSD | Low | Boyer Valley CSD Operating Budget | None | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The school district will identify or produce new materials and/or resources to teach youth about hazard risk and proper safety techniques | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Medium | Boyer Valley CSD, Harrison County EMA | Low | Boyer Valley CSD Operating Budget | Time, personnel | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The school district will utilize media outlets and other resources to send hazard awareness materials, safety measures, and potential risk mitigation projects | Animal/Plant/Crop Disease, Dam/Levee Failure, Drought, Earthquake, Extreme Heat, Flash Flood, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | Low | Boyer Valley CSD, Harrison County EMA | Low | Boyer Valley CSD Operating Budget | Time, personnel | Ongoing |
| The school district will train employees/staff to increase capacity to provide hazard awareness materials and information | Earthquake, Grass/Wildland Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological Incident, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/Windstorm, Transportation Incident | High | Boyer Valley CSD, Harrison County EMA | Low | Boyer Valley CSD Operating Budget | Time, personnel | Ongoing |
| The school system will promote and educate county text/phone notification systems available (Alert IA System) through email, text, phone, and its website | Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm | High | Boyer Valley CSD, Harrison County EMA | Low | None | Time, personnel | Ongoing |

## Adoption Resolution

# Logan-Magnolia CSD

## Community Capabilities

| | Date/Time | Location |
|---|---|---|
| School Board Meeting | | Logan-Magnolia CSD |

### Services

| Service | Yes | No | Comments |
|---|---|---|---|
| Tornado Shelter | X | | |
| Fire Escape Route | X | | |
| Routine Fire/Tornado Drills | X | | |
| Active Shooter Plan | X | | |
| Security Cameras | X | | |
| Single Entrance | X | | |
| Intercom System | X | | |
| Alarm System | | X | |

**Any additional safety measures?**

- School safety team that meets twice a month
- Training of staff and students on regular basis including drills for active intruder, evacuation and other responses
- E3 (Emergent 3) app for safety responses and communications
- Back up generator

### Plans

**Are there any emergency preparedness-related plans that your school district has in place?**
EOP that addresses responses for every safety concern. We utilize the resources provided through a partnership with I Love U Guys Foundation.

### Staff

| | Yes | No | Comments |
|---|---|---|---|
| School Nurse | X | | |
| School Resource Officer | | X | |
| School Counselor | X | | |

**Any additional staff with special training?**

_____

_____

**What projects, plans or changes, if any, has your district completed in the last five years?**

- Built a tornado shelter that can fit entire student population
- Update district EOP on yearly basis after comprehensive review by school safety team.

**Does your district have any available resources to expand your capabilities to address hazard mitigation? Resources could include additional staff or staff time, available funding, knowledge or expertise held by school officials, or community/cultural resources.**

- Employ an AEA employee who has an extensive knowledge in school safety
- District is located in the same town as two sheriff's offices and they are very supportive
- VFD including members on our staff

## Status of Previous Mitigation Actions

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| The school district will build, upgrade, or maintain infrastructure that protects schools' buildings by retrofitting structures to withstand heavy winds and severe weather | X | | | | | | |
| The school district will construct a Red Cross certified and FEMA approved safe room/s at the Logan-Magnolia school building | X | | | | | | |
| The school district will create and implement a plan to maintain road clearing capabilities and repair roads at its school buildings following adverse weather conditions | | | | | | X | |
| The school district will investigate funding for repairs and winterization of school buildings | | | | | | | X |
| The school district will expand awareness on energy efficient building materials and techniques that adequately protect people from adverse weather conditions | | | | | | X | |
| The school district will construct a new levee, dike or berm that protects the facility from flood damage | | | | | | X | |
| The school district will upgrade drainage and storm sewer systems (pipes, culverts and channels) on school property to meet proper capacity requirements for systems to adequately and safely remove excess water | X | | | | | | |
| The school district will make weather alert radios available in its buildings by identifying and obtaining funding to subsidize the purchase of radios | | | | | X | | |

## Action Plan

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Source(s) | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster. | | | | | | | |
| The school district will create and implement a plan to maintain road clearing capabilities and repair roads at its school buildings following adverse weather conditions | Thunderstorm/Lightning/Hail, Severe Winter Storms, Tornado/Windstorms | Low | LOMA CSD Transportation Director | Low | LOMA CSD Operating Budget | Equipment, time | Short term |
| The school district will investigate funding for repairs and winterization of school buildings | Severe Winter storms | High | LOMA CSD Superintendent | Low | LOMA CSD Operating Budget | Time, resources, funding opportunities | Short term |
| The school district will expand awareness on energy efficient building materials and techniques that adequately protect people from adverse weather conditions | Thunderstorm/Lightning/Hail, Severe Winter Storms, Tornado/Windstorms | Low | Facilities Director | Low | LOMA CSD Operating Budget | Trainings/ workshops | Short term |
| The school district will construct a new levee, dike or berm that protects the facility from flood damage | Flash Floods, River Flooding | Low | Grounds Director | High | LOMA CSD Operating Budget, BRIC, FMA | Legislation, land owners, funding | Long term |
| The school district will upgrade drainage and storm sewer systems (pipes, culverts and channels) on school property to meet proper capacity requirements for systems to adequately and safely remove excess water | Flash Floods, River Flooding | Low | Grounds Director | High | LOMA CSD Operating Budget, BRIC, FMA, CDBG | Funding | Long term |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The school district will make weather alert radios available in its buildings by identifying and obtaining funding to subsidize the purchase of radios | Thunderstorm/Lightning/Hail, Severe Winter Storms, Tornado/Windstorms | Medium | LOMA CSD Safety Team | Low | LOMA CSD Operating Budget | Funding | Short term |
| **GOAL #3 -** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| Support Severe Weather Awareness Week by creating or continuing activities that teach severe weather hazards and proper safety techniques | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/ Hail, Tornado/ Windstorm, Transportation Incident | High | LOMA CSD Safety Team | Low | LOMA Valley CSD Operating Budget | NA | Ongoing |
| Identify and invite outside organizations that can teach hazard safety to youth | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/ Hail, Tornado/ Windstorm, Transportation Incident | Medium | LOMA CSD Safety Team | Low | LOMA CSD Operating Budget | NA | Ongoing |

## Adoption Resolution

# Missouri Valley CSD

## Community Capabilities

| | Date/Time | Location |
|---|---|---|
| School Board Meeting | 2nd Monday @ 6pm | MVCSD Media Center 607 E Lincoln HWY, Missouri Valley |

### Services

| Service | Yes | No | Comments |
|---|---|---|---|
| Tornado Shelter | | | |
| Fire Escape Route | X | | |
| Routine Fire/Tornado Drills | X | | |
| Active Shooter Plan | X | | |
| Security Cameras | X | | |
| Single Entrance | X | | |
| Intercom System | X | | |
| Alarm System | X | | |

**Any additional safety measures?**

_____

_____

_____

### Plans

**Are there any emergency preparedness-related plans that your school district has in place?**
We utilize the I Love You Guys resources and guidelines for emergency preparedness. We have plans for hazards in building and district emergency operations plans.

### Staff

| | Yes | No | Comments |
|---|---|---|---|
| School Nurse | X | | |
| School Resource Officer | | X | |
| School Counselor | X | | |

**Any additional staff with special training?**
School based interventionist, director of student services, school psychologist (2)

## Status of Previous Mitigation Actions

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety, and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster | | | | | | | |
| Remove dilapidated, abandoned or dangerous structures that pose or enhance a threat to people | | | X | | | | |
| Adopt / maintain and enforce building codes to ensure new construction and development will not create new risk to the county | | | | X | | | |
| Provide assistance in installing and training of proper usage of fire extinguishers | | | X | | | | |
| Establish or maintain standards and methods that protect power lines and infrastructure from potential risks | | | X | | | | |
| Adopt / maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure | | | X | | | | |
| Build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand heavy winds and severe weather | | | | X | | | |
| Construct a Red Cross certified and FEMA approved safe room/s in a public facility | | | | X | | | |
| Ensure access to safe rooms for students and staff in the event of a hazard incident | | | | X | | | |
| Expand awareness on energy efficient building materials and techniques that adequately protect people from adverse weather conditions | | | | | | | X |
| **GOAL #2 -** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| Maintain and update evacuation plans | | | X | | | | |
| **GOAL #3 -** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| Support Severe Weather Awareness Week by creating or continuing activities that teach severe weather hazards and proper safety techniques | | | X | | | | |
| Identify and invite outside organizations that can teach hazard safety to youth | | | X | | | | |
| Conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques | | | X | | | | |
| Support Severe Weather Awareness Week by creating or continuing activities that teach severe weather hazards and proper safety techniques | | | X | | | | |

## Action Plan

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Source(s) | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety, and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster | | | | | | | |
| Provide assistance in installing and training of proper usage of fire extinguishers | Grass or Wild Land Fire | High | Missouri Valley CSD | Low | Missouri Valley CSD General Budget | Time | Ongoing |
| Construct a Red Cross certified and FEMA approved safe room/s in a public facility | Thunderstorm/ Lightning/Hail, Tornado/ Windstorm | Medium | Missouri Valley CSD | High | Missouri Valley CSD General Budget, Bonding, BRIC, HMGP, PDM | Funding | Long term |
| Ensure access to safe rooms for students and staff in the event of a hazard incident | Terrorism, Thunderstorm/ Lightning/Hail, Tornado/ Windstorm | High | Missouri Valley CSD | Low | Missouri Valley CSD General Budget, Bonding, BRIC, HMGP, PDM | None | Ongoing |
| **GOAL #2 -** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| Maintain and update evacuation plans | Grass or Wild Land Fire, Severe Winter Storm, Thunderstorms/Lightning/Hail, Terrorism, Tornado/ Windstorm | High | Missouri Valley CSD, Missouri Valley, Harrison County | Low | Missouri Valley CSD General Budget | NA | Ongoing |
| Update and maintain a list of contacts that respond to all emergencies | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human | High | Missouri Valley CSD, Missouri Valley, Harrison County | Low | Missouri Valley CSD General Budget | NA | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | | | | | | |
| **GOAL #3 -** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| Support Severe Weather Awareness Week by creating or continuing activities that teach severe weather hazards and proper safety techniques | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | High | Missouri Valley CSD, Missouri Valley, Harrison County | Low | Missouri Valley CSD General Budget | NA | Ongoing |
| Identify and invite outside organizations that can teach hazard safety to youth | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/H | Medium | Missouri Valley CSD, Missouri Valley, Harrison County | Low | Missouri Valley CSD General Budget | NA | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | ail, Tornado/ Windstorm, Transportation Incident | | | | | | |
| Conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques | Wild Land Fire, Terrorism, Tornado/Windstorm | High | Missouri Valley CSD | Low | Missouri Valley CSD General Budget | NA | Ongoing |

## Adoption Resolution

# West Harrison CSD

## Community Capabilities

| | Date/Time | Location |
|---|---|---|
| School Board Meeting | 2nd Wednesday | West Harrison CSD |

### Services

| Service | Yes | No | Comments |
|---|---|---|---|
| Tornado Shelter | X | | |
| Fire Escape Route | X | | |
| Routine Fire/Tornado Drills | X | | |
| Active Shooter Plan | X | | |
| Security Cameras | X | | |
| Single Entrance | X | | |
| Intercom System | X | | |
| Alarm System | X | | |

Any additional safety measures?

_____

_____

### Plans

Are there any emergency preparedness-related plans that your school district has in place?

_____

_____

### Staff

| | Yes | No | Comments |
|---|---|---|---|
| School Nurse | X | | |
| School Resource Officer | | | |
| School Counselor | X | | |

Any additional staff with special training?

_____

_____

What projects, plans or changes, if any, has your district completed in the last five years?

_____

_____

Does your district have any available resources to expand your capabilities to address hazard mitigation? Resources could include additional staff or staff time, available funding, knowledge or expertise held by school officials, or community/cultural resources.

_____

_____

## Status of Previous Mitigation Actions

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety, and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster | | | | | | | |
| Remove dilapidated, abandoned or dangerous structures that pose or enhance a threat to people | X | | | | | | |
| Adopt / maintain and enforce building codes to ensure new construction and development will not create new risk to the county | X | | | | | | |
| Provide assistance in installing and training of proper usage of fire extinguishers | X | | | | | | |
| Establish or maintain standards and methods that protect power lines and infrastructure from potential risks | | | | | X | | |
| Adopt / maintain and enforce all building codes that regulate building construction and remove or mitigate risk of structure failure | X | | | | | | |
| Build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand heavy winds and severe weather | | | | | X | | |
| Construct a Red Cross certified and FEMA approved safe room/s in a public facility | | | | | X | | |
| Ensure access to safe rooms for students and staff in the event of a hazard incident | | | | | X | | |
| Expand awareness on energy efficient building materials and techniques that adequately protect people from adverse weather conditions | | | | | X | | |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| Maintain and update evacuation plans | X | | | | | | |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| Support Severe Weather Awareness Week by creating or continuing activities that teach severe weather hazards and proper safety techniques | X | | | | | | |
| Identify and invite outside organizations that can teach hazard safety to youth | X | | | | | | |
| Conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques | X | | | | | | |
| Support Severe Weather Awareness Week by creating or continuing activities that teach severe weather hazards and proper safety techniques | X | | | | | | |

## Action Plan

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Source(s) | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety, and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster | | | | | | | |
| Provide assistance in installing and training of proper usage of fire extinguishers | Grass or Wild Land Fire | High | West Harrison CSD, Mondamin, Harrison County | Low | West Harrison CSD General Budget | NA | Ongoing |
| Construct a Red Cross certified and FEMA approved safe room/s in a public facility | Thunderstorm/ Lightning/Hail, Tornado/ Windstorm | Medium | West Harrison CSD | High | West Harrison CSD General Budget, Bonding, BRIC, HMGP, PDM | Funding | Long term |
| Ensure access to safe rooms for students and staff in the event of a hazard incident | Terrorism, Thunderstorm/ Lightning/Hail, Tornado/ Windstorm | High | West Harrison CSD | Low | West Harrison CSD General Budget, Bonding, BRIC, HMGP, PDM | None | Ongoing |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| Maintain and update evacuation plans and the district's Emergency Operations Plan | Grass or Wild Land Fire, Severe Winter Storm, Thunderstorms/Lightning/Hail, Terrorism, Tornado/ Windstorm | High | West Harrison CSD, Mondamin, Harrison County | Low | West Harrison CSD General Budget | NA | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Install GPS on all school buses to allow for accurate and immediate tracking of buses during hazardous weather. | Earthquake, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Landslide, River Flooding, Severe Winter Storm, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/ Windstorm, Transportation Incident | Medium | West Harrison CSD | Moderate | West Harrison CSD General Budget, BRIC, HMGP, PDM | Cost | Mid-term |
| Purchase a generator to allow for continued power during outages (would allow for the school to be an emergency site for town) | Severe Winter Storm, Terrorism, Thunderstorm/ Lightning/Hail, Tornado/ Windstorm | Low | West Harrison CSD | Moderate | West Harrison CSD General Budget, BRIC, HMGP, PDM | Cost | Mid-term |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| Support Severe Weather Awareness Week by creating or continuing activities that teach severe weather hazards and proper safety techniques | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | High | West Harrison CSD, Mondamin, Harrison County | Low | West Harrison CSD General Budget | NA | Ongoing |
| Identify and invite outside organizations that can teach hazard safety to youth | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, | Medium | West Harrison CSD, Mondamin, Harrison County | Low | West Harrison CSD General Budget | NA | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Tornado/ Windstorm, Transportation Incident | | | | | | |
| Conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques | Wild Land Fire, Terrorism, Tornado/Windstorm | High | West Harrison CSD, Mondamin, Harrison County | Low | West Harrison CSD General Budget | NA | Ongoing |

## Adoption Resolution

# Woodbine CSD

## Community Capabilities

| | Date/Time | Location |
|---|---|---|
| **School Board Meeting** | August / 2026 | WCSD Library |

**Services**

| Service | Yes | No | Comments |
|---|---|---|---|
| **Tornado Shelter** | X | | But needs updated |
| **Fire Escape Route** | X | | |
| **Routine Fire/Tornado Drills** | X | | |
| **Active Shooter Plan** | X | | |
| **Security Cameras** | X | | Needs updating |
| **Single Entrance** | | | |
| **Intercom System** | | | |
| **Alarm System** | X | | Old and needs replaced |

**Any additional safety measures?**

_____Yes_____

_____

**Plans**

**Are there any emergency preparedness-related plans that your school district has in place?**

____Yes_____

_____

**Staff**

| | Yes | No | Comments |
|---|---|---|---|
| **School Nurse** | X | | |
| **School Resource Officer** | X | | |
| **School Counselor** | X | | |

**Any additional staff with special training?**

**_____Yes_____**

**_____**

**What projects, plans or changes, if any, has your district completed in the last five years?**

N/A_____

_____

**Does your district have any available resources to expand your capabilities to address hazard mitigation? Resources could include additional staff or staff time, available funding, knowledge or expertise held by school officials, or community/cultural resources.**

Yes_____
_____

## Status of Previous Mitigation Actions

| Previous Mitigation Actions | Complete | Underway | Ongoing | Future | Not Implemented | Carry Over | Delete |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster | | | | | | | |
| The school district will remove dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community | | | | | | | X |
| The school district will ensure all building codes are met and new construction does not create additional risk | | | | | | | X |
| The school district will provide assistance in installing and training of proper usage of fire extinguishers | | | X | | | | |
| The school district will establish or maintain standards and methods that protect power lines and infrastructure from potential risks | | | | | | | X |
| The school district will ensure all building codes are met and new construction does not create additional risk | | | X | | | | |
| The school district will build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand heavy winds and severe weather | | | X | | | | |
| The school district will construct a Red Cross certified and FEMA approved safe room/s in a public facility | | | | X | | | |
| The school district will ensure access to a safe room for students and staff in the event of a hazard incident | | | | | | | X |
| The school district will create and implement plan to maintain road clearing capabilities and repair roads following adverse weather conditions | | | | | | | X |
| The school district will assist residents in obtaining funding for homes that need house repairs and winterization | | | | | | | X |
| The school district will build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand snow loads and prevent roof collapse | | | | | | | X |
| The school district will expand awareness on energy efficient building materials and techniques that adequately protect people from adverse weather conditions | | | | | | | X |
| The school district will construct a new levee / dike / berm that protects the facility from flood damage | | | | | | | X |
| The school district will upgrade drainage and storm sewer systems (pipes, culverts and channels) to meet proper capacity requirements that provide systems that adequately and safely remove excess water from the track. | | | X | | | | |
| The school district will ensure the community is in compliance with the National Flood Insurance Program (NFIP) | | | | | | | X |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The community will ensure codes and ordinances are followed that protects future development from flooding and restricts encroachment of the built environment in the floodplain | | | | | | | X |
| The school district will keep streams, creeks and flood ditches clear of debris and blockages to ensure they flow properly – specifically, the creek behind the track. | | | | | | | X |
| The school district will expand awareness of incentives and disincentives on property or homeowner insurance that promote smart development and reduce hazard risk | | | | | | | X |
| The school district will make weather alert radios available to citizens by identifying and obtaining funding to subsidize the purchase of 40 radios | | | | | | | X |
| The school district will encourage homeowners to install 1500 carbon monoxide monitors and alarms | | | | | | | X |
| The school district will upgrade early warning siren systems to provide an additional level of early warning | | | X | | | | |
| The school district will train public staff that are able to provide information relating to severe weather | | | | | | | X |
| The school district will participate in the county-wide Everbridge mass notification early warning systems | | | | | | | X |
| The school district will participate in the statewide (Alert Iowa System) mass notification system | | | | X | | | |
| The school district will provide outreach and assistance to vulnerable populations to implement hazard mitigation projects and programs | | | | | | | X |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The school district will develop or maintain an inventory of equipment available to emergency responders to ensure resources can be easily and quickly identified in an event of a disaster | | | X | | | | |
| The school district will develop a plan to phase purchases of replacement equipment | | | | | | | X |
| The school district will investigate resources and funding to obtain the proper and necessary equipment for emergency response personnel | | | | | | | X |
| The school district will partner with or maintain partnership with the fire department, police department, and city administration in order to provide or share emergency response resources and/or equipment | | | | | | | X |
| The school district will maintain and update evacuation plans | | | X | | | | |
| The school district will develop or maintain an inventory of equipment available to emergency responders to ensure resources can be easily and quickly identified in an event of a disaster | | | | | | | X |
| The school district will develop a plan to phase purchases of replacement equipment | | | | | | | X |
| The school district will investigate resources and funding to obtain the proper and necessary equipment for emergency response personnel | | | | | | | X |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The school district will partner with or maintain partnership with the fire department, police department, and city administration in order to provide or share emergency response resources and/or equipment | | | | | | | X |
| The school district will maintain and update evacuation plans | | | | | | | X |
| The school district will build or maintain infrastructure that protects critical facilities such as, but not limited to, levees and berms in floodways or retrofitting structures to withstand snow loads and prevent roof collapse | | | | | | | X |
| The school district will maintain, improve and continually test early warning systems (sirens, etc.) | | | X | | | | |
| The school district will designate new or alternative critical facilities that are outside of hazard areas | | | | | | | X |
| The school district will purchase generators for facilities that provide critical services to the community in the event of a power outage by purchasing and/or maintaining generators | | | | X | | | |
| The school district will establish and maintain mutual aid agreements (28E or other) with local jurisdictions | | | | | | | X |
| The school district will update and maintain a list of contacts that respond to all emergencies | | | X | | | | |
| The school district will regularly test internet, phone, and radio communications equipment between local jurisdictions | | | | | | | X |
| The community will promote training between emergency response (fire and police) departments | | | | | | | X |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| The school district will support Severe Weather Awareness Week by creating or continuing drills and ALICE training activities that teach severe weather hazards and proper safety techniques | | | X | | | | |
| The school district will identify and invite outside organizations (fire, police, Harrison County EMA) that can teach hazard safety to youth | | | X | | | | |
| The school district will conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques: fire drills, tornado drill, ALICE) | | | X | | | | |
| The school district will create an additional educational program that teaches youth hazard safety preparedness and response | | | X | | | | |
| The school district will identify or produce new materials and/or resources to teach youth about hazard risk and proper safety techniques | | | X | | | | |
| The school district will support Severe Weather Awareness Week by creating or continuing drills and ALICE training activities that teach severe weather hazards and proper safety techniques | | | | | | | X |
| The school district will identify and invite outside organizations (fire, police, Harrison County EMA) that can teach hazard safety to youth | | | | | | | X |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The school district will conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques: fire drills, tornado drill, ALICE) | | | | | | | |
| The school district will create an additional educational program that teaches youth hazard safety preparedness and response | | | | | | | |
| The school district will identify or produce new materials and/or resources to teach youth about hazard risk and proper safety techniques | | | | | | | |
| The school district will promote and educate county text/phone notification systems available via Snow cap, internet, and TV | | | | | | | |
| The school district will expand awareness of community critical facilities available to the public in the event of a hazard via Snow cap, TV, newsletter, radio, and newspaper<br>The school district will expand awareness of evacuation routes and procedures | | | | | | | |
| The school district will expand awareness of resources that will protect the public from severe weather incidents via Snow cap, TVF, newsletter, radio, and newspaper | | | | | | | |

## Action Plan

| Action | Hazard(s) Addressed | Priority | Responsible Party | Estimated Cost | Potential Funding Sources | Obstacles to Implementation | Target Completion Date |
|---|---|---|---|---|---|---|---|
| **Goal #1:** Protect the health, safety and quality of life for Harrison County citizens while reducing or eliminating property losses, economic costs, and damage to the natural environment caused by a disaster | | | | | | | |
| The school district will provide assistance in installing and training of proper usage of fire extinguishers | Grass or Wild Land Fire | Low | Woodbine Community School District | Low | Woodbine CSD Operating Budget | N/A | Ongoing |
| The school district will establish or maintain standards and methods that protect power lines and infrastructure from potential risks | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm | Low | Woodbine Community School District | Low | Woodbine CSD Operating Budget | N/A | Short term, Ongoing |
| The school district will ensure all building codes are met and new construction does not create additional risk | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm | Low | Woodbine Community School District | Low | Woodbine CSD Operating Budget | N/A | Ongoing |
| The school district will build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand heavy winds and severe weather | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm | Low | Woodbine Community School District | Varies | Woodbine CSD Operating Budget | Funding | Ongoing |
| The school district will construct a Red Cross certified and FEMA approved safe room/s for faculty and students | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm | High | Woodbine Community School District | High | Woodbine CSD Operating Budget, BRIC, PDM | Funding | Long term |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The school district will build, upgrade or maintain infrastructure that protects critical facilities by retrofitting structures to withstand snow loads and prevent roof collapse | Severe Winter Storms | Medium | Woodbine Community School District | Varies | Woodbine CSD Operating Budget, BRIC, PDM | Funding | Short term |
| The school district will upgrade drainage and storm sewer systems (pipes, culverts and channels) to meet proper capacity requirements that provide systems that adequately and safely remove excess water from the track. | Flash Flood, River Flooding, Dam/Levee Failure | Low | Woodbine Community School District | Varies | Woodbine CSD Operating Budget, CDBG, BRIC | Funding | Short term, Ongoing |
| The school district will maintain, test, and upgrade early warning systems to provide an additional level of early warning | Extreme Heat, Grass or Wild Land Fire, Severe Winter Storm, Terrorism, Thunderstorms/Lightning/Hail, Tornado/Windstorm | Medium | Woodbine Community School District | Moderate | Woodbine CSD Operating Budget, BRIC | Funding | Long term |
| The school district will participate in the statewide (Alert Iowa System) mass notification system | Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Terrorism, Thunderstorms/Lightning/Hail, Tornado/Windstorm | Medium | Woodbine Community School District | Low | Woodbine CSD Operating Budget | N/A | Short term |
| **Goal #2:** Ensure government operations, response, and recovery are not significantly disrupted by disasters. | | | | | | | |
| The school district will develop or maintain an inventory of equipment available to emergency responders to ensure resources can be easily and quickly identified in an event of a disaster | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, | Medium | Woodbine Community School District | Low | Woodbine CSD Operating Budget | Time, personnel | Short term, ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Tornado/ Windstorm, Transportation Incident | | | | | | |
| The school district will maintain and update evacuation plans | Grass or Wild Land Fire, Severe Winter Storm, Terrorism, Thunderstorms/Lightning/Hail, Tornado/Windstorm | Medium | Woodbine Community School District | Low | Woodbine CSD Operating Budget | N/A | Ongoing |
| The school district will purchase generators for facilities that provide critical services to the community in the event of a power outage by purchasing and/or maintaining generators | Extreme Heat, Grass or Wild Land Fire, Infrastructure Failure, River Flooding, Severe Winter Storm, Terrorism, Thunderstorms/Lightning/Hail, Tornado/Windstorm | High | Woodbine Community School District | Moderate | Woodbine CSD Operating Budget | Funding | Long term |
| The school district will update and maintain a list of contacts that respond to all emergencies | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | Medium | Woodbine Community School District | Low | Woodbine CSD Operating Budget | N/A | Ongoing |
| **Goal #3:** Expand public awareness and encourage intergovernmental cooperation, coordination and communication to build a more resilient community against all hazards. | | | | | | | |
| The school district will support Severe Weather Awareness Week by creating or continuing drills and ALICE training activities that teach severe weather hazards and proper safety techniques | Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm | Medium | Woodbine Community School District | Low | Woodbine CSD Operating Budget | N/A | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The school district will identify and invite outside organizations (fire, police, Harrison County EMA) that can teach hazard safety to youth | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | Medium | Woodbine Community School District | Low | Woodbine CSD Operating Budget | Time, personnel | Ongoing |
| The school district will conduct hazard event drills in schools and public facilities to promote hazard response and teach proper safety techniques: fire drills, tornado drill, ALICE) | Grass or Wild Land Fire, Severe Winter Storm, Terrorism, Thunderstorms/Lightning/Hail, Tornado/Windstorm | Medium | Woodbine Community School District | Low | Woodbine CSD Operating Budget | N/A | Ongoing |
| The school district will create an additional educational program and/or identify or produce materials that teaches youth hazard safety preparedness and response | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/ Windstorm, Transportation Incident | Medium | Woodbine Community School District | Low | Woodbine CSD Operating Budget | Time, personnel | Short term |
| The school district will promote and educate county text/phone notification systems available via Snow cap, internet, and TV | Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/Windstorm | Medium | Woodbine Community School District | Low | Woodbine CSD Operating Budget | N/A | Ongoing |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| The school district will expand awareness of community critical facilities available to the public in the event of a hazard as well as resources to help the public mitigate effects of a hazard or protect them from a hazard | Animal/Plant/Crop Disease, Drought, Earthquake, Extreme Heat, Expansive Soils, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Landslide, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/ Lightning/Hail, Tornado/ Windstorm, Transportation Incident | Medium | Woodbine Community School District | Low | Woodbine CSD Operating Budget | N/A | Ongoing |

## Adoption Resolution

# Appendix B: Neighboring Communities

# Appendix C: Historical Occurrences

**NOAA STORM DATA 11/01/2014—11/30/2025**

| Tornado/Windstorm | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EVENT_ID | COUNTY | BEGIN_LOCATION | BEGIN_DATE | BEGIN_TIME | EVENT_TYPE | MAG | TOR_F_SCALE | DEATHS | INJURIES | PROP DAM | CROP DAM |
| 566342 | HARRISON CO. | LITTLE SIOUX | 5/10/2015 | 1300 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 566339 | HARRISON CO. | MISSOURI VLY | 5/10/2015 | 1243 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 569948 | HARRISON CO. | RIVER SIOUX | 6/6/2015 | 2246 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 639197 | HARRISON CO. | BEEBEETOWN | 6/29/2016 | 1651 | Tornado | | EF0 | 0 | 0 | 0 | 0 |
| 638981 | HARRISON CO. | WOODBINE | 6/29/2016 | 1617 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 639346 | HARRISON CO. | RIVER SIOUX | 7/11/2016 | 1924 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 643978 | HARRISON CO. | RIVER SIOUX | 8/11/2016 | 1740 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 649518 | HARRISON CO. | LITTLE SIOUX | 9/9/2016 | 1145 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 699574 | HARRISON CO. | MISSOURI VLY | 5/16/2017 | 1750 | Thunderstorm Wind | 50 | | 0 | 0 | 0 | 0 |
| 699577 | HARRISON CO. | YORKSHIRE | 5/16/2017 | 1825 | Thunderstorm Wind | 65 | | 0 | 0 | 0 | 0 |
| 709092 | HARRISON CO. | LITTLE SIOUX | 6/16/2017 | 1840 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 709067 | HARRISON CO. | WOODBINE | 6/16/2017 | 1855 | Thunderstorm Wind | 70 | | 0 | 0 | 0 | 0 |
| 759144 | HARRISON CO. | RIVER SIOUX | 5/1/2018 | 1721 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 770169 | HARRISON CO. | RIVER SIOUX | 6/1/2018 | 2312 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 771559 | HARRISON CO. | LOGAN | 6/28/2018 | 909 | Thunderstorm Wind | 51 | | 0 | 0 | 0 | 0 |
| 771557 | HARRISON CO. | MONDAMIN | 6/28/2018 | 840 | Thunderstorm Wind | 61 | | 0 | 0 | 0 | 0 |
| 771537 | HARRISON CO. | MONDAMIN | 6/28/2018 | 906 | Thunderstorm Wind | 65 | | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 771536 | HARRISON CO. | WOODBINE | 6/28/2018 | 900 | Thunderstorm Wind | 70 | | 0 | 0 | 0 | 0 |
| 781151 | HARRISON CO. | LOGAN | 9/20/2018 | 1708 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 794191 | HARRISON (ZONE) | | 1/1/2019 | 200 | High Wind | 50 | | 0 | 0 | 0 | 0 |
| 848325 | HARRISON CO. | EUCLID | 7/2/2019 | 1515 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 851327 | HARRISON CO. | EUCLID | 8/18/2019 | 300 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 857821 | HARRISON CO. | RIVER SIOUX | 9/21/2019 | 2050 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 858074 | HARRISON CO. | WOODBINE MUNI ARPT | 9/24/2019 | 1657 | Tornado | | EFU | 0 | 0 | 0 | 0 |
| 903517 | HARRISON CO. | MISSOURI VLY | 6/18/2020 | 1420 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 911848 | HARRISON CO. | RIVER SIOUX | 7/11/2020 | 20 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 915756 | HARRISON CO. | HARD SCRATCH | 8/10/2020 | 811 | Thunderstorm Wind | 50 | | 0 | 0 | 0 | 0 |
| 915752 | HARRISON CO. | LOGAN | 8/10/2020 | 800 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 915753 | HARRISON CO. | RIVER SIOUX | 8/10/2020 | 810 | Thunderstorm Wind | 61 | | 0 | 0 | 0 | 0 |
| 954799 | HARRISON CO. | DUNLAP | 6/11/2021 | 800 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 954798 | HARRISON CO. | RIVER SIOUX | 6/11/2021 | 705 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 966918 | HARRISON CO. | RIVER SIOUX | 7/9/2021 | 2230 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 969714 | HARRISON CO. | MISSOURI VLY | 7/10/2021 | 1300 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 969722 | HARRISON CO. | YORKSHIRE | 7/30/2021 | 1859 | Thunderstorm Wind | 87 | | 0 | 0 | 0 | 0 |
| 1017504 | HARRISON CO. | EUCLID | 4/12/2022 | 1908 | Tornado | | EF1 | 0 | 0 | 0 | 0 |
| 1017503 | HARRISON CO. | RIVER SIOUX | 4/12/2022 | 1830 | Thunderstorm Wind | 66 | | 0 | 0 | 0 | 0 |
| 1017505 | HARRISON CO. | WOODBINE MUNI ARPT | 4/12/2022 | 1925 | Tornado | | EF0 | 0 | 0 | 0 | 0 |
| 1025351 | HARRISON CO. | RIVER SIOUX | 5/12/2022 | 1805 | Thunderstorm Wind | 61 | | 0 | 0 | 0 | 0 |
| 1038568 | HARRISON CO. | MAGNOLIA | 7/11/2022 | 149 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1038567 | HARRISON CO. | MONDAMIN | 7/11/2022 | 140 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 1038866 | HARRISON CO. | MONDAMIN | 7/23/2022 | 1930 | Thunderstorm Wind | 65 | | 0 | 0 | 0 | 0 |
| 1038865 | HARRISON CO. | RIVER SIOUX | 7/23/2022 | 1925 | Thunderstorm Wind | 61 | | 0 | 0 | 0 | 0 |
| 1111555 | HARRISON CO. | BEEBEETOWN | 7/12/2023 | 510 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 1114265 | HARRISON CO. | HARD SCRATCH | 7/12/2023 | 505 | Tornado | | EF2 | 0 | 0 | 0 | 0 |
| 1111554 | HARRISON CO. | HARD SCRATCH | 7/12/2023 | 508 | Thunderstorm Wind | 50 | | 0 | 0 | 0 | 0 |
| 1111556 | HARRISON CO. | HARD SCRATCH | 7/12/2023 | 516 | Thunderstorm Wind | 50 | | 0 | 0 | 0 | 0 |
| 1111553 | HARRISON CO. | LOGAN | 7/12/2023 | 503 | Thunderstorm Wind | 78 | | 0 | 0 | 0 | 0 |
| 1167518 | HARRISON CO. | BEEBEETOWN | 4/26/2024 | 1626 | Tornado | | EF0 | 0 | 0 | 0 | 0 |
| 1167531 | HARRISON CO. | HARD SCRATCH | 4/26/2024 | 1640 | Tornado | | EF1 | 0 | 0 | 0 | 0 |
| 1167509 | HARRISON CO. | MAGNOLIA | 4/26/2024 | 1552 | Tornado | | EF1 | 0 | 0 | 0 | 0 |
| 1167508 | HARRISON CO. | MODALE | 4/26/2024 | 1518 | Tornado | | EF1 | 0 | 0 | 0 | 0 |
| 1167511 | HARRISON CO. | PISGAH | 4/26/2024 | 1559 | Tornado | | EF0 | 0 | 0 | 0 | 0 |
| 1167526 | HARRISON CO. | YORKSHIRE | 4/26/2024 | 1646 | Tornado | | EF1 | 0 | 0 | 0 | 0 |
| 1166174 | HARRISON CO. | LITTLE SIOUX | 4/30/2024 | 1425 | Thunderstorm Wind | 53 | | 0 | 0 | 0 | 0 |
| 1181267 | HARRISON CO. | MISSOURI VLY | 5/24/2024 | 138 | Thunderstorm Wind | 63 | | 0 | 0 | 0 | 0 |
| 1181298 | HARRISON CO. | MISSOURI VLY | 5/24/2024 | 141 | Tornado | | EF1 | 0 | 0 | 0 | 0 |
| 1181270 | HARRISON CO. | MISSOURI VLY | 5/24/2024 | 145 | Thunderstorm Wind | 64 | | 0 | 0 | 0 | 0 |
| 1181269 | HARRISON CO. | MISSOURI VLY ARPT | 5/24/2024 | 141 | Thunderstorm Wind | 62 | | 0 | 0 | 0 | 0 |
| 1181294 | HARRISON CO. | MODALE | 5/24/2024 | 137 | Thunderstorm Wind | 93 | | 0 | 0 | 0 | 0 |
| 1181274 | HARRISON CO. | PERSIA | 5/24/2024 | 152 | Thunderstorm Wind | 50 | | 0 | 0 | 0 | 0 |
| 1181282 | HARRISON CO. | PERSIA | 5/24/2024 | 207 | Thunderstorm Wind | 61 | | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1198305 | HARRISON CO. | LITTLE SIOUX | 6/12/2024 | 1929 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 1206732 | HARRISON CO. | LOGAN | 7/31/2024 | 1735 | Thunderstorm Wind | 50 | | 0 | 0 | 0 | 0 |
| 1206730 | HARRISON CO. | MISSOURI VLY | 7/31/2024 | 1723 | Thunderstorm Wind | 60 | | 0 | 0 | 0 | 0 |
| 1206728 | HARRISON CO. | MISSOURI VLY ARPT | 7/31/2024 | 1714 | Thunderstorm Wind | 50 | | 0 | 0 | 0 | 0 |
| 1221073 | HARRISON (ZONE) | | 12/19/2024 | 1200 | High Wind | 52 | | 0 | 0 | 0 | 0 |
| 1244835 | HARRISON (ZONE) | | 3/4/2025 | 1500 | High Wind | 50 | | 0 | 0 | 0 | 0 |
| 1245322 | HARRISON CO. | MISSOURI VLY | 3/14/2025 | 1614 | Thunderstorm Wind | 53 | | 0 | 0 | 0 | 0 |
| 1245119 | HARRISON (ZONE) | | 3/19/2025 | 300 | High Wind | 63 | | 0 | 0 | 0 | 0 |
| 1282502 | HARRISON CO. | MONDAMIN | 7/28/2025 | 221 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 1290170 | HARRISON CO. | MISSOURI VLY ARPT | 8/9/2025 | 522 | Thunderstorm Wind | 87 | | 0 | 0 | 0 | 0 |
| **Flooding and Flash Flooding** | | | | | | | | | | | |
| EVENT_ID | COUNTY | BEGIN_LOCATION | BEGIN_DATE | BEGIN_TIME | EVENT_TYPE | MAG | TOR_F_SCALE | DEATHS | INJURIES | PROP DAM | CROP DAM |
| 771608 | HARRISON CO. | MISSOURI VLY | 6/18/2018 | 1730 | Flood | | | 0 | 0 | 0 | 0 |
| 781130 | HARRISON CO. | PERSIA | 8/20/2018 | 600 | Flash Flood | | | 0 | 0 | 0 | 0 |
| 813991 | HARRISON CO. | DUNLAP | 3/13/2019 | 1100 | Flood | | | 0 | 0 | 2200000 | 0 |
| 813996 | HARRISON CO. | RIVER SIOUX | 3/14/2019 | 300 | Flood | | | 0 | 0 | 0 | 0 |
| 1097604 | HARRISON CO. | PISGAH | 5/12/2023 | 2230 | Flash Flood | | | 0 | 0 | 500000 | 0 |
| 1198302 | HARRISON CO. | CALIFORNIA JCT | 6/12/2024 | 1915 | Flash Flood | | | 0 | 0 | 25000 | 15000 |
| 1198872 | HARRISON CO. | CALIFORNIA JCT | 6/24/2024 | 1000 | Flood | | | 0 | 0 | 200000 | 16950 |
| 1206365 | HARRISON CO. | MONDAMIN | 7/1/2024 | 0 | Flood | | | 0 | 0 | 0 | 0 |
| **Severe Winter Weather** | | | | | | | | | | | |
| EVENT_ID | COUNTY | BEGIN_LOCATION | BEGIN_DATE | BEGIN_TIME | EVENT_TYPE | MAG | TOR_F_SCALE | DEATHS | INJURIES | PROP DAM | CROP DAM |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 550899 | HARRISON (ZONE) | | 1/31/2015 | 1600 | Winter Storm | | | 0 | 0 | 0 | 0 |
| 552122 | HARRISON (ZONE) | | 2/1/2015 | 0 | Winter Storm | | | 0 | 0 | 0 | 0 |
| 603359 | HARRISON (ZONE) | | 11/30/2015 | 500 | Winter Storm | | | 0 | 0 | 0 | 0 |
| 607990 | HARRISON (ZONE) | | 12/24/2015 | 800 | Heavy Snow | | | 0 | 0 | 0 | 0 |
| 611550 | HARRISON (ZONE) | | 2/2/2016 | 300 | Winter Storm | | | 0 | 0 | 0 | 0 |
| 667552 | HARRISON (ZONE) | | 1/15/2017 | 1500 | Ice Storm | | | 0 | 0 | 0 | 0 |
| 676412 | HARRISON (ZONE) | | 2/7/2017 | 2300 | Winter Weather | | | 0 | 0 | 0 | 0 |
| 742387 | HARRISON (ZONE) | | 2/5/2018 | 600 | Winter Weather | | | 0 | 0 | 0 | 0 |
| 742737 | HARRISON (ZONE) | | 2/22/2018 | 0 | Winter Weather | | | 0 | 0 | 0 | 0 |
| 748016 | HARRISON (ZONE) | | 3/5/2018 | 2200 | Winter Weather | | | 0 | 0 | 0 | 0 |
| 754879 | HARRISON (ZONE) | | 4/18/2018 | 400 | Winter Weather | | | 0 | 0 | 0 | 0 |
| 797615 | HARRISON (ZONE) | | 12/1/2018 | 1400 | Winter Storm | | | 0 | 0 | 0 | 0 |
| 805214 | HARRISON (ZONE) | | 2/19/2019 | 1800 | Winter Weather | | | 0 | 0 | 0 | 0 |
| 808677 | HARRISON (ZONE) | | 2/23/2019 | 1200 | Blizzard | | | 0 | 0 | 0 | 0 |
| 863261 | HARRISON (ZONE) | | 11/26/2019 | 1300 | Winter Weather | | | 0 | 0 | 0 | 0 |
| 928198 | HARRISON (ZONE) | | 12/23/2020 | 900 | Winter Storm | | | 0 | 0 | 0 | 0 |
| 934498 | HARRISON (ZONE) | | 1/14/2021 | 2100 | Blizzard | | | 0 | 0 | 0 | 0 |
| 934593 | HARRISON (ZONE) | | 1/25/2021 | 800 | Winter Storm | | | 0 | 0 | 0 | 0 |
| 933852 | HARRISON (ZONE) | | 2/14/2021 | 700 | Extreme Cold/Wind Chill | | | 0 | 0 | 0 | 0 |
| 946709 | HARRISON (ZONE) | | 2/21/2021 | 430 | Winter Storm | | | 0 | 0 | 0 | 0 |
| 1065099 | HARRISON (ZONE) | | 12/22/2022 | 200 | Extreme Cold/Wind Chill | | | 0 | 0 | 0 | 0 |
| 1079080 | HARRISON (ZONE) | | 1/18/2023 | 1200 | Winter Storm | | | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1087690 | HARRISON (ZONE) | | 3/26/2023 | 100 | Winter Storm | | | 0 | 0 | 0 | 0 |
| 1158333 | HARRISON (ZONE) | | 1/8/2024 | 700 | Winter Storm | | | 0 | 0 | 0 | 0 |
| 1158403 | HARRISON (ZONE) | | 1/11/2024 | 1700 | Winter Storm | | | 0 | 0 | 0 | 0 |
| 1158799 | HARRISON (ZONE) | | 1/12/2024 | 2100 | Extreme Cold/Wind Chill | | | 0 | 0 | 0 | 0 |
| 1159577 | HARRISON (ZONE) | | 1/18/2024 | 1230 | Winter Weather | | | 0 | 0 | 0 | 0 |
| 1239109 | HARRISON (ZONE) | | 2/17/2025 | 2100 | Extreme Cold/Wind Chill | | | 0 | 0 | 0 | 0 |
| 1239956 | HARRISON (ZONE) | | 2/19/2025 | 2100 | Extreme Cold/Wind Chill | | | 0 | 0 | 0 | 0 |
| 1243769 | HARRISON (ZONE) | | 3/4/2025 | 2000 | Blizzard | | | 0 | 0 | 0 | 0 |
| 1244937 | HARRISON (ZONE) | | 3/19/2025 | 300 | Blizzard | | | 0 | 0 | 0 | 0 |
| 1298570 | HARRISON (ZONE) | | 11/28/2025 | 1200 | Winter Storm | | | 0 | 0 | 0 | 0 |
| **Excessive Heat** | | | | | | | | | | | |
| EVENT_ID | COUNTY | BEGIN_LOCATION | BEGIN_DATE | BEGIN_TIME | EVENT_TYPE | MAG | TOR_F_SCALE | DEATHS | INJURIES | PROP DAM | CROP DAM |
| 1129676 | HARRISON (ZONE) | | 8/19/2023 | 1200 | Excessive Heat | | | 0 | 0 | 0 | 0 |
| 1206692 | HARRISON (ZONE) | | 7/15/2024 | 1200 | Excessive Heat | | | 0 | 0 | 0 | 0 |
| 1208240 | HARRISON (ZONE) | | 8/26/2024 | 1400 | Excessive Heat | | | 0 | 0 | 0 | 0 |
| 1268758 | HARRISON (ZONE) | | 6/20/2025 | 1100 | Excessive Heat | | | 0 | 0 | 0 | 0 |
| 1284084 | HARRISON (ZONE) | | 7/27/2025 | 1100 | Excessive Heat | | | 0 | 0 | 0 | 0 |
| **Thunderstorm/Lightning/Hail** | | | | | | | | | | | |
| EVENT_ID | COUNTY | BEGIN_LOCATION | BEGIN_DATE | BEGIN_TIME | EVENT_TYPE | MAG | TOR_F_SCALE | DEATHS | INJURIES | PROP DAM | CROP DAM |
| 566339 | HARRISON CO. | MISSOURI VLY | 5/10/2015 | 1243 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 566342 | HARRISON CO. | LITTLE SIOUX | 5/10/2015 | 1300 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 569948 | HARRISON CO. | RIVER SIOUX | 6/6/2015 | 2246 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 638975 | HARRISON CO. | DUNLAP | 6/29/2016 | 1600 | Hail | 1 | | 0 | 0 | 0 | 0 |
| 638981 | HARRISON CO. | WOODBINE | 6/29/2016 | 1617 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 639346 | HARRISON CO. | RIVER SIOUX | 7/11/2016 | 1924 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 643978 | HARRISON CO. | RIVER SIOUX | 8/11/2016 | 1740 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 649518 | HARRISON CO. | LITTLE SIOUX | 9/9/2016 | 1145 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 676394 | HARRISON CO. | MISSOURI VLY ARPT | 3/6/2017 | 1535 | Hail | 1 | | 0 | 0 | 0 | 0 |
| 676397 | HARRISON CO. | BEEBEETOWN | 3/6/2017 | 1545 | Hail | 1 | | 0 | 0 | 0 | 0 |
| 682169 | HARRISON CO. | MONDAMIN | 4/15/2017 | 1937 | Hail | 1.5 | | 0 | 0 | 0 | 0 |
| 682171 | HARRISON CO. | LOGAN | 4/15/2017 | 1951 | Hail | 1.5 | | 0 | 0 | 0 | 0 |
| 682172 | HARRISON CO. | LOGAN | 4/15/2017 | 1951 | Hail | 1 | | 0 | 0 | 0 | 0 |
| 682170 | HARRISON CO. | MAGNOLIA | 4/15/2017 | 1952 | Hail | 1.5 | | 0 | 0 | 0 | 0 |
| 682173 | HARRISON CO. | WOODBINE MUNI ARPT | 4/15/2017 | 2018 | Hail | 1.75 | | 0 | 0 | 0 | 0 |
| 683021 | HARRISON CO. | MISSOURI VLY ARPT | 4/19/2017 | 614 | Hail | 0.75 | | 0 | 0 | 0 | 0 |
| 699574 | HARRISON CO. | MISSOURI VLY | 5/16/2017 | 1750 | Thunderstorm Wind | 50 | | 0 | 0 | 0 | 0 |
| 699577 | HARRISON CO. | YORKSHIRE | 5/16/2017 | 1825 | Thunderstorm Wind | 65 | | 0 | 0 | 0 | 0 |
| 709092 | HARRISON CO. | LITTLE SIOUX | 6/16/2017 | 1840 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 709067 | HARRISON CO. | WOODBINE | 6/16/2017 | 1855 | Thunderstorm Wind | 70 | | 0 | 0 | 0 | 0 |
| 710263 | HARRISON CO. | RIVER SIOUX | 6/29/2017 | 1755 | Hail | 2 | | 0 | 0 | 0 | 0 |
| 710264 | HARRISON CO. | CALIFORNIA JCT | 6/29/2017 | 1801 | Hail | 1 | | 0 | 0 | 0 | 0 |
| 710265 | HARRISON CO. | PISGAH | 6/29/2017 | 1804 | Hail | 1 | | 0 | 0 | 0 | 0 |
| 710266 | HARRISON CO. | MAGNOLIA | 6/29/2017 | 1837 | Hail | 1 | | 0 | 0 | 0 | 0 |
| 710267 | HARRISON CO. | MISSOURI VLY | 6/29/2017 | 1905 | Hail | 1 | | 0 | 0 | 0 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 759144 | HARRISON CO. | RIVER SIOUX | 5/1/2018 | 1721 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 770169 | HARRISON CO. | RIVER SIOUX | 6/1/2018 | 2312 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 771557 | HARRISON CO. | MONDAMIN | 6/28/2018 | 840 | Thunderstorm Wind | 61 | | 0 | 0 | 0 | 0 |
| 771536 | HARRISON CO. | WOODBINE | 6/28/2018 | 900 | Thunderstorm Wind | 70 | | 0 | 0 | 0 | 0 |
| 771537 | HARRISON CO. | MONDAMIN | 6/28/2018 | 906 | Thunderstorm Wind | 65 | | 0 | 0 | 0 | 0 |
| 771559 | HARRISON CO. | LOGAN | 6/28/2018 | 909 | Thunderstorm Wind | 51 | | 0 | 0 | 0 | 0 |
| 781151 | HARRISON CO. | LOGAN | 9/20/2018 | 1708 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 848325 | HARRISON CO. | EUCLID | 7/2/2019 | 1515 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 851327 | HARRISON CO. | EUCLID | 8/18/2019 | 300 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 857474 | HARRISON CO. | RIVER SIOUX | 9/14/2019 | 810 | Hail | 0.88 | | 0 | 0 | 0 | 0 |
| 857821 | HARRISON CO. | RIVER SIOUX | 9/21/2019 | 2050 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 857812 | HARRISON CO. | LITTLE SIOUX | 9/24/2019 | 1635 | Hail | 1.75 | | 0 | 0 | 0 | 0 |
| 903517 | HARRISON CO. | MISSOURI VLY | 6/18/2020 | 1420 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 911848 | HARRISON CO. | RIVER SIOUX | 7/11/2020 | 20 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 915752 | HARRISON CO. | LOGAN | 8/10/2020 | 800 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 915753 | HARRISON CO. | RIVER SIOUX | 8/10/2020 | 810 | Thunderstorm Wind | 61 | | 0 | 0 | 0 | 0 |
| 915756 | HARRISON CO. | HARD SCRATCH | 8/10/2020 | 811 | Thunderstorm Wind | 50 | | 0 | 0 | 0 | 0 |
| 954798 | HARRISON CO. | RIVER SIOUX | 6/11/2021 | 705 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 954799 | HARRISON CO. | DUNLAP | 6/11/2021 | 800 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 967056 | HARRISON CO. | PERSIA | 7/9/2021 | 123 | Hail | 1 | | 0 | 0 | 0 | 0 |
| 966918 | HARRISON CO. | RIVER SIOUX | 7/9/2021 | 2230 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 969714 | HARRISON CO. | MISSOURI VLY | 7/10/2021 | 1300 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 969722 | HARRISON CO. | YORKSHIRE | 7/30/2021 | 1859 | Thunderstorm Wind | 87 | | 0 | 0 | 0 | 0 |
| 1017503 | HARRISON CO. | RIVER SIOUX | 4/12/2022 | 1830 | Thunderstorm Wind | 66 | | 0 | 0 | 0 | 0 |
| 1017502 | HARRISON CO. | LOGAN | 4/12/2022 | 1918 | Hail | 1 | | 0 | 0 | 0 | 0 |
| 1025351 | HARRISON CO. | RIVER SIOUX | 5/12/2022 | 1805 | Thunderstorm Wind | 61 | | 0 | 0 | 0 | 0 |
| 1025347 | HARRISON CO. | WOODBINE | 5/18/2022 | 22 | Hail | 1 | | 0 | 0 | 0 | 0 |
| 1025348 | HARRISON CO. | WOODBINE | 5/18/2022 | 23 | Hail | 1.25 | | 0 | 0 | 0 | 0 |
| 1025349 | HARRISON CO. | WOODBINE MUNI ARPT | 5/18/2022 | 35 | Hail | 1 | | 0 | 0 | 0 | 0 |
| 1038567 | HARRISON CO. | MONDAMIN | 7/11/2022 | 140 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 1038568 | HARRISON CO. | MAGNOLIA | 7/11/2022 | 149 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 1038865 | HARRISON CO. | RIVER SIOUX | 7/23/2022 | 1925 | Thunderstorm Wind | 61 | | 0 | 0 | 0 | 0 |
| 1038866 | HARRISON CO. | MONDAMIN | 7/23/2022 | 1930 | Thunderstorm Wind | 65 | | 0 | 0 | 0 | 0 |
| 1111553 | HARRISON CO. | LOGAN | 7/12/2023 | 503 | Thunderstorm Wind | 78 | | 0 | 0 | 0 | 0 |
| 1111554 | HARRISON CO. | HARD SCRATCH | 7/12/2023 | 508 | Thunderstorm Wind | 50 | | 0 | 0 | 0 | 0 |
| 1111555 | HARRISON CO. | BEEBEETOWN | 7/12/2023 | 510 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 1111556 | HARRISON CO. | HARD SCRATCH | 7/12/2023 | 516 | Thunderstorm Wind | 50 | | 0 | 0 | 0 | 0 |
| 1115030 | HARRISON CO. | WOODBINE | 7/17/2023 | 427 | Hail | 1 | | 0 | 0 | 0 | 0 |
| 1133698 | HARRISON CO. | LITTLE SIOUX | 9/23/2023 | 1000 | Hail | 1 | | 0 | 0 | 0 | 0 |
| 1166174 | HARRISON CO. | LITTLE SIOUX | 4/30/2024 | 1425 | Thunderstorm Wind | 53 | | 0 | 0 | 0 | 0 |
| 1181294 | HARRISON CO. | MODALE | 5/24/2024 | 137 | Thunderstorm Wind | 93 | | 0 | 0 | 0 | 0 |
| 1181267 | HARRISON CO. | MISSOURI VLY | 5/24/2024 | 138 | Thunderstorm Wind | 63 | | 0 | 0 | 0 | 0 |
| 1181269 | HARRISON CO. | MISSOURI VLY ARPT | 5/24/2024 | 141 | Thunderstorm Wind | 62 | | 0 | 0 | 0 | 0 |
| 1181270 | HARRISON CO. | MISSOURI VLY | 5/24/2024 | 145 | Thunderstorm Wind | 64 | | 0 | 0 | 0 | 0 |

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| 1181274 | HARRISON CO. | PERSIA | 5/24/2024 | 152 | Thunderstorm Wind | 50 | | 0 | 0 | 0 | 0 |
| 1181282 | HARRISON CO. | PERSIA | 5/24/2024 | 207 | Thunderstorm Wind | 61 | | 0 | 0 | 0 | 0 |
| 1198299 | HARRISON CO. | LITTLE SIOUX | 6/12/2024 | 1908 | Hail | 1.75 | | 0 | 0 | 0 | 0 |
| 1198300 | HARRISON CO. | LITTLE SIOUX | 6/12/2024 | 1921 | Hail | 1.5 | | 0 | 0 | 0 | 0 |
| 1198304 | HARRISON CO. | LITTLE SIOUX | 6/12/2024 | 1929 | Hail | 3 | | 0 | 0 | 0 | 0 |
| 1198305 | HARRISON CO. | LITTLE SIOUX | 6/12/2024 | 1929 | Thunderstorm Wind | 56 | | 0 | 0 | 0 | 0 |
| 1198636 | HARRISON CO. | MISSOURI VLY | 6/25/2024 | 1900 | Hail | 1.5 | | 0 | 0 | 0 | 0 |
| 1206728 | HARRISON CO. | MISSOURI VLY ARPT | 7/31/2024 | 1714 | Thunderstorm Wind | 50 | | 0 | 0 | 0 | 0 |
| 1206730 | HARRISON CO. | MISSOURI VLY | 7/31/2024 | 1723 | Thunderstorm Wind | 60 | | 0 | 0 | 0 | 0 |
| 1206732 | HARRISON CO. | LOGAN | 7/31/2024 | 1735 | Thunderstorm Wind | 50 | | 0 | 0 | 0 | 0 |
| 1245322 | HARRISON CO. | MISSOURI VLY | 3/14/2025 | 1614 | Thunderstorm Wind | 53 | | 0 | 0 | 0 | 0 |
| 1282502 | HARRISON CO. | MONDAMIN | 7/28/2025 | 221 | Thunderstorm Wind | 52 | | 0 | 0 | 0 | 0 |
| 1290170 | HARRISON CO. | MISSOURI VLY ARPT | 8/9/2025 | 522 | Thunderstorm Wind | 87 | | 0 | 0 | 0 | 0 |
| 1294737 | HARRISON CO. | PISGAH | 9/22/2025 | 2112 | Hail | 1 | | 0 | 0 | 0 | 0 |

**Iowa DNR Spill Data 1/1/2020—12/31/2025**

| Spill Number | Responsible Party Name | Location City | Location County | Discovered Date | Incident Status | Medium | Material | Incident Information |
|---|---|---|---|---|---|---|---|---|
| 010624-BM1-0906 | Road Ditch | Woodbine | Harrison | 1/6/2024 8:39 AM | Closed | Land | Sodium Bisulfate: 11430 Pounds | (01/08/2024) Vehicle pulling a trailer slid through the intersection due to icy roads and overturned into the ditch. |

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| 011923-ARM-0929 | Road Surface | Missouri Valley | Harrison | 1/19/2023 7:06 AM | Closed | Land | Diesel Fuel: 50 Gallons | (01/19/2023) A 50 gallon diesel fuel spill occurred as a result of a traffic accident on the I-29 Northbound ON ramp. The accident involved a vehicle that punctured the side of the fuel tank of a semi truck. |
| 013123-KRB-0915 | Road Ditch | Dunlap | Harrison | 1/30/2023 4:00 PM | Closed | Land | Corn Syrup: 500 Gallons | (01/31/2023) Truck took a corner too short, tipped over, punctured hole in 10,000 gallon capacity tank. Only about 500 gallons leaked out onto frozen snow covered ground. Within an hour, another semi was onsite to off load remaining product. |
| | | | | | | | | A backhoe was onsite the same evening to perform clean up of the frozen corn syrup. No water impacted. |
| 013124-JJB-0950 | Road Ditch | Mondamin | Harrison | 1/31/2024 9:00 AM | Closed | Land | Diesel Fuel: 40 Gallons | (02/06/2024) Due to driver error, 40 gallons of diesel full was spilt in a roadside ditch. |
| 021625-BM1-1240 | Private Property (rp Not Owner) | Woodbine | Harrison | 2/16/2025 11:15AM | Closed | Land | Mineral oil: 7 Gallons | (02/16/2025) RP waspushing snow at the property and accidentally ran into the transformer. The case around the transformer cracked causing 7 gallons of non PCB mineral oil to leak into the dirt within the fiberglass pedestal of the transformer. |
| 030322-JTB-1945 | | Little Sioux | Harrison | 3/3/2022 7:00 PM | Closed | Land | non-PCB Oil: 80 Gallons | (03/07/2022) Two transformers of unknown size blew up causing a building fire. Fire Departments were onsite. MidAmerican is waiting for the site to be cleared so further investigation can occur. |

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| 030824-BM1-0825 | Road Ditch | Woodbine | Harrison | 3/8/2024 7:54 AM | Closed | Land | Soap: 40100 Pounds | (03/12/2024) A TRACTOR TRAILER TRUCK ROLLED OVER DUE TO ICEY ROADS. AN UNKNOWN AMOUNT OF SOY BEAN SOAP STOCK RELEASED INTO A DRAINAGE DITCH. |
| 040123-LRO-0520 | Road Ditch | Mondamin | Harrison | 4/1/2023 5:00 AM | Closed | Land | Diesel Fuel: 60 Gallons | (04/06/2023) Truck in accident at on-ramp from rest area. Lost fuel from fuel tanks. |
| 041024-KRB-1005 | Harrison County REC | Logan | Harrison | 4/10/2024 10:05 AM | Closed | Land | Transformer Oil (Non PCB): 5 Gallons | (04/10/2024) A tree fell on the power pole, causing a spill of Non-PCB oil. |
| 041024-LLB-2134 | | Modale | Harrison | 4/10/2024 9:00 PM | Closed | Land | Diesel Fuel: 10 Gallons | (04/12/2024) Per email from Lois Benson, FO3: I was paged at 9:34 by the DOT dispatcher about an accident at I-29 mile marker 81.5 in Harrison County.<br>Accident occurred around 9. A semi had a blow out and overturned and was leaking diesel into the ditch. It was too dark to do much so they will investigate this morning. I spoke with Sgt. Meadows and he said there were no waters of the State nearby and it was contained although still slowly leaking. No estimate on amount, but just one side tank. |
| 041123-DAK-1847 | Gingerich Structures | Missouri Valley | Harrison | 4/11/2023 5:40 PM | Closed | Land | Hydraulic Fluid: 100 Gallons | (04/13/2023) 100gallons of hydraulic fluid spilled to the ground/gravel at Gingerich Structures in Missouri Valley. A boom lift had an electrical malfunction causing it to catch fire and release hydraulic oil. The release occurred within 25 feet from a roadside ditch. |

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| 041420-DWW-1727 | Road Ditch | Logan | Harrison | 4/14/2020 3:24 PM | Closed | Land | Diesel Fuel: 60 Gallons | (04/20/2020) A RoGator (fertilizer spreader) and a semi were involved in an accident where fuel was released to the shoulder of the road when the RoGator turned left in front of the semi. DWW |
| 041624-KRB-1638 | | Logan | Harrison | 4/16/2024 4:00 PM | Closed | Land | Transformer Oil (Non PCB): 5 Gallons | (04/17/2024) During the wind/rain storm, a pole broke in the alley at 201 E 6th St., Logan. Wires are still down, so MidAmerican can't get to the pole yet. Ms. Leslie was unsure if the oil was PCB or non-PCB at the time of the call. Oil was discovered on the customer's roof and garage. This particular transformer can hold a maximum of 50 gallons, so that is what was reported. |
| 050125-DO-0447 | Mies & Sons Trucking | | Harrison | 5/1/2025 4:03 AM | Closed | Land | Cream: 47000 Pounds | Traffic accident resulted in a spill of grade A cream in the I-29 median at mm 94.5. Personnel onsite noted a wetland nearby but didn't see any spill to the wetland or any affected drains. The interstate is closed while DOT removed debris. The driver was taken to the hospital. Arrow Trucking will remove the truck at daylight. |
| 050520-JMT-0607 | Road Ditch | Missouri Valley | Harrison | 5/5/2020 4:50 AM | Closed | Land | Diesel Fuel: 50 Gallons | (05/15/2020) Semi lost control and left the interstate on the nb side, ending up in the east ditch and diesel was released to the ground. Clean up sight and smell. JMT |

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| 051123-ARM-1615 | Rivera Transportation LLC | Modale | Harrison | 5/11/2023 4:00 PM | Closed | Land | Engine oil: 4 Gallons | (05/12/2023) A semi broke down near the 72 mile marker, southbound on I-29, north of Loveland.<br>Highway Helper and the Modale FD were at the scene. As a result of a hole in the engine of the truck, approximately 3.5 gallons of engine oil spilled but was contained to the concrete. |
| 052322-JTB-0812 | Agrivision | Missouri Valley | Harrison | 5/20/2022 4:30 PM | Closed | Land | Oil: 100 Gallons | (05/23/2022) Used oil, that was in a storage container outside, leaked through its spigot, roughly 100 gallons. |
| 052825-JB-1026 | Harms Oil | Logan | Harrison | 5/28/2025 10:00 AM | Closed | Land | Diesel Fuel: 3 Gallons | Tanker truck was refilling a diesel tank at Yes Way in Logan which overflowed causing 3 gallons of diesel to spill across the pavement and into the storm drain. Floor dry was applied to the pavement and into the storm drain. ESC - Omaha, an environmental cleanup company, was hired by the responsible party (Harms Oil) to clean out the storm drain. |
| 060224-ARM-1226 | Caseys General Store 2665 | Woodbine | Harrison | 6/2/2024 12:20 PM | Closed | Land | Gasoline non-ethanol: 400 Gallons | (06/03/2024) A tanker was filling up the USTs and a valve malfunctioned. The driver was unable to turn the valve off right away and 400 gallons was spilt. |
| 061623-ARM-1210 | Road Ditch | Missouri Valley | Harrison | 6/14/2023 7:30 PM | Closed | Land | Liquid Nitrogen: 50 Gallons | (06/19/2023) A driver error resulted in a 50 gallon liquid nitrogen spill in a roadside ditch. |

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| 062323-DPO-0546 | Bitcoin Logistics | | Harrison | 6/22/2023 5:03 PM | Closed | Land | Diesel Fuel: 50 Gallons | (06/23/2023) A semi traveled off the road and ended up in the adjacent crop field. A saddle tank was ruptured and approximately 50 gallons of diesel fuel spilled into the field. There were no waters of the state or tile intakes impacted. |
| 070725-JB-1322 | Idot - I-29 Rest Stops | | Harrison | 7/7/2025 1:22 PM | Closed | Land | Engine oil: 100 Gallons | State Trooper Luke Fergeson called to report a spill yesterday. The spill was discovered at a rest area on I29 (between Modale and Missouri Valley) and was described as "100 gallons of diesel floating on water puddles". There was no responsible party. I contacted Jaime Hoefer with the DOT for cleanup. As it turns out, it was oil, not diesel. The puddles were vacced up, then the area was power washed. The runoff from power washing was collected with the vac truck. The vac truck company originally asked if the wastewater could be taken to the City of Logan WWTF (evidently the City gave them permission), to which I said no. Since it was only about 100 gallons of water and oil mixture, the vac truck company decided to use their oil separator and will store the removed oil on site until it is picked up by a third party for disposal. |
| 073023-KRB-1133 | Road Ditch | Neola | Harrison | 7/30/2023 12:48 AM | Closed | Land | Transformer Oil (Non PCB): 6 Gallons | (07/31/2023) Tree fell on a power line, breaking pole, and causing transformer oil to spill. |

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| 080625-WW-1015 | Rockin K Solutions | Dunlap | Harrison | 8/6/2025 9:24 AM | Closed | Surface Water | Oil: 1200 Gallons | Report from Harrison County dispatch regarding a small explosion and large fire at Rockin K Solutions, located at 310 N 6th St, Dunlap, Iowa. On-site personnel requested DNR on-site for a potential release of oils and fuels from the fire. |
| 080823-BM1-1355 | Road Ditch | Missouri Valley | Harrison | 8/8/2023 8:48 AM | Closed | Land | Diesel Fuel: 100 Gallons | (08/08/2023) Per Harrison County EMA-Semi was SB on I-29 and crossed the median into the NB lane and struck a vehicle resulting in a fatality in the struck vehicle. Fuel spill is in the east ditch of I-29 just south of the NB exit ramp.<br>Per Mr. Durshpek-trucking company owner, Driver of semi suffered a medical emergency leading him to cross the center median. |
| 081020-AHB-1600 | Storm Related Blanket Spill # | Logan | Harrison | 8/10/2020 4:00 PM | Closed | Land | Transformer Oil (Unknown PCB): 10 Gallons | (09/14/2020) During the Derecho storm event MidAmerican Energy lost transformers throughout the state. This report is a blanket spill report covering all MidAmerican spills that occurred as a result of the storm within Harrison county. Specific locations and quantities of materials release can be found in the attached spreadsheet and follow-up written report. |

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| 081021-KRB-0945 | Heartland Cooperative | Logan | Harrison | 8/10/2021 8:37 AM | Closed | Air | Ammonia (anhydrous) - Agricultural: 1 | (08/10/2021) Customer was filling anhydrous tank, front valve broke, causing a release.<br>After the valve was closed, there was a small leak that occurred for an additional ~5 minutes. Harrison County EMA stated that the plume around the Coop had dissipated. |
| 081524-DPO-1510 | | Missouri Valley | Harrison | 8/15/2024 3:10 PM | Closed | Air | Natural gas: 1 unk | (08/15/2024) UPRR personnel were using a brush cutter near the intersection of North Willow Road and West Huron Street when they hit a valve or pipe. After hitting the pipe, they noticed a strong odor of natural gas. |
| 090424-DPO-1629 | Ohlsen Trucking | Modale | Harrison | 9/4/2024 4:00 PM | Closed | Land | Gypsum: 56000 Pounds | (09/04/2024) Semi rollover accident due to unknown cause. |
| 092221-JRM-1250 | K & W Electric | | Harrison | 9/22/2021 12:30 PM | Closed | Air | Natural Gasoline: 200 Pounds | (09/23/2021) While doing electrical work, the trenching resulted in an employee to hit a pipeline. They were doing electrical work in the area of Highway 30 near Petromart |

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| 092325-BM-0935 | BKD Farms | Dunlap | Harrison | 9/22/2025 8:00 PM | Closed | Land | Diesel Fuel: 25 Gallons | Mark, Boyer Valley Car Wash, called to report that last night (9/22/25) a semi pulled into his lot and broke off it's fuel tank and spilled diesel in the lot. The truck driver added some floor dry to it but did nothing further.<br>Spoke to Dunlap City staff who stated last night city employees including police and Harrison county EMA were notified and applied floor dry and saw dust to the affected areas. There is still staining present and absorbents are still on the ground. I spoke to the RP who stated he would have the cleanup company come and clean up the floor dry and affected areas to sight and smell standards. |
| 092424-ADW-0637 | Railroad Line Segment | Missouri Valley | Harrison | 9/24/2024 6:37 AM | Closed | Land | Tallow: 1000 Pounds | (10/04/2024)<br>Discovered by residents of Jefferson and the Greene County Sheriff department. I spoke with UPRR and they said the spill was from Scranton to Boone, and the railcar was taken out of service and repaired in Boone. I investigated and found the spill came from beyond Iowa (at least from Nebraska). Company used microblaze starting 9/23/24 all along the affected areas listed above, with focus on crossings. |
| 100520-HJV-1939 | Harrison County Landfill | Logan | Harrison | 10/5/2020 7:00 PM | Closed | Land | Solid waste: 1 Pounds | (10/21/2020) Landfill fire |

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| 101024-JJB-1229 | Road Ditch | Mondamin | Harrison | 10/10/2024 12:29 PM | Closed | Land | Animal fat: 300 Gallons | (10/23/2024) At 12:29 pm on 10/10/2024 Bonnie Costello with Harrison County Emergency Management called to report an ongoing spill on I-29 at MM 83.3 in the northbound lane. A rendering truck carrying "animal fat product" has pulled over to the side of the road and is still currently leaking material. I arrived on-scene at 2:30pm. At that time, the spill had been cleaned off the roadway and the northbound right lane has been reopened, but there is still a |
| | | | | | | | | substantial amount along the shoulder and in the ditch. The spill began at mile marker 86 and ended at 86.3, south of the Mondamin exit. The bulk of it is located near a waterway, but appears to be contained in the ditch, for now (see photos and aerial map below). Sand was applied to the road and vacced up using a street sweeper by DOT. The material will be disposed of at the landfill, according to DOT. I will contact the responsible party tomorrow to determine next steps with cleanup. According to Bonnie, the spill is due to the tanker becoming pressurized and blowing a valve open. |

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| 102423-WSW-1506 | | Missouri Valley | Harrison | 10/24/2023 3:00 PM | Closed | Land | Lubricating oil: 45 Gallons | (11/14/2023) Per Jayde Duysen-Release of 45 gallons of locomotive lube oil. Only less than a half gallon of oil dripped onto the ground. The rest of the oil was contained in a pan. No water sources impacted. |
| 110621-TMN-1430 | Heller Bulk Fuel Site | Dunlap | Harrison | 11/30/2021 12:30 PM | Closed | Land | Diesel Fuel: 600 Gallons | (11/30/2021) On November 6, 2021, the Department of Natural Resources (DNR) Field Office 4 (FO4) received notification from Phillip Davis, Harrison County Emergency Management, that they were actively responding to a 600 gallon diesel spill in Dunlap originating from the Heller Implement bulk fuel facility (105 West Remsen) and spilling fuel for a number of blocks until the valve was closed at the shop located at 310 N. Sixth St. Multiple FDs responded and applied absorbents (Mondamin and Woodbine besides Dunlap). |
| 111524-JTB-1200 | Harms Oil | Logan | Harrison | 11/15/2024 11:45 AM | Closed | Land | Gasoline non-ethanol: 8 Gallons | (11/15/2024) While filling the underground storage tank, the valve broke at the fill causing gasoline to spill onto the pavement and into the stormwater drain nearby. |
| 112223-ARM-1445 | Road Ditch | Little Sioux | Harrison | 11/22/2023 2:30 PM | Closed | Land | Dry Fertilizer: 24240 Pounds | (11/27/2023) 24,240 pounds of dry fertilizer was spilled into the roadside ditch at the intersection of Eason Trail and Larpentur Memorial Road (~1 mile NE of Little Sioux). |

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| 121621-RPY-0830 | Union Pacific Railroad | Missouri Valley | Harrison | 12/16/2021 8:03 AM | Closed | Land | Motor oil: 75 Gallons | (12/16/2021) Winds blew an empty 55 gallon drum into a used oil tank which damaged a valve causing a the contents to leak. an estimated 50-100 gallons were spilled. |

# Appendix D: Meeting Notices and Sign-in Sheets