Montgomery County
Multi-Jurisdictional
Hazard Mitigation Plan
2025

FEMA Approval Letter

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The views and opinions of the authors [or agency] expressed herein do not necessarily state or reflect those of FEMA and/or IHSEMD.

Montgomery 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 Montgomery 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 Montgomery County Hazard Mitigation Plan. This new plan will bring the Hazard Mitigation Plan into FEMA compliance.

The overall goal of the Montgomery County Multi-Jurisdictional Hazard Mitigation Plan (from here on to be referred to as the "Montgomery 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 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 Montgomery 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

Montgomery County contracted with SWIPCO on May 9, 2024 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 Montgomery 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 Montgomery County HMP update was coordination of efforts with local, state, and federal agencies and organizations.

Coordination

In order to write the plan for Montgomery County, Southwest Iowa Planning Council 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, Montgomery County Emergency Management Agency (EMA) and Southwest Iowa Planning Council worked together to develop a multi-jurisdictional plan. The Montgomery County EMA helped to coordinate efforts to involve officials, stakeholders and residents of local jurisdictions. The Montgomery 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.

Community Profile

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

History

Montgomery County was named in honor of General Richard Montgomery who died at the assault of Quebec in the Revolutionary War. The Pottawattamie Tribe of the Algonquian family originally inhabited Montgomery County. When the State of Iowa was admitted into the United States in 1846, the Pottawattamie Tribe exchanged their land for a reservation in Kansas. The General Assembly established the county in 1851 and the first county elections were held in 1853. Prior to this the county was attached to Adams County for judicial and financial reasons. The original county seat of Montgomery County was the City of Frankfort. In 1865, the City of Red Oak Junction, later dropping “Junction” in 1901, became the county seat and has remained the county seat since. The first courthouse was a simple wooden-framed structure located in the City of Frankfort. After the contest between Frankfort and Red Oak for the county seat was decided, the building was hitched to a team of oxen and towed to Red Oak during the winter of 1865. Whilst being towed, the building had to be abandoned during a

blizzard and was lost, though eventually found and relocated in Red Oak. With the growing needs of the county, a second courthouse was built in 1890, but not after two failed attempts for approval. As the railroad was developed west across Iowa into Montgomery County in the late 1860's, cities then began to sprout up along the railroad lines. Between 1870 and 1880, the population of the county tripled in size. Red Oak became the trade center for the area with industries such as meatpacking, brewery, a glove factory, buggy manufacturing, a cannery, four mills and a brick and tile works. The original prairie land evolved into farmland as people moved into the county in the late 1800's and agriculture has remained a major industry of the county to this day.

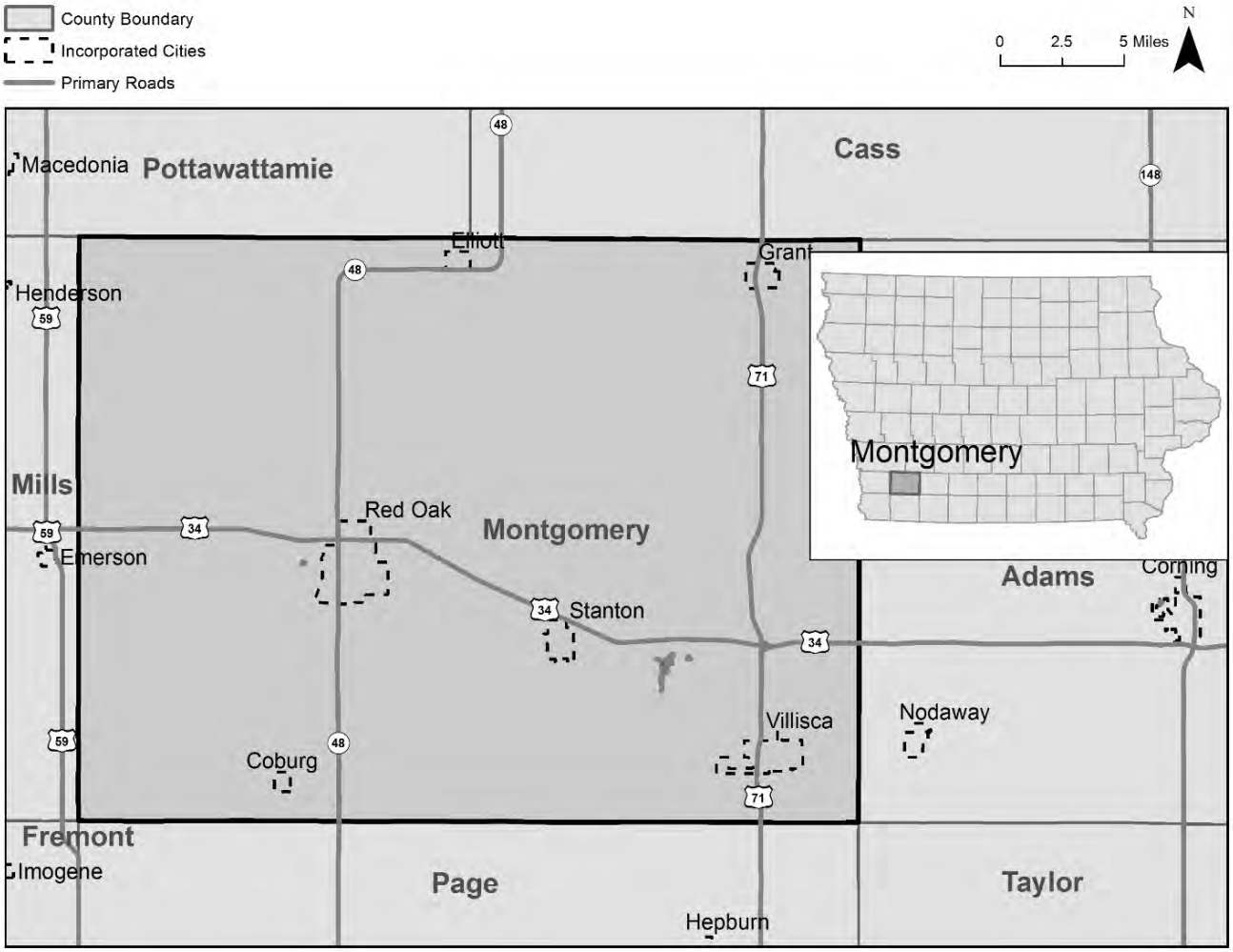
Geography and Environment

Montgomery County is a rural county located in Southwest Iowa, approximately 94 miles west southwest of Des Moines and 25 miles east southeast of the Omaha/Council Bluffs Metropolitan Area. With an area of 425.1 square miles, Montgomery County ranks 93rd in size of Iowa's 99 counties. The county is a rectangular shape with its longest length at 31.6 miles east to west and 23.6 miles north to south. The county seat of Montgomery County is the City of Red Oak located in the central portion of the county. Five other incorporated communities are located within Montgomery County, which are the cities of Coburg, Elliott, Grant, Stanton and Villisca. There are also six unincorporated towns named Hawthorne, McPherson, Morton Mills, Stennett, Tenville and Wales. Counties adjacent to Montgomery County are Mills County to the west, Adams County to the east, Pottawattamie and Cass Counties to the north, and Page County to the south.

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

Map 1.1 - Montgomery County Location

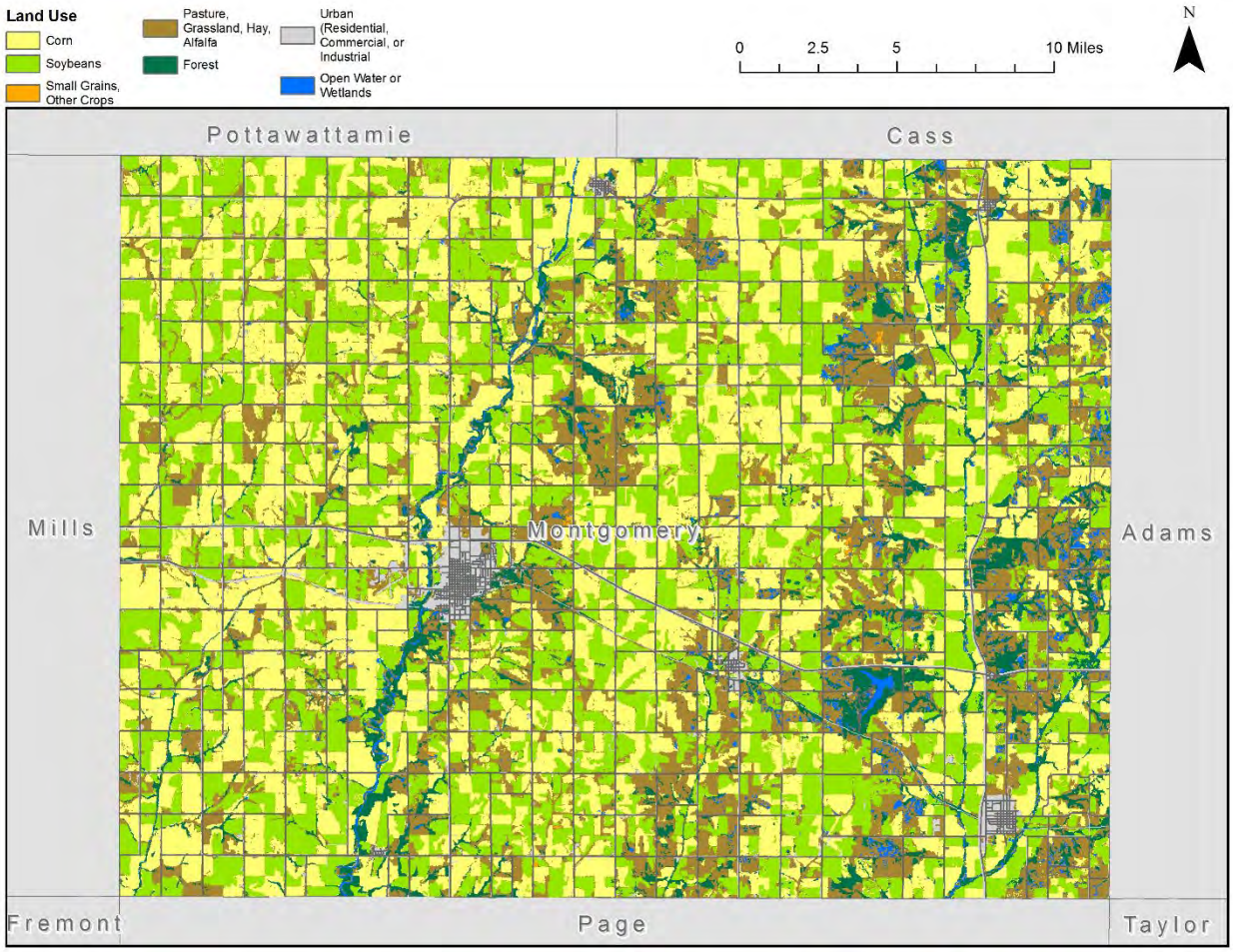
Source: Iowa Department of Natural Resources



Land Use

Land use in Montgomery 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 35 percent and 33.2 percent respectively and is dispersed evenly throughout the county. Pasture, grasslands, hay and alfalfa make up the third largest area at 19.47 percent and is located more on the eastern half of the county. Forest accounts for only 4.34 percent of the area while open water and wetlands account for approximately 1 percent with these areas more abundant on the eastern half of the county as well. Incorporated urban areas make up just under 7 percent of the land use in the county with Red Oak accounting for the largest urban area land use. This highlights the importance of the agricultural industries to the county. The land cover map illustrates the distribution of land use throughout the county.

Map 1.2 - Montgomery County Land Use

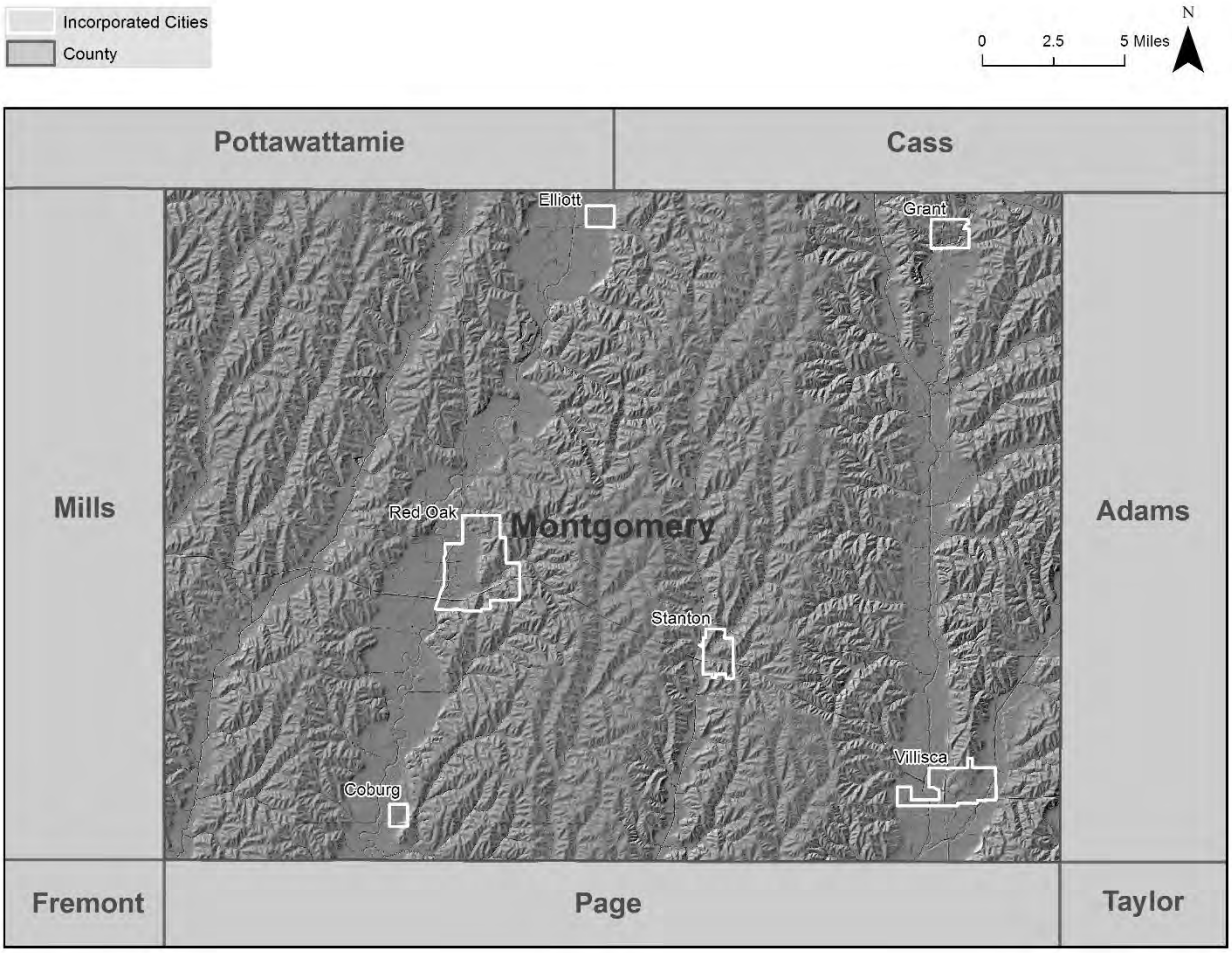


Source: United States Department of Agriculture, Natural Resources Conservation Service

Elevation

The topography of Montgomery County is similar that of the region and consists of mostly rolling hills with slopes and are cut by various streams, tributaries, and intermittent drainage ways. The uplands near the rivers and main streams have steeper, more abrupt slopes, and the hills are narrower and less rounded. The benches, or second bottom lands, which are in the valley of the East Nishnabotna River and the Nodaway Rivers, are nearly level or gently sloping. The valleys are generally one to three miles wide. Elevation between the communities is fairly simliar with only a 105 foot elevation difference between the outlying values. Below is a map and table illustrating the county's elevation.

Map 1.3 - Montgomery County Shaded Relief



Source: Iowa Department of Natural Resources

Table 1.1 - Elevation by Populated Places

Coburg	1073 ft.	Red Oak	1050 ft.
Elliott	1073 ft.	Stanton	1155 ft.
Grant	1145 ft.	Villisca	1076 ft.

Source: TopoZone

Rivers, Streams, and Lakes

The major types of waters in Montgomery 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 Montgomery County rely on primarily underground water sources through shallow wells that tap into aquifers near the existing streams or rivers.

Montgomery County has approximately 586 miles of rivers and streams. Major rivers within Montgomery County include the Nishnabotna, West Nodaway, and Middle Nodaway Rivers. Flowing into these rivers are at least eight creeks in Montgomery County including Indian, Walnut, Crabapple, Tarkio, Little Tarkio, West and East Tarkio and Seven Mile Creeks. These creeks and rivers flow mainly from north to southwest throughout the county.

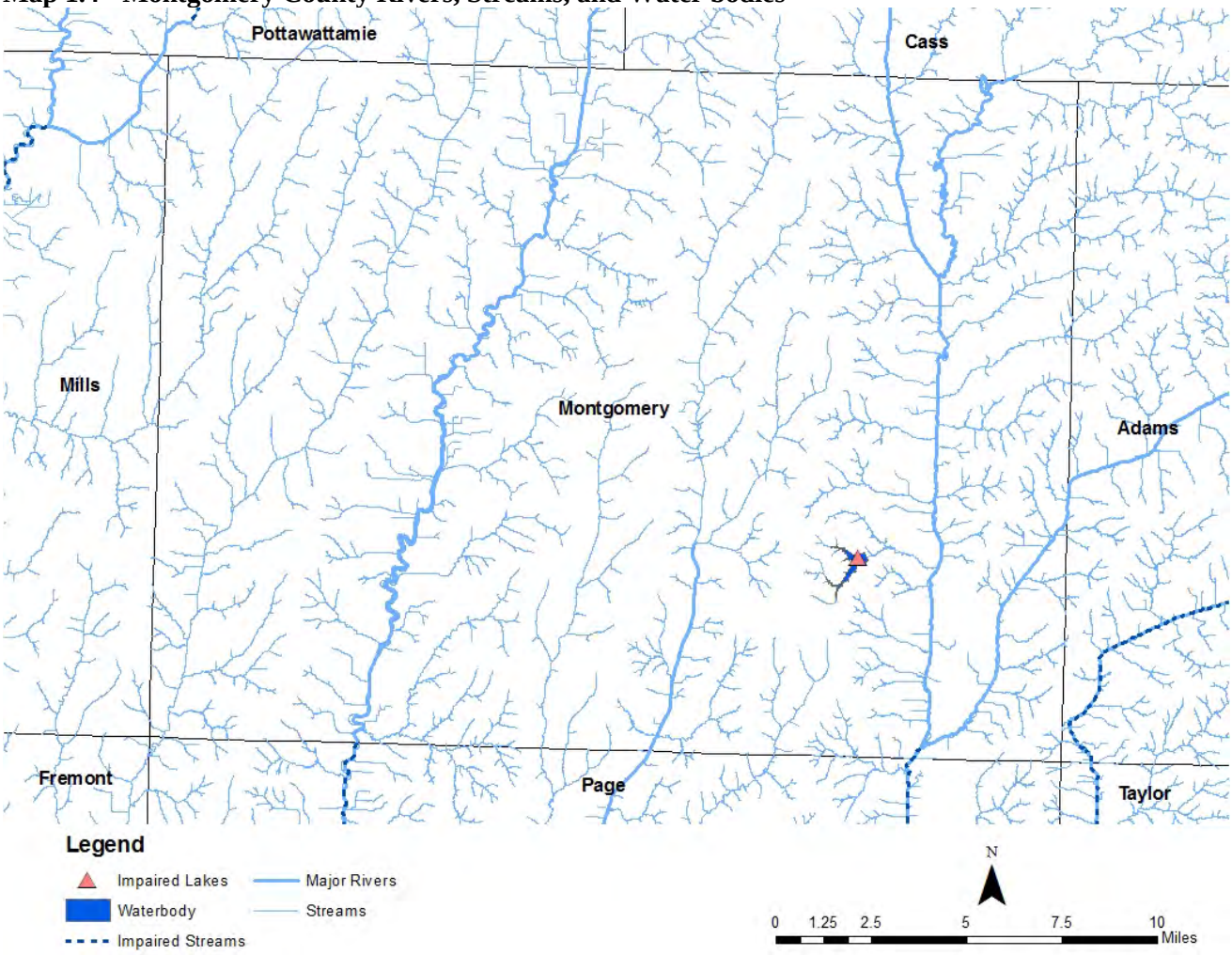
The eastern third of the county drains into the West and Middle Nodaway Rivers. The area to the west of that drainage area drains into the Tarkio Creek. The middle/west portion of the county, which includes the Red Oak area, drains into the East Nishnabotna River. The western quarter of the county drains into the Walnut and Indian Creeks.

The confluence of the west and middle Nodaway River located near the southern border of Montgomery County, is designated as impaired under Section 303(d) of the Clean Water Act due to an indication of bacteria due to pollutants, though this priority is considered low. Much of this creek is located in Cass County with only a small portion in Montgomery County.

Rivers in the county are subject to sudden fluctuations due to the nature of the soils, land, 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.

There is only one lake located in Montgomery County and it is named Viking Lake. Located in the southeastern part of the county, this lake is 147 acres in size which is considered small compared to other lakes in Iowa. The lake is currently designated for use for aquatic life, fish consumption, recreation and drinking water. It is listed as impaired under Section 303(d) of the Clean Water Act due to an indication of bacteria from either a pollutant or an unknown source and is of medium priority.

Map 1.4 - Montgomery County Rivers, Streams, and Water bodies



Source: Iowa Department of Natural Resources

Ponds and Wetlands

There are 1,176 individual freshwater ponds and 1,989 individual wetlands located in Montgomery County totaling 3,766.56 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 is 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 Montgomery County, 98 percent of them are smaller than 10 acres with the average size for all ponds and wetlands being 1.2 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

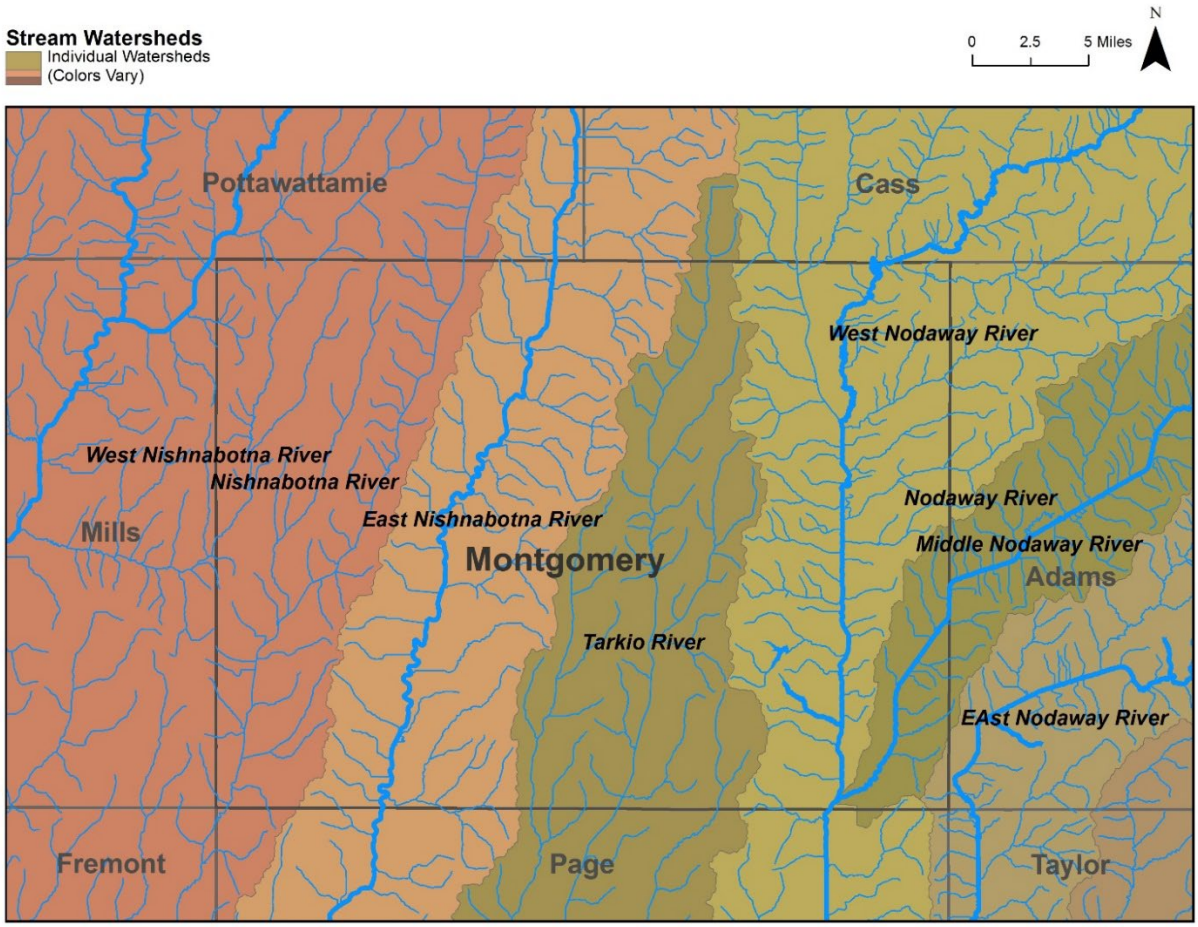
lakes can also hold water for periods of time during dry periods and can lessen the effect of a drought in a region. At the same time, these areas can become reservoirs and buffers during periods of heavy precipitation and can lessen the impact of flooding. Vegetation around these areas also play a key 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. Six watersheds are located within Montgomery County. The western half of Montgomery County is made up of the East and West Nishnabotna River watersheds while the East, Middle and West Nodaway River watersheds make up the eastern third of the county. The Tarkio River splits the two watersheds in half and makes up the remaining part of the county watersheds. These watersheds, with the exception of the Tarkio River watershed, run well into the counties north and to the east of Montgomery County and are greatly affected by the events that occur upstream in those counties. The Nodaway River watershed begins in Adair and Cass County and travels though portions of Adams County with the West and Middle Nodaway River watersheds eventually moving fully into Montgomery County. The East Nishnabotna watershed begins primarily in Audubon and Cass County before narrowing and running into Montgomery. The West Nishnabotna begins farther north in Crawford and Carroll Counties before moving south into Audubon and Shelby Counties then into Pottawattamie County. The portion of the West Nishnabotna river in Montgomery County has no major rivers within the watershed thus is affected less by the areas of the watershed located in the far northern counties. The Tarkio River watershed would be least affected by water drainage from the northern counties of Pottawattamie and Cass as the watershed begins slightly north of Montgomery County.

Developed in 2019, the East Nishnabotna River Watershed Management and Flood Resiliency Plan and the West Nishnabotna River Watershed Management and Flood Resiliency Plan address flood mitigation and resilience, water quality improvement and other resource concerns for their respective areas. Mitigation actions were developed in conjunction with the plans to aid communities in better addressing areas of concern such as flooding, high nitrogen and phosphorus levels, high levels of bacteria and stream bank erosion.

Map 1.5 - Montgomery County Watersheds

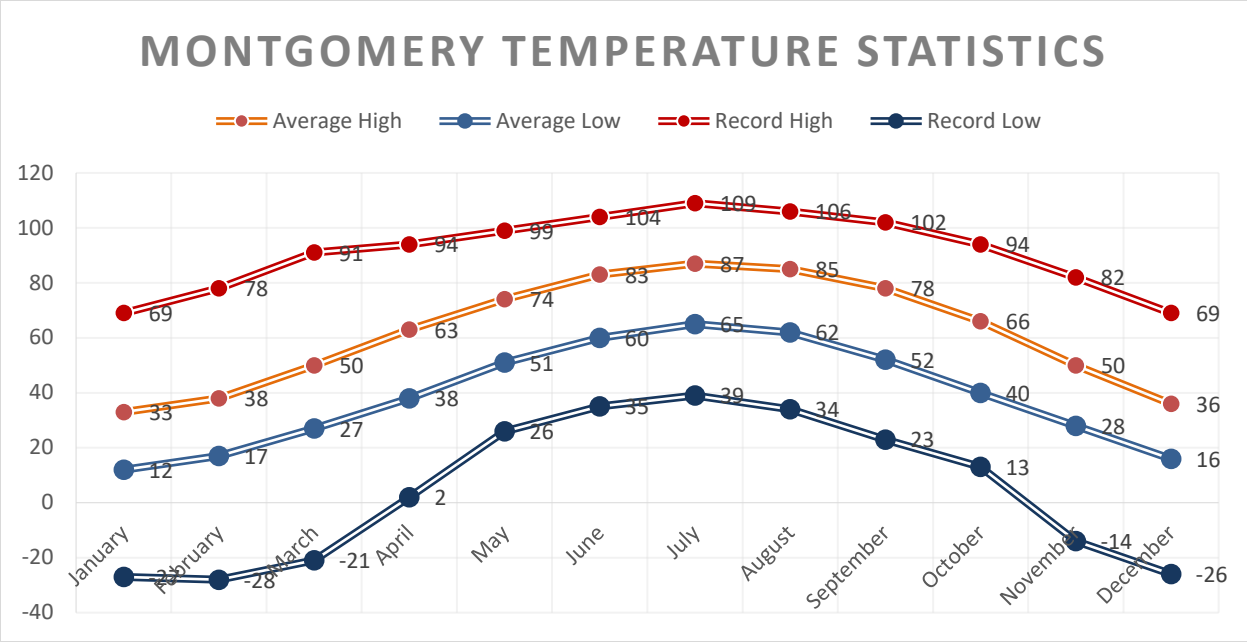


Source: Iowa Department of Natural Resources

Climate and Weather

Montgomery 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 33ºF and a low of 12ºF with a record low of -27ºF in 1996. July summer temperatures average between a high of 87ºF and a low of 65ºF with a record high of 109ºF in 1974. The annual average precipitation for the county is 36.58 inches. The spring and summer months of May, June and July see the highest average precipitation between 4.3 and 5.7 inches per month. Flood risk are 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 an average of less than 1.3 inches in precipitation. Although precipitation is at its lowest during the winter months, snowstorms, ice storms and blizzards are common.

Figure 1.1 - Montgomery County Historic Temperature Records



Source: weather.com

Population and Households

Montgomery County reached its peak population period around the year 1900, when the population was 17,803. Since then the county population has habitually declined, with only minor growth shown occasionally. Like many other rural counties in the State of Iowa, Montgomery County experienced a sharp decline in its population during the 1980's. The 2020 census showed the county's population at 10,330, the lowest population the county has seen since 1870. The 2023 estimates show further loss of population at 10,254. 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 with a reduction of farm-related jobs.

Table 2 below shows Montgomery County's population trends as compared to the State of Iowa. Montgomery County ranks as the 72nd in population for Iowa's counties according to the 2020 Census carrying only 0.3 percent of the State of Iowa's total population. 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 1.2 - Population Trends for the State of Iowa and Montgomery County, 2010-2023

	2010	2020	2023(estimated)	% Change 2010-2020	% Change 2020-2023
Montgomery County Total	10,740	10,330	10,254	-3.8%	-0.7%
State of Iowa Total	3,046,355	3,190,369	3,195,937	4.7%	0.2%

Source: U.S. Census, American Community Survey 2019-2023 5-year estimates

Red Oak and Villisca are the only two communities with a population over 1,000, while the remaining communities each have a population under 700 according to the most recent U.S. Census American Community Survey estimates. All incorporated cities have had an overall loss in population since the 2000 Census. When looking at the population change from the 2000 Census to the 2020 Census, the City of Coburg shows the greatest

loss of 38.1% followed by the unincorporated county at a decrease of 15.5%. The City of Stanton shows the smallest loss of 1.6% followed by Red Oak with 2.5%.

Table 1.3 - Population Trends for All Jurisdictions within Montgomery County, 2010-2023

Montgomery County	2010	2020	2023(estimated)	% Change 2010-2020	% Change 2020-2023
Coburg	42	26	51	-38.1%	96.2%
Elliott	350	338	419	-3.4%	24.0%
Grant	92	86	40	-6.5%	-53.5%
Red Oak	5,742	5,596	5,542	-2.5%	-1.0%
Stanton	689	678	670	-1.6%	-1.2%
Villisca	1,252	1,132	1,004	-9.6%	-11.3%
Unincorporated Montgomery County	2,573	2,174	2,528	-15.5%	16.3%
Montgomery County Total	10,740	10,330	10,254	-3.8%	-0.7%

Source: U.S. Census, American Community Survey 2019-2023 5-year estimates

Montgomery County is largely comprised of persons considering themselves White or Caucasian, totaling 93.3 percent of the population, which is significantly higher than the State of Iowa's 85.6 percent. Persons of Hispanic origin represent the largest non-Caucasian population in the State of Iowa while those identifying as two or more races makes up the largest non-Caucasian population within Montgomery County. These numbers are illustrated in Table 4 below.

Table 1.4 - Montgomery County Jurisdictions and State of Iowa Populations by Race and Hispanic/Latino 2023

Percent Population by Race and Hispanic/ Latino	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)
Coburg	92.2%	0.0%	0.0%	0.0%	0.0%	0.0%	7.8%	0.0%
Elliott	99.8%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	3.3%
Grant	97.5%	0.0%	0.0%	0.0%	0.0%	0.0%	2.5%	0.0%
Red Oak	90.3%	1.0%	0.5%	0.9%	1.0%	1.7%	4.6%	1.7%
Stanton	95.8%	0.9%	0.1%	0.0%	0.0%	0.0%	3.1%	0.6%
Villisca	95.8%	0.0%	0.1%	0.0%	0.0%	1.3%	2.8%	2.3%
Montgomery County Total	93.3%	0.6%	0.3%	0.6%	0.5%	1.6%	3.1%	1.7%
State of Iowa Total	85.6%	3.9%	0.3%	2.4%	0.1%	2.0%	5.6%	7.0%

Source: U.S. Census, American Community Survey 2019-2023 5-year estimates

Montgomery County's median age rate is 43.8 years, substantially higher than the State of Iowa's at 38.6 years. This illustrates the County as having an aging population. One jurisdiction, Coburg, has a lower median age rate than the State of Iowa at 28.5 years. Median ages run from 28.5 in Coburg to 53.8 in Stanton.

Table 1.5 - Montgomery County Jurisdictions and State of Iowa Populations by Age, 2023

Percent Population by Age	0-5 years	Under 20 years	20-64 years	65+ years	Median age
Coburg	15.6%	35.2%	43.1%	21.6%	28.5
Elliott	8.4%	28.4%	54.9%	16.7%	38.6
Grant	2.5%	12.5%	55.0%	32.5%	52.4
Red Oak	5.1%	24.9%	55.1%	20.0%	39.7
Stanton	5.7%	22.7%	50.7%	26.6%	53.8
Villisca	7.8%	22.8%	45.5%	31.7%	47.2
Montgomery County Total	5.4%	24.3%	52.8%	22.8%	43.8
State of Iowa Total	5.9%	26.0%	56.2%	17.8%	38.6

Source: U.S. Census, American Community Survey 2019-2023 5-year estimates

The U.S. Census measures households and families separately. A household is composed of one or more people who occupy a housing unit, whereas family households consist of two or more individuals who are related by birth, marriage, or adoption, although they may include other unrelated people. There were an estimated 4,609 households in Montgomery County in 2023. Of these households, 63.9 percent represent families, and 36.1 percent represent non-family households. These figures are consistent with the State of Iowa data. The average size of Montgomery County's households is 2.18 persons, comparable to the state average of 2.38. The average family size in Montgomery County is 2.70, just slightly under the state average of 2.99.

Table 1.6 - Montgomery County Jurisdictions and State of Iowa Households, 2023

Households by Type	Total Households	Percent Family Households	Percent Non-Family Households	Percent Householder living alone	Average Household Size	Average Family Size
Coburg	20	55%	45%	35.0%	2.55	3.18
Elliott	184	68.5%	31.5%	28.3%	2.28	2.68
Grant	22	54.5%	45.5%	50.0%	1.82	2.17
Red Oak	2,502	63.2%	36.8%	31.1%	2.16	2.68
Stanton	273	71.8%	29.2%	23.8%	2.33	2.74
Villisca	501	46.3%	53.7%	51.1%	1.93	2.85
Montgomery County Total	4,609	63.9%	36.1%	31.4%	2.18	2.70
State of Iowa Total	1,303,763	61.9%	38.1%	30.5%	2.38	2.99

Source: American Community Survey 2019-2023

Montgomery County's population living in urban areas represents slightly over half of the county in 2000, decreasing slightly to approximately 53.4 percent in 2010. Although this trend follows the State's pattern of urban households increasing slightly over the last ten years, note that almost half of Montgomery County households are rural, while just over one-third of Iowa households are considered rural.

Table 1.7 - Montgomery County and State of Iowa Rural and Urban Households 2010-2020

Percent of Rural and Urban Households	2010 Iowa	2010 Montgomery County	2020 Iowa	2020 Montgomery County
Total Population: Urban	64.02	53.4	63.1	55.1
Total Population: Rural	35.98	46.6	36.9	44.9

Source: U.S. Census, 2010 and 2020

Housing

Table 8, below, shows that nearly half of the housing units in Montgomery County were built before 1939. This is significantly high considering only 26 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 stock of new structures. Tables 9 and 10 show that all of the incorporated cities and the unincorporated areas in Montgomery County have an aging housing stock with 37 percent pf the county's housing stock built before 1939. 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. Red Oak has the smallest percentage of houses built prior to 1939 when compared to the rest of the County at 29.1 percent which is approximately 5 percent more than the State of Iowa.

Table 1.8 - Year structures have been built within Montgomery County and State of Iowa

Year Structure Was Built	State of Iowa		Montgomery County	
	#	%	#	%
Total	1,427,175		5,011	
2020 or later	14,095	1.0%	4	0.1%
2010-2019	126,217	8.8%	120	2.4%
2000-2009	152,872	10.7%	317	6.3%
1990-1999	142,227	10.0%	252	5.0%
1980-1989	101,092	7.1%	331	6.6%
1970-1979	200,592	14.1%	807	16.1%
1960-1969	138,245	9.7%	470	9.4%
1950-1959	141,131	9.9%	451	9.0%
1940-1949	66,730	4.7%	398	7.9%
1939 or earlier	343,974	24.1%	1861	37.1%

Source: US Census Bureau, American Community Survey 2019-2023 5-year estimates

Table 1.9 - Year structures have been built within Coburg, Elliott, and Grant

Year Structure Was Built	Coburg		Elliott		Grant		Red Oak	
	#	%	#	%	#	%	#	%
Total	20		207		23		2,712	
2020 or later	0	0.0%	0	0.0%	0	0.0%	0	0.0%
2010-2019	0	0.0%	0	0.0%	0	0.0%	61	2.2%
2000-2009	6	30.0%	2	1.0%	0	0.0%	139	5.1%
1990-1999	4	20.0%	0	0.0%	1	4.3%	102	3.8%
1980-1989	0	0.0%	6	2.9%	0	0.0%	140	5.2%
1970-1979	0	0.0%	34	16.4%	7	30.4%	538	19.8%
1960-1969	0	0.0%	25	12.1%	0	0.0%	359	13.2%
1950-1959	2	10.0%	10	4.8%	5	21.7%	349	12.9%
1940-1949	0	0.0%	20	9.7%	0	0.0%	220	8.1%
1939 or earlier	8	40.0%	110	53.1%	10	43.5%	804	29.6%

Source: US Census Bureau, American Community Survey 2019-2023 5-year estimates

Table 1.9 Continued - Year structures have been built within Red Oak, Stanton, Villisca, and Unincorporated Montgomery County.

Year Structure Was Built	Stanton		Villisca	
	#	%	#	%
Total	288		542	
2020or later	0	0.0%	0	0.0%
2010-2019	4	1.4%	10	1.8%
2000-2009	21	7.3%	18	3.3%
1990-1999	16	5.6%	46	8.5%
1980-1989	18	6.3%	120	22.1%
1970-1979	35	12.2%	43	7.9%
1960-1969	14	4.9%	20	3.7%
1950-1959	27	9.4%	14	2.6%
1940-1949	17	5.9%	28	5.2%
1939 or earlier	136	47.2%	243	44.8%

Source: US Census Bureau, American Community Survey 2019-2023 5-year estimates

Home ownership in Montgomery County at 71.6 percent is comparable to that of the State of Iowa at 71.5 percent. All jurisdictions except Red Oak and Coburg have an ownership rate over 70 percent. Median rent ranges from a low of $732/month in Villisca to a high of $840/month in Elliott, with the county's median rent $167 lower than that of the state.

Table 1.10 - Home Ownership and Median Rent 2023

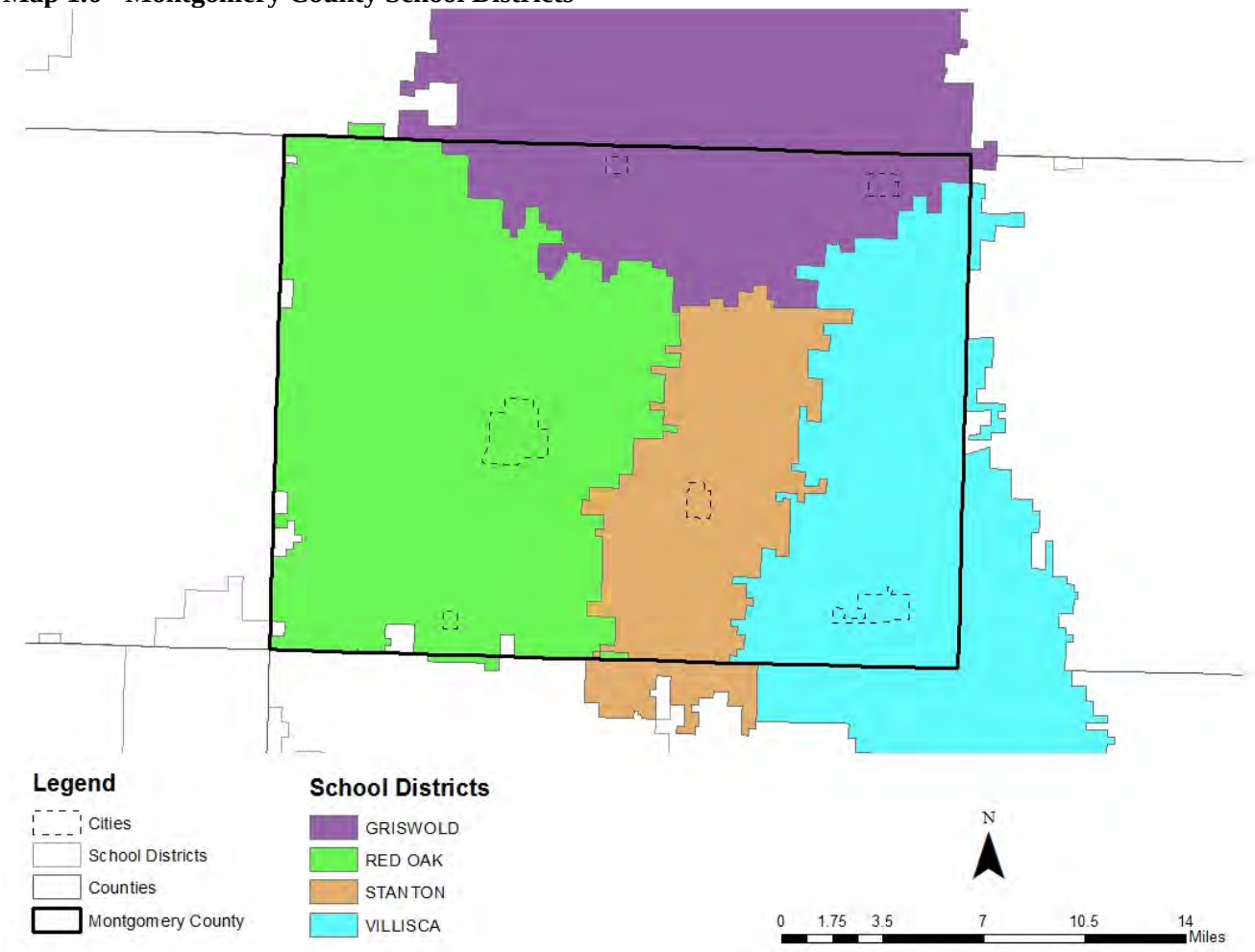
Jurisdiction	# Occupied	# Owned	% Owned	Rented	% Rented	Median Rent
State of Iowa	1,303,763	932,618	71.5%	371,145	28.5%	$949
Montgomery County	4,609	3,300	71.6%	1,309	28.4%	$782
Coburg	20	13	65.0%	7	35.0%	-
Elliott	184	137	74.5%	47	25.5%	$840
Grant	22	19	86.4%	3	13.6%	-
Red Oak	2,502	1,6247	65.0%	875	35.0%	$768
Stanton	273	224	82.1%	49	17.9%	$766
Villisca	501	374	74.1%	130	25.9%	$732

Source: US Census Bureau, American Community Survey 2019-2023 5-year estimates

School Districts

Montgomery County is served primarily by four school districts. Red Oak Community School District accounts for the majority of the county and serves Red Oak and Coburg. The Griswold school district serves Elliott and Grant in Montgomery County, but all buildings are located in Cass County. Stanton school district covers the city of Stanton and the central portion of the county and the Villisca School District covers Villisca and the eastern side of the county. Small portions of the unincorporated areas of Montgomery County are served by other school districts including East Mills, Essex and Shenandoah.

Map 1.6 - Montgomery 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 Montgomery County as a primary mode of commuting and for freight transportation. Montgomery County has 875 miles of urban and rural roadways connecting its communities to resources and industries located outside of the county and to move goods and services throughout and out of the region. Three major transportation routes cross through the county: U.S. Highway 71, U.S. Highway 34, and State Highway 48. The nearest Interstate roadways are Interstate 80 north of the county running east-west and Interstate 29 east of the county running north-south. Roadways are classified by their use and the volume of traffic they can handle. Principal arterials and major or minor collector roads, those listed below, are responsible for moving traffic throughout the region as well as to adjacent communities. 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.

- Interstate 80 runs east to west approximately 25 miles north of the Montgomery County border. This interstate in vital to the region as a fast and easy connection to the urban metropolitan areas of Council Bluffs/Omaha and Des Moines. The interstate is particularly useful for long distance travel to neighboring states and beyond, though is not limited to only long-distance travel.

- Interstate 29 runs north to south approximately 23 miles west of the Montgomery County border. This interstate connections with the urban metropolitan areas of Council Bluffs and Omaha. The interstate is particularly useful for long distance travel to Sioux City to the north and to the State of Missouri to the south. To reach Interstate 29, U.S. Highway 34 is the quickest route.

- U.S. Highway 34 runs east to west through the central portion of the county. US Hwy 34 enters from Mills County, crosses through Red Oak before veering south and passing just north of Stanton then heading into Adams County. This highway is particularly useful for vehicle traffic between the communities of Red Oak and Stanton and as a medium to long distance route for east/west travel. It is an important route for freight moving across state.

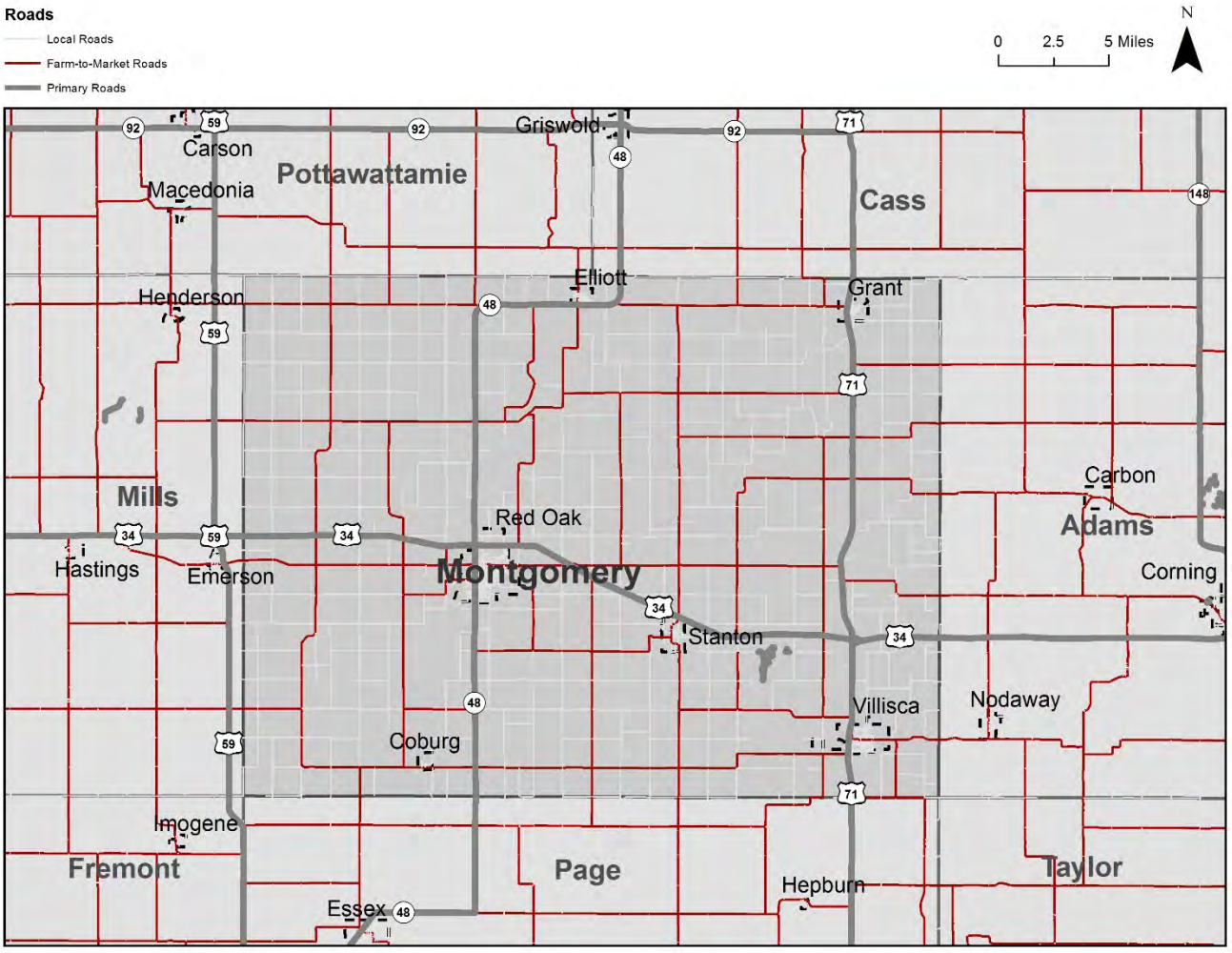
- U.S. Highway 71 crosses through the east section of Montgomery County. This State Highway runs north to south starting in Cass County, crossing through the communities of Grant and Villisca before heading into Page County. Its direct connection to Atlantic in Cass County provides the eastern portion of the county to quick access to Interstate 80. It also provides quick access to Clarinda in Page County.

- State Highway 48 is located in the central part of the county and is an important route for the City of Red Oak as a connection to the Atlantic in Cass County to its north and Shenandoah in Page County to its south. This State Highway first enters Montgomery County just east of Elliott before turning west and passing through the community. It then heads south again crossing through Red Oak then passing near Coburg before it enters Page County.

- 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.

Map 7 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 1.7 - Montgomery County Highways and Roads

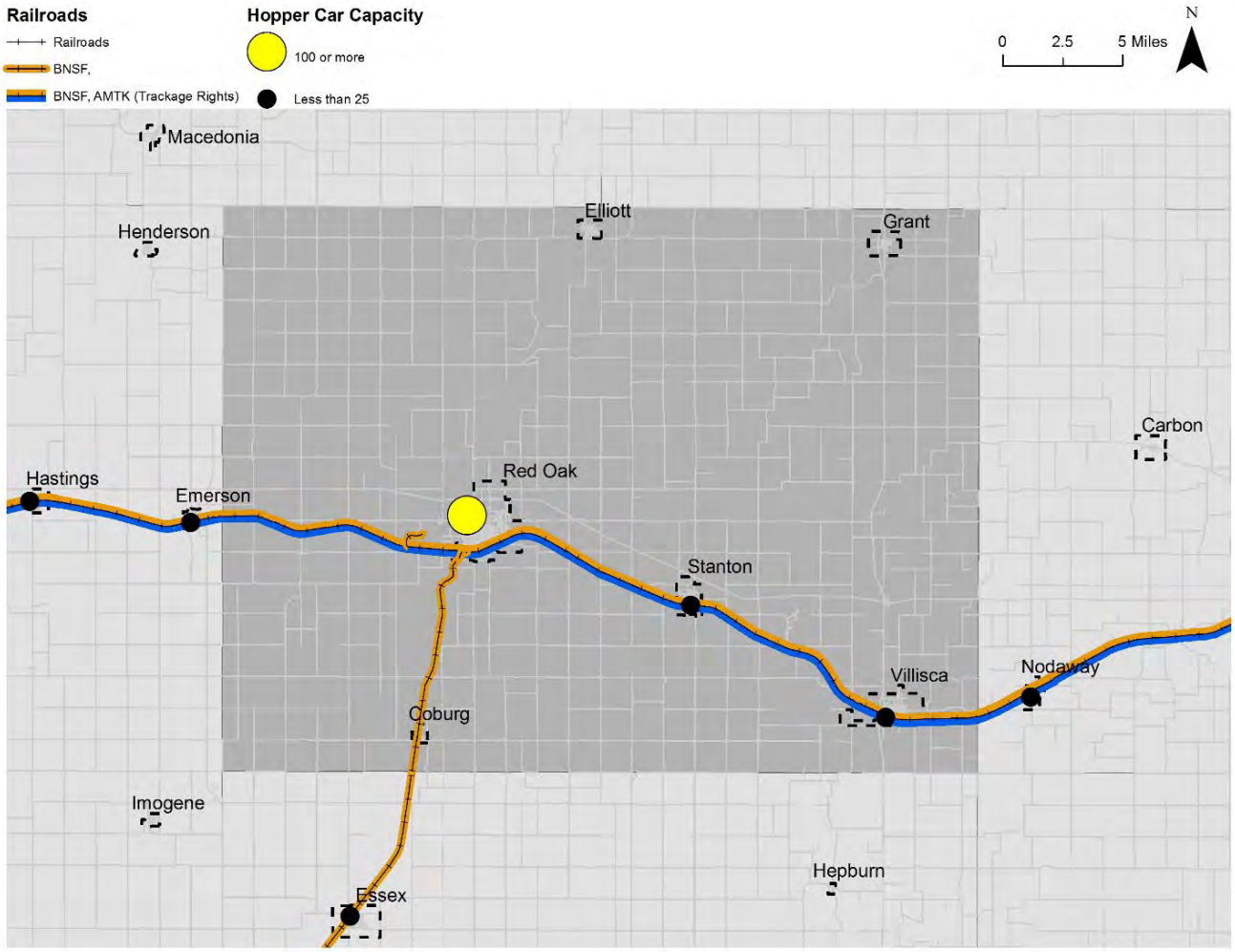


Source: Iowa Department of Transportation

Rail

Montgomery County contains 43.6 miles of railroad track within its county border. The major route of track runs east to west entering near Villisca, running through Stanton before stopping in Red Oak. In Red Oak the rail lines then split with the major route continuing on into Mills County. The second route heading out of Red Oak runs south through Coburg before it enters Page County. This portion of track primarily serves Shenandoah as it terminates shortly after the City of Farragut in Fremont County. BNSF Railway Co. is the owner of all of the railroad track within the county and uses it primarily for freight. Amtrak owns trackage rights for the east to west portion of the railroad in Montgomery and runs a commercial passenger service through the county, although no stops are made within Montgomery County. Grain hopper car capacity is available in the County in the cities of Red Oak, Stanton and Villisca. Red Oak has the largest hopper car capacity at more than 100 cars and Stanton and Villisca have hopper car capacity at 25 or less cars. The map below illustrates the locations and routes of the hopper car locations and rails.

Map 1.8 - Montgomery County Railroads



Source: Iowa Department of Transportation

Airports

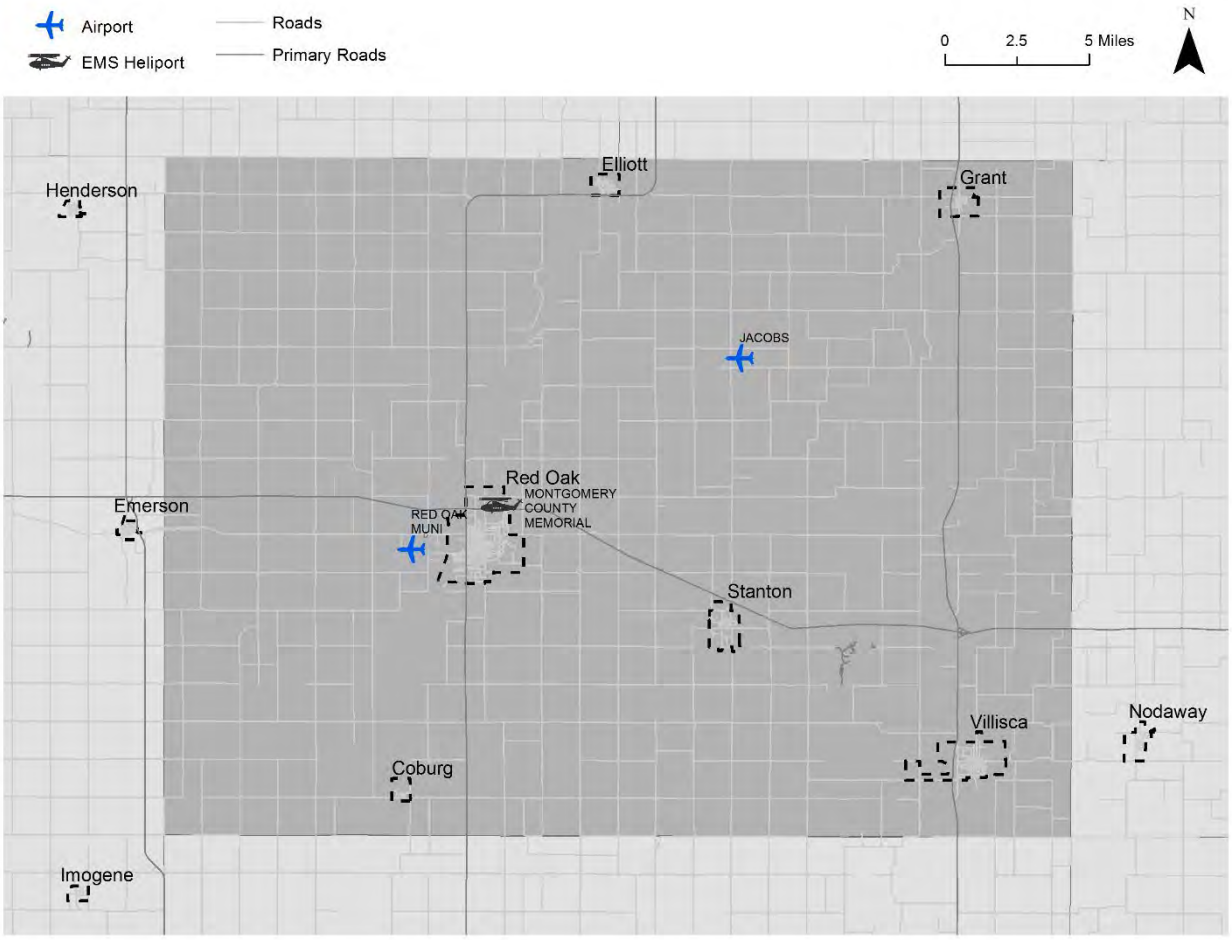
Airports - Red Oak Municipal Airport (RDK) – The Red Oak Municipal Airport is located along H-34, 2 miles west of the City of Red Oak. The airport has three runways; 13/31, which has a turf surface, is 210 feet in width and 2,035 feet long; 17/35, which has a concrete surface, is 60 feet in width and 2,901 feet long; and 05/23, which has a concrete surface, is 75 feet in width and 5,000 feet long. There are no runway lights on 13/31, but 17/35 and 05/23 have MIRL runway lights. Runway 5/23 has REIL approach lights. The airport has a rotating beacon, both 100LL and Jet A fuel, and is attended Monday through Friday from 8:00 A.M. to 5:00 P.M. The airport has NDB and VOR type navigation systems. The airport is a general service airport, which support most twin and single engine general aviation aircraft and occasional use by business jets. The total economic output as estimated in the 2022 Iowa Aviation Economic Impact Report prepared by the Iowa DOT Office of Aviation is $172,200.

Figure 1.2 - Aerial Photo of Red Oak Municipal Airport

Source: Iowa Department of Transportation

Map 1.9 - Montgomery County Airports

Source: Iowa Department of Transportation



- EMS Emergency Medical Service Heliport (Montgomery County Memorial Hospital) – Emergency Medical Service heliports add to the capabilities and enhances the accessibility of advanced medical services of rural community hospitals. EMS heliports in Iowa are used to transport healthcare professionals, organs, blood, and medical equipment. Pilots, mechanics, support staff and medical crews are ready to fly at any moment.

Utilities

Electric

The county is served by six different power companies. These companies include: Adams County Co-op Electric Company, Central Iowa Power Co-op, Mid-American Energy, Nyman Electric Co-op, Western Area Power Administration and Villisca Municipal. All homes and businesses within the county are served by adequate and reasonably priced electricity.

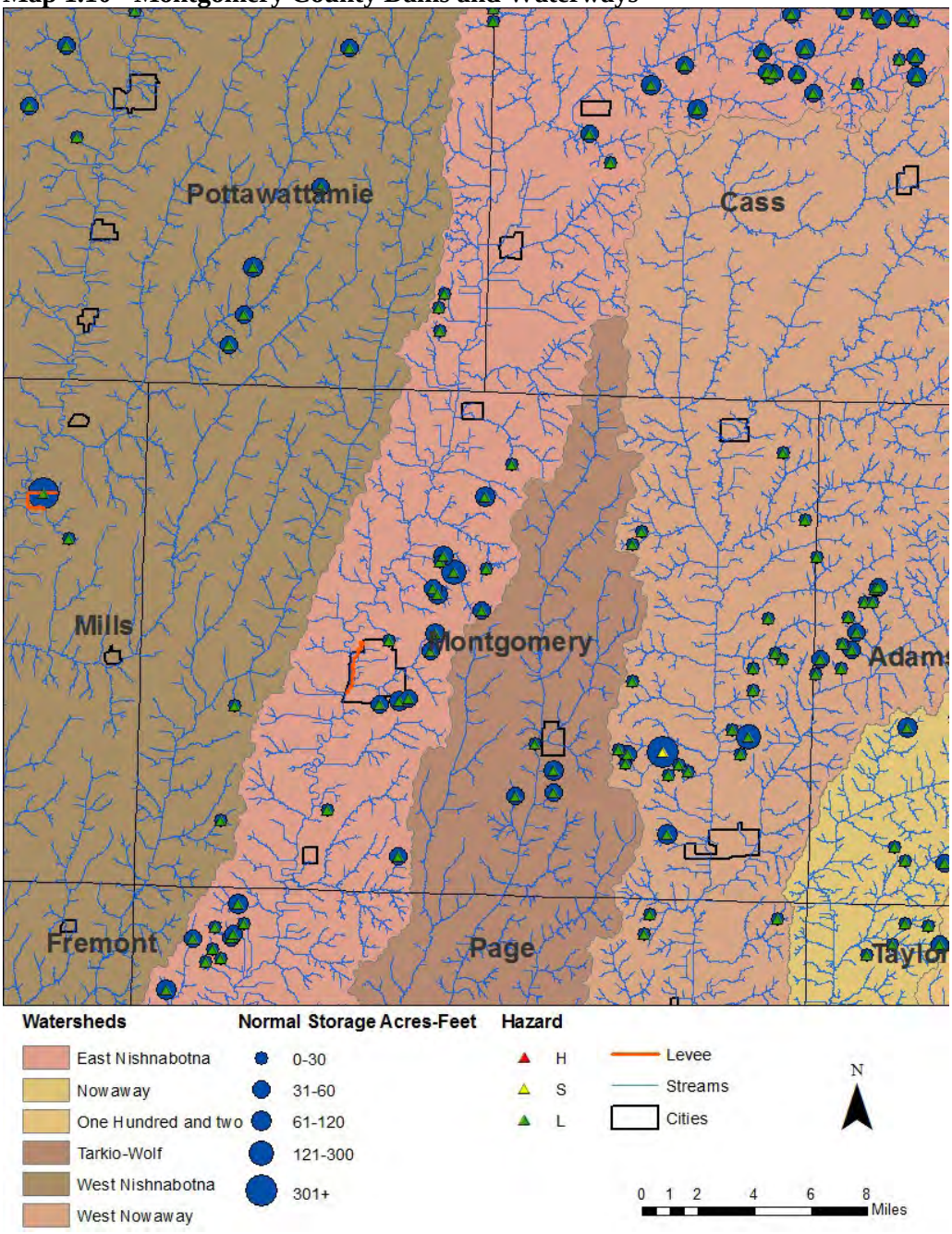
Gas

Nearly all areas of the county are provided natural gas. Companies that provide natural gas in Montgomery County include Iowa Electric, Mid-American Energy and Natural Gas.

Dams

Dam risk in Montgomery County is primarily limited to the northwest corner of the county. There are a total of 44 dams located in Montgomery County with the majority of them located in the East Nishnabotna River and West Nodaway River watersheds. Of the three possible ratings given for dam risk, high, significant or low, there is one with a rating of significant, the highest risk rating given in Montgomery County. This dam is located in the southeast corner of Montgomery County on Viking Lake and has a storage capacity of 1,900 acre-feet. A large number of dams are located in Cass County in the Nishnabotna River watershed with seven of them rated with a significant rating and a further two in Audubon that are rated significant and two that are rated high. Due to the nature of water flowing south, dam failure in these counties could affect water levels and contribute to flooding in Montgomery County.

Map 1.10 - Montgomery 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 Montgomery County citizens is provided through a variety of sources. Much of the unincorporated areas, as well as Coburg, are served by private wells. Southwest Regional Water District (SWRWD) and Southwest Iowa Regional Water (SIRWA) also provide potable water to a number of rural areas. In addition, SIRWA provides water to the City of Grant. All other incorporated areas are served by municipal water systems.

The City of Elliott's municipal water system consists of two supply wells and a storage tank. Well #2 is used for the water distribution system and Well #1 is used primarily as back-up, for bulk agriculture use, and in emergencies. Well #2 was built in 1962 and is located in the eastern residential area of the city. Well #1 sits next to a former gas station and is vulnerable to contamination. This well has had past issues with petroleum seepage, thus is not used as a primary source. Neither well is subject to surface water run-off. The city has an emergency back-up generator for these systems in the event of electrical failure to the community or facility.

Red Oak distribution system well main size ranges from 2 to 12 inches in diameter. Water pressure is maintained throughout the water system through a combination of gravity fed network of piping and elevated storage and pumping stations. The City's elevated storage capacity holds 2,500,000 gallons of water. Portions of the city's system are very old with sections dating as far back as 1880 with the installation of the original system. Fire protection is enhanced by a series of hydrants located throughout the city. Emergency back-up generators were purchased for the system in 2008 in the event of a disruption in electrical services to the facility.

Stanton's potable water is provided by two deep, gravel packed wells that are supplied by underground water from the Dakota Sandstone aquifer. Well #1 was constructed in 1953, is 158 feet deep, and is located in the treatment plant facility. Well #2 was constructed in 1970, is 150 feet deep, and is located adjacent to the treatment plant facility with storage tanks. A third well is located at the maintenance building along Broad Street and is used for non-potable reasons such as fire or agricultural use. In 2010, the City upgraded 11,000 linear feet of water main to 6 and 8inch mains. The City is currently in the second phase of this project which will upgrade the remainder of its mains to 6 and 8-inch. This upgrade is anticipated to lower the city's ISO fire rating from a 7 to a 5.

The City of Villisca's water system consists of 6- and 8-inch mains. The city competed the last phase of a 3-phase distribution system upgrade in 2000. The city utilizes a 100,000-gallon storage tower with a 500,000 reservoir. In 2021, the city completed further upgrades to the system which included 6,300 LF of new water mains, new water meters, replacing 10 fire hydrants and making improvements to the water treatment plant.

Wastewater

Wastewater systems throughout Montgomery County are similar to the potable water systems. The rural unincorporated areas of Montgomery County, as well as the cities of Coburg and Grant, utilize private septic systems, leech fields, cesspools, and/or clarification pits. The remainder of incorporated areas in the county utilize municipal systems to treat wastewater.

Elliott's municipal wastewater system consists of a two-cell waste stabilization, controlled discharge lagoon treatment facility located approximately ½ mile north of the city. The city often completes routine maintenance to its network - mains are flushed, manholes are cleaned out, and manhole lids reset to street elevation. The lagoon cells have recently been fitted with new riprap along the western portion of the interior cell banks. Over the last 20 years, improvements have been made at the treatment facility and to the underground infrastructure. Upgrades and replacement of older lines occurred in 2002 and 2007. In 2021, the city began a project to reduce

the amount of inflow and infiltration into the sewer system. This included replacement of sewer mains and disconnection of two storm drains.

Red Oak utilizes an underground system that is over 30 miles in length and carries sewage to the treatment facility. At the facility, the sewage is treated and then released downstream into the Red Oak Creek. Over the last 20 years, improvements have been made to the treatment facility and to various sections of underground infrastructure, although upgrades and replacement of older lines is still required in other portions.

The City of Stanton's sanitary sewer system is comprised of 8, 10, 12- and 18-inch gravity collection mains which are piped to four lift stations. Effluent from the three secondary lift stations is taken by a 4-inch force main to the primary lift station or outfall sewer main. The effluent from the primary lift station is taken by a 6-inch force main to the treatment facility on the western boundary of the city. Secondary lift stations are located in the southeastern corner of the south bridge on Broad Avenue, at Meadow Avenue and Center Street, and on Broad Avenue south of Prospect Street. The primary lift station is located between Meadow and Concord Avenues, south of Thorn Street. All of the city's lift stations have been updated within the last five years. The Stanton Sewer Treatment Plant utilizes a three-cell water stabilization facility. The controlled discharge lagoon facility lies just north of Frankfort Street (H-42) and west of the western corporate limits. The treatment facility was reconstructed in 1994 to bring the city into compliance with the provisions of the Safe Water Drinking Act. The treated effluent is discharged into the Tarkio Creek.

The City of Villisca's wastewater treatment system is primarily made up of a 12-inch collection system that is pumped to three lift stations. The effluent is then pumped to a lemnna-covered lagoon followed by a polishing reactor and UV system. The city's treatment plant was updated in 2008.

Communications

Telephone and internet services are supplied by a variety of companies throughout Montgomery County. Griswold Cooperative serves the Cities of Elliott and Grant. Farmers' Mutual Telephone Cooperative provides services to the Cities of Stanton and Villisca. Coburg, Elliott, and Red Oak utilize Century Link. Mediacom serves Coburg and Red Oak.

Essex area - Farmers Telephone
Emerson area - Southwest Telephone Exchange
Griswold area - Griswold Co-op
Stanton area - Farmers Mutual
Villisca area - Villisca Farmers Telephone
Red Oak area - Qwest and Mediacom

Emergency Services

Medical and Hospitals

Montgomery County is served by Montgomery County Memorial Hospital + Clinics (MCMH) located in Red Oak on US Hwy 34. The emergency care capacity of the ER is 7 patients, and the hospital care capacity is 25 beds. MCMH + Clinics also has clinics in Villisca and Malvern, as well as a retail pharmacy in Red Oak. However, if an accident or emergency should occur within/near Montgomery County where more doctors and support would be needed, surrounding hospitals, medical clinics and doctors would assist MCMH. Below is a list and description of services the hospital located in Red Oak provides:

- Outpatient Specialty Clinic – MCMH's outpatient specialty clinic brings in specialty providers from all over the region. With more than 35 specialists, covering over 20 specialties, patients have access to care close to home. Specialties include dermatology, endocrinology, ENT, gastroenterology, neurology, breast health, sleep studies and more.
- Orthopedics – MCMH has partnered with MD West ONE to provide orthopedic clinic visits and surgery in Red Oak. MCMH currently has four orthopedic surgeons available covering the specialties of joint replacement, sports/general, hand and foot/ankle.
- Cardiac and Pulmonary Rehabilitation – The center provides services to help people recover from a) hospitalization due to heart related events and b) people with COPD or any other lung disease.
- Diabetes Education program aids in creating individualized treatment plans to live healthier lifestyles for those with diabetes.
- The Laboratory is a full-service lab operating 24 hours a day, 7 days a week, using state-of-the-art equipment to provide inpatient and outpatient services. Testing at the facility assists diagnosing diseases and monitoring medication therapy.
- The Nutrition Education department provides quality nutrition for patients at the Montgomery County Memorial Hospital.
- Rehabilitation services, including physical, occupational and speech therapy at Montgomery County Memorial Hospital are offered to regain physical strength and return to active lifestyles after illnesses, injuries or surgery.
- Radiology department provides several services that include diagnostic radiology, MRI, nuclear medicine, CT scans, ultrasound, bone densitometry and digital mammography.
- Social Services department services include patient discharge planning, attending to patient psychosocial needs, crisis-oriented and supportive counseling, emergency department and clinic social work, and home health and hospice social work.
- Women's Health Center provides specialized care to women in the form of annual examinations, antenatal care, breast health, prenatal care, contraception, gynecological care, infertility, menopause, osteoporosis prevention, pelvis support problems, women's nutrition, and more.
- Work Health Solutions program provides injured workers the capacity to determine their physical capacity at handling their job. The provide help in assessing work restrictions and determine if additional treatment is needed.
- The Telestroke program, in partnership with Nebraska Medicine, brings high-quality stroke care to the community. The primary goal of the tele-stroke program is to provide timely and expert care to stroke patients, regardless of their geographical location. Through telemedicine technology, stroke specialists can assess patients, review medical records and test results, and make treatment recommendations remotely. This allows for rapid diagnosis and appropriate treatment decisions, reducing the time it takes for stroke patients to receive critical interventions.

Clarinda Regional Health Center also operates a clinic in Villisca.

Fire Protection and Rescue

Montgomery County is served by five fire departments, three of which operate ambulances, as well as one first responder team. All fire departments serve the needs of the rural areas surrounding each region and aid neighboring cities as needed.

The City of Red Oak has a fire and rescue department that is staffed by 15 volunteers and 12 full time fire fighters and also houses a Special Operations trailer for confined space and gran bin rescues, Dive Team Equipment as well as a 110' Aerial Platform ladder truck. Volunteer Fire and Rescue Departments are also located in the Cities of Grant, Stanton, Elliott and Villisca. The City of Elliott relies on Red Oak Fire & Rescue or Griswold Rescue to transport patients to their respective hospital or trauma center. The City of Grant uses Volunteer First Responders but receives ambulance service through mutual aid usually through Villisca Rescue, Red Oak Fire & Rescue or Griswold Rescue in Cass County. The City of Coburg relies on the fire and rescue services through mutual aid. This aid usually comes through the Red Oak Fire and Rescue Department or the Essex Fire and Rescue Department in Page County.

The fire insurance ratings (ISO) in Montgomery County are as follows:

City of Elliott – 5/5X
City of Grant – 9
City of Red Oak – 4
City of Stanton – 5
City of Villisca – 4
City of Coburg and all rural areas – 10

Law Enforcement

The Montgomery County Sheriff is the coordinator of any countywide operations and is in charge of law enforcement throughout the unincorporated areas of the county as well as the Cities of Coburg, Elliott, Grant, Stanton and Villisca. These communities as well as the unincorporated areas have 28E agreements with the Montgomery County Sheriff. 28E agreements are contracts between two public agencies to share services. In Montgomery County, many smaller communities enter into an agreement with a larger community or the county to provide services it cannot provide by itself.

The City of Red Oak maintains its own law enforcement agency which performs all law enforcement activities within the corporate limits as well as aids the Montgomery County Sheriff's Office and other agencies as needed. The police department consists of ten full-time officers and eleven reserve peace officers.

Iowa State Troopers have a daily presence in Montgomery County and 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.

Emergency Management

The Montgomery County Emergency Management Agency (EMA) is the chief county agency responsible for disaster planning and preparedness, response, recovery, and mitigation. The Montgomery County EMA has one full-time coordinator, eight emergency dispatchers and about 75 first responders that serve as trained weather spotters. Each first responder is equipped with two-way radios, a pager, and identification materials. Each spotter receives training annually in severe weather spotting and safety. AlertIowa is Montgomery County's mass notification system that alerts participating citizens to weather warnings. Montgomery County EMA participates in the annual statewide severe weather week and provides support and assistance to area schools for drills.

The Montgomery County EMA has several agreements with local and surrounding jurisdictions in time(s) of an emergency or disaster. The local EMA Coordinator and surrounding EMA Coordinators provide automatic mutual aid to all incidents involving hazmat releases or spills, two-alarm or major fires, serious motor vehicle accidents involving three or more injured victims, all search and rescue operations including underwater, all emergencies involving aircraft, all emergencies involving railroads, and whenever extra assistance is needed. Agreements are made with surrounding counties and local agencies to provide support when resources are stretched. The Montgomery EMA also works with the American Red Cross and Salvation Army to provide disaster assistance in the event of large-scale events. These agreements provide resiliency to possible emergency events and greatly expands the resources available to the county.

Montgomery County EMA is equipped with or has access to a number of items to respond to and help citizens in the event of an emergency or disaster. The EMA has a fully equipped mobile command trailer. A four-person John Deere gator equipped with wildland fire suppression equipment and a 3 person Polaris Ranger equipped with a personnel and medical transport skid and trailer(s) which are available to assist in areas of limited access or otherwise inaccessible areas. A mobile command vehicle is equipped with a computer, weather radar capabilities and multiple radios to assist with coordination and tracking of resources at an incident. The EMA has 2 fully functioning Unmanned Aerial System Vehicles (sUAS or drones) with FLIR/Thermal capability to search for missing/wanted subjects as well as being able to assist at large fires or for post damage assessment surveys. The second sUAS is capable of flying within confined spaces or through indoor buildings to assist law enforcement in dangerous situations.

Montgomery County EMA has a fully functioning Emergency Operations Center (EOC) out of the Emergency Management facility with full backup or supplementing dispatching console capable of serving all of Montgomery County as well as other counties within Western Iowa utilizing the Iowa Statewide Interoperable Communications System (ISICS). Montgomery County utilizes the Iowa Statewide Interoperable Communications System (ISICS) for all public safety communications with all-band portable and mobile radios throughout all first responders countywide. Three 300' communications towers are also in service across the county to provide nearly 100% indoor/outdoor radio communications coverage for all first responders.

Business and Industry

Business and industry in Montgomery County are primarily centered on and supports the agricultural industry. 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 Montgomery County derive basic economic support from farm-related activities. The top businesses in Montgomery County by employment include:

- Parker Hose Products, 100-249
- Red Oak Greenhouse, 100-249
- Good Samaritan Society-Red Oak, 100-249
- Hy-Vee, 100-249
- Parker-Hannifin Corp, 100-249

Source: Iowa Work Force Development

Per capita retail sales in Montgomery 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 not able to support large commercial shopping centers. Instead retail sales are primarily agricultural related with limited consumer commercial sales coming from the larger communities able to sustain smaller stores. When broken down by city, all communities aside from Red Oak have a lower retail sale per capita than the State of Iowa. Red Oak slightly edges out the State per capita sales which can be explained by the community's importance as a commercial center for the county.

Table 1.11 - Per Capita Retail sales in the Montgomery County

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
State of Iowa	$14,577	$14,048	$15,020	$15,601	$15,456
Montgomery County	$8,828	$8,832	$9,254	$9,803	$10,300
Elliott	$591	-	-	-	-
Red Oak	$13,930	$13,705	$14,476	$15,420	$16,235
Stanton	$8,734	$9,814	$9,177	$9,883	$10,456
Villisca	$5,120	$6,028	$6,401	$6,405	$6,709

Source: Iowa State University, Iowa Community Indicators Program

Labor Force

Montgomery County's unemployment rate is substantially higher than that of the state as a whole. Only two communities in Montgomery County are estimated at a lower unemployment rate than the State's. Table 1.12 shows employment and unemployment rates for the State of Iowa, Montgomery County, and all six of Montgomery County's incorporated communities as well as the county's unincorporated area. The county as well as all jurisdictions, except for Elliott, have lower unemployment rates than the state as a whole.

Table 1.12 - Employment Statistics for the Population 16 Years and over for the State of Iowa, Montgomery County, and Montgomery County Jurisdictions, 2023 Estimates

Population 16 years and over	Total	Percentage In labor force	Employed Rate	Unemployment Rate
State of Iowa	2,547,553	66.4%	64.0%	2.4%
Montgomery County	8,225	60.1%	58.6%	1.5%
Coburg	38	47.4%	47.4%	0.0%
Elliott	331	69.8%	67.1%	2.7%
Grant	36	52.8%	52.8%	0.0%
Red Oak	4,387	57.8%	55.6%	2.2%

Stanton	531	58.9%	58.4%	0.6%
Villisca	801	52.7%	52.6&	0.1%

Source: U.S. Census, American Community Survey 2019-2023 5-year estimates

Montgomery 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. One of biggest differences is in the professional, scientific, management, administrative, and waste management services with Montgomery County when compared to the State of Iowa. Montgomery has 2.8 percent of its civilian population working in that sector in comparison to the State of Iowa's 7.7 percent of civilian population employed in that sector.

Table 1.13 - Industry by Occupation for the Civilian Employed Population 16 Years and Older for the State of Iowa and Montgomery, 2023 Estimates

Private Employment	State of Iowa		Montgomery County	
	#	%	#	%
Total	1,629,641		4,820	
Agriculture, forestry, fishing and hunting, and mining	60,470	3.7%	383	7.9%
Construction	112,119	6.9%	464	9.6%
Manufacturing	240,105	14.7%	794	16.5%
Wholesale trade	42,516	2.6%	154	3.2%
Retail trade	186,225	11.4%	661	13.7%
Transportation and warehousing, and utilities	83,731	5.1%	266	5.5%
Information	22,861	1.4%	117	2.4%
Finance, insurance, real estate, and rental and leasing	124,791	7.7%	156	3.2%
Professional, scientific, management, administrative, and waste management services	125,965	7.7%	135	2.8%
Educational services, and health care and social assistance	394,835	24.2%	1123	23.3%
Arts, entertainment, recreation, accommodation and food services	112,729	6.9%	261	5.4%
Other services (except public administration)	69,718	4.3%	181	3.8%
Public administration	53,576	3.3%	125	2.6%

Source: U.S. Census Bureau, American Community Survey 2019-2023 5-year estimates

Table 1.14 - Industry by Occupation for the Civilian Employed Population 16 Years and Older, 2023 Estimates

Private Employment	Coburg		Elliott		Grant		Red Oak		Stanton		Villisca	
	#	%	#	%	#	%	#	%	#	%	#	%
Total	18		222		19		2,439		310		421	
Agriculture, forestry, fishing and hunting, and mining	0	0.0%	18	8.1%	0	0.0%	135	5.5%	23	7.4%	27	6.4%
Construction	7	38.8%	22	9.9%	2	10.5%	209	8.6%	26	8.4%	32	7.6%
Manufacturing	1	5.5%	34	15.3%	0	0.0%	482	19.8%	15	4.8%	101	24.0%
Wholesale trade	2	11.1%	13	5.9%	1	5.3%	69	2.8%	14	4.5%	3	0.7%
Retail trade	0	0.0%	21	9.5%	6	31.6%	416	14.1%	20	6.5%	56	13.3%
Transportation and warehousing, and utilities	0	0.0%	0	0.0%	1	5.3%	158	6.5%	24	7.7%	17	4.0%
Information	0	0.0%	7	3.2%	0	0.0%	42	1.7%	20	6.5%	13	3.1%

Finance, insurance, real estate, and rental and leasing	0	0.0%	6	2.7%	3	15.8%	60	2.5%	16	5.2%	15	3.6%
Professional, scientific, management, administrative, and waste management services	0	0.0%	15	6.8%	0	0.0%	27	1.0%	23	7.4%	11	2.6%
Educational, health and social services	3	16.7%	33	14.9%	2	10.5%	596	24.4%	88	28.4%	87	20.7%
Arts, entertainment, recreation, accommodation and food services	0	0.0%	5	2.3%	2	10.5%	172	7.1%	9	2.9%	11	2.6%
Other services (except public administration)	0	0.0%	29	13.1%	2	10.5%	58	2.4%	14	4.5%	34	8.1%
Public administration	5	27.8%	19	8.6%	0	0.0%	15	0.6%	18	5.8%	14	3.3%

Source: U.S. Census Bureau, American Community Survey 2019-2023 5-year estimates

Table 1.15 - Industry by Occupation for the Civilian Employed Population 16 Years and Older for Unincorporated Montgomery County, 2023 Estimates

Private Employment	Unincorporated Montgomery County	
	#	%
Total	1,391	
Agriculture, forestry, fishing and hunting, and mining	180	12.9%
Construction	166	11.9%
Manufacturing	161	11.6%
Wholesale trade	52	3.7%
Retail trade	142	10.2%
Transportation and warehousing, and utilities	66	4.7%
Information	35	2.5%
Finance, insurance, real estate, and rental and leasing	56	4.0%
Professional, scientific, management, administrative, and waste management services	59	4.2%
Educational, health and social services	314	22.6%
Arts, entertainment, recreation, accommodation and food services	62	4.5%
Other services (except public administration)	44	3.2%
Public administration	54	3.9%

Source: U.S. Census Bureau, American Community Survey 2019-2023 5-year estimates

Income

Montgomery County's household income distribution is concentrated at the lower levels of income as compared to the State of Iowa, with the median income being approximately $10,000 lower than the state as a whole. Approximately 39 percent of the county's population has an annual income of less than $50,000, and the mean income for the county is $83,851 which is over $12,000 lower than the state's mean income of $75,951.

Table 1.16 - Household Income in the Past 12 Months for State of Iowa and Montgomery County, 2023 Estimates

Income level	State of Iowa	Montgomery County
Less than $10,000 (percent)	4.0%	4.4%
$10,000 to $14,999 (percent)	3.4%	5.1%
$15,000 to $24,999 (percent)	7.0%	10.2%
$25,000 to $34,999 (percent)	7.3%	7.4%

$35,000 to $49,999 (percent)	11.7%	11.9%
$50,000 to $74,999 (percent)	17.8%	18.4%
$75,000 to $99,999 (percent)	14.1%	14.1%
$100,000 to $149,999 (percent)	18.4%	17.0%
$150,000 to $199,999 (percent)	8.4%	8.6%
$200,000 or more (percent)	8.0%	3.0%
Median income (dollars)	$73,147	$63,190
Mean income (dollars)	$95,968	$83,851

Source: U.S. Census, American Community Survey 2019-2023 5-year estimates

Table 1.17 below shows the median household income and per capita income for Montgomery County as compared to the State of Iowa for years 1999-2023. Both Montgomery County's median household income and per capita income have consistently been below that of the State of Iowa. In addition, Montgomery County's growth in median income has been below that of the state.

Table 1.17 - Median Household and Per Capita Income for the State of Iowa and Montgomery County, 1999-2023 Estimates

Year	State of Iowa		Montgomery County	
	Median Household Income	Per Capita Income	Median Household Income	Per Capita Income
2023	73,147	39,728	63,190	37,388
2022	70,571	37,949	61,261	36,122
2021	65,429	34,817	56,971	33,028
2020	61,836	33,021	55,761	34,545
2019	60,523	32,176	51,696	29,781
2018	58,580	31,08	47,648	28,780
2017	56,570	30,063	43,674	25,005
2016	54,570	28,872	42,641	23,626
2015	53,183	27,950	42,418	23,445
2014	52,716	27,621	43,566	23,342
2013	51,843	27,027	44,281	22,868
2012	51,129	26,545	40,530	22,811
2011	50,451	26,110	38,072	22,039
2010	48,872	25,335	38,624	21,301
1999	21,406	19,674	19,846	16,373

Source: U.S. Census, American Community Survey

Section II: Prerequisite

Adoption Assurances

The Montgomery 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 Montgomery County Multi-jurisdictional Hazard Mitigation Plan demonstrates the county 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 B.

Section III: The Planning Process

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

Resource Organization

Montgomery County began the process of developing a multi-jurisdictional hazard mitigation plan In June of 2024. The county contracted with Southwest Iowa Planning Council, located in Atlantic, Iowa, to facilitate the planning process and create the plan. Brian Hamman, Montgomery County Emergency Management Coordinator, was the primary point of contact during the planning process. The process for jurisdictional meetings are as follows:

Meeting 1 – The first planning meeting was held with all jurisdictions on October 24, 2024 at the Montgomery County EMA office in Red Oak. The meetings 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. Lastly, representatives from each jurisdiction assisted in the completion on the county risk assessment.

Meeting 2 – The second meeting was held on November 21, 2024 at the Montgomery County EMA office in Red Oak. The second meeting involved reviewing the purpose of hazard mitigation planning, creating a community profile for each jurisdiction and discussing future meetings. Each jurisdiction reviewed data collections sheets and determined critical facilities, vulnerable populations and completed risk assessments for their jurisdictions.

Meeting 3 – The third meeting was held on February 6, 2025 at the Montgomery County EMA Office in Red Oak. At this meeting, jurisdictions reviewed mitigation actions established in the previous plan and provided updates on current status and priority levels. Jurisdictions also reviewed and amended their implementation plans.

In September of 2025, the final draft of the Montgomery 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 was a vital component in developing the multi-jurisdictional plan for Montgomery County. Elected officials, key stakeholders, and residents from each community were identified to participate in the planning process. These participants served as 'experts' in identifying historical occurrences of hazards, establishment of goals and objectives and determining potential mitigation action items. To encourage participation in the planning process, the following actions were taken:

- Jurisdictions were encouraged to include interested members of the public on their planning teams
- Agendas for each meeting were sent to individual jurisdictions to comply with Iowa's Open Meetings Law and to encourage public participation
- Emails were sent out several times during the planning process for dissemination to planning team members and those interested in participating

To establish a high priority of public involvement in the planning process, meeting attendance requirements were established at the beginning of the planning process. No members of the public ever attended the meetings. In order to participate in the plan, at least one representative from each jurisdiction had to be present at the designated public meetings. Sign-in sheets from all public meetings can be found in Appendix A.

Participating Jurisdictions and Representatives

The Montgomery County Multi-Jurisdictional Hazard Mitigation Plan was developed through a collective effort by Montgomery County, City of Elliott, City of Grant, City of Red Oak, City of Stanton, City of Villisca, Red Oak Community School District, Stanton Community School District, and Southwest Valley Community School District. The City of Coburg chose not to participate in the plan. The list of the planning team members for each jurisdiction can be found on the following table:

Table 3.1: Montgomery County Planning Team Members

NAME	JURISDICTION	TITLE
Brian Hamman	Montgomery County	Montgomery County EMA
Charla Schmid	Montgomery County	Montgomery County Supervisor
Mike Carson	Elliott	Mayor
Greg Vetter	Grant	Fire Chief
Lisa Kotter	Red Oak	City Administrator
Shawnna Silvius	Red Oak	Mayor
TJ Clark	Stanton	Public Works Director
David Wagg	Stanton	Water and Sewer Supervisor
Matt Kutzli	Stanton	Mayor
Chad James	Villisca	Public Works Director
Ron Lorenzo	Red Oak CSD	Superintendent
Adam Wenberg	Red Oak CSD	Facilities Director
David Gute	Stanton CSD	Superintendent
Danielle Briggs	SWIPCO	Lead Planner

In-Direct Participation

To involve a greater number of jurisdictions in the Montgomery County Hazard Mitigation Plan, an in-direct method of participation was developed for several jurisdictions. It was decided by the planning team that school districts would be a participant in the plan indirectly. Additionally, unincorporated areas, due to their absence of taxing authority, are under the jurisdiction of and are represented by the county. The in-direct methods would ensure each jurisdiction would be represented within the plan.

It was recognized during the planning process that a number of School Districts have infrastructure that is solely within the city limits of jurisdictions already represented in the plan. School districts would therefore use the city's risk assessment as their own. For school districts whose infrastructure is located in multiple jurisdictions or jurisdictions outside of the county, their risk assessment was tied to the city where the majority of their infrastructure was located within Montgomery County. During the planning meetings, when asked to rank vulnerability of hazards, the school district representative worked with local community members to assess their hazard risk. The School District and the associated risk assessment is as follows:

- The Red Oak Community School District used the City of Red Oak's risk assessment. All of the structures that the school district operates are located within the city.
- The Stanton Community School District used the City of Stanton's risk assessment. All of the structures that the school district operates are located within the city.
- The Southwest Valley Community School District has structures located in Villisca and Corning. The school district, during the planning process, worked with the City of Villisca and used the City's risk assessment for all structures that it operates.
- The Griswold School District has structures located in Elliot; however, the school district chose to participate in the Cass County Multi-Jurisdictional Hazard Mitigation Plan process rather than Montgomery County's.

Opportunity for Neighboring Communities

The opportunity was given to inform neighboring communities and counties of the Montgomery County Hazard Mitigation plan and to allow them the opportunity for public involvement. Neighboring communities and counties were contacted and invited to provide comments or feedback to the plan. Refer to Appendix C for correspondence sent to the neighboring communities.

The following neighboring communities were sent information regarding the Montgomery County Hazard Mitigation Plan:

- Adams County
- Cass County
- Fremont County
- Mills County
- Page County
- Pottawattamie County
- Taylor 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 county-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 focus on natural and man-made hazards that pose a risk to Montgomery 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/Plant/Crop Disease
2. Dam/Levee Failure
3. Drought
4. Earthquake
5. Extreme Heat
6. Expansive Soils
7. Flash Flooding
8. Grass/Wild Land Fire
9. Hazardous Material Incident
10. Human Disease
11. Infrastructure Failure
12. Radiological
13. River Flooding
14. Severe Winter Storm
15. Sinkholes
16. Terrorism
17. Thunderstorm/Lightning/Hail
18. Tornado/Windstorm
19. Transportation Incident

Each individual risk assessment provided by the participants are found in Section IV: Multi-Jurisdictional Hazard Analysis/Risk Assessment. Each table represents the individual assessment made by each jurisdiction prior to a county-wide assessment. 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 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.

During the planning process, it was determined that the risk assessment for each school district jurisdiction would be represented by the city in which the structure was located.

Mitigation Strategy

The mitigation strategy 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 Montgomery 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 Montgomery County Hazard Mitigation Plan. Information and resources used in the plan are as follows:

Table 3.2 - 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 (2013)
Montgomery County Hazard Mitigation Plans	SWIPCO	Previously approved Montgomery County Hazard Mitigation plans
Local/County Hazard Mitigation Plans	Respective County Website	Current local hazard mitigation plans
Montgomery County Website	http://www.montgomerycountyiowa.com/	County Website
Montgomery County Assessor	http://www.montgomerycountyiowa.com/	Building and Structure Information
Montgomery 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.geodata.iowa.gov	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.census.gov factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml	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
Montgomery County Memorial Hospital	www.mcmh.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
Red Oak Chamber and Industry Association	http://www.redoakiowa.com/ashadebetter/Default.aspx	Historical Information on Montgomery County

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. The hazard analysis and risk assessment is divided into four steps: first identify the hazard, then create hazard profiles for each hazard, next create a community profile to assess vulnerability and lastly estimate potential impacts. Hazards need to be first identified to put focus in the hazard mitigation planning process and target hazards that create the most risk in each jurisdiction. A hazard profile is created for each jurisdiction to identify and understand the nature and characteristics of each hazard and to explain how each hazard can affect the community. A community profile then will illustrate the scope or size of the potential risk or value that a hazard can have on a community. Potential losses are estimated to give an indication at the amount of loss the jurisdiction could experience due to a disaster or emergency resulting from the identified hazard.

A comprehensive hazard analysis and risk assessment seeks to identify the potential threats and costs of hazards that can occur within the identified jurisdiction. While the plan includes information on several hazards and covers those that would most likely occur or impact the community, it does not provide specific information on all hazards. Instead, the document can be used as a tool by adapting the basic procedures explained in this section to any hazard. It will answer who or what will be affected by the hazard, such as what particular buildings or infrastructure could be damaged and the amount of damage done, which populations will be affected and are there any vulnerable populations within the hazard area or are there unique or symbolic characteristics that could be adversely impacted.

Individuals participating in the rating and ranking of hazards were chosen based on the following: (1) part of the emergency management team for the city/county; (2) part of the city/county emergency response team; (3) city/county stakeholders with knowledge of hazards that have affected the area; (4) city/county individuals with general knowledge of hazard mitigation. The participants are experts for Montgomery County with regards to hazards and mitigation efforts for each jurisdiction.

Hazards Identification

Identified Hazards

For the purpose of the Montgomery County plan, hazards were identified and prioritized to focus on those that would impact the communities located in the jurisdiction. For the Montgomery County Plan, it was determined to include both natural hazards as required by FEMA and man-made hazards.

The potential natural hazards identified for Montgomery County are as follows:

- Animal/Plant/Crop Disease
- Dam/Levee Failure
- Drought
- Earthquake
- Extreme Heat
- Expansive Soils
- Flash Flood
- Grass or Wild Land Fire
- Hazardous Material Incidents
- Human Disease
- Infrastructure Failure
- Radiological
- River Flooding
- Severe Winter Storm
- Sinkholes
- Terrorism
- Thunderstorms/Lightning/Hail
- Transportation Incident
- Tornado/Windstorm

The following hazards were not included in identification and evaluation of this Plan were determined to be of little or no threat to Montgomery County:

- Landslide – 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. USGS shows that the western portion of Montgomery County is moderately susceptible to the threat of landslides. However, due to the lack of historical events and data, and with input from the County Emergency Management Coordinator indicated, it was decided by the planning committee to not include this hazard in the plan.

Hazard Ranking Analysis

In order to understand the risk associated with each individual jurisdiction, a hazard ranking analysis was performed by asking planning team members from each jurisdiction to assess and rate hazard risk in their jurisdiction. Each team member was able to provide local input into the risk analysis through the hazard ranking analysis. In making their hazard analysis and risk assessment, the Montgomery County Planning Committee considered the following:

- Probability
- Magnitude/Severity
- Warning Time
- Duration

Each category was given a weighted score similar to the weighted score used in the State of Iowa Hazard Mitigation Plan. The weighting criteria allows for state priorities to be reflected in the final scoring of the hazards and to allow for a higher priority on hazards that have a higher occurrence and potential for adverse impacts. Probability was given the highest weight with a scale between 5 and 18, magnitude and severity was given a weighted scale between 3 and 12, warning time was given a weighted scale between 2 and 6 and duration was given a scale between 1 and 4. Participants would then rank each hazard based on the weighted values. Once each category of a hazard was ranked, the weighted values were added to determine the hazard score. The hazard score, when compared to each of the hazards, gave the ranking for that jurisdiction. Using the weighted values as previously described, the following equation was used to determine the score:

(Probability x .45) + (Magnitude/Severity x .30) + (Warning Time x .15) + (Duration x .10) = Total Weighted Score

The following tables define each factor and the rating scale that was used to assess the hazards risk to the community.

Table 4.1 - Hazard Risk Assessment Criteria

Probability: likelihood of the hazard occurring again in the future based on historical occurrences and projected likelihood.		
Score	Description	
5	Unlikely	Less than 10% probability in any given year (up to 1 in 10 chance of occurring). History of events is less than 10% likely or the event is unlikely, but there is a possibility of its occurrence.
9	Occasional	Between 10% and 20% probability in any given year (up to 1 in 5 chance of occurring), history of events is at least 10% but no more than 20% the event is likely to occur.
14	Likely	Between 21% and 33% probability in any given year (up to 1 in 3 chance of occurring), history of events is at least 20% but no more than 33% the event is likely to occur.
18	Highly Likely	More than 33% probability in any given year (event has a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.
Magnitude/Severity: severity in terms of injuries and fatalities, personal property, and infrastructure, and the degree with which the hazard affects the jurisdiction		
Score	Description	
3	Negligible	Less than 10% of property severely damaged, shutdown of facilities and services for less than 24 hours, and/or injuries/illnesses treatable with first aid.
6	Limited	10% to 25% of property severely damaged, shutdown of facilities and services for more than a week, and/or injuries/illnesses that do not result in permanent disability
9	Critical	26% to 50% of property severely damaged, shutdown of facilities and services for at least 2 weeks, and/or injury/illnesses that result in permanent disability.
12	Catastrophic	More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths
Warning Time: rating the potential amount of warning that is available before the hazard occurs		
Score	Description	
2	More than 24 hours warning time	
3	12 to 24 hours warning time	
5	6 to 12 hours warning time	
6	Minimal or no warning time (up to 6 hours warning)	
Duration: measure of the time the hazard will affect the jurisdiction		
Score	Description	
1	Less than 6 hours	
2	Less than 1 day	
3	Less than 1 week	
4	More than 1 week	

Each community first rated and ranked each hazard based on the level of threat present within their community. A county-wide ranking was then determined based on discussions and input from all communities. Hazards italicized are ones that were determined to be county-wide and were not scored at the jurisdiction level. The ranking of hazards are as follows:

Table 4.2 - Montgomery County Hazard Ranking

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

Ranking Reasoning

The above ranking is based on the following information provided by each jurisdiction while looking at the hazards. Jurisdictions that differ from the county ranking are also outlined.

Animal/Plant/Crop disease was the highest ranked hazard for the hazard due to the probability of occurrence and the limited warning time. This was not as big of a threat for jurisdictions due to their lack of crops or livestock.

Tornado/Windstorms were ranked within the top three hazards for all jurisdictions. This is due to the overwhelming damage attributed to historical events as well as the probability of these storms happening.

Drought was also ranked within the top three hazards for all jurisdictions do to the frequency of occurrence, how long droughts tend to last and the amount of crop damage caused.

River flood ranked fourth for the county but varied widely among the jurisdictions due to proximity to rivers.

Transportation incidents were ranked within the top five hazards for most jurisdictions except for Elliott which is not located on a state highway.

Thunderstorm/lighting/hail, human disease, severe winter storms, extreme heat and earthquakes were all considered countywide hazards. They ranked sixth, seventh, tenth and eighteenth for the county, but rankings for jurisdictions varied widely based upon the scores given to other hazards.

Hazard materials incidents ranked ninth for the county and was ranked similarly for each jurisdiction, verifying based upon transportation routes running through each.

Grass/wildland fire ranked eleventh for the county due to the vast amount of grass and crop lands. It scored towards the bottom for all jurisdictions except Villisca who has a lot of undeveloped land within city limits.

Infrastructure failure ranked similarly among most jurisdictions with the exception of Red Oak who ranked it as their number one hazard due to recent issues related to water and sewer, roads, and poor housing.

Flash flooding ranked between tenth and thirteenth for all jurisdictions.

Dam/levee failure varied depending on the presence of said infrastructure with Elliot ranking it the highest and eleventh and Villisca ranking it lowest at eighteenth.

Sinkholes, radiological and terrorism all ranked relatively low and were considered, but also acknowledged that they were likely to not pose a real threat for the county or its jurisdictions.

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 Montgomery County where either or both individual and public assistance was given.

Table 4.3 - Historical Presidential and State Disaster Declarations affecting Montgomery County

Presidential Declarations		
Declaration Date	**Disaster Number**	**Description**
May 24, 2024	DR-4784	Severe storms, tornadoes, and flooding
March 23, 2019	DR-4421	Severe Storms, Flooding
July 14, 2014	DR-4181	Severe Storms, Tornadoes, Straight-line Winds and Flooding
July 29, 2010	DR-1930	Severe Storms, Flooding, and Tornadoes
May 27, 2008	DR-1763	Severe Storms, Tornadoes and Flooding
January 4, 2008	DR-1737	Severe Winter Storm
September 14, 2007	DR-1727	Severe Storms and Flooding
May 25, 2007	DR-1705	Severe Storms, Flooding, and Tornadoes
May 25, 2004	DR-1518	Severe Storms, Tornadoes, and Flooding

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
July 9, 1993	DR-996	Flooding and Severe Storms
December 26, 1991	DR-928	Ice Storm
July 17, 1987	DR-795	Storms, Flash Flooding
September 26, 1972	DR-354	Severe Storms, Flooding
April 22, 1965	DR-193	Flooding
State Proclamations		
Declaration Date	**Disaster Number**	**Description**
July 16, 2024	2024-34	Storms, tornadoes, straight line wind
May 22, 2024	2024-12	Storms, tornadoes, flash flooding

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.

Recent and Projected Changes and Their Impact of Risk

Built Environment

Development and changes in land use and the built environment can increase hazard risks for jurisdictions experiencing such growth and change. Where such development has recently occurred in areas identified as higher risk for a particular hazard is of especial concern. For instance, development in flood hazard areas means more exposure and vulnerability and more risk to manage. Jurisdictions should be mindful as development encroaches closer and closer to areas, like flood hazard areas, that have a higher probability of experiencing a disastrous hazard event. Besides flooding, other hazards with geographic areas of higher risk are dam or levee failure, earthquake, wildfire, sinkhole and expansive soils.

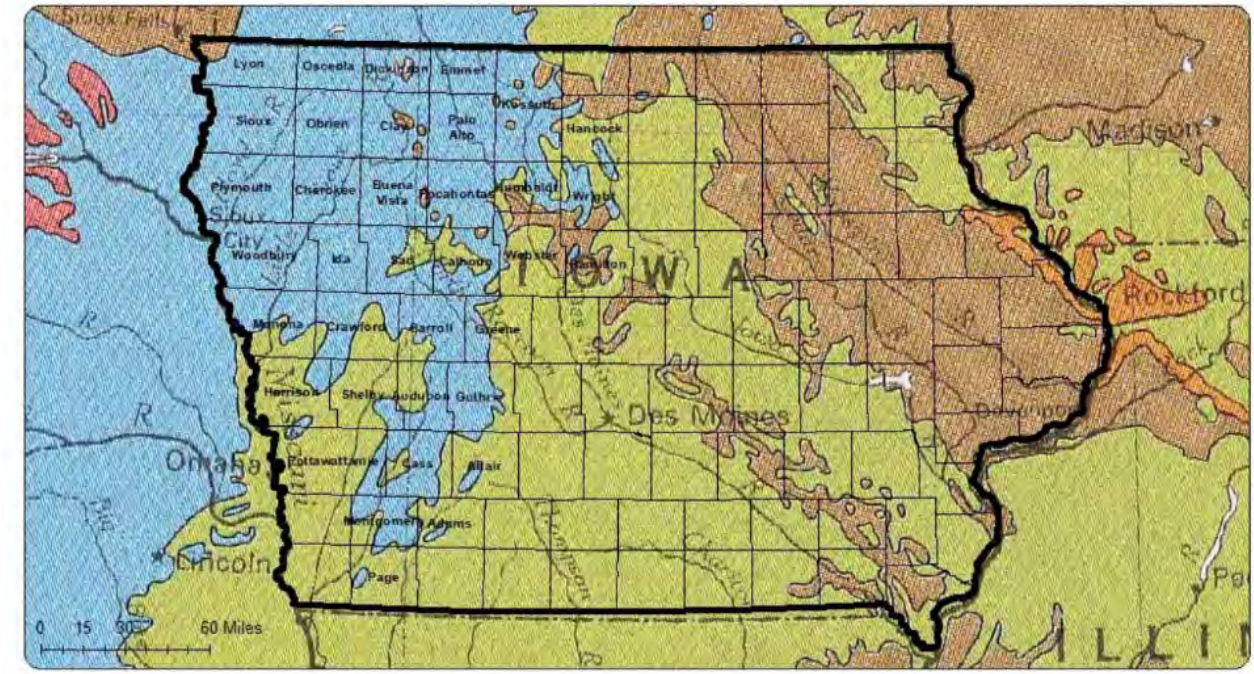
The below map shows the locations of coal mines as recorded by the Iowa DNR. These sites would have an increased risk of sinkholes and development on or near them should be avoided. According to this map, there are no locations of increase risk of sinkholes in Montgomery County.

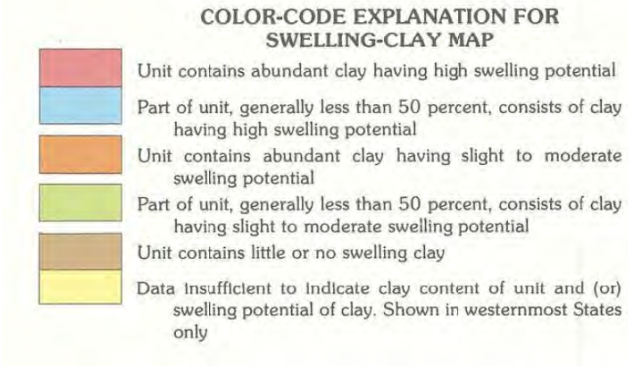
Map 4:1—Coal Mine Locations

Source: Iowa Department of Natural Resources

The below map shows the rate of swelling clay soil for the State of Iowa, which is also known as expansive soils. Areas with high rates of expansive soils should be avoided for development. According to this map, there is a significant amount of area marked as having soil that contains generally less than 50 percent clay with a high swelling potential.

Map 4:2—Swelling Clay Soils

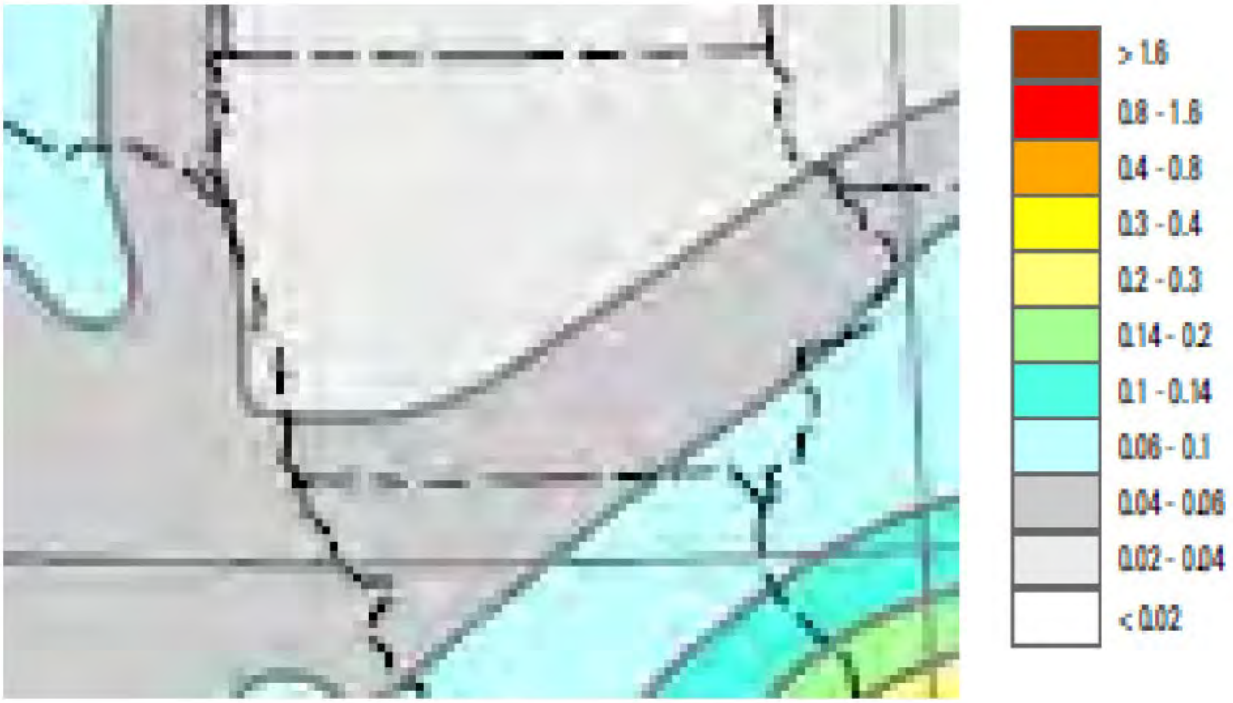




Source: US Geographical Survey

This next map shows susceptibility to earthquake damage. It illustrates that the southeast corner of Iowa has a higher probability (2% in 50 years) than the rest of the state of experiencing moderate perceived shaking from an earthquake (with very light damage expected).

Map 4:3—Peak Horizontal Acceleration with 2% Probability of Exceedance in 50 Years (NEHRP site class B/C (V_{30}=760 m/s)



As for Montgomery County's other natural hazards (drought, excessive heat, severe winter storms, lightning, hail, and tornado and other wind hazards), they do not necessarily have particular geographic areas where hazard event probability is considerably greater than event probability elsewhere in the County. But, changes in population demographics may increase the exposure and vulnerability of certain populations to such hazards. For example, wherever more people go, those places will have more exposure and vulnerability to the impacts of hail or excessive heat. This is the same for man-made hazards such as human disease, terrorism, transportation incidents, and hazard materials incidents.

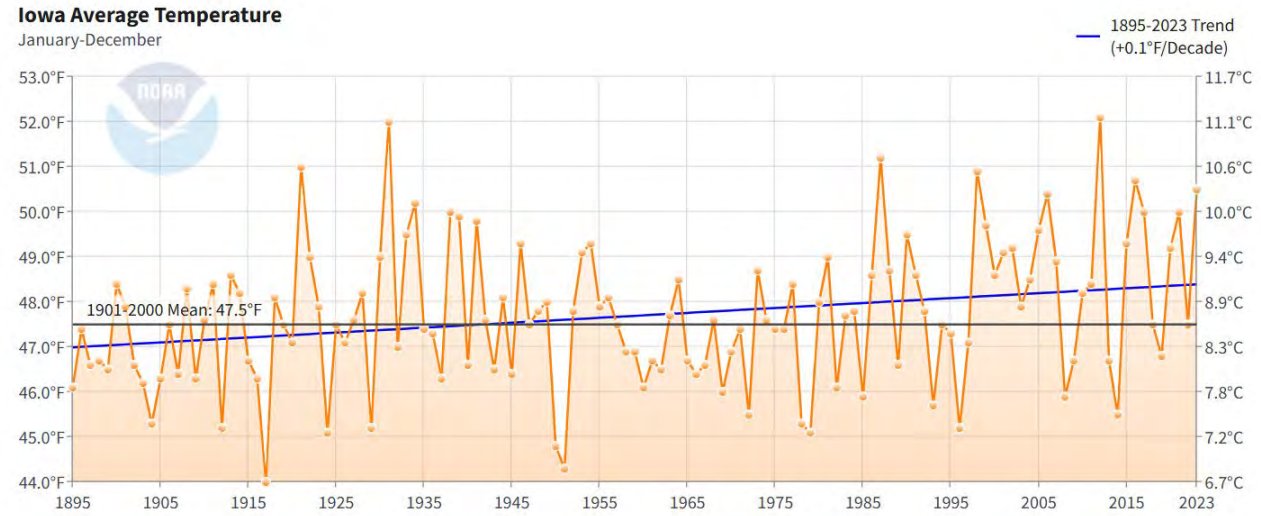
Montgomery County has not seen an excessive amount of development recently. Development and population growth are fairly stagnant and it is anticipated to stay that way for the life of this plan. Montgomery County does however, have a population that has an older median age than that of the state. It is anticipated that this trend of an again population will continue and could lead to more vulnerable populations.

The Effects of Climate Change

As a part of the risk assessment, it is critical to consider the effects of climate change and how that can impact future hazards and the increase/decrease in severity and occurrence. While it is difficult to predict exactly what impact climate change may have on the hazards covered in this plan, it is an environmental aspect that must be considered in hazard planning to better prepare for mitigation efforts. As weather patterns continue to change, an increase in the number of hazard events and/or the severity will be a real issue, as the area has already seen with recent occurrences of flooding and derechos.

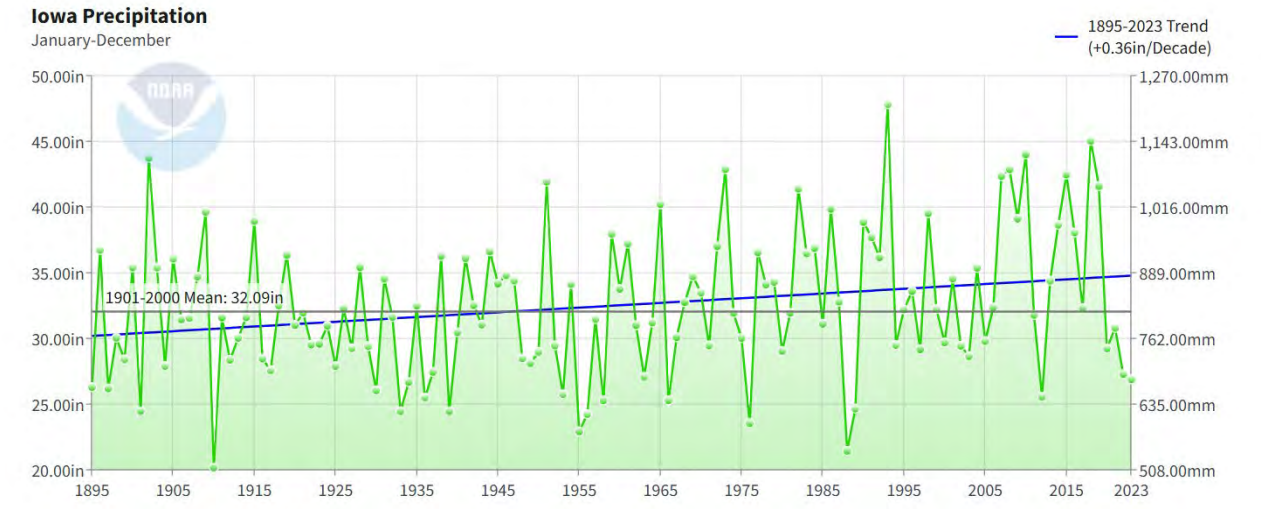
From 1895 to today, the average temperature and precipitation in Iowa have been on the rise, with temperatures increasing roughly 1.5°F and the average precipitation increasing roughly 5 inches.

Graph 4:1—Iowa Average Temperature 1895-2023



Source: NOAA

Graph 4:2—Iowa Precipitation 1895-2023



Source: NOAA

While climate changes have been gradual and often go unnoticed, Iowa is already feeling the effects. According to the Iowa DNR(Climate Change (iowadnr.gov)), the following are challenges Iowa is already facing due to a changing climate:

- Increased precipitation
  - Increase frequency of precipitation extremes that lead to flooding
  - Increase of 8% more precipitation from 1873 to 2008
  - A larger increase in precipitation in eastern Iowa than in Western Iowa
- Higher temperatures
  - Long-term winter temperatures have increase six times more than summer temperatures

    - Nighttime temperatures have increase more than daytime temperatures since 1970
    - Iowa's humidity has risen substantially, especially in summer, which now has 13% more atmospheric moisture than 35 years ago as indicated by a 3-5 degree F rise in dew-point temperature. This fuels convective thunderstorms that provide more summer precipitation.
- Agricultural challenges
    - Climate extremes, not averages, have the greater impact of crop and livestock productivity
    - Increased soil erosion and water runoff
    - Increased challenges associated with manure applications
    - Favorable conditions for survival and spread of many unwanted pests and pathogens
- Habitat changes
    - Plants are leafing out and flowering sooner
    - Birds are migrating earlier in the spring
    - Particular animals are now being sighted farther north than in the past
- Public health effects
    - Increases in heart and lung programs from increase air pollutants of ozone and fine particles enhanced by higher temperatures
    - Increases in infectious diseases transmitted by insects that require a warmer, wetter climate
    - An increased prevalence of asthma and allergies

The table below shows the anticipated effect that climate change may have on each hazard addressed in this plan.

Table 4:4—Hazard by Hazard Expected Conditions

Hazard	Expected Change
Drought	Varies regionally. May be more common in northwestern and southern counties. Northeastern counties, while potentially experiencing a greater increase in precipitation than the rest of the state, may be affected by drought more often than they are now. Precipitation could be expected to vary more both temporally and spatially, with one area experiencing record heat and drought while nearby areas experience heavy precipitation. Drought may take on a seasonal aspect, with excessive moisture in spring and insufficient moisture in summer. Iowa already sees wetter spring and fall and dryer summers than in its previous climate decade. Higher temperatures will increase evaporation rates, intensifying naturally-occurring droughts.
Tornado/Windstorm	Uncertain. Frequency and intensity do not appear to be changing. Some evidence suggests that 'Tornado Alley' – an area most favorable to tornado formation – is moving east, but the biggest effect of this is in the South. The likelihood of a tornado in any given part of Iowa has not significantly shifted. As temperatures rise, however, the length of tornado season may increase.
Flooding (flash and river)	Increasing. Precipitation is expected to increase in intensity, though not necessarily frequency. With average annual precipitation increasing only 1" to 4" in any county by 2050, however, heavy precipitation events are likely to become more common. Eastern Iowa seeing higher increase in precipitation than western Iowa indicates greater likelihood of flooding in eastern Iowa.

Severe Winter Storms	Decreasing. As winters warm faster than summers, winter weather is expected to cause less damage in coming decades. Overnight lows are increasing quickly relative to daytime temperatures, meaning there may be less than historical rates of re-freezing of snow and ice at some points in winter, and more at other points. Winters are becoming shorter as well.
Thunderstorm/Lightning/Hail	Increasing. Warming summers and higher quantities of water in the atmosphere will likely fuel increased thunderstorm development.
Excessive Heat	Increasing. Days with maximum temperatures above 90 are projected to occur 2 to 5 times more often by 2050 in the best case scenario. Days above 100, currently occurring once every few years in most of Iowa, are projected to happen several times per year by 2050. Days over 105 may not be rare either. 'Cooling degree days' will nearly double in about 50 years, straining energy systems and increasing chances of blackouts and brownouts (barring adaptation measures).
Dam/Levee Failure	Increasing. Flooding is expected to increase, increasing strain on levees and likelihood of failure or overtopping. Drought is also expected to increase, which may cause levees, especially those containing clay, to crack. Heavy precipitation events following these dry spells (a cycle expected to increase with climate change) can worsen the cracks. Dams most likely to experience increase risk of overtopping, rather than catastrophic failure, but flooding strains the structure as well.
Earthquake	No change expected.
Grass and wildfire	Increasing. If droughts become more common or more intense, even seasonally, dry vegetation will be more prone to ignition. High temperatures will also pull moisture from vegetation. Wind is not expected to increase.
Sinkholes	Uncertain. Sinkholes in central Iowa are general related to abandoned coal mines. Sinkholes in northeastern Iowa are generally related to the karst landscapes prevalent there. Increased precipitation could conceivably speed the dissolution of soluble rocks, and drought could conceivably lead to subsidence from loss (or over-pumping) of groundwater, but no definite projections are available. The freeze-thaw cycle can break up the ground and lead to sinkholes. Dry soil freezes faster and deeper than moist soil, so water acts as a barrier to freezing. With warming winters and wetter springs projected, the coinciding timing of each may or may not intensify the effects from the freeze-thaw cycle.
Expansive Soils	Uncertain. The expected increase in the back and forth between heavy precipitation and drought could conceivably lead to more damage, but no research in the US was readily available to support this.
Animal/Crop/Plant Disease	Increasing. As temperatures rise, this will allow for longer periods of favorable conditions for the survival and spread of pests and pathogens that will effect animals, crops, and plants.

Human Disease	Increasing. Similar to animals, the rise in temperatures will allow for more favorable conditions for the survival and spread of pests and pathogens. There will also be an increase in diseases transmitted by inspects that survive in a warmer wetter climate as well as an increase in asthma and heart and lung issues caused by pollutants in the atmosphere.
Infrastructure Failure	No change expected.
Radiological	No change expected.
Terrorism	No change expected.
Transportation incidents	No change expected.

Animal/Crop/Plant Disease

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.

The following table shows how Montgomery County ranked animal/plant/crop disease in their hazard score analysis.

Table 4.5 – Animal/Plant/Crop Disease Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Elliott	18	3	5	2	28	7
Grant	18	9	5	4	36	1
Red Oak	18	6	5	4	33	4
Stanton	18	6	5	4	33	3
Villisca	18	6	2	4	30	5
Montgomery County	18	9	5	4	36	1

Dam/Levee Failure

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.

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 three 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 two 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):

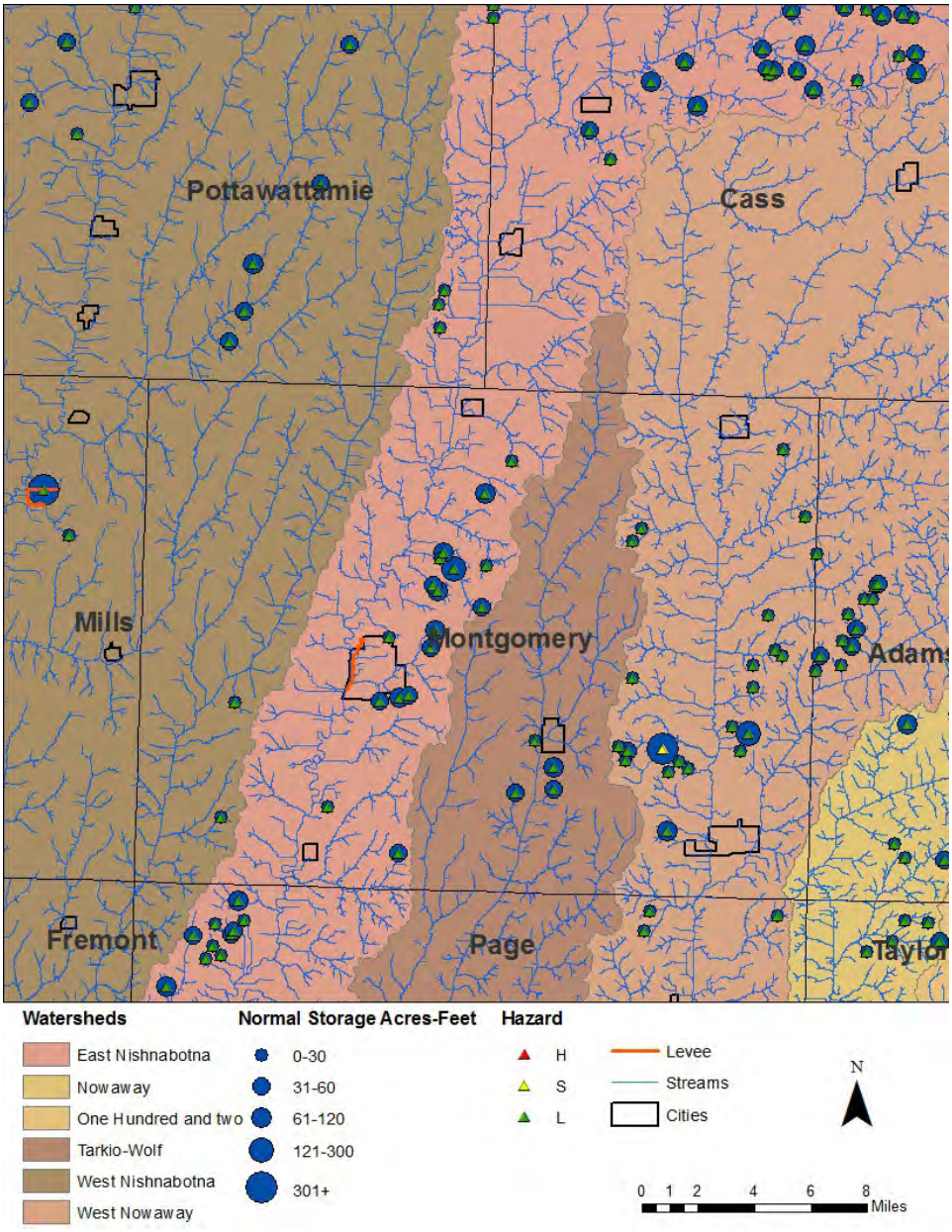
- High Hazard – Dams are classified as High Hazard when it is located in an area where dam failure may create a serious threat of loss of human life.

- Moderate (Significant) Hazard – A Moderate Hazard Dam is where failure may damage isolated homes or cabins, industrial or commercial 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.

Most dams located in and around Montgomery County are of low hazard risk which would limit the losses in the event of a dam failure to the loss of the dam, agricultural losses and lesser used roads. One dam has been given a moderate hazard ranking due the capacity of water it holds and its location north of Villisca. The only levee located in Montgomery County is located along the East Nishnabotna River next to the City of Red Oak. A failure of this levee could affect the western portion of the city. The map on the following page shows the location of the dams and levees located in and around the county.

Map 4.4 - Montgomery County Dams and Waterways



Source: Iowa Department of Natural Resources

The following table shows how each community ranked dam/levee failure in their hazard score analysis.

Table 4.6 - Dam/Levee Hazard Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Elliott	5	6	6	2	19	11
Grant	5	6	5	2	18	13
Red Oak	5	9	6	3	23	13

Stanton	5	3	6	2	16	13
Villisca	5	3	2	1	11	18
Montgomery County	5	6	5	2	18	14

Drought

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.

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.

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.

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

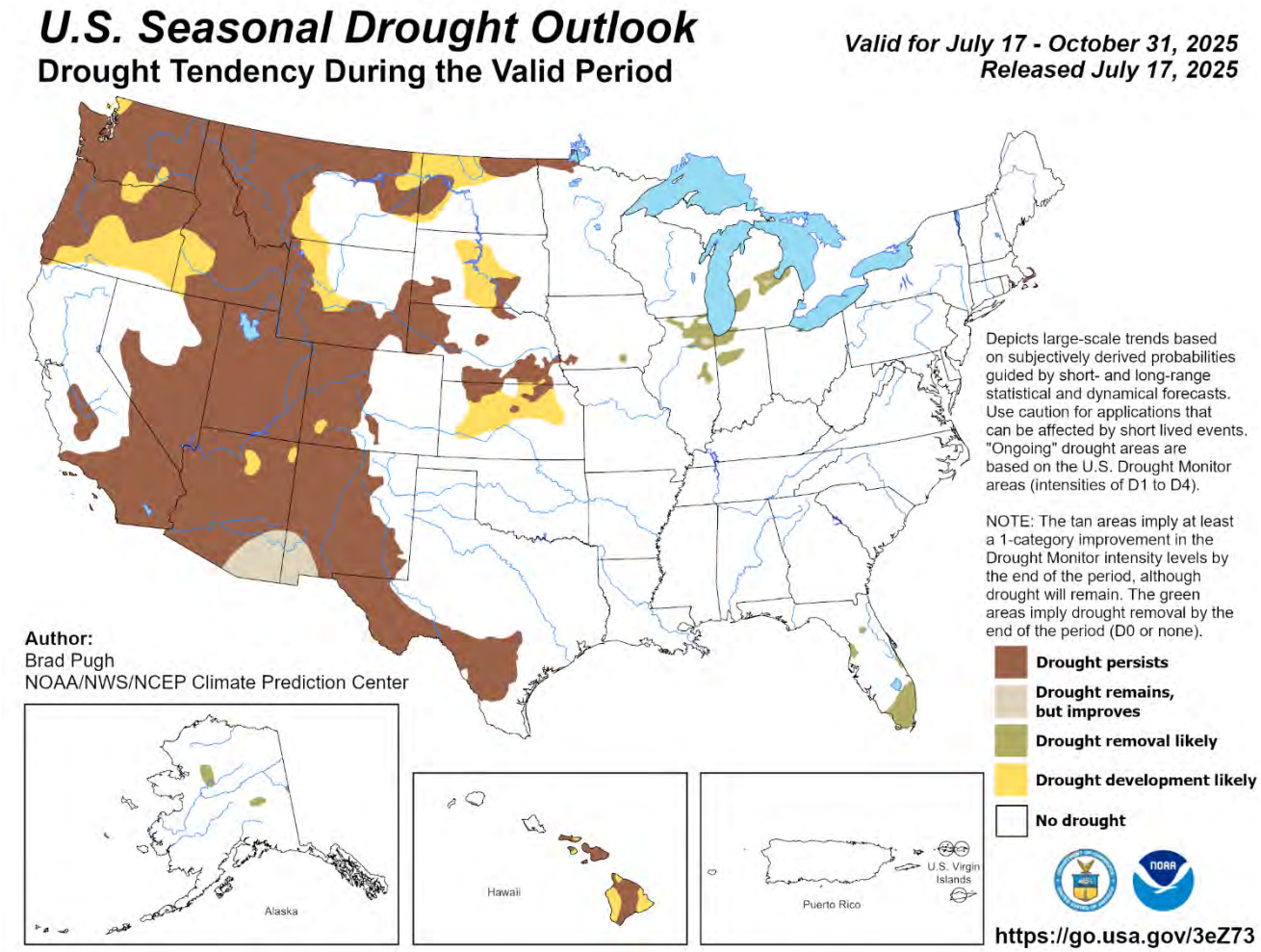
		Ranges					
Category	**Description**	**Possible Impacts**	**Palmer Drought Index**	**CPC Soil Moisture Model (Percentiles)**	**USGS Weekly Streamflow (Percentiles)**	**Standardized Precipitation Index (SPI)**	**Objective Short and Long-term Drought Indicator Blends (Percentiles)**
D0	Abnormally Dry	Going into drought: short-term dryness slowing planting, growth of crops or pastures. Coming out of	-1.0 to -1.9	21-30	21-30	-0.5 to -0.7	21-30

		drought: some lingering water deficits; pastures or crops not fully recovered					
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

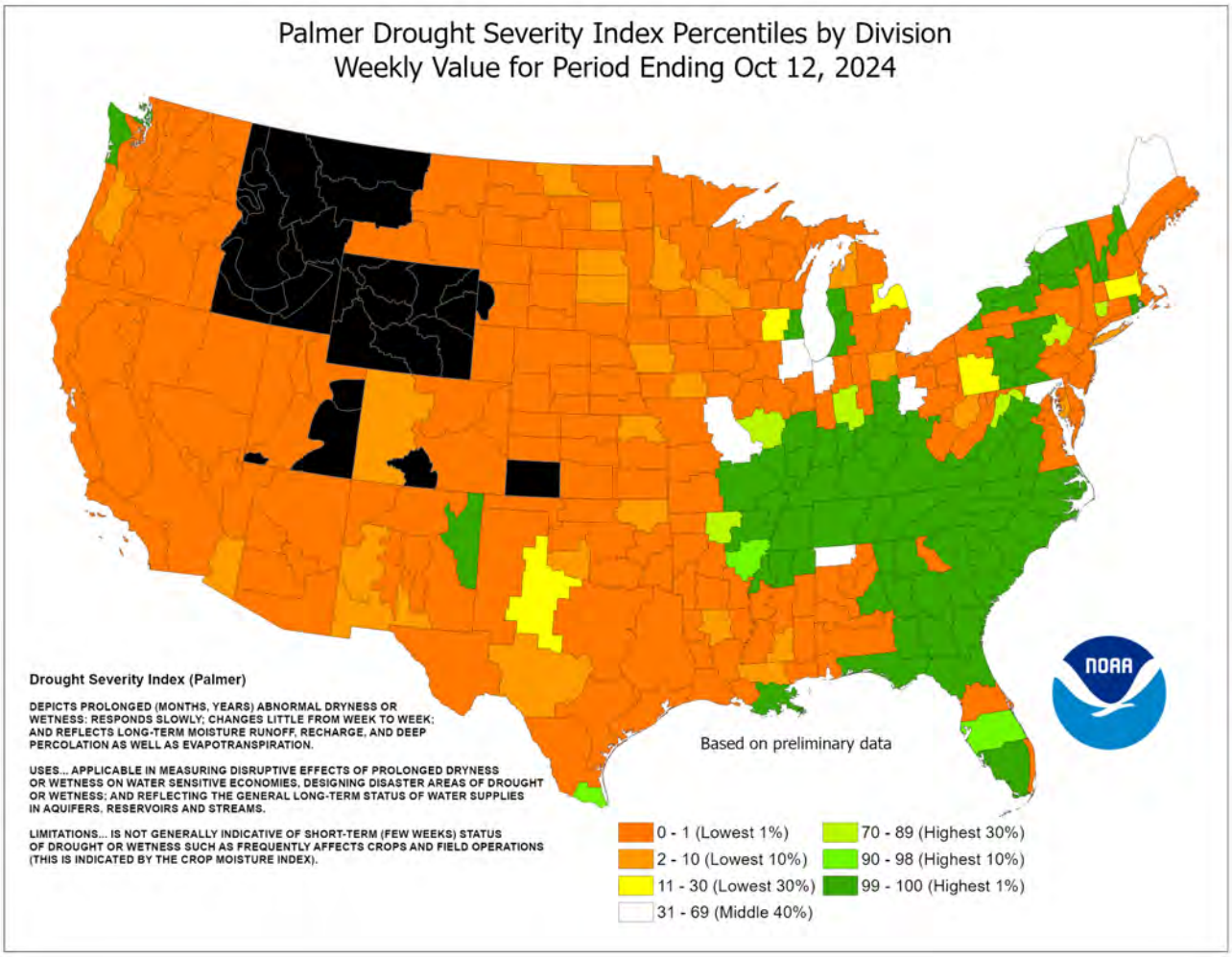
Typically, the Midwest, including Iowa, sees an abundant amount of rainfall, although droughts can occur in the region. The large presence of agricultural activity in the county leaves it significantly vulnerable in the event of a drought. The agricultural activity is highly dependent on precipitation 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 Montgomery County, but most of Iowa if not the Midwest as a whole. The following map displays the U.S. seasonal drought outlook for June 19, 2014 to September 30, 2014 followed by the Palmer drought index percentiles based upon historical data.

Map 4.5 - US Seasonal Drought Outlook for July 17 – October 31, 2025



Source: NOAA Climate Prediction Center

Map 4.6 – Palmer Drought Index Percentiles by Division (Weekly Value for Period Ending October 12, 2024 – Records Began in 1895)



Source: NOAA

The following table shows how each community ranked drought in their hazard score analysis.

Table 4.7 - Drought Hazard Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Montgomery County	18	9	2	4	33	3

The region can expect dry conditions to occur regularly with classified droughts periodically. In the last 23 years, there has been four classified droughts with no damage reported.

Earthquake

An earthquake is a geological event in which the ground shakes. Earthquakes are often a result of tectonic plate movement, though in some instances can also be man-made. USGS rates the area as located in low risk

zones for an earthquake. 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.

Earthquakes are considered a county-wide hazard meaning that jurisdictions helped to establish a county-wise risk score for it that all communities used.

Table 4.8 - Earthquake Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Montgomery County	5	3	6	1	15	18

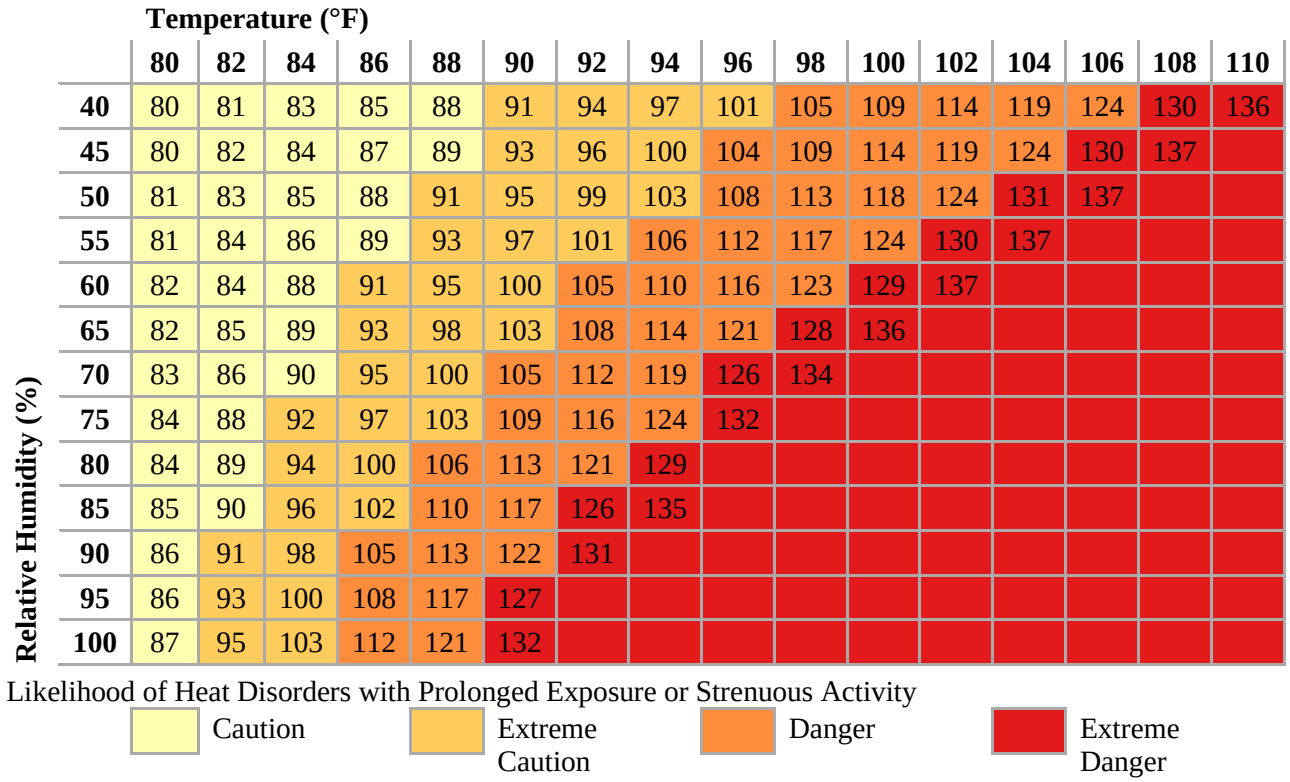
Extreme Heat

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 expected to fall below "around 75°F". A heat advisory can be issued for a heat index less than 100°F when the cumulative effect of successive days of near advisory heat leads to potentially life-threatening conditions.

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

Figure 4.2 - Heat Index



Relative Humidity (%)	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										

Source: NOAA – National Weather Service

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.

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 following table shows how each community ranked extreme heat in their hazard score analysis.

Table 4.9 - Extreme Heat Hazard Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Montgomery County	18	3	2	3	26	10

Excessive heat typically goes unreported as it is expected between the months of June and September. Only five incidents were reported in the last five years, which supports the lack of reporting for excessive heat. According to the National Climate Data Center, Southwest Iowa averages 36 days per year with maximum temperatures 90°F or higher.

Flash Flood

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.

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.

The following table shows how each community ranked flash flood in their hazard score analysis.

Table 4.10 - Flash Flood Hazard Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Elliott	5	6	6	2	19	12
Grant	5	6	6	1	18	12
Red Oak	9	6	3	2	20	12
Stanton	9	6	6	2	23	10
Villisca	5	3	6	2	16	10
Montgomery County	9	6	6	1	22	13

Flash flooding rarely causes enough damage to be reported and, as such, the incident history is skewed. These events often occur in conjunction with other disasters (i.e. thunderstorm/lightening/hail) and are reported elsewhere. Montgomery County can expect to have minor flash flooding annually with larger, damaging incidents every three to five years.

Grass or Wild Land Fire

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.

Wildfires are characterized by their physical properties in terms of topography, weather, and fuels. Wildfires are dependent on factors such as fuel type and moisture content in the fuel, humidity, wind speed, ambient temperature, topography, geographic location and the cause of ignition. Grass or wild-land fires can be man-made or naturally caused. Common causes of grass or wild land fires include, though not limited to, lightning, arson, or unattended or uncontrollable burnings. Grass or wild land fires are more commonly caused by human related activities than natural sources.

Grass or wild land fires have the potential to damage or destroy buildings and crops, damage recreational areas, loss of wildlife habitat and air pollution. In addition, secondary effects of wildfires include higher risk of erosion, induction of invasive species and changes in water quality. They are also beneficial to many natural ecosystems and are vital to many prairies in Iowa. Vegetation that has been burned away allow for new diverse vegetation to grow in its place, provide nutrients to the soil and are vital to some species of plants for reproduction. Fire suppression can actually lead to an increased risk of wildfires due to the buildup of vegetation which increases the amount of fuel for a fire. Controlled burns are often used to reduce this risk. The following table shows how each community ranked grass or wild land fire in their hazard score analysis.

Table 4.11 - Grass or Wild Land Fire Hazard Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Elliott	5	3	6	1	15	16
Grant	5	3	6	1	15	18
Red Oak	5	3	6	1	15	18
Stanton	5	3	6	1	15	17

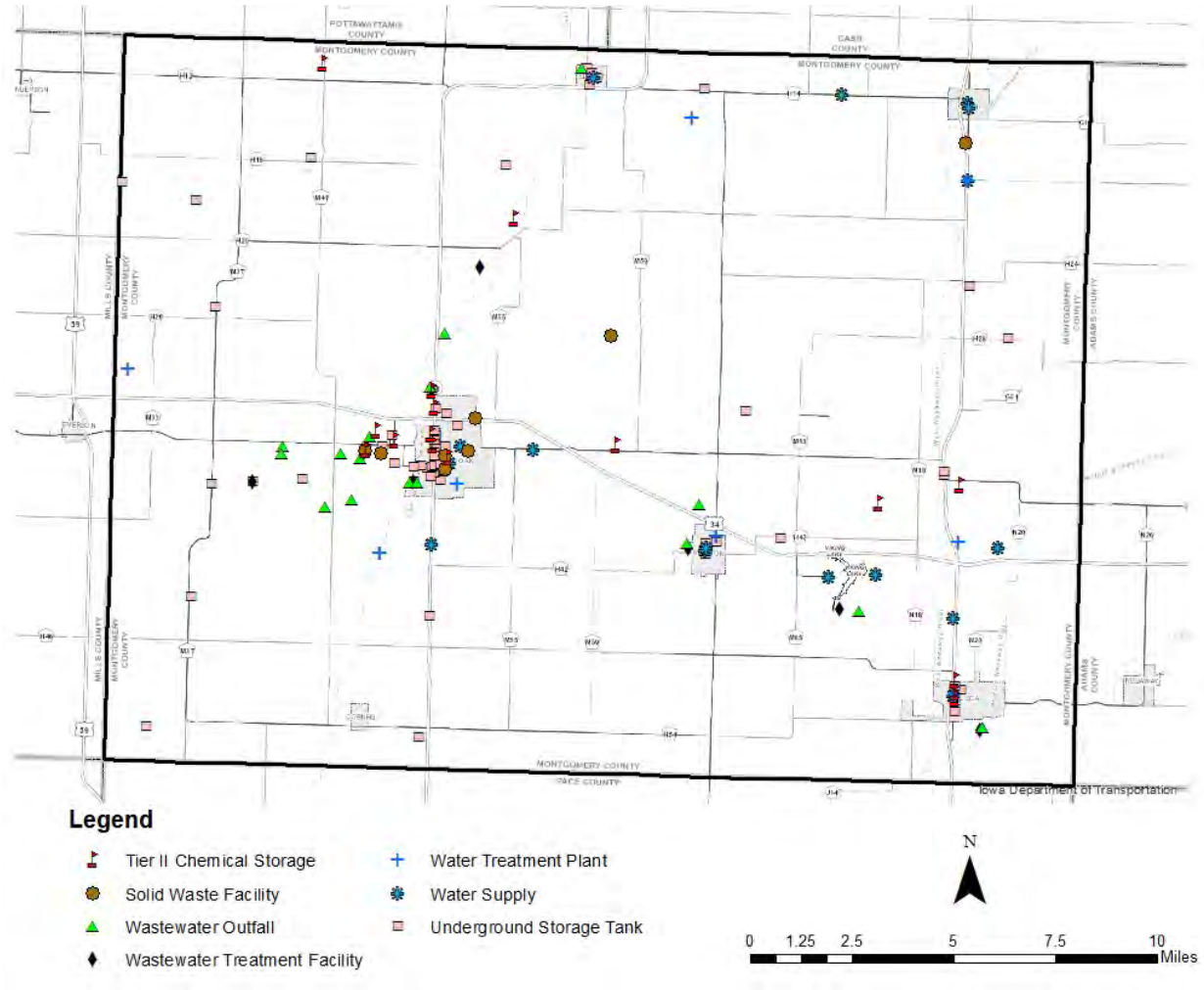
Villisca	5	3	6	2	16	11
Montgomery County	14	3	6	1	24	11

According to the DNR Forest Fire protection, Montgomery County is considered a low risk for wild land fires. The County Conservation office works to schedule burn approximately 75-100 acres per year to reduce risk of wild land fires and promote wild grasses and flowers.

Hazardous Materials Incident

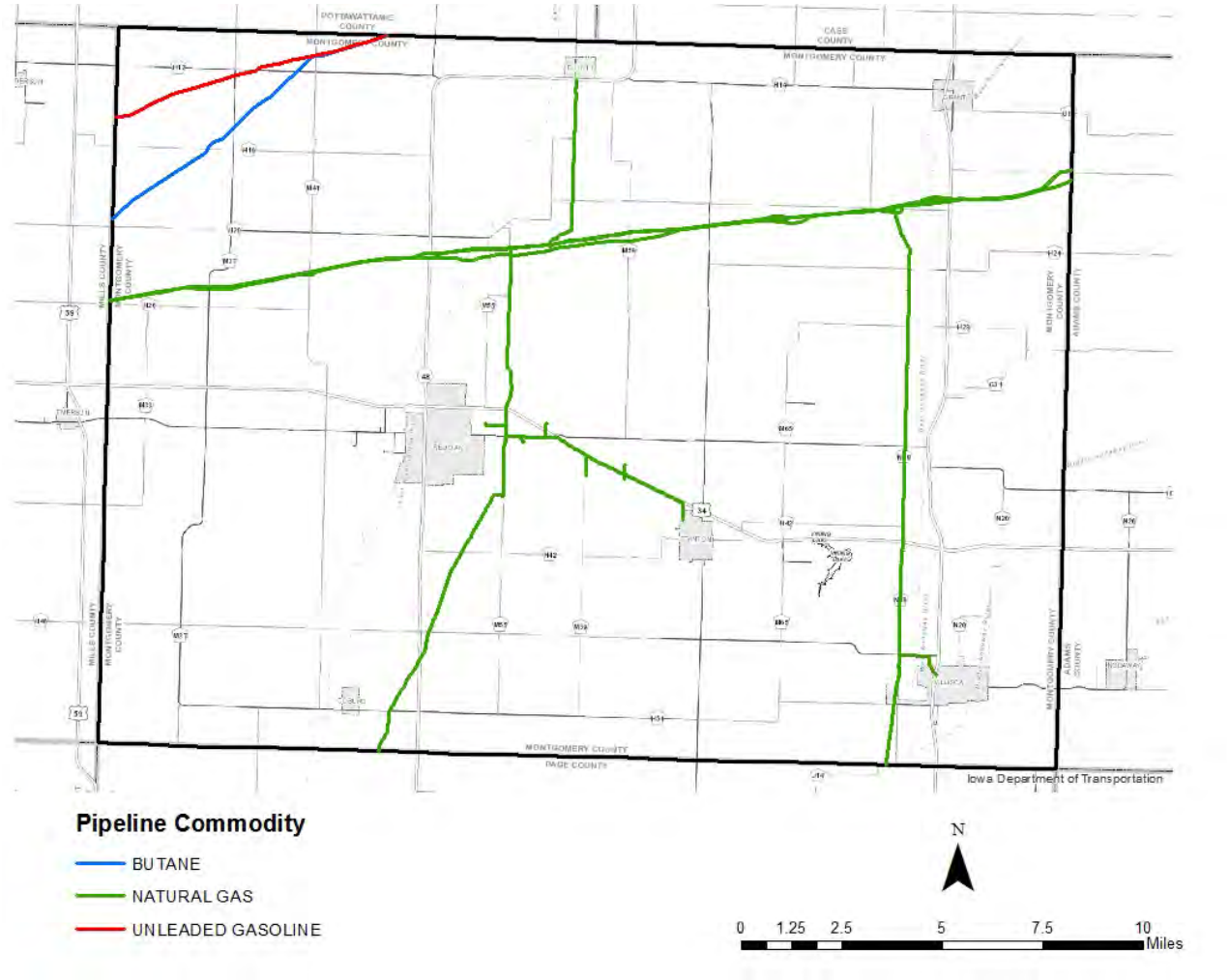
Hazardous materials can come in various different forms and are found in almost every jurisdiction in the county. These are materials that could pose a threat to the environment or surrounding people if a leak occurred. Some materials are flammable and could cause an explosion if mistreated leading to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

Map 4.7 – Fixed Hazardous Materials



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

Map 4.8 – Pipelines by Commodity



The following table shows how each community ranked hazardous materials incidents in their risk analysis.

Table 4.12 – Hazardous Materials Incident Hazard Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Elliott	9	3	2	1	15	10
Grant	9	3	6	2	20	9
Red Oak	18	6	6	1	31	6
Stanton	18	3	6	2	29	8
Villisca	18	3	6	2	29	8
Montgomery County	18	3	6	2	29	9

There have been several spills of varying amounts and substances throughout the county reported to the Iowa DNR. It is likely that there will continue to be multiple spills reported every year.

Human Disease

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.

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 Montgomery County for a period of 10 years.

Table 4.13 – Reported Communicable Disease Cases for Montgomery County 2015-2024

Year	Count
2024	9
2023	11
2022	3
2021	7
2020	4
2019	12
2018	14
2017	3
2016	3
2015	6

Source: Iowa Department of Public Health Annual Reports of Notifiable and Other Diseases

Table 4.14 – Human Disease Hazard Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Montgomery County	18	6	2	4	30	7

Infrastructure Failure

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 Montgomery County could include water main breaks, sewer system backups, bridge failure, power outages or road failures to name a few.

Due to the nature of Montgomery County, 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.

Table 4.15 – Infrastructure Failure Score by Jurisdiction

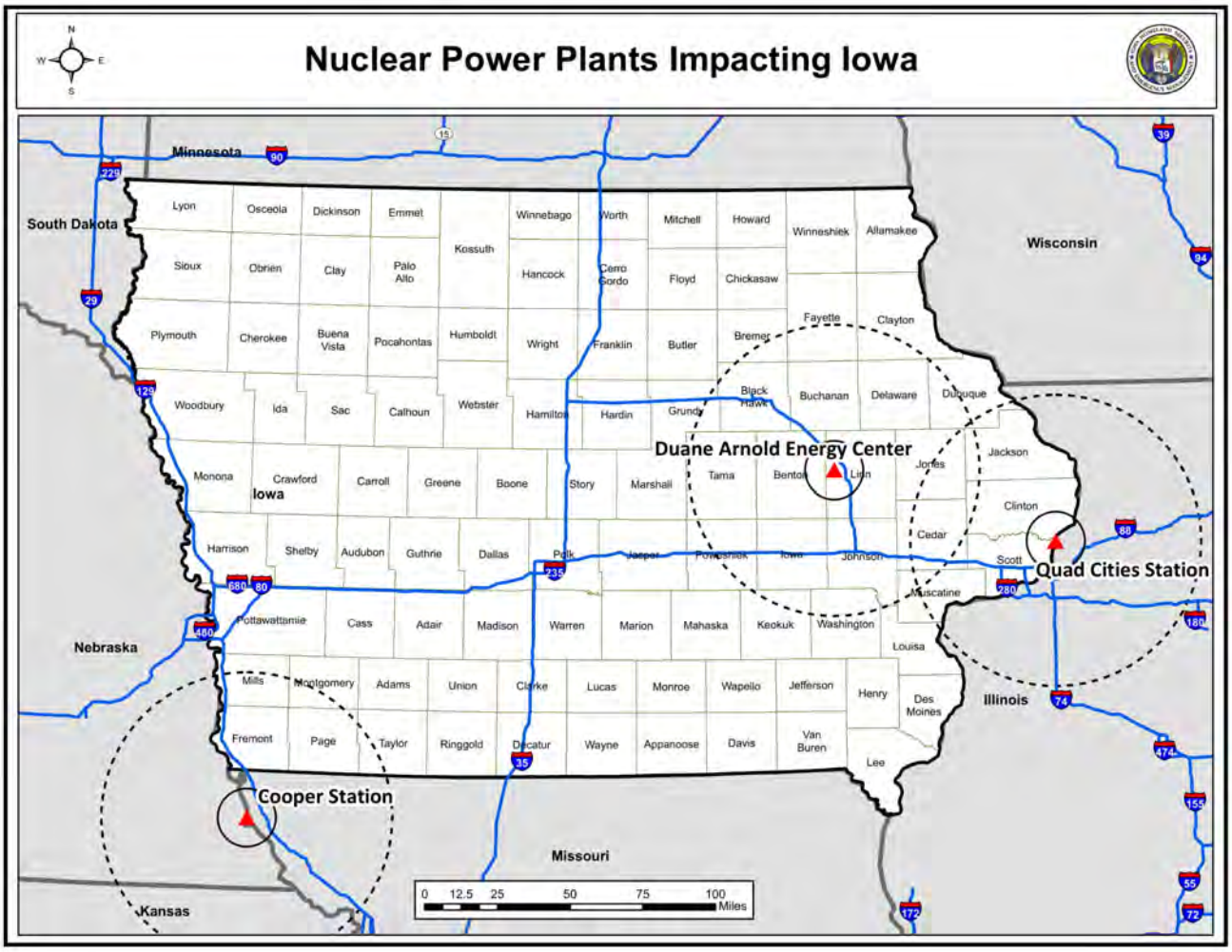
	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Elliott	5	3	2	1	11	17
Grant	5	6	6	4	21	11
Red Oak	18	9	6	4	37	1
Stanton	5	9	6	4	24	11
Villisca	5	3	6	1	15	15
Montgomery County	9	6	6	4	25	12

There is no data available for this hazard so local knowledge was used. It is expected that throughout the County, incidences of infrastructure failure will occur annually.

Radiological

There are currently no nuclear power plants located within Montgomery County, however, parts of the county are located within the 50-mile radius to Cooper Station near Brownville Nebraska. This 50-mile radius is called the Ingestion Exposure Pathway and requires emergency planning to deal with potential exposure. The danger in this zone comes mainly from consuming contaminating food or water whereas the 10-mile radius around a nuclear power plant would face dangers of direct exposure.

Figure 4.3—Nuclear Power Plants



Source: Iowa Homeland Security and Emergency Management

Table 4.16 - Radiological Hazard Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Elliott	5	3	2	1	11	18
Grant	5	3	6	2	16	15
Red Oak	5	3	6	2	16	16
Stanton	5	3	6	2	16	14
Villisca	5	3	6	2	16	12
Montgomery County	5	3	6	2	16	16

River Flooding

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.

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. As of December 2019, there were no repetitive loss properties within Montgomery County.

The following map shows the areas of potential flooding using mapped FEMA flood zones:

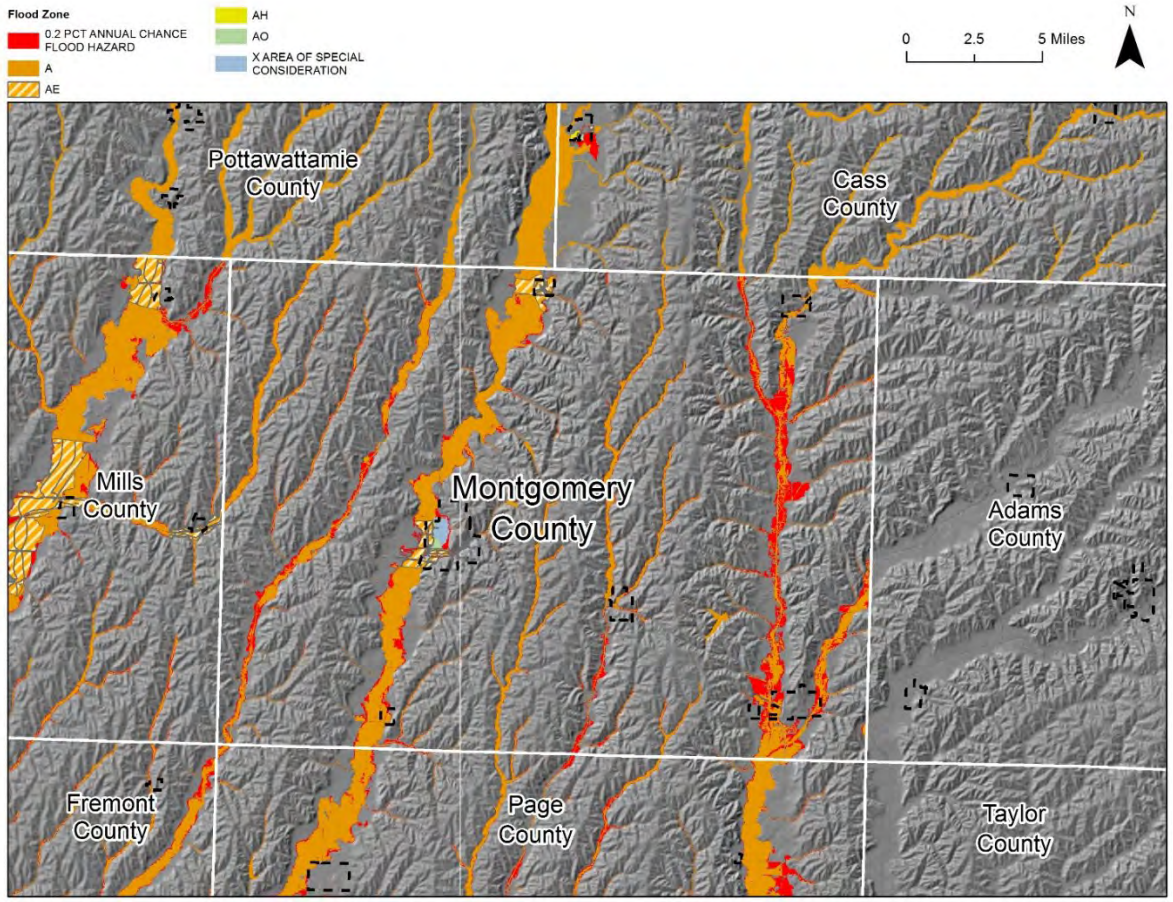
- Zone A – Areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown. Mandatory flood insurance purchase requirements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

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

- X Area of Special Consideration – Areas subject to special circumstances in the event of a flood. An area located in Red Oak is classified as having a special consideration due to a levee that protects a portion of the town.

Map 4.9 - Montgomery County Shaded Relief and Flood Zone Map



Source: Iowa Department of Natural Resources/FEMA

Red Oak School District has two school buildings and the bus barn located within the 100- and 500-year flood zones. These buildings were constructed with local funds in the most densely populated areas without consideration of flooding as the city was protected by a US Army Corp of Engineers certified levee. At this point there are no mitigation techniques available outside of new construction for these buildings. When the time comes for new schools to be built, they will be located outside the floodplain.

The following table shows how each community ranked river flooding in their hazard score analysis.

Table 4.17 - River Flooding Hazard Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Elliott	14	9	2	3	28	8
Grant	5	9	2	3	19	10
Red Oak	9	6	3	3	21	11
Stanton	5	3	2	2	12	18
Villisca	5	3	2	3	13	17
Montgomery County	18	9	2	3	33	4

Montgomery County experienced fourteen incidents of flooding in the last 23 years. Most floods have little to no damage, but during that time one large flood has impacted the county (1998). Montgomery County can expect approximately one small flood during the next five years and one major flood in the next 10-15 based on historical occurrences.

Severe Winter Storm

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.

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

The following table shows how each community ranked severe winter storm in their hazard score analysis.

Table 4.6 - Severe Winter Storm Hazard Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Montgomery County	18	6	2	3	29	8

Montgomery County averages 1.65 winter incidents per year. It is expected the county will be impacted annually by at least two blizzard/extreme cold incidents, however property damage is typically minimal. This does not include traffic accidents attributed to winter driving conditions.

Sinkholes

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.

The following map shows coal mine locations within Montgomery County.

Map 4.10 – Coal Mine Locations

Table 4.18 - Sinkholes Hazard Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Elliott	5	3	6	3	17	14
Grant	5	3	6	4	18	14
Red Oak	5	3	6	4	18	15
Stanton	5	3	6	4	18	12
Villisca	5	3	3	3	14	16
Montgomery County	5	3	6	4	18	15

Terrorism

Terrorism is a human caused threat that demonstrates unlawful force, violence or a threat to another person or property with the intent to cause harm. Various forms of terrorism exist including:

- Enemy attack
- Biological terrorism
- Agro-terrorism
- Chemical terrorism
- Conventional terrorism
- Cyber terrorism
- Radiological terrorism
- Public disorder

As discussed by jurisdictions, the most common types of terrorism that would be seen in Montgomery County are agro-terrorism, cyber terrorism and public disorder. Public knowledge was used for determining the probability of this hazard. All jurisdictions scored very similar except for Red Oak. As a larger city, Red oak would have a higher magnitude than the rest of the jurisdictions.

Table 4.19 - Terrorism Hazard Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Elliott	5	3	6	4	18	13
Grant	5	3	6	2	16	16
Red Oak	5	9	6	3	23	14
Stanton	5	3	6	2	16	15
Villisca	5	3	6	2	16	13
Montgomery County	5	3	6	2	16	17

Thunderstorms, Lightning and Hail

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. While thunderstorms can produce several weather-related hazards; many of these were separated into individual hazard categories due to their severity and unique characteristics in the region.

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.

- 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.

The following table shows how each community ranked severe winter storm in their hazard score analysis.

Table 4.20 - Thunderstorms, Lightning and Hail Hazard Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Montgomery County	18	6	5	1	30	6

These types of events are expected to occur frequently from April to September. The last 23 years have averaged 5.65 incidents per year. There is a high probability of this type of incident each year, but with little damage on average.

Tornado and Windstorms

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.

Tornadoes have occurred all over the world but are prevalent in the American Midwest and South. Over 1,000 tornadoes are recorded each year in the US. Tornado season typically occurs within the months of March and April and 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.

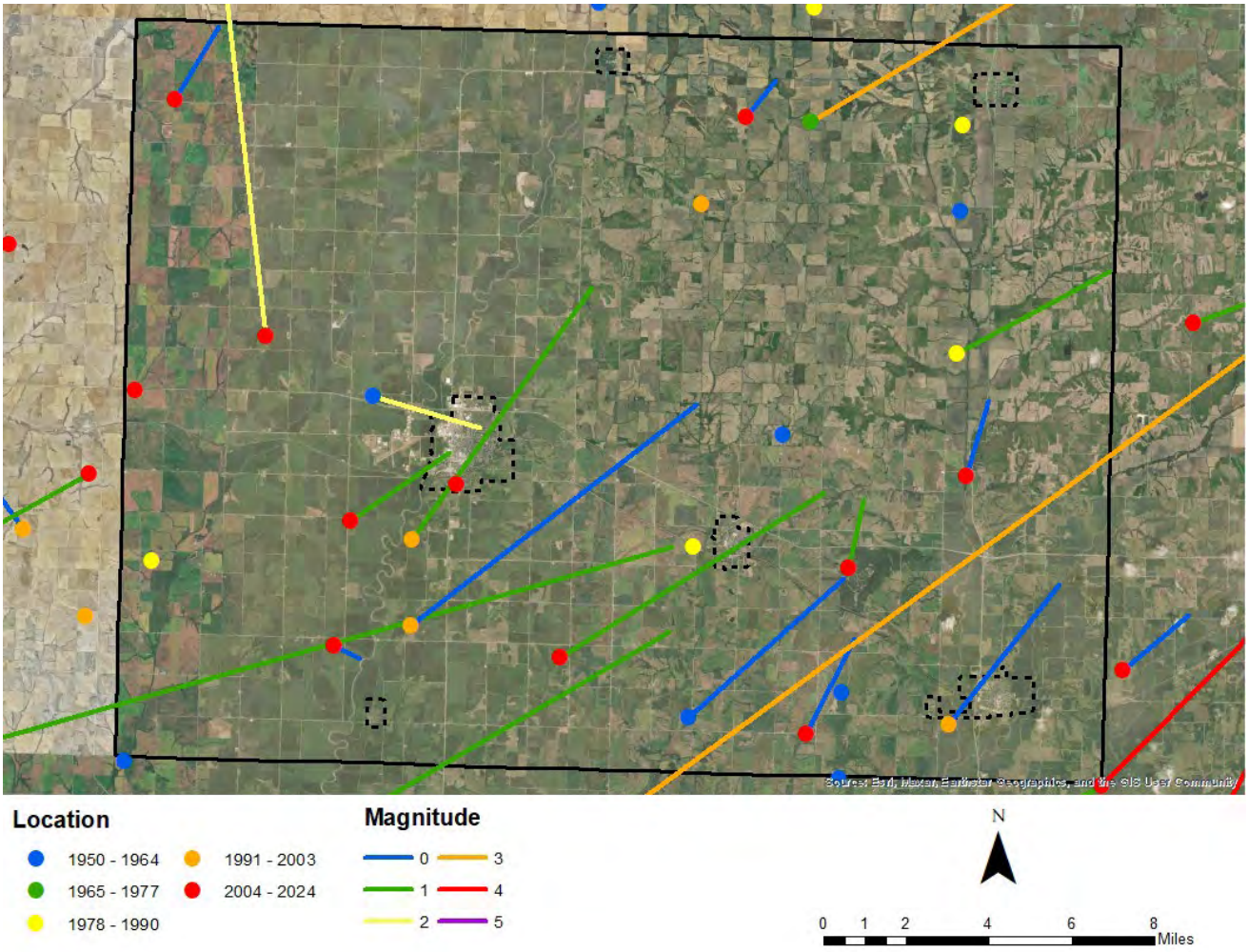
Figure 4.5 - Enhanced Fujita Scale and Damage Descriptions

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

Map 4.11 - Recorded Tornado Sightings and Tracks (1950 – 2024)



Source: NOAA Storm Prediction Center

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.

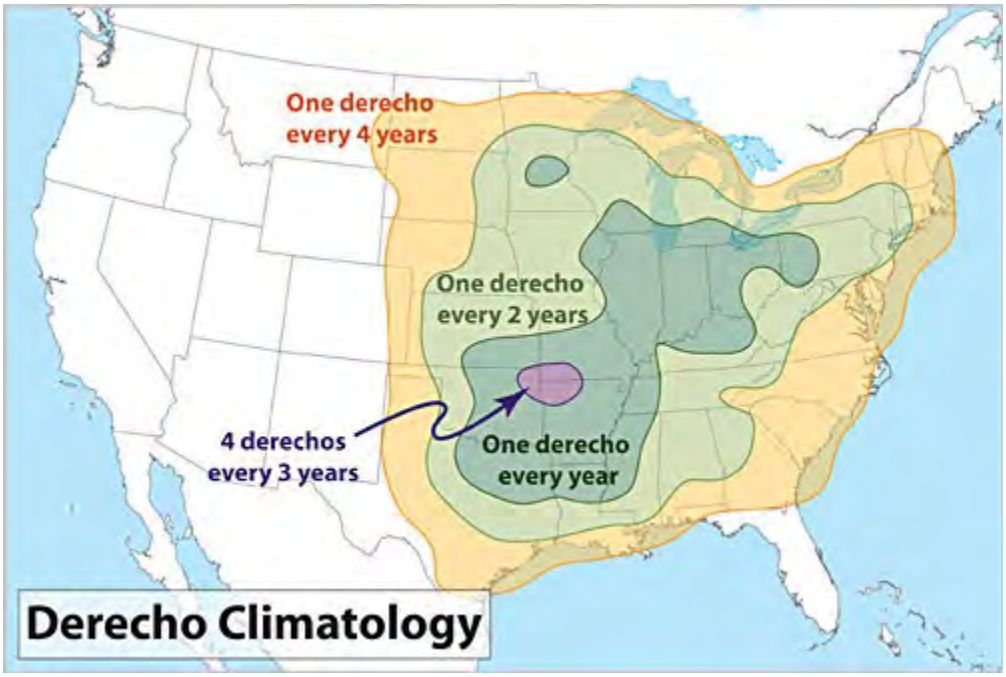
Figure 4.6 - Beaufort Wind Scale

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 windstorm 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 4.12 - Derecho Climatology



Source: NOAA Storm Prediction Center

The following table shows how each community ranked tornado and windstorms in their hazard score analysis.

Table 4.21 - Tornado and Windstorm Hazard Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Montgomery County	18	9	6	1	34	2

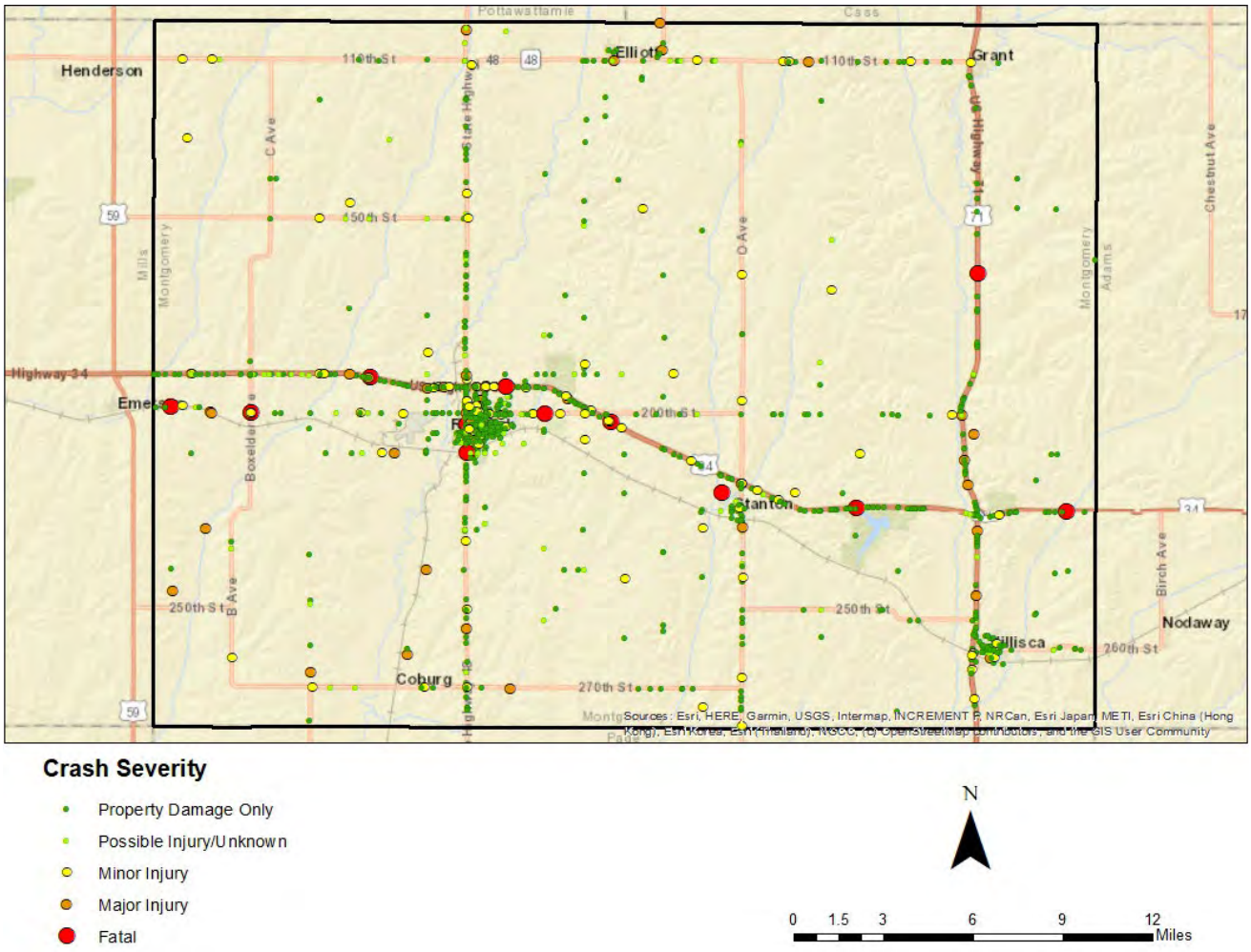
Future probability for a tornado/windstorm affecting Montgomery County is high. The extent of damage will vary greatly depending on the magnitude of the storm but the county averaged 0.739/ year tornadoes over the last 23 years. The county can expect approximately one tornado each year of varying magnitude.

Transportation Incidents

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.

Data regarding transportation incidents was gathered from the Iowa Department of Transportation and the National Transportation Safety Board. Within Montgomery County in the last ten years, there have been 1334 transportation incidents including one airplane crash recorded at the Red Oak Municipal Airport. Of these accidents, 15 were fatal and 148 resulted in a major or minor injury. The vast majority of accidents, 971, resulted in only property damage and the remained were unknown or possible injury.

Map 4.13 – Crashes by Severity from 2014-2024



Source: Iowa Department of Transportation

The following table shows how each community ranked transportation incidents in their hazard score analysis.

Table 4.22 – Transportation Incident Score by Jurisdiction

	Probability	Magnitude/ Severity	Warning Time	Duration	Total	Ranking
Montgomery County	18	6	6	1	31	5
Elliott	18	3	6	2	29	6
Grant	18	6	6	2	32	4
Red Oak	18	6	6	2	32	5
Stanton	18	6	6	1	31	4
Villisca	18	6	6	2	32	3

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 hazard or incident.

Each community was asked to identify their critical facilities based on the evaluation criteria determined by FEMA. From this list, valuations were determined based on Assessor data and the potential for total loss was determined as well as the percentage within the impact area (i.e. within floodplain).

Critical Facilities

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 will target the community. To further concentrate hazard mitigation efforts, a number of facilities were prioritized by each jurisdiction according to their significance based upon the five evaluation criteria listed below.

Evaluation Criteria

Critical Facilities were chosen and reviewed at public meetings and through contact with local officials. The criteria for the chosen facilities were based on five different ideas listed below.

- Critical Facilities – Structures necessary for a community's response to and recovery from emergencies. These facilities must continue to operate during a disaster to reduce severity and speed up recovery.

- Vulnerable Populations – Concentrations of people who will be less able to respond to and more likely to need help in the case of a disaster. These could include elderly, children, disabled, etc.

- Economic Elements – Economic drivers within a community that would affect the local economy if disrupted or that will be critical to the recovery of a community.

- Social Considerations – Areas of high-density development that could result in large death tolls or injuries

- Historical or Other Considerations – Areas protected under state or federal law or facilities that would help ensure a full recovery of the county following a hazard event

Many of those who reside in Montgomery County rely on services within and outside their jurisdiction or in different counties altogether. These structures are therefore possibly important to those outside of the designated jurisdiction. Among the facilities designated as critical to Montgomery County by the planning team are fire departments, city halls, police departments, water and wastewater systems, electrical utility facilities and structures, transportation systems, schools, medical centers, retirement centers, and other structures.

One or more of the designations for a critical facility was assigned to each facility in order to display its critical importance following a hazard. For example, a city hall in one community may be designated both a 'Critical Facility' and a 'Social Consideration' while another community may designate their city hall as only a 'Critical Facility'. Adding each designation for a critical facility will not represent the total number of critical facilities in the county.

Table 4.23 - Critical Facilities Inventory
Table 4.23.1 - Montgomery County

Community: Montgomery County											
Name or Description of Asset	Critical Facilities	Vulnerable Populations	Economic Assets	Social Considerations	Historic/Other Considerations	Size of Building (Sq. Ft.)	Replacement Value($)	Contents Value ($)	Occupancy (#)	Notes
	X	X	X	X	X					
Montgomery County Courthouse	X		x	x	X	26,000	30,000,000	5,000,000	Varies	County offices, Courtroom
Montgomery County Emergency Management Facility	X		x			6,000	1,000,000	1,000,000	Varies	County EOC, Emergency Equipment Storage
Montgomery County Law Enforcement Center	X		x			18,000	10,000,000	5,000,000	Varies	County Jail, Law Enforcement Offices, County Communications Center
Montgomery County Secondary Roads	x					5,000	850,000	1,000,000	Varies	Secondary Roads office and shop
Montgomery County Secondary Roads Annex	x					7,000	1,250,000	4,000,000	Varies	Secondary Roads vehicle storage
Montgomery County Communications – Red Oak Tower Site	X					300’	1,500,000	2,000,000	0	Communications Site – 300’ Self-Supported Tower
Montgomery County Communications – Villisca Tower Site	X					300’	1,500,000	2,000,000	0	Communications Site – 300’ Self-Supported Tower
Montgomery County Communications – North Tower Site	X					300’	1,500,000	2,000,000	0	Communications Site – 300’ Self-Supported Tower

Table 4.23.2- Elliott

Community: Elliott										
Name or Description of Asset	Critical Facilities	Vulnerable Populations	Economic Assets	Social Considerations	Historic/Other Considerations	Size of Building (Sq. Ft.)	Replacement Value($)	Contents Value ($)	Occupancy (#)	Notes
	X	X	X	X	X					
Elliott City Hall	X					48'x36'	$150,000	$150,000		
City Lagoons/lift station	x						$120,000/cell			2 cell system
Storm Water Lift Station							$150,000			
Sewer Lift Station							$150,000			
City Wells 1 & 2	X					14'x10' each	$20,000 each	$40,000 each		2 locations
Elliott Fire Department	x					40'x80'	$200,000	$1M		
Elliott First Responders	x					30'x30'	$150,000	$20,000		

Table 4.23.3 – Grant

Community: Grant										
Name or Description of Asset	Critical Facilities	Vulnerable Populations	Economic Assets	Social Considerations	Historic/Other Considerations	Size of Building (Sq. Ft.)	Replacement Value($)	Contents Value ($)	Occupancy (#)	Notes
	X	X	X	X	X					
Fire Station	X					2500	200,000	300,000		
Hayloft	X									

Table 4.23.4 - Red Oak

Community: Red Oak										
Name or Description of Asset	Critical Facilities	Vulnerable Populations	Economic Assets	Social Considerations	Historic/Other Considerations	Size of Building (Sq. Ft.)	Replacement Value($)	Contents Value ($)	Occupancy (#)	Notes
	X	X	X	X	X					
City Hall	X		X	X		4,000				
Montgomery County Memorial Hospital	X		X			160,000				
Fire Department	X		X			15,000				
Red Oak Fabrication		X	X			155,000				
American Hydraulics		X	X			185,000			144	
Agrivision		X	X			45,000				
Airport	X		X			50,000				
Good Sam		X				37,000				Nursing home
Red Oak Rehab		X				25,000				Nursing home

Table 4.23.5 - Stanton

Community: Stanton											
Name or Description of Asset	Corresponding #	Critical	Vulnerable	Economic	Social	Historic/Other	Size of Building (Sq. Ft.)	Replacement Value($)	Contents Value ($)	Occupancy (#)	Notes
		X	X	X	X	X					
City Hall		X				X	1,453	$400,000	$10,000	30	City office and council chamber
Maintenance Shed				X			5,400	$900,000	$110,000	10	City equipment
Stanton Area Fire Station/Community Center		X			X		6,900	$1600,000	$160,000	200	
Viking Center/Library/Tornado Shelter		X	X		X		15,680	$6,310,000	$110,000	500	
Water Plant		X					768	$950,000	$80,000	0	
City Parks and Trails					X			$1,500,000	$200,000		
Electric Substation		X					240	$2,500,000	$15,000		
Lagoons		X						$2,000,000			
Water Tower		**X**						$900,000			
Wells		X						$100,000			
Church-Evangelical Covenant			X		X	X	4,140	$3,500,000	$700,000	300	
Church-Mamrelund Lutheran			X		X	X	5,968	$6,500,000	$900,000	500	
Stanton CSD			X		X		40,000	$19,000	$1,300,000	270	HS and Elementary
Daycare Center			X	X	X		10,582	$4,000,000	$750,000	150	
Stanton Historical Museum					X	X	5,152	$60,000	$10,000	150	

Accura HealthCare of Stanton			X		X		20,833	$3,750,000	$150,000	85	Assisted living
First Interstate Bank				X			3,038	$390,000	$1,800,000	50	
FMTC HQ		X		X			5,276	$1,200,000	$6,400,000	40	
FMTC Data Center		X		X			2,420	$600,000	$300,000		
Old Lumber Yard Event Center				X	X		7,080	$2,000,000	$100,000		
SWI-REC Equipment Depot		X		X			3,200	$200,000	$100,000		

Table 4.23.6 – Villisca

Community: Villisca											
Name or Description of Asset	Corresponding # on Map	Critical Facilities	Vulnerable Populations	Economic Assets	Social Considerations	Historic/Other Considerations	Size of Building (Sq. Ft.)	Replacement Value($)	Contents Value ($)	Occupancy (#)	Notes
		X	X	X	X	X					
City Hall		x					2560	$1,453,302	$37,475	6	
Library						x	2075	$1,321,190	$79,482	2 plus visitors	
Community Building/Fire Station		x					9600	$1,848,582	$127,339	varies	
SWV Schools/ Daycare			**x**								See schools
Wellness Center					**x**						See schools
Water Plant/Water Storage		x					3486	$3,515,464	$242,857	3	
Sewer Plant/lift stations		x						$4,714,993	$917,608	3	
Lagoon		x						$2,497,905			
FMTC				x			12560			6	
Caseys				x			3150			varies	
Dollar General				x			9301			varies	
Good Samaritan			x				30437			90	
Power Plant		x					14296			4	
Villisca Wells		x					1401	$1,224,497	$289,981	3	
Villisca Housing			x				28146			100	Includes both locations
City Maintenance Building				x			625	$317,428	$838,928	3	
High St, 3rd St and 3rd Ave		x					14174	$2,746,900			
Churches (5)			**x**				Varies			varies	
Park			**x**							varies	
Pool			**x**					$1,085,529	$15,301	varies	
Bank Iowa				x			1518			4	
New Coop - 2 locations				x			15702			20	

Table 4.23.7 - Red Oak CSD

Community: Red Oak CSD										
Name or Description of Asset	Critical Facilities	Vulnerable Populations	Economic Assets	Social Considerations	Historic/Other Considerations	Size of Building (Sq. Ft.)	Replacement Value($)	Contents Value ($)	Occupancy (#)	Notes
	X	X	X	X	X					
Red Oak Early Childhood Center	X	X	X	X		23,966	$5,910,923	$108,150	150	Pre-K and Daycare 400 W 2nd St
Inman Elementary School	X	X	X	X		65,763	$15,597,081	$1,256,497	530	K-6, 900 Inman Dr
Red Oak Jr/Sr High School	X	X	X	X		132,387	$32,856,424	$2,500,072	510	7-12, 2011 N 8th St
Central Office/Bus Barn	X		X			13,200	$1,489,957	$561,750	13	604 S Broadway
Activity Center							$1,689,428	$108,150	0	2011 N 8th St

Table 4.23.8 - Stanton CSD

Community: Stanton CSD										
Name or Description of Asset	Critical Facilities	Vulnerable Populations	Economic Assets	Social Considerations	Historic/Other Considerations	Size of Building (Sq. Ft.)	Replacement Value($)	Contents Value ($)	Occupancy (#)	Notes
	X	X	X	X	X					
Elementary School	X	X	X	X		20,000	$7,000,000	$500,000	135	
High School	X	X	X	X		20,000	$12,000,000	$800,000	135	
Baseball and Softball Field		X	X			1,000	$800,000	$20,00		
Gym and Locker rooms	X	X	X	X		20,000	$3,000,000	$500,000		
Outside Storage			X			2,000	$500,000	$50,000		

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. FEMA flood plain data also included areas protected by a levee or dam for the City of Red Oak, therefore levee or dam failure was calculated separately for the City of Red Oak. All other jurisdictions either did not have a levee or had a levee but was not analyzed or represented in the flood plain data. 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 Montgomery County with community summaries following. Individual assessed value for each jurisdiction is located in appendix D.

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

Table 4.24 – Unincorporated Montgomery County Community Assessment

Classification	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	8,381	8,381	100%	849	10%	8,381	100%	3,884	46%
Commercial	149	149	100%	5	3%	135	%	131	88%

Industrial	15	15	100%	1	7%	11	%	15	100%
Multi-Residential	3	3	100%	1	33%	3	100%	3	100%
Residential	952	952	100%	33	3%	864	%	579	61%
Total:	**9,500**	**9,500**	**100%**	**889**	**9%**	**9,394**	**99%**	**4,612**	**49%**

Source: Montgomery County Assessor (2025), FEMA, Iowa DNR

Table 4.25 - Unincorporated Montgomery County Value of Structures

Classification	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	$108,936,080	$108,936,080	100%	$2,506,150	2%	$108,936,080	100%
Commercial	$28,669,240	$28,669,240	100%	$1,014,840	4%	$26,610,680	93%
Industrial	$11,901,720	$11,901,720	100%	$123,870	1%	$8,993,390	76%
Multi-Residential	$6,425,730	$6,425,730	100%	$598,360	9%	$6,425,730	100%
Residential	$131,502,730	$131,502,730	100%	$2,138,790	2%	$130,673,210	99%
Total:	**$287,435,500**	**$287,435,500**	100%	**$6,382,010**	**2%**	**$281,639,090**	**98%**

Classification	Value	Value in Hazard Area (D)	% in Hazard Area (D)
Agriculture	$108,936,080	$52,720,600	48%
Commercial	$28,669,240	$25,163,850	88%
Industrial	$11,901,720	$11,901,720	100%
Multi-Residential	$6,425,730	$6,425,730	100%
Residential	$131,502,730	$82,075,200	62%
Total:	**$287,435,500**	**$178,287,100**	**62%**

Source: Montgomery County Assessor (2025), FEMA, Iowa DNR

Table 4.26 – Population of Jurisdiction

City	Population (2020)	Population Estimate (2023)
Elliott	338	419
Grant	86	40
Red Oak	5,596	5,542
Stanton	678	670
Villisca	1,132	1,004

Source: U.S. Census, American Community Survey (2020; 2023)

Table 4.27 - Montgomery County Crop and Animal Values

Crops and Animals	Estimated Yearly Value
Corn	$111,654,000
Soybeans	$66,645,000
Other crops	$116,086,000
Cattle and calves	$25,459,000
Hogs and Pigs	$15,151,000
Other animals including products	$4,120,000

Source: Census of Agriculture (2022)

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 outline 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.

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 Montgomery 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. In reviewing previous mitigation actions, the planning team felt it would be more beneficial to create new actions for each city and school district, separate from the county's actions. This would allow for those jurisdictions to complete mitigation actions at

their level and capability more efficiently. While each city and school district created a list of new actions, the unincorporated county chose to keep the same actions from the previous plan as they were still important items for them to complete.

Prioritization of Objectives and Action Plan

Each action is listed with the priority of implementation for each action represented as high, medium or low for each jurisdiction. The priority of each action is as follows:

- High (H) – Action items that will be implemented by the jurisdiction to reduce hazard risk
- Medium (M) – Action items that the jurisdiction would like to implement, but are not a high priority
- Low (L) – Action items that the jurisdiction may be implemented should funding be available
- - - Not applicable to jurisdiction

Actions labeled high priority will be examined by the County Emergency Manager for possible county-wide implementation or assistance efforts. For example, "Conduct tornado drills in schools and public buildings" is a high priority for nearly every jurisdiction. The county will determine if this action item is something that can be addressed at a county level or county driven to ensure all jurisdictions are able to benefit. The projects with the most county-wide benefit will be pursued if possible.

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.

Table 5.1 is the list of mitigation activities and their priority ranking for unincorporated Montgomery County.

Table 5.1 - Objectives and Actions Priority Ranking for Montgomery County

Goal #1 Objectives and Actions	
Objective #1: Protect health, safety and quality of life of Montgomery County residents by ensuring effective response to all hazards.	
Make weather alert radios available to citizens	M
Maintain or create evacuation routes that ensure the safety of people in the event of a disaster	M
Construct FEMA approved safe rooms in each community and school district and ensure existing shelters are Red Cross certified	H
Maintain power supply for critical facilities in the event of a power outage by purchasing or maintaining generators	H
Obtain and upgrade necessary equipment for emergency responders to respond to situations in the most prepared manner	H
Encourage homeowners to install carbon monoxide monitors and alarms	L

Objective #2: Prevent property and infrastructure loss by promoting and implementing smart development recommendations and rules.	
Adopt and enforce building codes that improve disaster resistance and are manageable to enforce	L
Construct, retrofit, or maintain drainage systems (pipes, culverts and channels) to meet proper capacity requirements and provide adequate systems	H
Plan and maintain adequate road clearing capabilities	M
Provide help in installing and proper usage of fire extinguishers in all buildings	L
Remove dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community	L
Expand awareness on incentives and disincentives on property or home owner insurance that promote smart development and reduces hazard risk	L
Objective #3: Prevent economic loss by improving disaster resistance to resources supporting economic activity.	
Enable measures that limit property and infrastructure loss, such as buildings and roads, which could negatively impact economic activity	M
Encourage businesses to identify resources that would be available in the event of a disaster	M
Establish standards and methods that protect power lines and infrastructure from potential risks, including tree pruning and burying power lines	L
Objective #4: Promote and initiate natural environment friendly measures that help mitigate or prevent damages cause by a disaster.	
Clear flood ditches from blockages that would enhance flood risk and/or damage	H
Keep streams and creeks clear of debris and ensure they flow properly	M
Goal #2 Objective and Actions	
Objective #1: Maintain and retrofit public buildings with proper infrastructure and tools to ensure government facilities are operational during a hazard.	
Retrofit public buildings to withstand snow loads and prevent roof collapse	M
Ensure public buildings critical to disaster response have back-up generators	H
Objective #2 Ensure critical facilities are protected from hazard damage	
Designate new or alternative critical facilities that are outside of hazard areas	M
Build or maintain infrastructure that protects critical facilities	M
Objective #3: Ensure Emergency Response personnel are properly equipped and trained to handle disaster response and recovery	
Provide training to emergency response personnel (NIMS training)	H
Purchase necessary equipment and/or tools for disaster response	H
Objective #4: Identify or designate alternative operations in the event that response and recovery are impacted by a disaster.	
Create or maintain policies that provide guidelines that designate secondary locations and/or personnel to handle disaster response and recovery	M
Maintain 28-E agreements within and with surrounding communities	M
Goal #3 Objectives and Actions	
Objective #1: Enhance public education through programs and the distribution of materials that expand public awareness about hazard risks and mitigation and safety measures	

Support severe weather awareness week and create or continue campaigns that support awareness of hazards and proper safety techniques	H
Identify and promote public organizations that can hold training events or create classes that relate to hazard awareness	M
Produce and distribute family and traveler emergency preparedness information	L
Objective #2: Create and implement public education programs in schools to encourage safe hazard response practices to ensure youth safety	
Conduct tornado drills in schools and public buildings	L
Maintain fire safety and education in schools	L
Provide and maintain programs for winter weather awareness	L
Objective #4: Ensure community resources are available during extreme weather events	
Review community policies and procedures to ensure community buildings and facilities are open and available to residents during extreme weather events	M
Objective #5: Maintain communication and cooperation with neighboring communities.	
Ensure communications equipment is available and working between all government operations	H
Maintain 28-E agreements within and with surrounding communities	M

By reviewing each action, each jurisdiction had to consider several 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 table on the follow page illustrates an analysis of each action with a cost/benefit review with the categories described 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. These costs are general estimates and do not reflect action or total costs.
- 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: 10-20 years
    - Short-term: 1-10 years
    - Continuous: an ongoing item that has no specified end date.

Table 5.2 – County-Wide Action Items and Implementation Strategy

Goal #1 Objectives and Actions							
Action Measures	**Related Hazard**	**Funding Source**	**Potential Costs** ($ costs are estimates obtained from various sources)	**Benefit**	**Obstacles to Implementation**	**Responsibility**	**Time Frame**
Objective #1: Protect health, safety and quality of life of Montgomery County residents by ensuring effective response to all hazards.							
Purchase weather radios for citizens in areas without alert sirens.	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	Average $40 per radio	Provides early warning access to all citizens in the event of a hazard incident	Funding	Fire Chief, County EMA Director	Short Term
Maintain or create evacuation routes that ensure the safety of people in the event of a disaster	Flash Flood, Grass or Wild Land Fire, River Flooding, Tornado/Windstorm, Dam/Levee Failure	General Fund	$0-$500	Increases organization and effectiveness in the event of an evacuation	Time, commitment, personnel	City Council, Board of Supervisors, County EMA Director	Short Term
Construct FEMA approved safe rooms in each community and school district and ensure existing shelters are Red Cross certified	Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm, Extreme Heat	General Fund, PDM, HMGP	$6,000 – 8,700 for an 8x8 ft. room in new building 20% more in existing building	Provides a safe area in which populations can seek protection during a hazard event	Funding	City Council, Board of Supervisors, School Board, School Superintendent	Long Term
Maintain power supply for critical facilities in the event of a power outage by purchasing or maintaining generators	Flash Flooding, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund, PDM, HMGP	$4,000 per generator	Ensures facilities critical to the community/jurisdiction have the necessary electricity to provide support and services in the event of a hazard and power outage	Funding	Public Works Director, City Council, Board of Supervisors, School Board, School Superintendent	Long Term

Obtain and upgrade necessary equipment for emergency responders to respond to situations in the most prepared manner	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund, PDM, HMGP	Varies by project scope	Ensures emergency responders are adequately prepared to handle an emergency with the proper equipment	Funding	City Council, Fire Chief, Police Chief, County EMA Director	Long Term
Encourage homeowners to install carbon monoxide monitors and alarms	Extreme Heat, Grass or Wild Land Fire	General Fund	$0-$500	Provides warning to citizens of possible hazardous risks	Homeowner funding, advertising	City Council, Fire Department, County EMA Director	Long Term
Objective #2: Prevent property and infrastructure loss by promoting and implementing smart development recommendations and rules.							
Adopt and enforce building codes that improve disaster resistance and are manageable to enforce	Flash Flood, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	$0-$500	Promotes development practices that can withstand or mitigate hazard damages and risk	Enforcement costs	City Council, Board of Supervisors	Short Term
Construct, retrofit, or maintain drainage systems (pipes, culverts and channels) to meet proper capacity requirements and provide adequate systems	Flash Flooding, River Flooding	General Fund, PDM, HMGP	Varies by project scope	Reduces risk of or prevents flood events and flood damage	Funding	City Council, Board of Supervisors, Public Works Director, County Engineer	Long Term
Plan and maintain adequate road clearing capabilities	Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm, Flash Flooding, River Flooding	General Fund	Varies by project scope	Ensures hazards will have minimal impact on roadway transportation	Funding	City Council, Public Works Director, Board of Supervisors, County Engineer	Long Term
Provide help in installing and proper usage of fire extinguishers in all buildings	Extreme Heat, Grass or Wild Land Fire, Thunderstorms/Lightning/Hail	General Fund	$0-$500	Will help protect citizens from fire related hazards	Time commitment, personnel	Fire Department	Continuous

Remove dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community	Grass or Wild Land Fire, Severe Winter Storm, Tornado/Windstorm/ Flash Flooding/River Flooding, Thunderstorm/Lightning/Hail	General Fund, SWIHTF	House Demolition – 10,000 to 25,000+	Mitigates the threat that a fire may pose to a community/jurisdiction	Funding	City Council, Board of Supervisors	Long Term
Expand awareness on incentives and disincentives on property or home owner insurance that promote smart development and reduces hazard risk	Flash Flood, River Flooding	General Fund	$0-$500	Promotes best development practices to mitigate flood risk	Time, commitment, personnel	City Council, Board of Supervisors	Continuous
Objective #3: Prevent economic loss by improving disaster resistance to resources supporting economic activity.							
Enable measures that limit property and infrastructure loss, such as buildings and roads, which could negatively impact economic activity	Dam/Levee Failure, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	$0-$500	Promotes best development practices to mitigate hazard risk as well as ensures community activities are not severely affected by a hazard event	Funding	City Council, Public Works Director, Board of Supervisors, County Engineer	Continuous
Encourage businesses to identify resources that would be available in the event of a disaster	Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	$0-$500	Promotes community cohesiveness and resilience that would limit hazard damage	Time, Commitment, Personnel	City Council, Board of Supervisors	Short Term
Establish standards and methods that protect power lines and infrastructure from potential risks, including tree pruning and burying power lines	Flash Flood, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	Tree Pruning equipment or services $40 to $1000 Burry Power Lines	Decreases the risk of damage to electrical lines and property	Time, Funding, Personnel	City Council, Public Works Director, Board of Supervisors, County Engineer	Short Term

			$1,100 – 2,100 per mile				
Objective #4: Promote and initiate natural environment friendly measures that help mitigate or prevent damages cause by a disaster.							
Clear flood ditches from blockages that would enhance flood risk and/or damage	Flash Flood, River Flooding	General Fund	Varies by project scope	Reduces the risk or damages caused by flooding	Time, commitment, personnel, funding	Public Works Director, County Engineer	Continuous
Keep streams and creeks clear of debris and ensure they flow properly	Flash Flood, River Flooding	General Fund	Varies by project scope	Reduces the risk or damages caused by flooding	Time, commitment, personnel, funding	Public Works Director, County Engineer	Continuous
Goal 2: Objectives and Actions							
Action Measures	**Related Hazard**	**Funding Source**	**Potential Costs** ($ costs are estimates obtained from various sources)	**Benefit**	**Obstacles to Implementation**	**Responsibility**	**Time Frame**
Objective #1: Maintain and retrofit public buildings with proper infrastructure and tools to ensure government facilities are operational during a hazard.							
Retrofit public buildings to withstand snow loads and prevent roof collapse	Severe Winter Storm	General Fund, PDM, HMP	Varies by project scope	Ensures community activities and services are not disrupted due to an infrastructure failure	Funding	City Council, Board of Supervisors, School Board, School Maintenance Director	Long Term
Ensure public buildings critical to disaster response have back-up generators	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund, PDM, HMGP	4,000 per generator	Ensures emergency responders and community service providers are able to operate during a power outage	Funding	City Council, Board of Supervisors, School Board, School Superintendent	Long Term
Objective #2 Ensure critical facilities are protected from hazard damage							
Designate new or alternative critical	Dam/Levee Failure, Flash Flood, River Flooding	General Fund,	$0-$500	Ensures communities/jurisdictions have a designated	Time, commitment, personnel	City Council, Board of Supervisors	Short Term

facilities that are outside of hazard areas		PDM, HMGP		facility that can provide services or emergency response from outside of affected hazard zones			
Build or maintain infrastructure that protects critical facilities	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund, PDM, HMGP	Varies by project scope	Helps protect critical infrastructure from hazard events and mitigates or prevents disruption of community activities	Funding	City Council, Board of Supervisors	Long Term
Objective #3: Ensure Emergency Response personnel are properly equipped and trained to handle disaster response and recovery							
Provide training to emergency response personnel (NIMS training)	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	$0-$500	Ensures emergency response personnel are adequately trained to provide the best response services in the event of an emergency or disaster	Time, experienced personnel	City Council, County EMA Director	Continuous
Purchase necessary equipment and/or tools for disaster response	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund, PDM, HMGP	Varies by project scope	Ensures emergency response personnel are adequately equipped to provide the best response services in the event of an emergency or disaster	Funding	Fire Chief, Police Chief, County EMA Director, School Superintendent	Long Term
Objective #4: Identify or designate alternative operations in the event that response and recovery are impacted by a disaster.							
Create or maintain policies that provide guidelines that designate secondary locations and/or personnel to handle disaster response and recovery	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	$0-$500	Ensures communities/jurisdictions have a back-up plan to provide disaster response in the event that primary emergency response resources are overextended or unavailable	Time, commitment, personnel	City Council, Board of Supervisors, School Board	Short Term

Maintain 28-E agreements within and with surrounding communities	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	Local	$0-$500	Ensures communities/jurisdictions with limited resources have access to emergency response and services	Time, commitment, personnel	City Council, Board of Supervisors, School Board	Continuous
Goal #3 Objectives and Actions							
Action Measures	**Related Hazard**	**Funding Source**	**Potential Costs** ($ costs are estimates obtained from various sources)	**Benefit**	**Obstacles to Implementation**	**Responsibility**	**Time Frame**
Objective #1: Enhance public education through programs and the distribution of materials that expand public awareness about hazard risks and mitigation and safety measures							
Support severe weather awareness week and create or continue campaigns that support awareness of hazards and proper safety techniques	Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	$0-$500	Promotes awareness of hazards and educates the public on how to handle and prepare for hazard events	Time, commitment, personnel	City Council, County EMA Director, Fire Departments, School Board	Continuous
Identify and promote public organizations that can hold training events or create classes that relate to hazard awareness	Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	$0-500	Promotes awareness of hazards and educates the public on how to handle and prepare for hazard events using existing resources	Time, commitment, personnel	City Council, Board of Supervisors, County EMA Director, School Board	Continuous
Produce and distribute family and traveler emergency preparedness information	Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	$0-$500 Brochures 50 for about $25	Promotes awareness of hazards and educates the public on how to handle and prepare for hazard events	Funding, coordination, time commitment, personnel	City Council, Board of Supervisors, County EMA Director, School Board	Short Term
Objective #2: Create and implement public education programs in schools to encourage safe hazard response practices to ensure youth safety							

Conduct tornado drills in schools and public buildings	Tornado/Windstorm	General Fund	$0-$500	Educates the public on best practices during a hazard to promote safety	Time, commitment, personnel	School Superintendent, Fire Departments, County EMA Director	Continuous
Maintain fire safety and education in schools	Grass or Wild Land Fire, Thunderstorms/Lightning/Hail	General Fund	$0-$500	Educates the public on best practices during a hazard to promote safety	Time, commitment, personnel	Fire Departments, County EMA Director, School Superintendent	Continuous
Provide and maintain programs for winter weather awareness	Severe Winter Storm	General Fund	$0-$500	Educates the public on best practices during a hazard to promote safety	Time, commitment, personnel	City Council, Board of Supervisors, County EMA Director, School Superintendent	Continuous
Objective #3: Discourage development in high hazardous areas through public meetings and campaigns							
Use public resources through planning and/or incentives to steer development towards areas of low damage risk from hazards	Dam/Levee Failure, Flash Flood, Grass or Wild Land Fire, River Flooding	General Fund	$0-$500	Promotes best development practices to mitigate hazard risk as well as ensures community activities are not severely affected by a hazard event	Time, commitment, personnel	City Council, Board of Supervisors	Continuous
Create awareness through campaigns or informational documents and resources	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	$0-$500	Promotes best development practices to mitigate hazard risk as well as ensures community activities are not severely affected by a hazard event	Time, commitment, personnel	City Council, County Board of Supervisors, County EMA Director, School Superintendent	Continuous
Objective #4: Ensure community resources are available during extreme weather events							

Review community policies and procedures to ensure community buildings and facilities are open and available to residents during extreme weather events	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	$0-$500	Ensures a facility is available to those needing protection or services in the event of an extreme weather event	Time, commitment, personnel	City Council, Board of Supervisors, County EMA Director	Short Term
Objective #5: Maintain communication and cooperation with neighboring communities.							
Ensure communications equipment is available and working between all government operations	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund. PDM, HMGP	$0-$500	Ensures community services and response are not disrupted during a hazard event	Funding	County EMA responders, Fire Departments, Police Departments, City Council, County Board of Supervisors, School Board	Long Term
Maintain 28-E agreements within and with surrounding communities	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	$0-$500	Ensures communities/jurisdictions with limited resources have access to emergency response and services	Time, commitment, personnel	City Council, Board of Supervisors, School Board	Continuous

Jurisdiction Specific Goals, Objectives and Actions

Table 5.3 – Jurisdiction Action Items and Implementation Strategy

Goal #1 Objectives and Actions

Jurisdiction	Action Measures	Related Hazard	Funding Source	Potential Costs ($ costs are estimates obtained from various sources)	Benefit	Obstacles to Implementation	Responsibility	Time Frame	Priority
Grant	Ensure public buildings critical to disaster response have back-up generators (fire station)	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund, PDM, HMGP	$4000 to $10000 per generator	Ensures emergency responders and community service providers are able to operate during a power outage	Time, personnel, funding,	City Council	Long Term	H
Elliott	Reconstruct wastewater system to reduce I&I	Flash Flood River Flooding	General Fund, SRF, CDBG	$300,000 - $600,000 total	Reduce inflow and infiltration which will reduce wear on overall system	Funding	City, SWIPOCO IDNR	3-5 years	H
Elliott	Channel Widening or Bridge Improvements	Flash Flooding River Flooding	General Fund, STBG	$250,000 - $500,000	Channel widening, debris and vegetation cleanout and bridge upsizing can improve flood flows and reduce flood elevations.	Funding	City, RC&D, County	Long term	M

Elliott	Floodplain Remapping	River Flooding	General Fund	$150,000 - $250,000	Maps that are outdated or based on poor data do not accurately convey flood risks	Funding	City, RC&D, County	Short term	H
Elliott	Levee Improvements or Accreditation	River Flooding	General Fund	$100,000 - $500,000	Accredited levees are more effective at reducing flood risk than non-accredited	Funding	City, RC&D, County	Long term	H
Elliott	Levees	River Flooding	General Fund, USACE	$500,000 - $1,000,000	Levees can effectively control flood risks in urban areas	Funding	City, County, RC&D, USCAE	Long term	M
Elliott	Non-Structural Flood Mitigation	River Flooding	General Fund	$25,000-$200,000	May include property acquisition, building elevation, flood proofing, community education, flood warning systems, etc.	Funding	City, RC&D, County	Long term	M

Elliott	Storm Sewer Upgrades	Flash Flooding River Flooding	General Fund, CDBG	$50,000-$500,000	Storm sewer systems effectively remove excess water from urban settings	Funding	City, RC&D, County	Mid term	H
Stanton	Electrical grid improvements, switching equipment upgrade and voltage increase	Thunderstorm/Lightning/Hail, Tornado/Windstorm,	General Fund, REC, CIPCO, PDM, HMGP	500,000 rural supply transformer 120,000 for switchgear 1,250,000 town grid upgrades	Ensure sustainable and fault tolerant electrical power supply and infrastructure serviceability for the long term	Availability and cost of materials, equipment lead time and specialist expertise	City, SWIA REC, CIPCO	Short term	M
Stanton	Maintain power availability by constructing and connecting an alternate supply line to city substation	Thunderstorm/Lightning/Hail, Tornado/Windstorm,	General Fund, REC, CIPCO, PDM, HMGP	800,000 for 5 mile supply line construction	Ensure supply redundancy to avoid single point source failure causing prolonged infrastructure outage	Cost of construction	City, SWIA REC	Short term	M
Stanton	Maintain power supply for critical infrastructure facilities in the event of electrical outage by installing and maintaining generators	Flash flooding, river flooding, severe winter storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm,	General Fund, PGM, HMGP	75,000 for multiple generators for maintenance facility and water	Ensure water, sewer sanitation and basic city maintenance services during potential power outage conditions	Cost of installation and availability of equipment	City	Short term	H

				plant, and sewer lift stations					
Red Oak	Purchase generator for communications tower	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund, PDM, HMGP	Cost of generator $4,000 each	Ensure notifications during emergency are broadcasted	Cost of equipment	City SWIPCO	3-5 years	H
Red Oak	Maintain or create evacuation routes that ensure the safety of people in the event of a disaster	Flash Flood, Grass or Wild Land Fire, River Flooding, Tornado/Windstorm, Dam/Levee Failure	General Fund	$0-$500	Increases organization and effectiveness in the event of an evacuation	Time, commitment, personnel	City Council, Board of Supervisors, County EMA Director	Short Term	M
Red Oak	Construct FEMA approved safe rooms in each community and school district and ensure existing shelters are Red Cross certified	Thunderstorm/Lightning/Hail, Tornado/Windstorm, Severe Winter Storm, Extreme Heat	General Fund, PDM, HMGP	$6,000 – 8,700 for an 8x8 ft. room in new building 20% more in existing building	Provides a safe area in which populations can seek protection during a hazard event	Funding	City Council, Board of Supervisors, School Board, School Superintendent	Long Term	M

Red Oak	Maintain power supply for critical facilities in the event of a power outage by purchasing or maintaining generators	Flash Flooding, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund, PDM, HMGP	Varies by scope	Ensures facilities critical to the community/jurisdiction have the necessary electricity to provide support and services in the event of a hazard and power outage	Funding	Public Works Director, City Council, Board of Supervisors, School Board, School Superintendent	Long Term	H
Red Oak	Purchase Automated External Defibrillator (AED) and additional water rescue equipment for police and emergency response	Dam/Levee Failure, Flash Flood River Flooding	General Fund, PDM, HMGP	AED: $1,500-$2,000 per kit Life Vest: $15 each	Increased equipment for responding to water related emergencies	Cost of equipment; Maintenance of equipment	City SWIPCO USDA	5-10 years	H
Red Oak	Clear Red Oak Creek of debris and complete yearly inspections	Dam/Levee Failure, Flash Flood River Flooding	General Fund	$1,500-$2,000 per year	Reduction in debris blocking the creek that could inhibit water flow.	Staffing	City	Continuous	M
Red Oak	Recertify levees within city limits	Dam/Levee Failure, Flash Flood River Flooding	General Fund	$300,000 +	Reduction in number of homes requiring flood insurance. Further protection from breaches	Cost of certification; Needed upgrades expensive	City SWIPCO FEMA Army Corp	10-20 years	H
Red Oak	Construct storm shelter in conjunction with Red Oak School District	Tornado/Windstorm	General Fund, PDM, HMGP	$6,000 – 8,700 for an 8x8 ft. room in	Provides a safe area in which populations can seek protection	Funding	City Council, Board of Supervisors, School	5-10 years	M

				new building 20% more in existing building	during a hazard event		Board, School Superintendent		
Red Oak	Construct pump station at Red Oak Creek Flood Gate	Flash Flood River Flooding	General Funds			Funding	City	Mid term	M
Red Oak	Channel Widening or Bridge Improvements	Flash Flooding River Flooding	General Fund, STBG	$500,000 - $750,000	Channel widening, debris and vegetation cleanout and bridge upsizing can improve flood flows and reduce flood elevations.	Funding	City, RC&D, County	Long term	M
Red Oak	Dam Rehabilitation/Modification	River Flooding	General Fund	$50,000-$250,000	Current dams can be rehabilitated to serve as they were designed or modified to accommodate large flows	Funding	City, RC&D, County	Long term	M
Red Oak	Dam Creation	Flash Flooding River Flooding	General Fund	$250,000 - $500,000	Dams create a flood pool which reduces peak flood flows downstream.	Funding	City, RC&D, County	Long term	M
Red Oak	Floodplain Remapping	River Flooding	General Fund	$150,000 - $250,000	Maps that are outdated or based on poor data do not accurately convey flood risks	Funding	City, RC&D, County	Short term	H

Red Oak	Join Community Rating System	River Flooding	General Fund	$5,000-$20,000	CRS reduces flood insurance premiums based on flood protection activities completed by the City	Funding	City, RC&D, County	Short term	M
Red Oak	Non-Structural Flood Mitigation	River Flooding	General Fund	$25,000-$200,000	May include property acquisition, building elevation, flood proofing, community education, flood warning systems, etc.	Funding	City, RC&D, County	Mid term	H
Red Oak	Storm Sewer Upgrades	Flash Flooding River Flooding	General Fund, CDBG	$50,000-$500,000	Storm sewer systems effectively remove excess water from urban settings	Funding	City, RC&D, County	Short term	H
Red Oak	Encourage businesses to identify resources that would be available in the event of a disaster	Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	$0-$500	Promotes community cohesiveness and resilience that would limit hazard damage	Time, Commitment, Personnel	City Council, Board of Supervisors	Short Term	M

Red Oak	Clear flood ditches from blockages that would enhance flood risk and/or damage	Flash Flood, River Flooding	General Fund	Varies by project scope	Reduces the risk or damages caused by flooding	Time, commitment, personnel, funding	Public Works Director, County Engineer	Continuous	H
Red Oak	Keep streams and creeks clear of debris and ensure they flow properly	Flash Flood, River Flooding	General Fund	Varies by project scope	Reduces the risk or damages caused by flooding	Time, commitment, personnel, funding	Public Works Director, County Engineer	Continuous	H
Villisca	Construct storm shelter in conjunction with School District	Tornado/Windstorm	General Fund, PDM, HMGP, PPEL, SAVE	$6,000 – 8,700 for an 8x8 ft. room in new building 20% more in existing building	Provides a safe area in which populations can seek protection during a hazard event	Funding	City Council, Board of Supervisors, School Board	Short Term	M
Red Oak CSD Stanton CSD	The School District will Construct safe room/s constructed to FEMA 361 Guidance in a public facility	Thunderstorm/Lightning/Hail, Tornado/Windstorm	General Fund, PDM, HMGP, PPEL, SAVE	$55,000 to $75,000 for 8x8sqft room in new building 20% more for existing building	Provides a safe area in which populations can seek protection during a hazard event	Time, personnel, funding,	School Board	Long Term	M

Goal #2 Objectives and Actions

Jurisdiction	Action Measures	**Related Hazard**	**Funding Source**	**Potential Costs** ($ costs are estimates obtained from various sources)	**Benefit**	**Obstacles to Implementation**	**Responsibility**	**Time Frame**	**Priority**
Red Oak	Protect water and wastewater facilities	Dam/Levee Failure, Flash Flood River Flooding	General Fund	Undetermined	Ensure consistent, safe water and wastewater systems for citizens	Funding, Land use	City SWIPCO	1-10 years	H
Red Oak	Maintain 28-E agreements within and with surrounding communities	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	$0-$500	Ensures communities/jurisdictions with limited resources have access to emergency response and services	Time, commitment, personnel	City Council, Board of Supervisors, School Board	Continuous	H
Stanton	Ensure water supply quality and availability by migrating to improved infrastructure and geography in a relocated	Flash flooding, river flooding, severe winter storm, tornado/windstorm	General fund, CDBG			Cost of project and determining location suitability	City	Short term	M

	water plant facility								
Stanton	Ensure water supply quality and availability by upkeeping infrastructure in place	Flash flooding, river flooding, severe winter storm,	General fund, CDBG			Cost and availability of equipment	City	Short term	H
Red Oak Elliott Villisca Grant	Provide resident flood awareness based on new FIRM maps	River Flooding	General Fund	$0-$500	Safety awareness for all residents	Time of Staff	City	Short Term	M
Stanton CSD	The School District will ensure public buildings critical to disaster response have back-up generators.	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund, PPEL, SAVE	$10,000 to $20,000 per generator	Ensures emergency responders and community service providers are able to operate during a power outage	Time, personnel, funding,	School Board	Long Term	H
Red Oak CSD Stanton CSD	The School District will designate new or alternative critical facilities that provide shelter and are protected from hazards.	Dam/Levee Failure, Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/Hail, Tornado/Windstorm	General Fund	No cost	Ensures communities/jurisdictions have a designated facility that can provide services or emergency response from outside of affected hazard zones	Time, personnel, funding,	Board of Supervisors, Emergency Management Director	Short Term	H

Goal #3 Objectives and Actions									
Jurisdiction	Action Measures	**Related Hazard**	**Funding Source**	**Potential Costs** ($ costs are estimates obtained from various sources)	**Benefit**	**Obstacles to Implementation**	**Responsibility**	**Time Frame**	**Priority**
Grant	Provide educational programs that enhance education about severe weather and winter weather awareness along with mitigation tactics that can be taken to minimize risks	Animal/Crop/Plant Disease, Dam/Levee Failure, Drought, Earthquake, Expansive Soils, Extreme Heat, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/ Hail, Tornado/Windstorm, Transportation Incident	General Fund	Varying depending on program	Promotes hazard awareness and teaches proper safety techniques in the event of a hazard incident	Time, personnel, funding	Emergency Management Director, Fire Chief, School Superintendent	Continuous	M
Stanton	City Hall building refurbishment and update to maintain a community location for city	Animal/Crop/Plant Disease, Dam/Levee Failure, Drought, Earthquake, Expansive Soils, Extreme Heat, Flash Flood, Grass or Wild Land Fire,	General Funds	150,000	Ensure a sound and safe location for city council sessions and municipal	Cost and revenue sources	City	Short term	M

	business and governance and a location for important city files	Hazardous Materials Incident, Human Disease, Infrastructure Failure, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/ Hail, Tornado/Windstorm, Transportation Incident			operations by city staff to serve residents				
Elliott Grant Stanton Villisca Red Oak	Support severe weather awareness week and create or continue campaigns that support awareness of hazards and proper safety techniques	Drought, Extreme Heat, Flash Flood, Grass or Wild Land Fire, River Flooding, Severe Winter Storm, Thunderstorms/Lightning/ Hail, Tornado/Windstorm	Genera l Fund	$0-$500	Promotes awareness of hazards and educates the public on how to handle and prepare for hazard events	Time, commitm ent, personnel	City Council, County EMA Director, Fire Departments, School Board	Continuous	M
Red Oak CSD Stanton CSD	Support Severe Weather Awareness Week by creating or continuing activities 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/ Hail, Tornado/Windstorm	General Fund	$0 to $600	Promotes awareness of hazards and educates the public on how to handle and prepare for hazard events	Time, personnel , funding,	City Council, Board of Supervisors, School Board, Fire Chief, Emergency Management Director	Continuous	M

Red Oak CSD Stanton CSD	The School District will provide and maintain educational programs that enhance education about severe weather and winter weather awareness and provide mitigation tactics that can be used to reduce the risk associated with those hazards.	Animal/Crop/Plant Disease, Dam/Levee Failure, Drought, Earthquake, Expansive Soils, Extreme Heat, Flash Flood, Grass or Wild Land Fire, Hazardous Materials Incident, Human Disease, Infrastructure Failure, Radiological, River Flooding, Severe Winter Storm, Sinkholes, Terrorism, Thunderstorms/Lightning/Hail, Tornado/Windstorm, Transportation Incident	General Fund	Varying depending on program	Promotes hazard awareness and teaches proper safety techniques in the event of a hazard incident	Time, personnel, funding	Emergency Management Director, Fire Chief, School Superintendent	Continuous	H

Changes in Priorities and Completed Projects

The following action items were adopted in the 2015 plan as countywide actions. The below chart outlines updates to each item:

Table 5.4 – 2020 Countywide Action Item Update

Action Measures	Status	Priority Level
Make weather alert radios available to citizens	Ongoing	Low
Maintain or create evacuation routes that ensure the safety of people in the event of a disaster	Ongoing	High
Construct FEMA approved safe rooms in each community and school district and ensure existing shelters are Red Cross certified	Carried Over	High
Maintain power supply for critical facilities in the event of a power outage by purchasing or maintaining generators	Ongoing	High
Obtain and upgrade necessary equipment for emergency responders to respond to situations in the most prepared manner	Ongoing	High
Encourage homeowners to install carbon monoxide monitors and alarms	Carried Over	Low
Adopt and enforce building codes that improve disaster resistance and are manageable to enforce	Ongoing	Low
Construct, retrofit, or maintain drainage systems (pipes, culverts and channels) to meet proper capacity requirements and provide adequate systems	Ongoing	High
Plan and maintain adequate road clearing capabilities	Ongoing	High
Provide help in installing and proper usage of fire extinguishers in all buildings	Carried Over	Low
Remove dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community	Carried Over	Low
Expand awareness on incentives and disincentives on property or home owner insurance that promote smart development and reduces hazard risk	Carried Over	Medium
Enable measures that limit property and infrastructure loss, such as buildings and roads, which could negatively impact economic activity	Ongoing	Low
Encourage businesses to identify resources that would be available in the event of a disaster	Ongoing	Medium
Establish standards and methods that protect power lines and infrastructure from potential risks, including tree pruning and burying power lines	Carried Over	Low
Clear flood ditches from blockages that would enhance flood risk and/or damage	Ongoing	High
Keep streams and creeks clear of debris and ensure they flow properly	Ongoing	High
Retrofit public buildings to withstand snow loads and prevent roof collapse	Carried Over	Low

Ensure public buildings critical to disaster response have back-up generators	Ongoing	High
Designate new or alternative critical facilities that are outside of hazard areas	Carried Over	High
Build or maintain infrastructure that protects critical facilities	Carried Over	Medium
Provide training to emergency response personnel (NIMS training)	Ongoing	Medium
Purchase necessary equipment and/or tools for disaster response	Ongoing	High
Create or maintain policies that provide guidelines that designate secondary locations and/or personnel to handle disaster response and recovery	Ongoing	Medium
Maintain 28-E agreements within and with surrounding communities	Ongoing	High
Support severe weather awareness week and create or continue campaigns that support awareness of hazards and proper safety techniques	Ongoing	Medium
Identify and promote public organizations that can hold training events or create classes that relate to hazard awareness	Ongoing	Medium
Produce and distribute family and traveler emergency preparedness information	Carried Over	Low
Conduct tornado drills in schools and public buildings	Ongoing	Low
Maintain fire safety and education in schools	Carried Over	Low
Provide and maintain programs for winter weather awareness	Ongoing	Low
Use public resources through planning and/or incentives to steer development towards areas of low damage risk from hazards	Carried Over	Medium
Create awareness through campaigns or informational documents and resources	Carried Over	Low
Review community policies and procedures to ensure community buildings and facilities are open and available to residents during extreme weather events	Ongoing	Low
Ensure communications equipment is available and working between all government operations	Ongoing	Medium

In the previous mitigation plan, countywide action items were used rather than jurisdiction specific. This made it difficult for jurisdictions to implement mitigation actions that would directly improve their resiliency to hazards. Because of this, jurisdictions were asked to develop new mitigation actions for the plan update and therefore, there are no jurisdiction specific updates on previous mitigation actions. Below is a table showing past mitigation actions for jurisdictions and the current status of those prior to being removed from the plan.

1-Completed
2-Not completed
3-It was an ongoing action

Table 5.5 – 2020 Action Item Updates for Jurisdictions

Action Measures	Elliott	Grant	Red Oak	Stanton	Villisca	Red Oak CSD	Stanton CSD
Make weather alert radios available to citizens	2	2	2	2	2	2	2
Maintain or create evacuation routes that ensure the safety of people in the event of a disaster	2	2	2	2	2	2	2
Construct FEMA approved safe rooms in each community and school district and ensure existing shelters are Red Cross certified	2	2	2	2	2	2	2
Maintain power supply for critical facilities in the event of a power outage by purchasing or maintaining generators	2	2	3	3	3	3	3
Obtain and upgrade necessary equipment for emergency responders to respond to situations in the most prepared manner	3	3	3	3	3	3	3
Encourage homeowners to install carbon monoxide monitors and alarms	3	3	3	3	3	-	-
Adopt and enforce building codes that improve disaster resistance and are manageable to enforce	2	2	1	1	2	-	-
Construct, retrofit, or maintain drainage systems (pipes, culverts and channels) to meet proper capacity requirements and provide adequate systems	3	3	3	3	3	-	-
Plan and maintain adequate road clearing capabilities	3	3	3	3	3	-	-
Provide help in installing and proper usage of fire extinguishers in all buildings	3	3	3	3	3	3	3
Remove dilapidated, abandoned or dangerous structures that pose or enhance a threat to the community	3	3	3	3	3	-	-
Expand awareness on incentives and disincentives on property or home owner insurance that promote smart development and reduces hazard risk	3	3	3	3	3	-	-
Enable measures that limit property and infrastructure loss, such as buildings and roads, which could negatively impact economic activity	3	3	3	3	3	-	-
Encourage businesses to identify resources that would be available in the event of a disaster	3	3	3	3	3	-	-
Establish standards and methods that protect power lines and infrastructure from potential risks, including tree pruning and burying power lines	3	3	3	3	3	-	-
Clear flood ditches from blockages that would enhance flood risk and/or damage	3	3	3	3	3	-	-
Keep streams and creeks clear of debris and ensure they flow properly	3	3	3	3	3	-	-

Retrofit public buildings to withstand snow loads and prevent roof collapse	2	2	2	2	2	2	2
Ensure public buildings critical to disaster response have back-up generators	3	3	3	3	3	3	3
Designate new or alternative critical facilities that are outside of hazard areas	2	2	2	2	2	2	2
Build or maintain infrastructure that protects critical facilities	3	3	3	3	3	3	3
Provide training to emergency response personnel (NIMS training)	3	3	3	3	3	-	-
Purchase necessary equipment and/or tools for disaster response	3	3	3	3	3	-	-
Create or maintain policies that provide guidelines that designate secondary locations and/or personnel to handle disaster response and recovery	3	3	3	3	3	-	-
Maintain 28-E agreements within and with surrounding communities	3	3	3	3	3	-	-
Support severe weather awareness week and create or continue campaigns that support awareness of hazards and proper safety techniques	3	3	3	3	3	3	3
Identify and promote public organizations that can hold training events or create classes that relate to hazard awareness	3	3	3	3	3	-	-
Produce and distribute family and traveler emergency preparedness information	3	3	3	3	3	-	-
Conduct tornado drills in schools and public buildings	3	3	3	3	3	3	3
Maintain fire safety and education in schools	-	-	-	-	3	3	3
Provide and maintain programs for winter weather awareness	3	3	3	3	3	3	3
Use public resources through planning and/or incentives to steer development towards areas of low damage risk from hazards	3	3	3	3	3	-	-
Create awareness through campaigns or informational documents and resources	3	3	3	3	3	3	3
Review community policies and procedures to ensure community buildings and facilities are open and available to residents during extreme weather events	3	3	3	3	3	-	-
Ensure communications equipment is available and working between all government operations	3	3	3	3	3	3	3

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 Ordinance 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 Red Oak and Stanton, 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. Each Jurisdiction has a mitigation plan adopted that will be updated with this document. Comprehensive and land-use plans were most common capabilities adopted among the jurisdictions.

Budget Capabilities

The Montgomery 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 (minus Grant). 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. The City of Red Oak also has a portion for flood mitigation, which is used to continue the city's efforts of reclassification of levees and further reduce flooding hazards.

Jurisdiction budgets are extremely tight and funding is considered the number one issue with implementing mitigation measures.

Policies and Ordinances

Policy and ordinance are capabilities that guide and regulate development within a community. Like the planning capabilities, the larger cities typically have more ordinances. All jurisdictions have many of the following capabilities implemented, though not all, within their communities: building codes, floodplain ordinances, nuisance ordinances, storm water ordinances, subdivision ordinances, tree trimming ordinances, and zoning ordinances.

Specific emergency-related Code of 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) Snow Removal: smaller cities such as Grant, also have 28-E agreements for snow removal; (3) Police Protection: the cities of Elliott, Grant, Stanton and Villisca have 28-E agreements with Montgomery County; (4) Fire Protection; each incorporated City within Montgomery county, aside from Coburg, has a fire department.

The Cities of Red Oak, Stanton and Villisca each have zoning and subdivision ordinances and Red Oak has a rental property ordinance.

Table 5.6 – City Codes of Ordinances Pertaining to Hazard Mitigation

Ordinance	Elliott	Grant	Red Oak	Stanton	Villisca
Zoning			X	X	X
Restricted Residence	X	X			
Subdivision			X	X	X
Floodplain	X	X	X	X	X
Building Permit	X	X	X	X	X
Building Codes			X	X	X
Nuisance	X	X	X	X	X
Tree Trimming	X		X	X	X
Storm Water	X		X		X
Drainage	X				X
Historic Preservation			X		

Programs

Programs are special or supplemental activities that communities can either join or create to enhance community awareness on several issues. These activities and resources can come from a variety of governmental or non-governmental organizations. Most 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. Per floodplain mapping the cities of Grant, Red Oak and Villisca are each a non-delegated participant in the National Flood Insurance Program (NFIP). Each city participating in the NFIP has the required adopted ordinance to participate. Stanton does not participate in the NFIP as they do not have any areas within the floodplain.

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.

The Cities of Red Oak and Stanton each have comprehensive plans completed in the last 10 years each having an emergency planning component. In 2014, Red Oak completed a housing study which outlined areas in the floodplain that should be avoided for capital improvement and new construction. Stanton and Elliott both completed updates to their code of ordinances within the last two 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 Montgomery 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 Montgomery 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.

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. Red Oak and Villisca each have a number of NGOs located within the community that include a veteran's group, chamber of commerce, and community organizations. A veteran's group is located in four of the seven jurisdictions. The remaining NGO's have little presence outside of Red Oak and Villisca.

School District Capabilities

Each of the school districts providing education to the county have the ability to levy taxes and bond for capital improvement projects, purchase property and complete construction projects with the adoption of the respective school board. All four school districts have a dedicated maintenance manager and an emergency response plan that outlines duties of staff in case of a disaster. Transit is provided by each district individually.

Changes in Development

Overall, there have been positive strides in development since the previous plan. The City of Stanton has begun development on its 22-acre technology park. The technology park is located on the north side of Stanton and has 10 lots connected to fiber optic broadband service. Within the technology park, a new daycare center was built and opened in 2024.

The City of Red Oak continues to do their rental inspections to ensure rental properties are compliant with maintenance code standards. Red Oak completed an 11-acre expansion to their Woodland Hills II subdivision to allow for an addition 59 homes as well as a new city park. Construction of the 59 townhomes is set to be completed in two phases with phase one being done in early 2026. Rehabilitation was done on a downtown building through the Community Catalyst program that created a pop-up commercial space and two residential units.

The City of Elliot completed a project to reline sewer mains in town in 2024. As part of that project, the city also replaced and rehabilitated manhole covers around town. The city also continues to repave roads as their budget allows.

In 2019, Villisca began work to rehabilitate six owner-occupied housing units. A couple years later in 202, Villisca began a project to replace water mains and lines, install new fire hydrants and water meters, and make improvements to the water treatment plant. This project provided more reliable water and better access to citizens and emergency responders. In 2024, the City updated their comprehensive plan.

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 2013, 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 5.7 - Montgomery County NFIP Policies as of July 2025

Jurisdiction	Policies In-Force	Total Coverage	Total Premium and Policy Fees
Elliott	25	$1,429,000	$20,023
Red Oak	78	$11,810,000	$106,406

Source: FEMA/NFIP BureauNet Reporting

Table 5.8 - Montgomery County Loss Statistics as of April 2025

Jurisdiction	Total Losses	Total Payments
Elliott	36	$133,502
Red Oak	46	$106,733

Source: FEMA/NFIP BureauNet Reporting

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 5.9- Montgomery County NFIP Participants

Jurisdiction	Init FHBM Identified	Init FIRM Identified	Current Effective Map Date
Elliott	6/25/76	5/17/89	05/02/16
Grant	11/19/76	05/01/11	05/02/16
Red Oak	06/28/74	08/03/81	05/02/16
Stanton	09/26/75	05/02/16	05/02/16
Villisca	08/13/76	05/01/11	05/06/16
(M) No Elevation Determined – All Zone A, C and X (L) Original FIRM by Letter – All Zone A, C and X			

Source: FEMA/NFIP Statistical Agent Bureau

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 5.10 - Community Rating System Classes

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 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.

The Cities of Elliott, Grant, Red Oak, Stanton and Villisca will continue their participation in the NFIP program. All jurisdictions have the most current floodplain ordinances provided by the Iowa Department of Natural resources adopted. These ordinances establish regulations for building in the floodplain, note the most current FIRM, detail substantial improvement and substantial damage work, and designate a local floodplain administrator. By default, the mayor or city administrator is the NFIP floodplain administrator.

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 FEMA's "NIFP Repetitive Loss Overview" map on ArcGIS Online, there are five repetitive loss properties and no severe repetitive loss properties in the county.

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 help 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 5.11 - 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 5.12- 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 5.13 - 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.

Montgomery County jurisdictions will be responsible for monitoring, evaluating, and updating the Montgomery County Multi-Jurisdictional Plan. Reviews 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 Montgomery 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. The Montgomery County Emergency Management Coordinator will be responsible for coordinating the plan update. 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 will 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

A hazard mitigation plan is a requirement for eligibility for project grants under the following hazard mitigation assistance programs: the Hazard Mitigation Grant Program (HMGP), Pre Disaster Mitigation (PDM), and Flood Mitigation Assistance (FMA). FEMA reviews plans to ensure that they meet the requirements of the Stafford Act and Title 44 Code of Federal Regulations (CFR) §201.6.and approves plans that comply with those requirements; it administers the mitigation grant programs. 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. For all of the jurisdictions in this plan, Southwest Iowa Planning Council (SWIPCO) is the local planning agency.

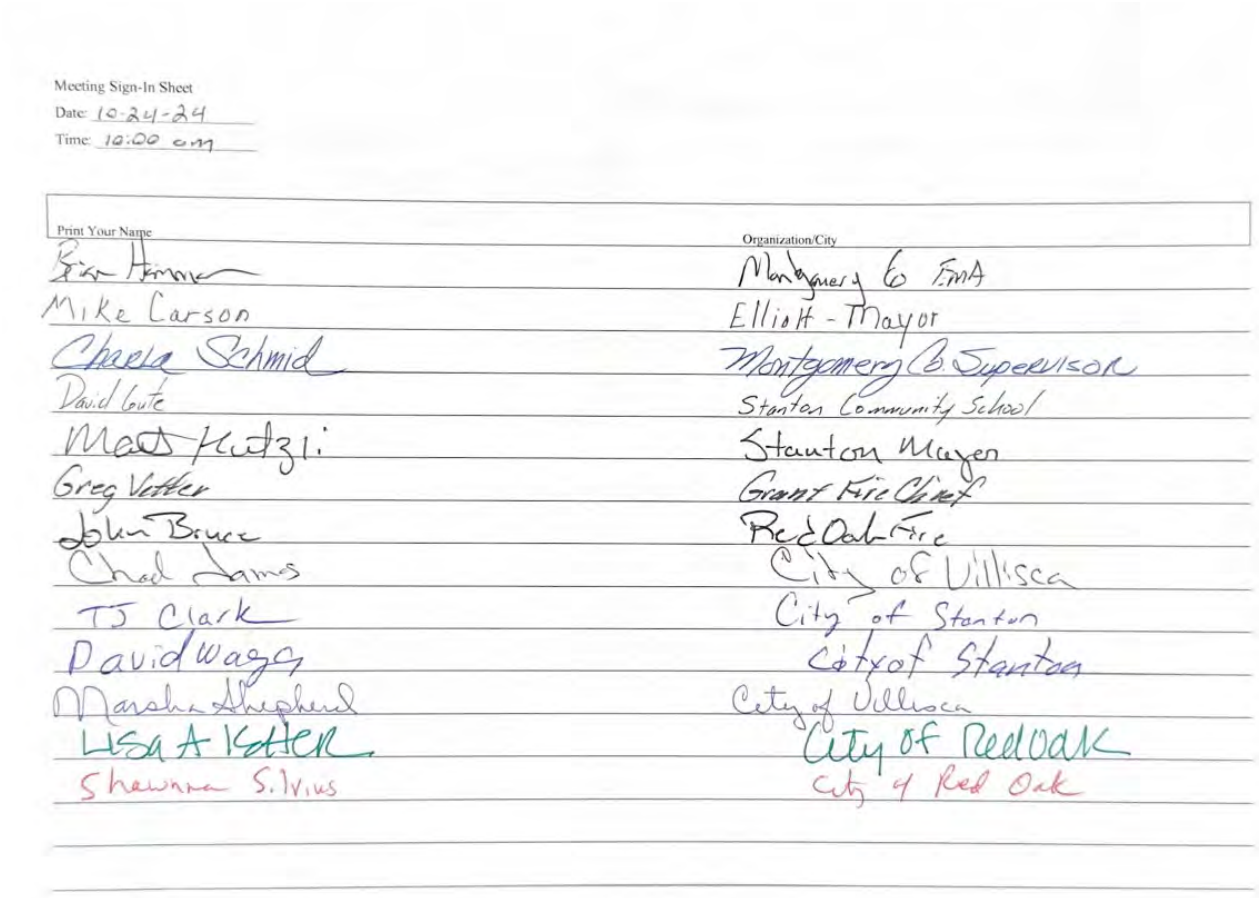
Due to the size of many of the communities in Montgomery County, the most common method of incorporating goals and objectives from this plan into local planning mechanisms is by adding related ordinances to their code of ordinances. Those participating in the NFIP have added in the appropriate floodplain 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, Stanton and Villisca 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. The City of Stanton has also recently adopted building codes and is doing inspections for new builds.

Appendices

Appendix A: Section I Appendices

Meeting Sign-in Sheets



Meeting Sign-In Sheet
Date: 10-24-24
Time: 10:00 am

Print Your Name	Organization/City
[illegible]	Montgomery Co EMA
Mike Carson	Elliott - Mayor
Sheela Schmid	Montgomery Co. Supervisor
David Gute	Stanton Community School
Matt Kutzli	Stanton Mayor
Greg Vetter	Grant Fire Chief
John Bruce	Red Oak Fire
Chad Lamos	City of Villisca
TJ Clark	City of Stanton
David Wagner	City of Stanton
Marsha Shepherd	City of Villisca
LISA A KOHLER	City of Red Oak
Shawnna S. Vius	City of Red Oak

Montgomery County Emergency Management
Emergency Operations Center
11-21-24

NAME	ORGANIZATION	PHONE #
Brian Hanson	Montgomery County EMA	712-30[illegible]
JOSH SCHVOTTE	CITY OF ELLIOTT	
Mike Carson	City of Elliott	712-767-2351
Chad James	City of Villisca	712 826 2282
Greg Vetter	City of Grant	712-621-2338
Ron LORENZ	RED OAK CSD	515-201-3637
Adam Wenberg	Red Oak CSD	712-621-3368
Shawnna I Silva	Red Oak - city of	402-217-1929
[illegible]	Red Oak	5633201206
Dan Cole	Stanton CSD	402 66-2714

Montgomery County Emergency Management
Emergency Operations Center
11-21-24

NAME	ORGANIZATION	PHONE #
David Wages	City of Stanton	712 584 1971
Matt Tuft Zi	City of Stanton	712-370-1592
Charla Schmid	Montgomery County	712-269-2113

Meeting Sign-In Sheet

Date: _____

Time: _____

Print Your Name	Organization/City	Phone	E-Mail Address	Signature
Mike Carson	Mayor/Elliott	712-767-2351	cityofelliott@netins.net	Mike Carson
Greg Vetter	Grant	712-621-2338	grantfire@netins.net	Greg Vetter
Ron Lorenz	Red Oak CSD	712-623-6600	lorenzr@redoakschools.org.	Ron Lorenz
Charla Schmid	Montgomery City	712-769-2113	cschmid@montgomerycountyiagov	Charla Schmid
Brian Hemmen	Montgomery EMA	712-370-4550	bhemmen@montgomerycountyiagov	
David Gute	Stanton CSD	712 829-2162	dgute@stantonschools.com	David Gute
Matt Kutzli	Stanton City	712-370-1542	mayor@citystantonia.com	Matt Kutzli
David Waggy	Stanton	712-789-1971		David Waggy
TJ Clark	Stanton	712-621-3095	tjclark3095@gmail.com	TJ Clark
Shawnna Schmitz	Red Oak	402-217-1929	mayor@redoakia.city	Shawnna Schmitz
LISA KATER	"		"	

Appendix B: Section II Appendices

Adopting Resolutions

Montgomery County

City of Elliott

City of Grant

City of Red Oak

City of Stanton

City of Villisca

Red Oak CSD

Southwest Valley CSD

Stanton CSD

Appendix C: Section III Appendices

Correspondence to Neighboring Communities

Neighboring Communities	
Name	**Email**
Adams County EMA	ema@adamscountyia.com
Cass County EMA	mkennon@casscoia.us
Fremont County EMA	clong@co.fremont.ia.us
Mills County EMA	thitchcock@millscountyiowa.gov
Page County EMA	ema@co.page.ia.us
Pottawattamie County EMA	ema@ema.pottcounty-ia.gov
Taylor County EMA	Belinda.ogle@taylorcounty.iowa.gov

Appendix D: Section IV Appendices

Hazard Ranking

City of Elliott

Hazard	Probability	Magnitude	Warning Time	Duration	Total	Weighted Total	Rank	Weighted Rank
Animal/Crop/Plant Disease	18	3	5	2	28	9.95	7	7
Dam/Levee Failure	5	6	6	2	19	5.15	10	11
Drought	18	9	2	4	33	11.5	2	2
Earthquake	5	3	6	1	15	4.15	14	15
Extreme Heat	18	3	2	3	26	9.6	9	9
Flash Flood	5	6	6	2	19	5.15	11	12
Grass/Wild Land Fire	5	3	6	1	15	4.15	15	16
Hazardous Materials Incident	9	3	2	1	15	5.35	16	10
Human Disease	18	6	2	4	30	10.6	3	4
Infrastructure Failure	5	3	2	1	11	3.55	17	17
Radiological	5	3	2	1	11	3.55	18	18
River Flooding	14	9	2	3	28	9.6	8	8
Severe Winter Storm	18	6	2	3	29	10.5	5	5
Sinkholes	5	3	6	3	17	4.35	13	14
Terrorism	5	3	6	4	18	4.45	12	13
Thunderstorm/Lightning/Hail	18	6	5	1	30	10.75	4	3
Tornado/Windstorm	18	9	6	1	34	11.8	1	1
Transportation Incident	18	3	6	2	29	10.1	6	6

City of Grant

Hazard	Probability	Magnitude	Warning Time	Duration	Total	Weighted Total	Rank	Weighted Rank
Animal/Crop/Plant Disease	18	9	5	4	36	11.95	1	1
Dam/Levee Failure	5	6	5	2	18	5	12	13
Drought	18	9	2	4	33	11.5	3	3
Earthquake	5	3	6	1	15	4.15	17	17
Extreme Heat	18	3	2	3	26	9.6	8	8
Flash Flood	5	6	6	1	18	5.05	13	12
Grass/Wild Land Fire	5	3	6	1	15	4.15	18	18
Hazardous Materials Incident	9	3	6	2	20	6.05	10	9
Human Disease	18	6	2	4	30	10.6	5	6
Infrastructure Failure	5	6	6	4	21	5.35	9	11
Radiological	5	3	6	2	16	4.25	15	15
River Flooding	5	9	2	3	19	5.55	11	10

Severe Winter Storm	18	6	2	3	29	10.5	7	7
Sinkholes	5	3	6	4	18	4.45	14	14
Terrorism	5	3	6	2	16	4.25	16	16
Thunderstorm/Lightning/Hail	18	6	5	1	30	10.75	6	5
Tornado/Windstorm	18	9	6	1	34	11.8	2	2
Transportation Incident	18	6	6	2	32	11	4	4

City of Red Oak

Hazard	Probability	Magnitude	Warning Time	Duration	Total	Weighted Total	Rank	Weighted Rank
Animal/Crop/Plant Disease	18	6	5	4	33	11.05	3	4
Dam/Levee Failure	5	9	6	3	23	6.15	10	13
Drought	18	9	2	4	33	11.5	4	3
Earthquake	5	3	6	1	15	4.15	16	17
Extreme Heat	18	3	2	3	26	9.6	9	10
Flash Flood	9	6	3	2	20	6.5	13	12
Grass/Wild Land Fire	5	3	6	1	15	4.15	17	18
Hazardous Materials Incident	18	6	6	1	31	10.9	6	6
Human Disease	18	6	2	4	30	10.6	18	8
Infrastructure Failure	18	9	6	4	37	12.1	1	1
Radiological	5	3	6	2	16	4.25	15	16
River Flooding	9	6	3	3	21	6.6	12	11
Severe Winter Storm	18	6	2	3	29	10.5	8	9
Sinkholes	5	3	6	4	18	4.45	14	15
Terrorism	5	9	6	3	23	6.15	11	14
Thunderstorm/Lightning/Hail	18	6	5	1	30	10.75	7	7
Tornado/Windstorm	18	9	6	1	34	11.8	2	2
Transportation Incident	18	6	6	2	32	11	5	5

City of Stanton

Hazard	Probability	Magnitude	Warning Time	Duration	Total	Weighted Total	Rank	Weighted Rank
Animal/Crop/Plant Disease	18	6	5	4	33	11.05	2	3
Dam/Levee Failure	5	3	6	2	16	4.25	13	13
Drought	18	9	2	4	33	11.5	3	2
Earthquake	5	3	6	1	15	4.15	16	16
Extreme Heat	18	3	2	3	26	9.6	9	9
Flash Flood	9	6	6	2	23	6.95	11	10
Grass/Wild Land Fire	5	3	6	1	15	4.15	17	17
Hazardous Materials Incident	18	3	6	2	29	10.1	7	8
Human Disease	18	6	2	4	30	10.6	5	6
Infrastructure Failure	5	9	6	4	24	6.25	10	11

Radiological	5	3	6	2	16	4.25	14	14
River Flooding	5	3	2	2	12	3.65	18	18
Severe Winter Storm	18	6	2	3	29	10.5	8	7
Sinkholes	5	3	6	4	18	4.45	12	12
Terrorism	5	3	6	2	16	4.25	15	15
Thunderstorm/Lightning/Hail	18	6	5	1	30	10.75	6	5
Tornado/Windstorm	18	9	6	1	34	11.8	1	1
Transportation Incident	18	6	6	1	31	10.9	4	4

City of Villisca

Hazard	Probability	Magnitude	Warning Time	Duration	Total	Weighted Total	Rank	Weighted Rank
Animal/Crop/Plant Disease	18	6	2	4	30	10.6	4	5
Dam/Levee Failure	5	3	2	1	11	3.55	18	18
Drought	18	9	2	4	33	11.5	2	2
Earthquake	5	3	6	1	15	4.15	14	14
Extreme Heat	18	3	2	3	26	9.6	9	9
Flash Flood	5	3	6	2	16	4.25	10	10
Grass/Wild Land Fire	5	3	6	2	16	4.25	11	11
Hazardous Materials Incident	18	3	6	2	29	10.1	7	8
Human Disease	18	6	2	4	30	10.6	5	6
Infrastructure Failure	5	3	6	1	15	4.15	15	15
Radiological	5	3	6	2	16	4.25	12	12
River Flooding	5	3	2	3	13	3.75	17	17
Severe Winter Storm	18	6	2	3	29	10.5	8	7
Sinkholes	5	3	3	3	14	3.9	16	16
Terrorism	5	3	6	2	16	4.25	13	13
Thunderstorm/Lightning/Hail	18	6	5	1	30	10.75	6	4
Tornado/Windstorm	18	9	6	1	34	11.8	1	1
Transportation Incident	18	6	6	2	32	11	3	3

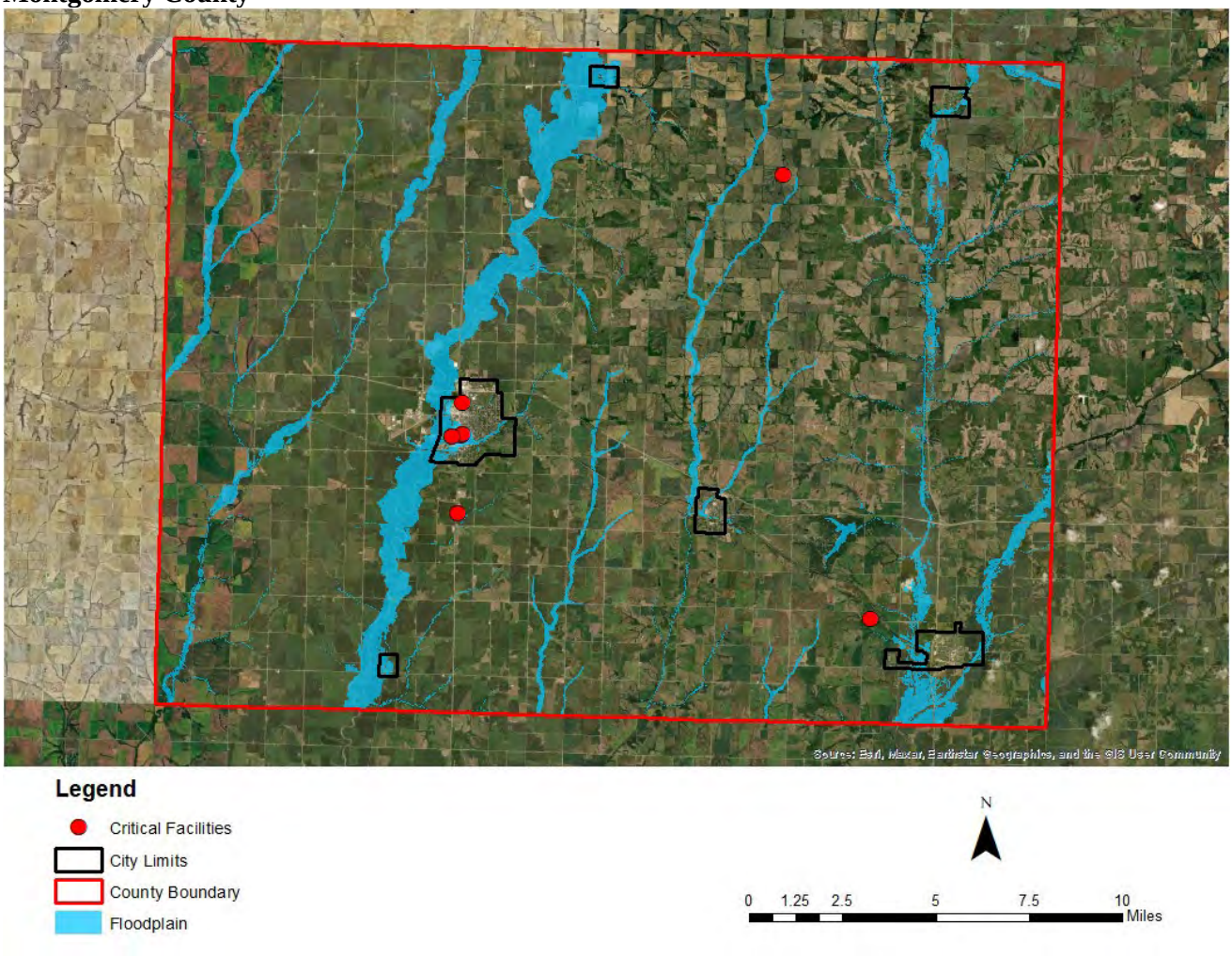
Montgomery County

Hazard	Probability	Magnitude	Warning Time	Duration	Total	Weighted Total	Rank	Weighted Rank
Animal/Crop/Plant Disease	18	9	5	4	36	11.95	1	1
Dam/Levee Failure	5	6	5	2	18	5	14	14
Drought	18	9	2	4	33	11.5	3	3
Earthquake	5	3	6	1	15	4.15	18	18
Extreme Heat	18	3	2	3	26	9.6	10	10
Flash Flood	9	6	6	1	22	6.85	13	13
Grass/Wild Land Fire	14	3	6	1	24	8.2	12	11
Hazardous Materials Incident	18	3	6	2	29	10.1	8	9

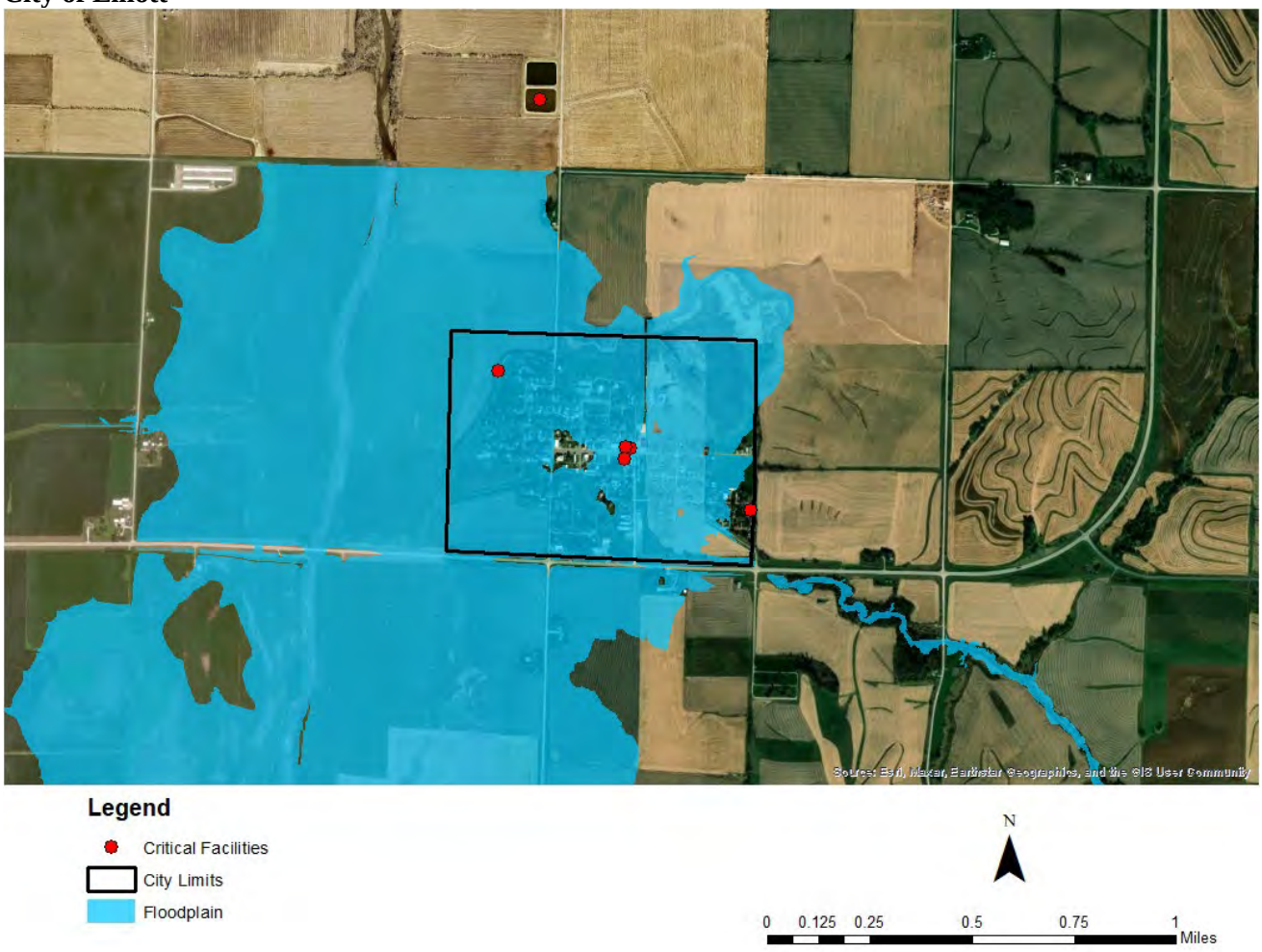
Human Disease	18	6	2	4	30	10.6	6	7
Infrastructure Failure	9	6	6	4	25	7.15	11	12
Radiological	5	3	6	2	16	4.25	16	16
River Flooding	18	9	2	3	32	11.4	4	4
Severe Winter Storm	18	6	2	3	29	10.5	9	8
Sinkholes	5	3	6	4	18	4.45	15	15
Terrorism	5	3	6	2	16	4.25	17	17
Thunderstorm/Lightning/Hail	18	6	5	1	30	10.75	7	6
Tornado/Windstorm	18	9	6	1	34	11.8	2	2
Transportation Incident	18	6	6	1	31	10.9	5	5

Critical Facilities

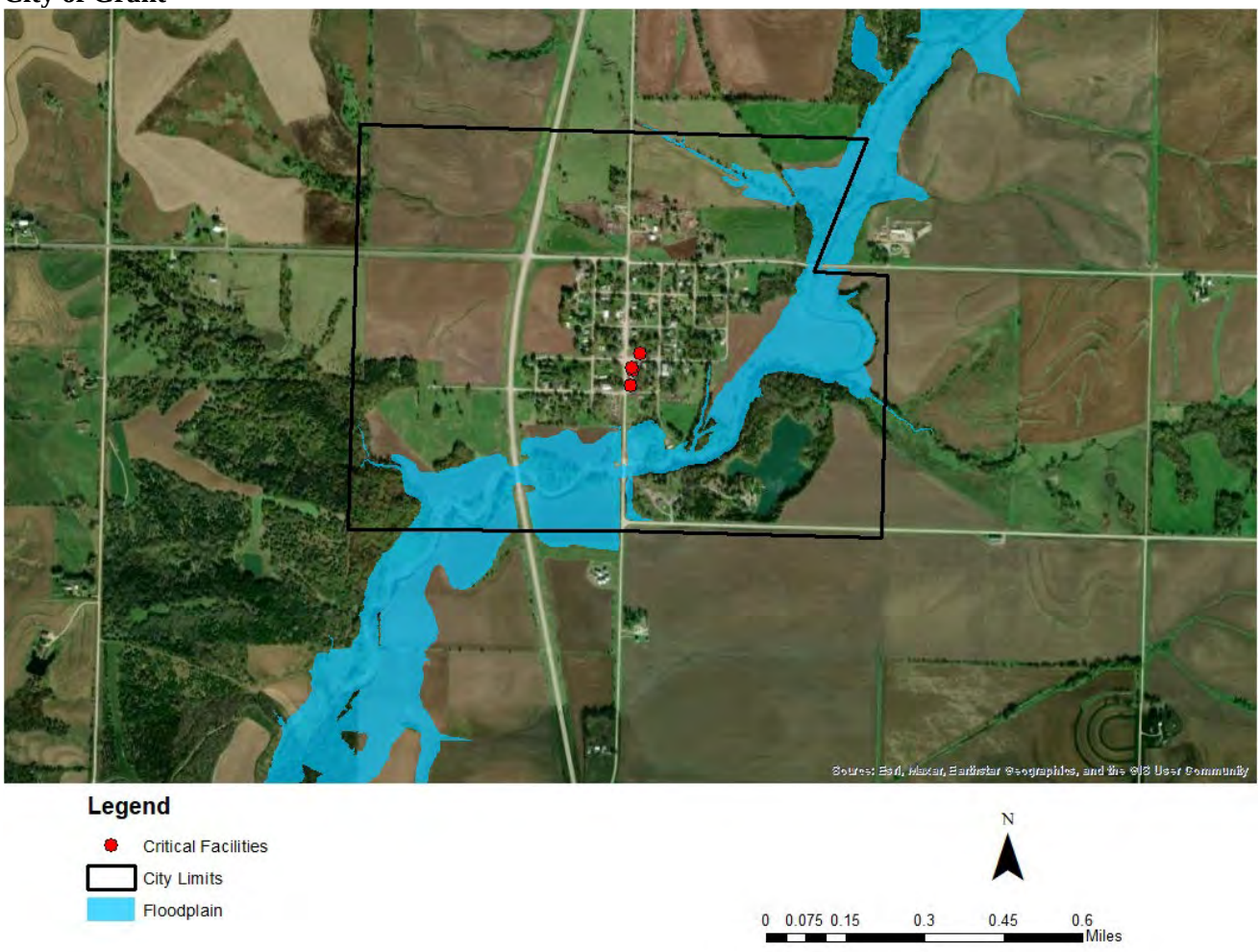
Montgomery County



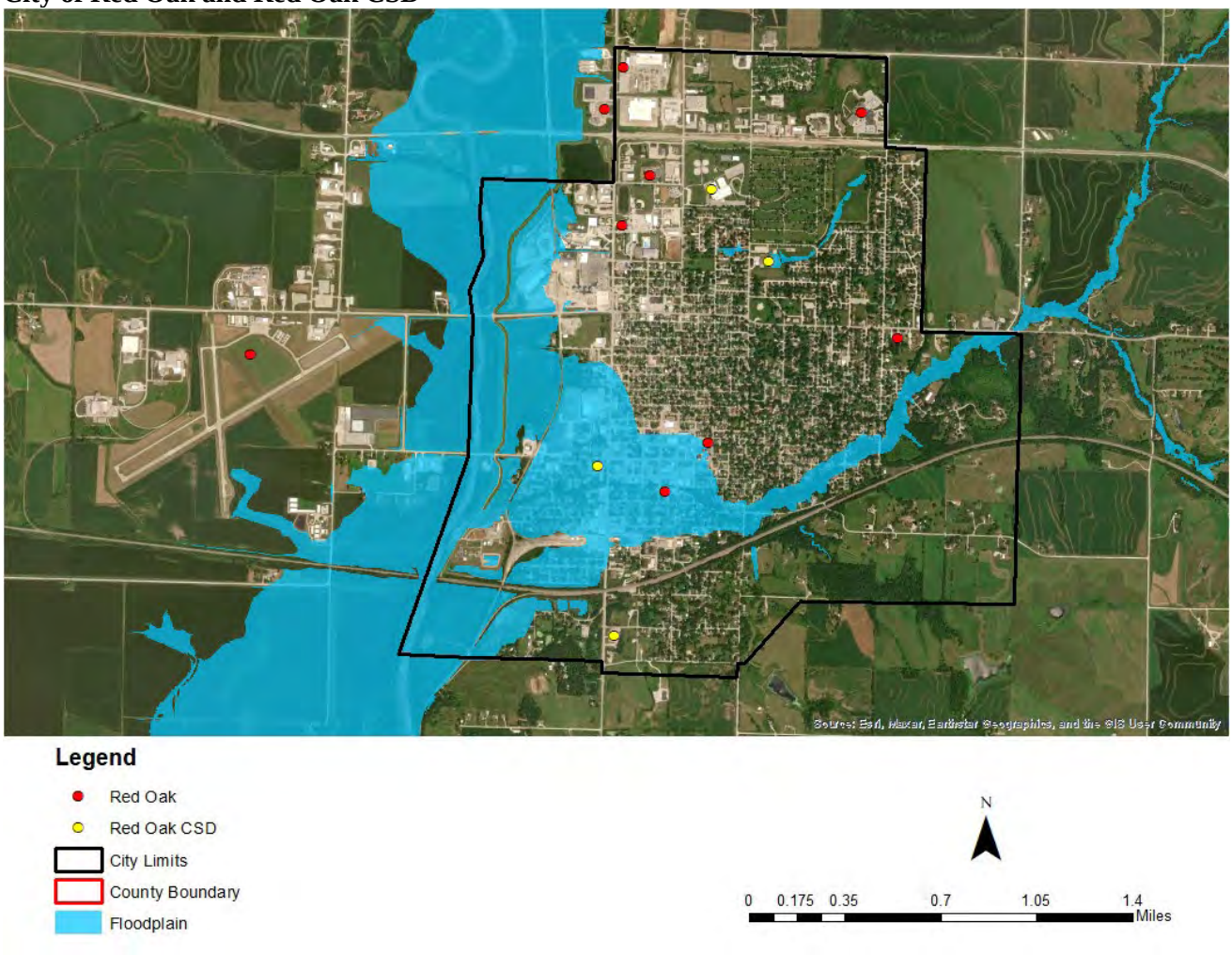
City of Elliott



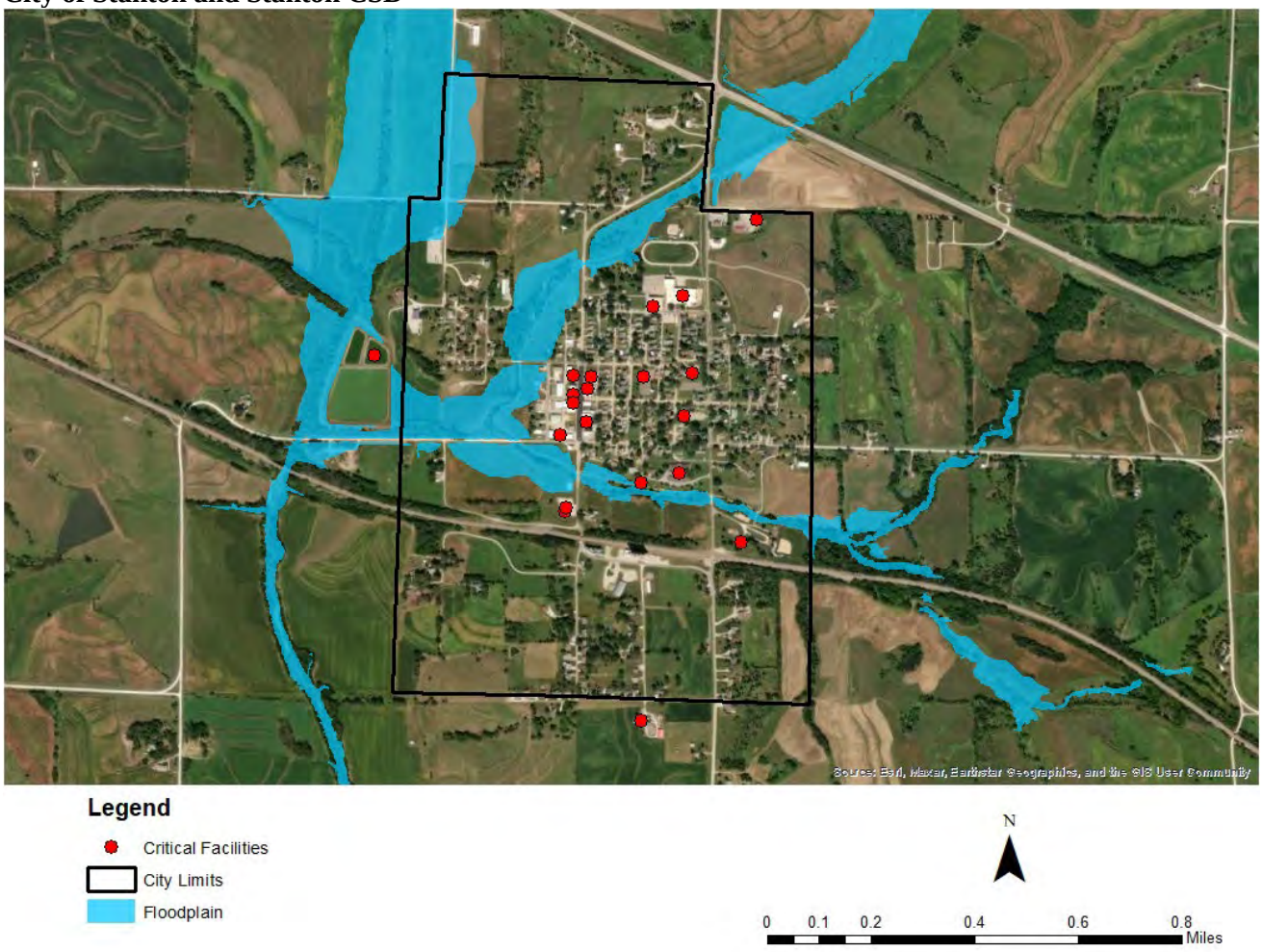
City of Grant



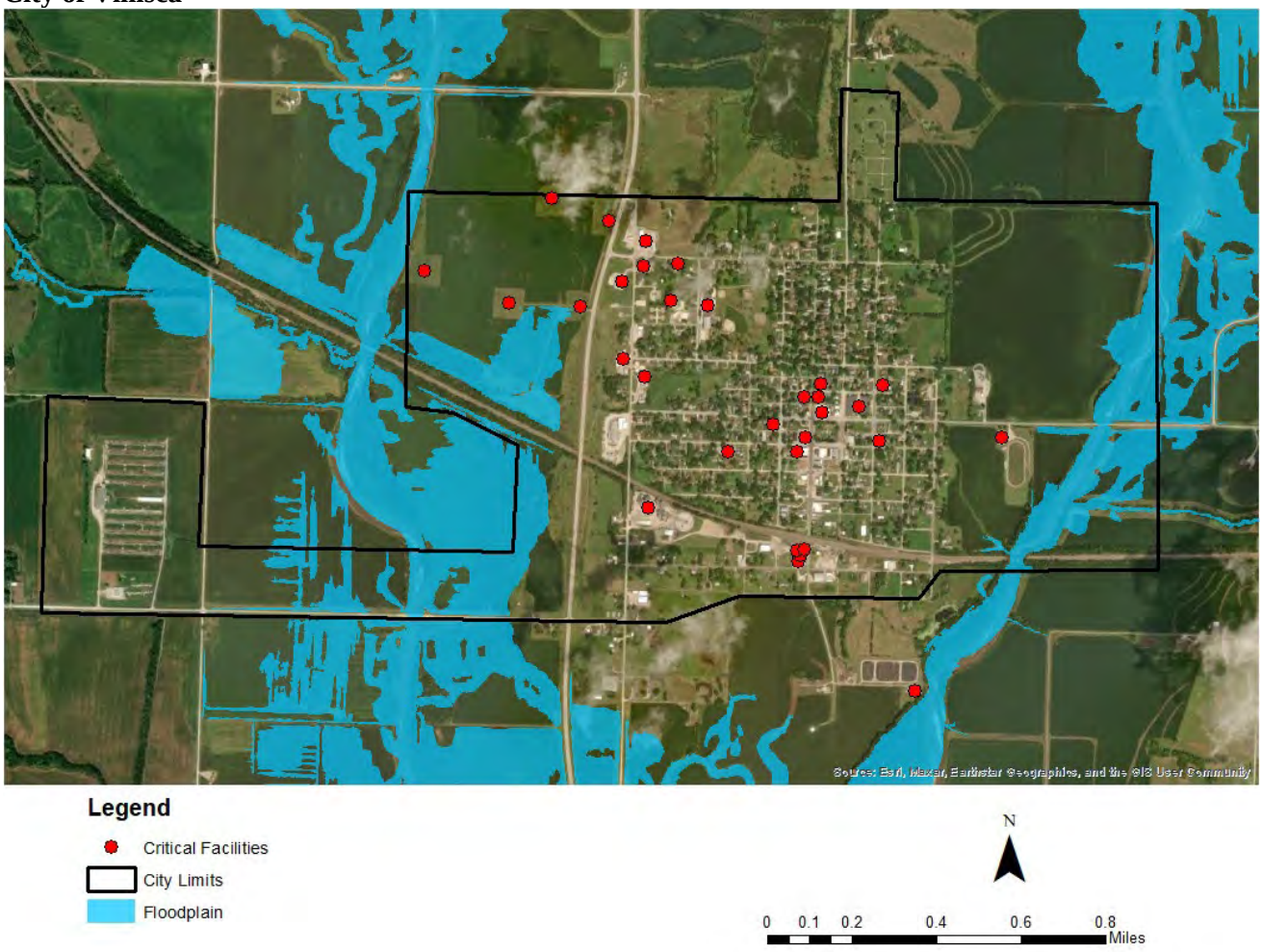
City of Red Oak and Red Oak CSD



City of Stanton and Stanton CSD

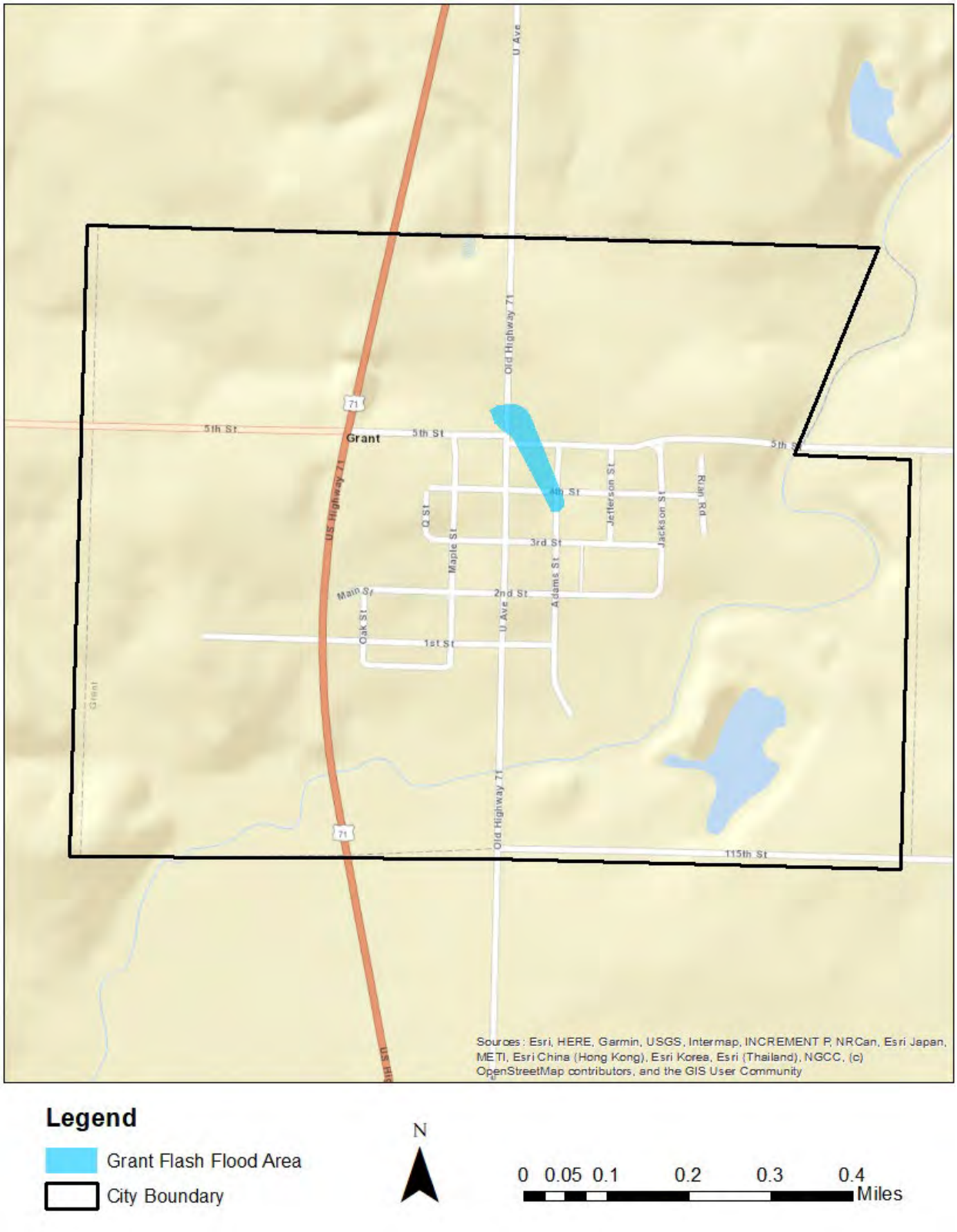


City of Villisca

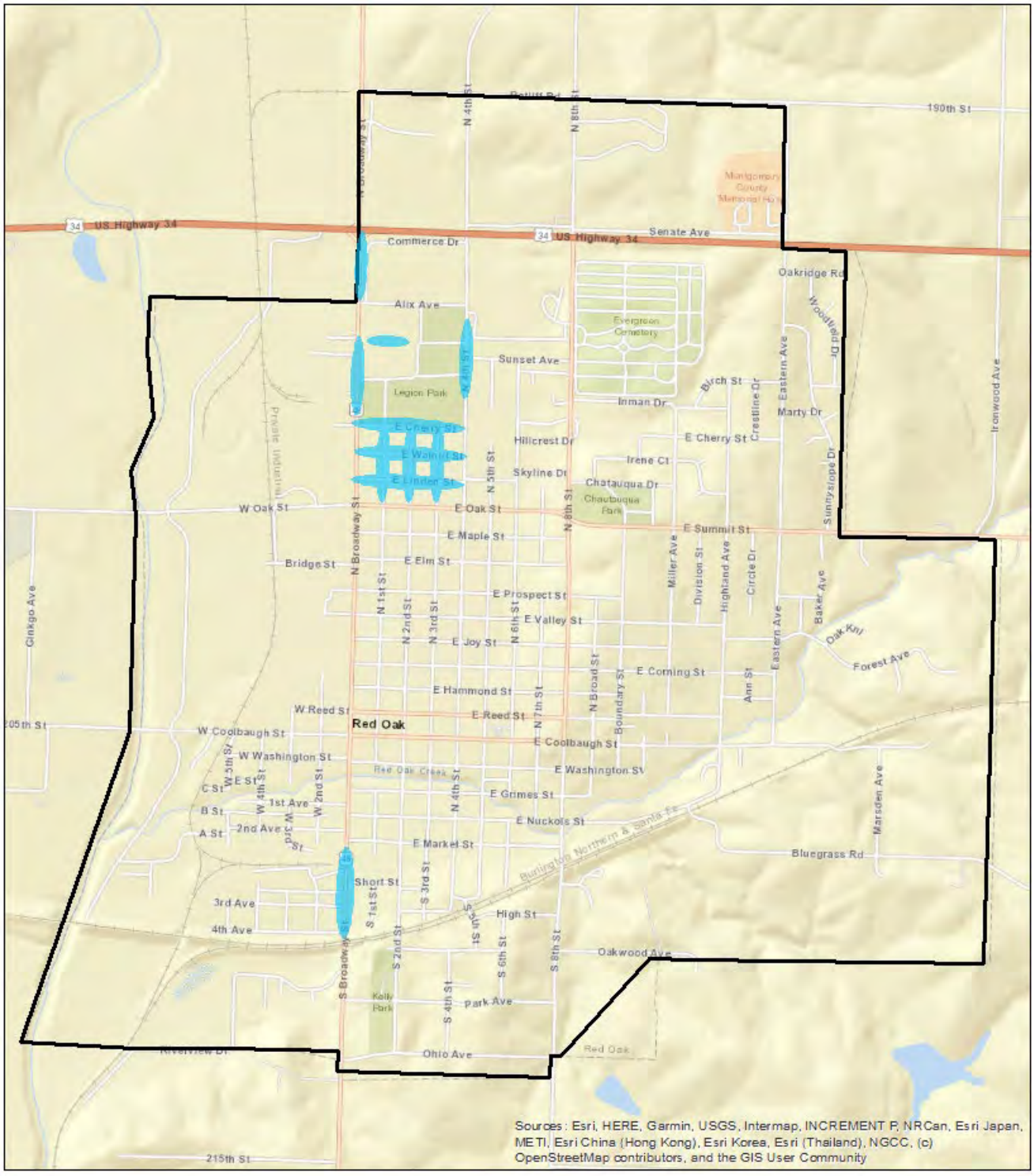


Flash Flood Maps

Grant



Red Oak



Legend

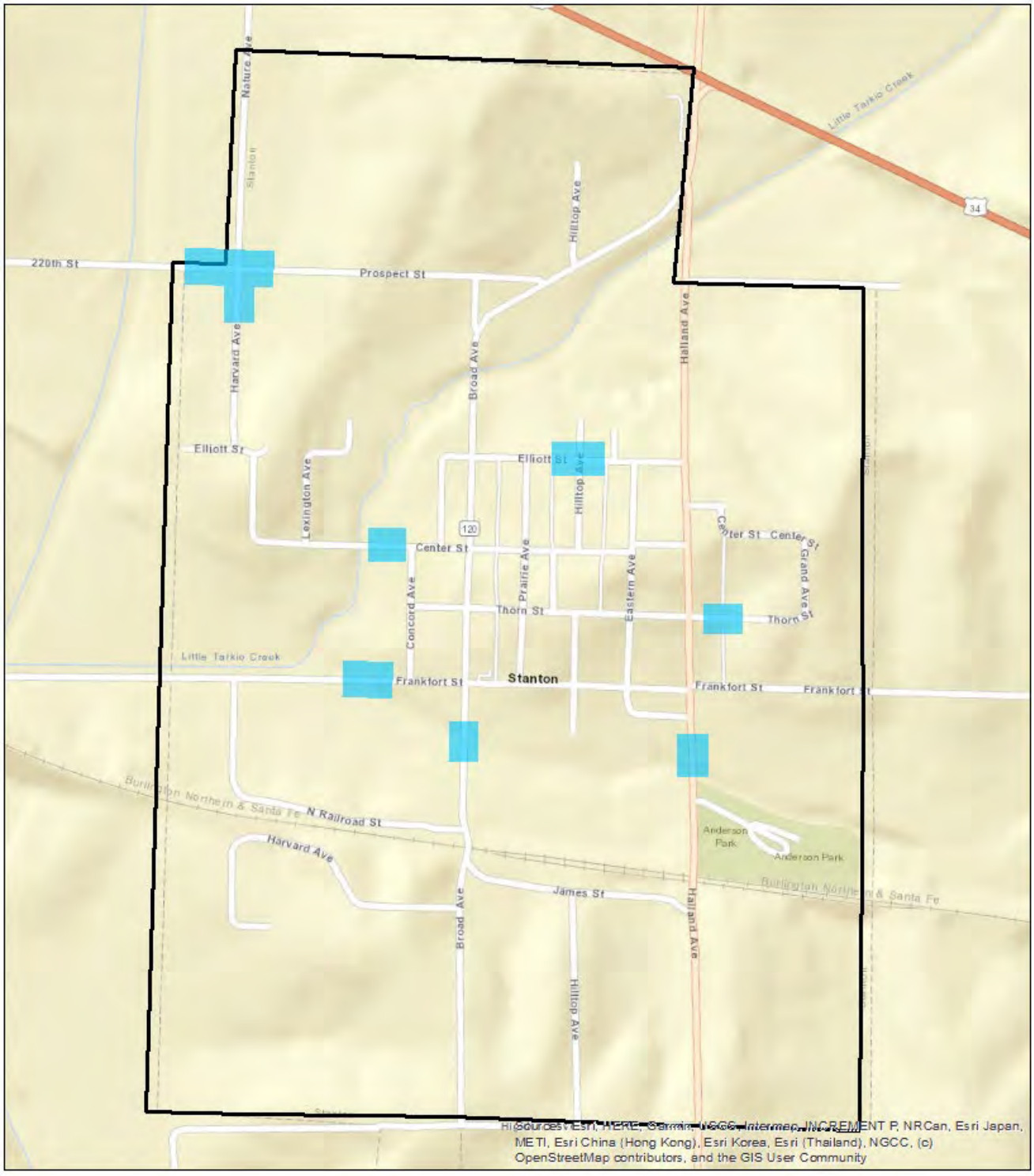
Red Oak Flash Flood Area

City Boundary

N

0 0.1 0.2 0.4 0.6 0.8 Miles

Stanton



Legend

Stanton Flash Flood Area

City Boundary

N

0 0.05 0.1 0.2 0.3 0.4 Miles

Community Assessment

Elliott - Community Assessment

Hazard: Drought, Extreme Heat, Flash Flood, Terrorism, Transportation Incident, Radiological, Severe Winter Storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm, 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	229	229	100%	9,113,710	9,113,710	100%
Multi-Residential	2	2	100%	95,150	95,150	100%
Commercial	56	56	100%	1,144,590	1,144,590	100%
Industrial	0	0	-	0	0	-
Agricultural	26	26	100%	299,470	299,470	100%
Total	313	313	100%	10,652,920	10,652,920	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	229	206	90%	9,113,710	7,874,130	86%
Multi-Residential	2	2	100%	95,150	95,150	100%
Commercial	56	41	73%	1,144,590	986,200	86%
Industrial	0	0	-	0	0	-
Agricultural	26	25	96%	299,470	288,060	96%
Total	313	274	88%	10,652,920	9,243,540	87%

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	229	50	22%	9,113,710	1,949,890	21%
Multi-Residential	2	0	0%	95,150	0	0%
Commercial	56	8	14%	1,144,590	23,820	2%
Industrial	0	0	-	0	0	-
Agricultural	26	26	100%	299,470	299,470	100%
Total	313	84	27%	10,652,920	2,273,180	21%

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	229	229	100%	9,113,710	9,113,710	100%
Multi-Residential	2	2	100%	95,150	95,150	100%
Commercial	56	56	100%	1,144,590	1,144,590	100%
Industrial	0	0	-	0	0	-
Agricultural	26	26	100%	299,470	299,470	100%
Total	313	313	100%	10,652,920	10,652,920	100%

Source: Montgomery County Assessor (2025), FEMA, Iowa DNR, Iowa State University Extension and Outreach

Grant - Community Assessment

Hazard: Drought, Extreme Heat, Flash Flood, Terrorism, Transportation Incident, Radiological, Severe Winter Storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm, 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	108	108	100%	1,517,860	1,517,860	100%
Multi-Residential	0	0	0%	0	0	0%
Commercial	24	24	100%	171,980	171,980	100%
Industrial	0	0	0%	0	0	0%
Agricultural	37	37	100%	23,470	23,470	100%
Total	169	169	100%	1,713,310	1,713,310	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	108	2	0%	1,517,860	0	0%
Multi-Residential	0	0	-	0	0	-
Commercial	24	0	0%	171,980	0	0%
Industrial	0	0	-	0	0	-
Agricultural	37	8	0%	23,470	0	0%
Total	169	10	6%	1,713,310	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	108	19	18%	1,517,860	347,110	23%
Multi-Residential	0	0	-	0	0	-
Commercial	24	2	8%	171,980	200	1%
Industrial	0	0	-	0	0	-
Agricultural	37	37	100%	23,470	23,470	100%
Total	169	58	34%	1,713,310	370,780	22%

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	108	0	0%	1,517,860	0	0%
Multi-Residential	0	0	0%	0	0	0%
Commercial	24	0	0%	171,980	0	0%
Industrial	0	0	0%	0	0	0%
Agricultural	37	0	0%	23,470	0	0%
Total	169	0	0%	1,713,310	0	0%

Source: Montgomery County Assessor (2025), FEMA, Iowa DNR, Iowa State University Extension and Outreach

Red Oak - Community Assessment

Hazard: Drought, Extreme Heat, Flash Flood, Terrorism, Transportation Incident, Radiological, Severe Winter Storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm, 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	2,618	2,618	100%	265,323,210	265,323,210	100%
Multi-Residential	40	40	100%	14,960,290	14,960,290	100%
Commercial	446	446	100%	104,106,447	104,106,447	100%
Industrial	12	12	100%	7,564,570	7,564,570	100%
Agricultural	71	71	100%	1,524,720	1,524,720	100%
Total	3,187	3,187	100%	393,479,237	393,479,237	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	2,618	587	22%	265,323,210	25,127,150	9%
Multi-Residential	40	10	25%	14,960,290	1,120,320	7%
Commercial	446	249	56%	104,106,447	24,345,747	23%
Industrial	12	2	17%	7,564,570	178,930	2%
Agricultural	71	44	62%	1,524,720	1,466,170	96%
Total	3,187	892	28%	393,479,237	52,238,317	13%

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	2,618	62	2%	265,323,210	9,165,640	3%
Multi-Residential	40	1	3%	14,960,290	238,100	2%
Commercial	446	10	2%	104,106,447	481,800	1%
Industrial	12	0	0%	7,564,570	0	0%
Agricultural	71	71	100%	1,524,720	1,524,720	100%
Total	3,187	144	5%	393,479,237	11,410,260	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	2,618	2,618	100%	265,323,210	265,323,210	100%
Multi-Residential	40	40	100%	14,960,290	14,960,290	100%
Commercial	446	446	100%	104,106,447	104,106,447	100%
Industrial	12	12	100%	7,564,570	7,564,570	100%
Agricultural	71	71	100%	1,524,720	1,524,720	100%
Total	3,187	3,187	100%	393,479,237	393,479,237	100%

Source: Montgomery County Assessor (2025), FEMA, Iowa DNR, Iowa State University Extension and Outreach

Stanton - Community Assessment

Hazard: Drought, Extreme Heat, Flash Flood, Terrorism, Transportation Incident, Radiological, Severe Winter Storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm, 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	368	368	100%	30,679,070	30,679,070	100%
Multi-Residential	3	3	100%	2,236,180	2,236,180	100%
Commercial	61	61	100%	9,593,030	9,593,030	100%
Industrial	0	0	-	0	0	-
Agricultural	48	48	100%	158,270	158,270	100%
Total	480	480	100%	42,666,550	42,666,550	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	368	15	4%	30,679,070	111,060	1%
Multi-Residential	3	0	0%	2,236,180	0	0%
Commercial	61	5	8%	9,593,030	28,650	1%
Industrial	0	0	-	0	0	-
Agricultural	48	5	10%	158,270	0	0%
Total	480	25	5%	42,666,550	139,710	1%

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	368	26	7%	30,679,070	2,782,070	9%
Multi-Residential	3	0	0%	2,236,180	0	0%
Commercial	61	1	2%	9,593,030	19,680	1%
Industrial	0	0	-	0	0	-
Agricultural	48	48	100%	158,270	158,270	100%
Total	480	75	16%	42,666,550	2,960,020	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	368	351	%	30,679,070	28,132,360	92%
Multi-Residential	3	3	100%	2,236,180	2,236,180	100%
Commercial	61	61	100%	9,593,030	9,593,030	100%
Industrial	0	0	-	0	0	-
Agricultural	48	47	%	158,270	158,270	100%
Total	480	462	96%	42,666,550	40,119,840	94%

Source: Montgomery County Assessor (2025), FEMA, Iowa DNR, Iowa State University Extension and Outreach

Villisca - Community Assessment

Hazard: Drought, Extreme Heat, Flash Flood, Terrorism, Transportation Incident, Radiological, Severe Winter Storm, Thunderstorm/Lightning/Hail, Tornado/Windstorm, 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	729	729	100%	37,171,400	37,171,400	100%
Multi-Residential	4	4	100%	3,301,630	3,301,630	100%
Commercial	161	161	100%	13,584,770	13,584,770	100%
Industrial	0	0	0%	0	0	0%
Agricultural	34	34	100%	503,130	503,130	100%
Total	928	928	100%	54,456,930	54,456,930	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	729	1	1%	37,171,400	0	0%
Multi-Residential	4	0	0%	3,301,630	0	0%
Commercial	161	0	0%	13,584,770	0	0%
Industrial	0	0	0%	0	0	0%
Agricultural	34	7	20%	503,130	0	0%
Total	928	8	1%	54,456,930	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	729	32	4%	37,171,400	969,580	3%
Multi-Residential	4	0	0%	3,301,630	0	0%
Commercial	161	4	2%	13,584,770	1,200,870	9%
Industrial	0	0	-	0	0	-
Agricultural	34	34	100%	503,130	503,130	100%
Total	928	70	8%	54,456,930	2,673,580	5%

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	729	729	100%	37,171,400	37,171,400	100%
Multi-Residential	4	4	100%	3,301,630	3,301,630	100%
Commercial	161	161	100%	13,584,770	13,584,770	100%
Industrial	0	0	0%	0	0	0%
Agricultural	34	34	100%	503,130	503,130	100%
Total	928	928	100%	54,456,930	54,456,930	100%

Source: Montgomery County Assessor (2025), FEMA, Iowa DNR, Iowa State University Extension and Outreach

Historical Occurrences

Drought

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	MAGNITUDE	TOR_F_SCALE	DEATHS_DIRECT	INJURIES_DIRECT	DAMAGE_PROPERTY_NUM	DAMAGE_CROPS_NUM	STATE_ABBR	CZ_TIMEZONE	END_DATE
3887742	MONTGOMERY (ZONE)		7/24/2012	0	Drought			0	0	0	0	IA	CST-6	7/31/2012
3991150	MONTGOMERY (ZONE)		8/1/2012	0	Drought			0	0	0	0	IA	CST-6	8/31/2012
4068017	MONTGOMERY (ZONE)		9/1/2012	0	Drought			0	0	0	0	IA	CST-6	9/30/2012
4118011	MONTGOMERY (ZONE)		10/1/2012	0	Drought			0	0	0	0	IA	CST-6	10/16/2012

Source: NOAA Storm Prediction Center

Flood

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	DAMAGE_PROPERTY_NUM	DAMAGE_CROPS_NUM	STATE_ABBR	CZ_TIMEZONE
5590766	MONTGOMERY (ZONE)		2/18/1997	1800	Flood	0	0	IA	CST
5651606	MONTGOMERY (ZONE)		6/14/1998	1000	Flood	0	2000000	IA	CST
5697272	MONTGOMERY (ZONE)		5/17/1999	500	Flood	0	0	IA	CST
5395409	MONTGOMERY (ZONE)		5/23/2004	1000	Flood	0	0	IA	CST
21955	MONTGOMERY CO.	ELLIOTT	5/6/2007	445	Flood	150000	0	IA	CST-6
23124	MONTGOMERY CO.	ELLIOTT	5/24/2007	1630	Flood	0	0	IA	CST-6
55226	MONTGOMERY CO.	ELLIOTT	10/14/2007	2300	Flood	0	0	IA	CST-6
97135	MONTGOMERY CO.	STENNETT	6/5/2008	15	Flood	0	0	IA	CST-6
97255	MONTGOMERY CO.	ELLIOTT	6/8/2008	1245	Flood	0	0	IA	CST-6
101558	MONTGOMERY CO.	ELLIOTT	6/11/2008	2230	Flood	0	0	IA	CST-6
233961	MONTGOMERY CO.	ELLIOTT	6/22/2010	1430	Flood	1000	0	IA	CST-6
233959	MONTGOMERY CO.	RED OAK	6/27/2010	1130	Flood	2000	0	IA	CST-6
290880	MONTGOMERY CO.	VILLISCA	5/11/2011	1730	Flood	0	0	IA	CST-6
544494	MONTGOMERY CO.	STENNETT	9/10/2014	331	Flood	5000	10000	IA	CST-6
544550	MONTGOMERY CO.	STENNETT	10/1/2014	1455	Flood	5000	10000	IA	CST-6

544552	MONTGOMERY CO.	CLIMAX	10/1/2014	2341	Flood	5000	10000	IA	CST-6
544551	MONTGOMERY CO.	CLIMAX	10/2/2014	330	Flood	5000	10000	IA	CST-6
575062	MONTGOMERY CO.	STENNETT	6/15/2015	1100	Flood	0	25000	IA	CST-6
604748	MONTGOMERY CO.	RED OAK	12/14/2015	630	Flood	0	0	IA	CST-6
632613	MONTGOMERY CO.	RED OAK	5/27/2016	338	Flood	0	0	IA	CST-6
820648	MONTGOMERY CO.	ELLIOTT	3/13/2019	1200	Flood	237000	0	IA	CST-6

Source: NOAA Storm Prediction Center

Hazardous Spills

Location City	Location County	Material Amount And Qty	Material Name	Responsible Party Company Name	Discovered Date
	Montgomery	1 unk	Coal		11/13/2019
	Montgomery	1 unk	Coal	BNSF Railway	11/13/2019
	Montgomery	1500 lbs	Manure		2/16/2015
	Montgomery	1500 lbs	Manure	Natural Fertilizer Services	2/16/2015
	Montgomery	1500 ton	Nitrogen, Liquid		3/11/2024
	Montgomery	1500 ton	Nitrogen, Liquid	New Cooperative Inc.	3/11/2024
	Montgomery	400 gal	Urea fertilizer (liq.)		5/26/2017
	Montgomery	400 gal	Urea fertilizer (liq.)	United Farmers Coop	5/26/2017
	Montgomery	486 lbs	Dry Fertilizer		3/20/2015
	Montgomery	486 lbs	Dry Fertilizer	United Farmers Merchants Coop	3/20/2015
	Montgomery	50 gal	#2 Diesel Fuel		11/6/2024
	Montgomery	50 gal	#2 Diesel Fuel	New Cooperative Inc.	11/6/2024
Elliott	Montgomery	1 Unknown	Manure		10/31/2024
Elliott	Montgomery	100 gal	Waste Water (industrial)		7/23/2014
Elliott	Montgomery	20000 gal	Fertilizer Solution		3/8/2010
Elliott	Montgomery	20000 gal	Fertilizer Solution	C&J Ag Supply	3/8/2010
Grant	Montgomery	1 Unknown	Antifreeze		6/22/2022
Grant	Montgomery	1 Unknown	Engine oil		6/22/2022
Grant	Montgomery	1500 lbs	Ammonia (anhydrous) - Agricultural		11/6/2011

Red Oak	Montgomery	0 unk	contaminated (burned shingles & trash) water runof		4/15/2002
Red Oak	Montgomery	0 unk	contaminated (burned shingles & trash) water runof	Iowa Waste Systems	4/15/2002
Red Oak	Montgomery	1 gal	Manure		9/9/2009
Red Oak	Montgomery	1 gal	Manure		8/16/2010
Red Oak	Montgomery	1 gal	Manure	Flying A Cattle Co.	8/16/2010
Red Oak	Montgomery	1 gal	Manure	Hog Haven	9/9/2009
Red Oak	Montgomery	1 unk	Fuel Oil		2/22/2006
Red Oak	Montgomery	1 unk	Fuel Oil	Eveready Battery	2/22/2006
Red Oak	Montgomery	1 Unknown	Manure Hog		4/28/2015
Red Oak	Montgomery	1 Unknown	Manure Hog	Hog Haven	4/28/2015
Red Oak	Montgomery	1000 gal	wastewater (anaerobic sludge)		10/29/2008
Red Oak	Montgomery	1000 gal	wastewater (anaerobic sludge)	Red Oak	10/29/2008
Red Oak	Montgomery	12 gal	Hydraulic Fluid		10/21/2024
Red Oak	Montgomery	12 gal	Hydraulic Fluid	New Cooperative Inc.	10/21/2024
Red Oak	Montgomery	12 gal	Transformer Oil (Unknown PCB)		2/16/2020
Red Oak	Montgomery	12 gal	Transformer Oil (Unknown PCB)		12/15/2021
Red Oak	Montgomery	12 gal	Transformer Oil (Unknown PCB)	MidAmerican Energy	2/16/2020
Red Oak	Montgomery	12 gal	Transformer Oil (Unknown PCB)	MidAmerican Energy	12/15/2021
Red Oak	Montgomery	15 gal	Manure		1/11/2011
Red Oak	Montgomery	15 gal	Manure	Hog Haven	1/11/2011
Red Oak	Montgomery	15 gal	motor oil, hydraulic oil, small amt of diesel fuel		11/1/2004
Red Oak	Montgomery	15 gal	motor oil, hydraulic oil, small amt of diesel fuel	MidAmerican Energy	11/1/2004
Red Oak	Montgomery	15 gal	Transformer mineral oil		4/19/2002
Red Oak	Montgomery	150 gal	Engine oil		7/20/2011
Red Oak	Montgomery	150 gal	Engine oil	BNSF Railroad	7/20/2011
Red Oak	Montgomery	1560 lbs	Sulfur phosphide		10/21/2024
Red Oak	Montgomery	1560 lbs	Sulfur phosphide	New Cooperative Inc.	10/21/2024

Red Oak	Montgomery	20 gal	Diesel Fuel		6/24/2001
Red Oak	Montgomery	20 gal	Diesel Fuel		4/14/2014
Red Oak	Montgomery	20 gal	Diesel Fuel	Cubby's Convenience Store	4/14/2014
Red Oak	Montgomery	20 gal	Diesel Fuel	MidAmerican Energy	6/24/2001
Red Oak	Montgomery	20 gal	Warden CX Fungicide/Insecticide		4/14/2020
Red Oak	Montgomery	20 gal	Warden CX Fungicide/Insecticide	United Farmers Coop	4/14/2020
Red Oak	Montgomery	21120 lbs	Potash		10/21/2024
Red Oak	Montgomery	21120 lbs	Potash	New Cooperative Inc.	10/21/2024
Red Oak	Montgomery	2500 gal	Diesel Fuel		4/17/2011
Red Oak	Montgomery	2500 gal	Diesel Fuel	BNSF Railroad	4/17/2011
Red Oak	Montgomery	3000 gal	Solvent		7/19/2016
Red Oak	Montgomery	3000 gal	Solvent	Fres-Co	7/19/2016
Red Oak	Montgomery	39 gal	Transformer Oil		4/16/2004
Red Oak	Montgomery	39 gal	Transformer Oil	MidAmerican Energy	4/16/2004
Red Oak	Montgomery	40 gal	#2 Diesel Fuel		9/10/2000
Red Oak	Montgomery	40 gal	#2 Diesel Fuel	K and M King, Inc.	9/10/2000
Red Oak	Montgomery	40 gal	Waste Oil		6/28/2016
Red Oak	Montgomery	40 gal	Waste Oil	Parker Hannifin	6/28/2016
Red Oak	Montgomery	5 gal	Gasoline		11/1/2007
Red Oak	Montgomery	5 gal	Gasoline	Seneca Companies	11/1/2007
Red Oak	Montgomery	55 gal	Cooking oil		9/21/2013
Red Oak	Montgomery	55 gal	Cooking oil	Rainbow Cafe	9/21/2013
Red Oak	Montgomery	6 gal	Ethylene glycol		9/10/2000
Red Oak	Montgomery	6 gal	Ethylene glycol	K and M King, Inc.	9/10/2000
Red Oak	Montgomery	640 lbs	Micro Sinc Supreme		10/21/2024
Red Oak	Montgomery	640 lbs	Micro Sinc Supreme	New Cooperative Inc.	10/21/2024
Red Oak	Montgomery	65 gal	Diesel Fuel		2/3/2003
Red Oak	Montgomery	80 gal	#1 Diesel Fuel		7/18/2021

Red Oak	Montgomery	80 gal	#1 Diesel Fuel	Decker Truck Line, Inc.	7/18/2021
Red Oak	Montgomery	9 gal	Fertilizer		4/28/2015
Red Oak	Montgomery	9 gal	Fertilizer	Montgomery County	4/28/2015
Shenandoah	Montgomery	1 gal	Hydraulic Oil		10/4/2011
Shenandoah	Montgomery	1 gal	Hydraulic Oil	Pella Corporation	10/4/2011
Stanton	Montgomery				6/5/2008
Stanton	Montgomery	1 unk	Monoammonium phosphate		12/1/2023
Stanton	Montgomery	1 unk	Monoammonium phosphate	New Cooperative Inc.	12/1/2023
Stanton	Montgomery	1 unk	Potash		12/1/2023
Stanton	Montgomery	1 unk	Potash	New Cooperative Inc.	12/1/2023
Stanton	Montgomery	1 unk	Sulfur		12/1/2023
Stanton	Montgomery	1 unk	Sulfur	New Cooperative Inc.	12/1/2023
Stanton	Montgomery	1 Unknown	Oil		7/17/2024
Stanton	Montgomery	1 Unknown	Petroleum Products - unknown type		7/17/2024
Stanton	Montgomery	120 gal	Diesel Fuel		12/1/2023
Stanton	Montgomery	120 gal	Diesel Fuel	New Cooperative Inc.	12/1/2023
Stanton	Montgomery	2 qt	Antifreeze		4/2/2024
Stanton	Montgomery	2 qt	Power Steering Fluid		4/2/2024
Stanton	Montgomery	25 gal	Non PCB transformer oil		3/10/2003
Stanton	Montgomery	25 gal	Non PCB transformer oil	SW Iowa Coop	3/10/2003
Stanton	Montgomery	30 gal	Antifreeze		12/1/2023
Stanton	Montgomery	30 gal	Antifreeze	New Cooperative Inc.	12/1/2023
Stanton	Montgomery	40 gal	Waste Oil		8/13/2008
Stanton	Montgomery	40 gal	Waste Oil	Stanton Service	8/13/2008
Villisca	Montgomery	1 gal	Gasoline		9/27/2007
Villisca	Montgomery	1 gal	Gasoline	A.C. Gridley, Inc.	9/27/2007
Villisca	Montgomery	1 ton	Soybeans		9/27/2007
Villisca	Montgomery	1 ton	Soybeans	A.C. Gridley, Inc.	9/27/2007

Villisca	Montgomery	1 Unknown	#1 Diesel Fuel		9/17/2022
Villisca	Montgomery	1 Unknown	#1 Diesel Fuel	Dhaliwal Brothers Trucking	9/17/2022
Villisca	Montgomery	1 Unknown	Anhydrous Ammonia - Ag related		10/14/2014
Villisca	Montgomery	1 Unknown	Anhydrous Ammonia - Ag related	United Farmers Merchants Coop	10/14/2014
Villisca	Montgomery	1 Unknown	Antifreeze		9/17/2022
Villisca	Montgomery	1 Unknown	Antifreeze	Dhaliwal Brothers Trucking	9/17/2022
Villisca	Montgomery	1 Unknown	Oil		9/17/2022
Villisca	Montgomery	1 Unknown	Oil	Dhaliwal Brothers Trucking	9/17/2022
Villisca	Montgomery	1 Unknown	Waste Water (industrial)		3/14/2016
Villisca	Montgomery	1 Unknown	Waste Water (industrial)	Forsman Farms	3/14/2016
Villisca	Montgomery	10 qt	2,4-D		5/14/2001
Villisca	Montgomery	10 qt	2,4-D	Villisca Elevator	5/14/2001
Villisca	Montgomery	1000 gal	28% nitrogen fertilizer		5/14/2001
Villisca	Montgomery	1000 gal	28% nitrogen fertilizer	Villisca Elevator	5/14/2001
Villisca	Montgomery	1500 gal	Urea Ammonium Nitrate (UAN)		7/31/2015
Villisca	Montgomery	1500 gal	Urea Ammonium Nitrate (UAN)	United Farmers Mercantile Cooperative	7/31/2015
Villisca	Montgomery	18 gal	Bicep Magnum 2		5/14/2001
Villisca	Montgomery	18 gal	Bicep Magnum 2	Villisca Elevator	5/14/2001

Source: Iowa DNR

Extreme Heat

EVENT_ID	CZ_NAME_STR	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	DEATHS_DIRECT	INJURIES_DIRECT	DAMAGE_PROPERTY_NUM	DAMAGE_CROPS_NUM	STATE_ABBR
571104 9	MONTGOMERY (ZONE)	7/19/1999	1	Heat	0	0	0	0	IA
525895 1	MONTGOMERY (ZONE)	7/28/2001	1800	Heat	0	0	0	0	IA
526312 1	MONTGOMERY (ZONE)	8/1/2001	0	Heat	0	0	0	0	IA
546782 9	MONTGOMERY (ZONE)	7/22/2005	1100	Heat	0	0	0	0	IA
167848	MONTGOMERY (ZONE)	6/22/2009	1300	Excessive Heat	0	0	0	0	IA
237832	MONTGOMERY (ZONE)	6/26/2010	1400	Heat	0	0	0	0	IA
236819	MONTGOMERY (ZONE)	7/14/2010	1100	Heat	0	0	0	0	IA

236776	MONTGOMERY (ZONE)	7/17/2010	1200	Heat	0	0	0	0	IA
237505	MONTGOMERY (ZONE)	7/22/2010	1300	Heat	0	0	0	0	IA
243561	MONTGOMERY (ZONE)	8/2/2010	1300	Heat	0	0	0	0	IA
241343	MONTGOMERY (ZONE)	8/8/2010	1200	Excessive Heat	0	0	0	0	IA
305998	MONTGOMERY (ZONE)	6/30/2011	1400	Heat	0	0	0	0	IA
310257	MONTGOMERY (ZONE)	7/10/2011	1300	Heat	0	0	0	0	IA
312000	MONTGOMERY (ZONE)	7/15/2011	1200	Excessive Heat	0	0	0	0	IA
317792	MONTGOMERY (ZONE)	7/27/2011	1300	Heat	0	0	0	0	IA
319217	MONTGOMERY (ZONE)	8/1/2011	0	Excessive Heat	0	0	0	0	IA
380767	MONTGOMERY (ZONE)	6/27/2012	1400	Heat	0	0	0	0	IA
381346	MONTGOMERY (ZONE)	7/3/2012	1300	Excessive Heat	0	0	0	0	IA
385716	MONTGOMERY (ZONE)	7/17/2012	1400	Heat	0	0	0	0	IA
1123383	MONTGOMERY (ZONE)	7/28/2023	1330	Excessive Heat	0	0	0	0	IA
1129611	MONTGOMERY (ZONE)	8/19/2023	1200	Excessive Heat	0	0	0	0	IA
1198864	MONTGOMERY (ZONE)	6/24/2024	1200	Heat	0	0	0	0	IA
1198867	MONTGOMERY (ZONE)	6/25/2024	1300	Heat	0	0	0	0	IA
1206694	MONTGOMERY (ZONE)	7/15/2024	1200	Excessive Heat	0	0	0	0	IA
1206738	MONTGOMERY (ZONE)	7/31/2024	1400	Excessive Heat	0	0	0	0	IA
1206737	MONTGOMERY (ZONE)	7/31/2024	1525	Excessive Heat	0	0	0	0	IA
1208243	MONTGOMERY (ZONE)	8/25/2024	1355	Excessive Heat	0	0	0	0	IA

Source: NOAA Storm Prediction Center

Thunderstorm/Lightning/Hail

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	MAGNITUDE
10018139	MONTGOMERY CO.		8/4/1959	1300	Thunderstorm Wind	0
10012363	MONTGOMERY CO.		6/26/1969	1250	Thunderstorm Wind	0
10011258	MONTGOMERY CO.		6/17/1970	910	Hail	2
10011320	MONTGOMERY CO.		8/2/1970	2155	Thunderstorm Wind	0
10012416	MONTGOMERY CO.		6/6/1971	2000	Thunderstorm Wind	0
10013575	MONTGOMERY CO.		9/4/1971	830	Hail	0.87
10014677	MONTGOMERY CO.		7/6/1972	1910	Hail	1
10013029	MONTGOMERY CO.		7/2/1973	0	Thunderstorm Wind	0
10014494	MONTGOMERY CO.		5/7/1974	1920	Hail	1.75

10015365	MONTGOMERY CO.		5/13/1974	1630	Hail	1.75
10013781	MONTGOMERY CO.		12/14/1975	30	Thunderstorm Wind	0
10014911	MONTGOMERY CO.		5/28/1976	1900	Hail	1
10011308	MONTGOMERY CO.		6/13/1976	2130	Hail	1
10014865	MONTGOMERY CO.		4/11/1981	2025	Hail	1.5
10011798	MONTGOMERY CO.		6/14/1981	1920	Thunderstorm Wind	0
10015192	MONTGOMERY CO.		9/17/1982	810	Hail	1
10012989	MONTGOMERY CO.		9/6/1983	315	Thunderstorm Wind	80
10012990	MONTGOMERY CO.		9/6/1983	325	Hail	1.75
10012991	MONTGOMERY CO.		9/6/1983	345	Hail	1
10018257	MONTGOMERY CO.		5/11/1985	1700	Thunderstorm Wind	74
10015545	MONTGOMERY CO.		9/22/1986	1350	Hail	1.75
10012048	MONTGOMERY CO.		6/16/1987	1600	Thunderstorm Wind	50
10012049	MONTGOMERY CO.		6/16/1987	1740	Hail	2.75
10028370	MONTGOMERY CO.		9/5/1987	1657	Thunderstorm Wind	50
10025514	MONTGOMERY CO.		8/22/1988	1230	Thunderstorm Wind	50
10027262	MONTGOMERY CO.		4/27/1989	2030	Thunderstorm Wind	50
10027263	MONTGOMERY CO.		4/27/1989	2035	Thunderstorm Wind	50
10028661	MONTGOMERY CO.		6/14/1991	1930	Thunderstorm Wind	50
10025281	MONTGOMERY CO.		6/15/1991	230	Thunderstorm Wind	50
10154637	MONTGOMERY CO.		7/29/1992	2143	Hail	1
10154640	MONTGOMERY CO.		7/29/1992	2200	Hail	1.5
10323944	MONTGOMERY CO.	Red Oak	4/19/1993	215	Hail	0.75
10323945	MONTGOMERY CO.	Grant	6/12/1994	2302	Thunderstorm Wind	69
10323946	MONTGOMERY CO.	Red Oak	6/25/1994	1745	Hail	0.75
10323947	MONTGOMERY CO.	Red Oak	6/25/1994	1800	Hail	0.88
10323948	MONTGOMERY CO.	Red Oak	7/1/1994	2027	Thunderstorm Wind	52
10323949	MONTGOMERY CO.	Stanton	7/24/1995	1720	Hail	1.75
10324014	MONTGOMERY CO.	Stanton	7/24/1995	1800	Hail	1
10324015	MONTGOMERY CO.	Tenville	7/24/1995	1800	Hail	1
5562056	MONTGOMERY CO.	COBURG	6/23/1996	1600	Thunderstorm Wind	70
5557018	MONTGOMERY CO.	RED OAK	7/22/1996	1215	Thunderstorm Wind	52
5566139	MONTGOMERY CO.	RED OAK	8/19/1996	1451	Hail	1.75
5563907	MONTGOMERY CO.	WALES	9/10/1996	1745	Hail	1
5612560	MONTGOMERY CO.	RED OAK MUNI ARPT	6/21/1997	45	Thunderstorm Wind	53
5612573	MONTGOMERY CO.	RED OAK	6/21/1997	110	Thunderstorm Wind	53
5651292	MONTGOMERY CO.	RED OAK MUNI ARPT	6/14/1998	12	Thunderstorm Wind	50
5695847	MONTGOMERY CO.	COBURG	4/8/1999	532	Hail	0.75
5714550	MONTGOMERY CO.	WALES	8/7/1999	15	Thunderstorm Wind	52
5717672	MONTGOMERY CO.	WALES	9/7/1999	1715	Hail	0.75
5717673	MONTGOMERY CO.	ELLIOTT	9/7/1999	1805	Hail	0.88
5717678	MONTGOMERY CO.	WALES	9/7/1999	2000	Hail	0.75
5717679	MONTGOMERY CO.	VILLISCA	9/7/1999	2030	Hail	1.75

5145728	MONTGOMERY CO.	WALES	5/12/2000	40	Hail	0.75
5151267	MONTGOMERY CO.	GRANT	6/13/2000	1620	Thunderstorm Wind	60
5152729	MONTGOMERY CO.	COBURG	6/25/2000	1550	Thunderstorm Wind	60
5240748	MONTGOMERY CO.	RED OAK	4/5/2001	1207	Hail	0.75
5239520	MONTGOMERY CO.	ELLIOTT	4/20/2001	2156	Thunderstorm Wind	60
5245590	MONTGOMERY CO.	GRANT	5/13/2001	715	Hail	0.88
5254095	MONTGOMERY CO.	ELLIOTT	6/1/2001	1359	Hail	1
5254267	MONTGOMERY CO.	RED OAK	6/18/2001	19	Thunderstorm Wind	55
5258827	MONTGOMERY CO.	VILLISCA	7/17/2001	2316	Thunderstorm Wind	55
5268581	MONTGOMERY CO.	ELLIOTT	9/20/2001	1010	Hail	0.88
5268582	MONTGOMERY CO.	WALES	9/20/2001	1020	Hail	0.75
5268585	MONTGOMERY CO.	RED OAK	9/20/2001	1040	Hail	2.5
5268586	MONTGOMERY CO.	STANTON	9/20/2001	1103	Hail	1.75
5292033	MONTGOMERY CO.	VILLISCA	4/18/2002	1609	Hail	0.88
5304013	MONTGOMERY CO.	RED OAK	6/18/2002	715	Hail	0.75
5314992	MONTGOMERY CO.	VILLISCA	8/12/2002	1910	Hail	0.88
5318939	MONTGOMERY CO.	RED OAK	10/1/2002	1825	Thunderstorm Wind	50
5357423	MONTGOMERY CO.	RED OAK	5/4/2003	1659	Hail	0.75
5357191	MONTGOMERY CO.	RED OAK	5/29/2003	1830	Hail	0.75
5334903	MONTGOMERY CO.	ELLIOTT	7/5/2003	1545	Hail	1
5334904	MONTGOMERY CO.	ELLIOTT	7/5/2003	1715	Hail	2.75
5334906	MONTGOMERY CO.	RED OAK	7/5/2003	1715	Hail	1.75
5334907	MONTGOMERY CO.	RED OAK	7/5/2003	1752	Hail	1.25
5334909	MONTGOMERY CO.	VILLISCA	7/5/2003	1845	Hail	1.25
5334242	MONTGOMERY CO.	ELLIOTT	7/9/2003	1610	Hail	0.88
5332949	MONTGOMERY CO.	ELLIOTT	8/10/2003	1900	Thunderstorm Wind	50
5375224	MONTGOMERY CO.	ELLIOTT	8/10/2003	1900	Hail	0.75
5395228	MONTGOMERY CO.	RED OAK	5/17/2004	1617	Hail	1.25
5395219	MONTGOMERY CO.	RED OAK	5/17/2004	1632	Hail	1
5395233	MONTGOMERY CO.	VILLISCA	5/17/2004	1710	Hail	1
5422124	MONTGOMERY CO.	RED OAK	8/3/2004	1950	Thunderstorm Wind	55
5422125	MONTGOMERY CO.	RED OAK	8/3/2004	2030	Thunderstorm Wind	50
5422126	MONTGOMERY CO.	STANTON	8/3/2004	2105	Thunderstorm Wind	60
5442906	MONTGOMERY CO.	RED OAK	4/19/2005	443	Hail	0.75
5479061	MONTGOMERY CO.	RED OAK	9/13/2005	1050	Hail	0.75
5495999	MONTGOMERY CO.	RED OAK	3/30/2006	1642	Hail	0.75
5515363	MONTGOMERY CO.	STANTON	6/19/2006	50	Hail	1
5515365	MONTGOMERY CO.	ELLIOTT	6/19/2006	100	Hail	0.88
5515367	MONTGOMERY CO.	ELLIOTT	6/19/2006	225	Hail	0.88
5515502	MONTGOMERY CO.	COBURG	6/27/2006	1635	Hail	0.75
5523948	MONTGOMERY CO.	RED OAK	7/13/2006	1545	Thunderstorm Wind	50
23120	MONTGOMERY CO.	RED OAK	5/23/2007	1410	Hail	1
23122	MONTGOMERY CO.	STANTON	5/23/2007	1440	Hail	0.75

40055	MONTGOMERY CO.	RED OAK	8/12/2007	1730	Thunderstorm Wind	50
41825	MONTGOMERY CO.	RED OAK	8/20/2007	1940	Thunderstorm Wind	53
41819	MONTGOMERY CO.	VILLISCA	8/20/2007	2005	Thunderstorm Wind	52
48127	MONTGOMERY CO.	VILLISCA	9/6/2007	2230	Thunderstorm Wind	75
97126	MONTGOMERY CO.	RED OAK	6/4/2008	1828	Thunderstorm Wind	55
96038	MONTGOMERY CO.	RED OAK	6/4/2008	1830	Hail	0.75
96039	MONTGOMERY CO.	STANTON	6/4/2008	1850	Hail	1.75
116119	MONTGOMERY CO.	VILLISCA	6/4/2008	1908	Thunderstorm Wind	55
97117	MONTGOMERY CO.	TENVILLE	6/4/2008	2340	Hail	1
99459	MONTGOMERY CO.	WALES	6/20/2008	1715	Hail	0.75
99460	MONTGOMERY CO.	RED OAK	6/20/2008	1752	Hail	0.75
99461	MONTGOMERY CO.	COBURG	6/20/2008	1810	Hail	0.75
100786	MONTGOMERY CO.	ELLIOTT	6/27/2008	1650	Thunderstorm Wind	52
127807	MONTGOMERY CO.	ELLIOTT	9/23/2008	2049	Hail	0.75
154285	MONTGOMERY CO.	STANTON	3/23/2009	1845	Hail	1
154293	MONTGOMERY CO.	STANTON	3/23/2009	1900	Thunderstorm Wind	60
156120	MONTGOMERY CO.	WALES	4/24/2009	1755	Hail	1
156376	MONTGOMERY CO.	RED OAK	4/26/2009	1540	Thunderstorm Wind	55
157617	MONTGOMERY CO.	COBURG	5/6/2009	1625	Hail	1
167536	MONTGOMERY CO.	STANTON	6/23/2009	1722	Thunderstorm Wind	52
167708	MONTGOMERY CO.	RED OAK	6/24/2009	1445	Thunderstorm Wind	56
167709	MONTGOMERY CO.	STANTON	6/24/2009	1510	Thunderstorm Wind	52
223743	MONTGOMERY CO.	RED OAK	6/5/2010	135	Thunderstorm Wind	51
232542	MONTGOMERY CO.	ELLIOTT	6/18/2010	810	Thunderstorm Wind	50
232536	MONTGOMERY CO.	ELLIOTT	6/18/2010	820	Hail	0.88
280413	MONTGOMERY CO.	RED OAK	3/22/2011	1556	Hail	1.75
290870	MONTGOMERY CO.	STANTON	5/11/2011	1120	Heavy Rain	
297873	MONTGOMERY CO.	STANTON	6/9/2011	240	Hail	1
299731	MONTGOMERY CO.	RED OAK	6/10/2011	0	Heavy Rain	
302607	MONTGOMERY CO.	HAWTHORNE	6/20/2011	2024	Thunderstorm Wind	52
322597	MONTGOMERY CO.	COBURG	8/6/2011	2010	Thunderstorm Wind	52
326040	MONTGOMERY CO.	RED OAK	8/18/2011	1655	Thunderstorm Wind	56
326041	MONTGOMERY CO.	WALLIN	8/18/2011	1703	Hail	2.75
334993	MONTGOMERY CO.	STANTON	8/18/2011	1703	Thunderstorm Wind	60
335050	MONTGOMERY CO.	VILLISCA	8/18/2011	1705	Hail	1.75
334997	MONTGOMERY CO.	VILLISCA	8/18/2011	1705	Thunderstorm Wind	55
363570	MONTGOMERY CO.	MC PHERSON	3/29/2012	1913	Hail	1
366382	MONTGOMERY CO.	RED OAK	4/14/2012	1300	Heavy Rain	
366380	MONTGOMERY CO.	COBURG	4/14/2012	1332	Hail	1.75
366381	MONTGOMERY CO.	GRANT	4/14/2012	1350	Hail	1
366400	MONTGOMERY CO.	RED OAK MUNI ARPT	4/14/2012	1710	Thunderstorm Wind	68
375893	MONTGOMERY CO.	RED OAK	6/10/2012	1900	Heavy Rain	
386284	MONTGOMERY CO.	STENNETT	7/26/2012	1553	Hail	1.75

386285	MONTGOMERY CO.	STENNETT	7/26/2012	1555	Hail	1
386286	MONTGOMERY CO.	RED OAK	7/26/2012	1612	Hail	1
440838	MONTGOMERY CO.	VILLISCA	5/19/2013	1606	Hail	1
444289	MONTGOMERY CO.	WALLIN	5/26/2013	1830	Hail	1.25
447980	MONTGOMERY CO.	MC PHERSON	6/24/2013	530	Thunderstorm Wind	64
473039	MONTGOMERY CO.	RED OAK	10/4/2013	1900	Thunderstorm Wind	52
500983	MONTGOMERY CO.	RED OAK	4/12/2014	1914	Hail	3
501631	MONTGOMERY CO.	RED OAK	4/12/2014	1942	Hail	1.75
501630	MONTGOMERY CO.	ELLIOTT	4/13/2014	1907	Hail	1.75
506868	MONTGOMERY CO.	RED OAK	5/11/2014	2130	Hail	1.75
528417	MONTGOMERY CO.	WALES	6/3/2014	1622	Thunderstorm Wind	52
528420	MONTGOMERY CO.	MC PHERSON	6/3/2014	1622	Thunderstorm Wind	72
528434	MONTGOMERY CO.	RED OAK	6/3/2014	1832	Thunderstorm Wind	52
518440	MONTGOMERY CO.	RED OAK	7/7/2014	1730	Hail	0.88
566247	MONTGOMERY CO.	WALES	5/7/2015	1545	Hail	1.25
587911	MONTGOMERY CO.	GRANT	8/2/2015	1715	Hail	1
587912	MONTGOMERY CO.	GRANT	8/2/2015	1715	Hail	1
602061	MONTGOMERY CO.	RED OAK	11/11/2015	1344	Thunderstorm Wind	55
622295	MONTGOMERY CO.	WALLIN	4/27/2016	1425	Hail	1
641617	MONTGOMERY CO.	VILLISCA	7/7/2016	250	Thunderstorm Wind	65
643928	MONTGOMERY CO.	RED OAK	7/18/2016	10	Thunderstorm Wind	52
643929	MONTGOMERY CO.	VILLISCA	7/18/2016	30	Thunderstorm Wind	52
676405	MONTGOMERY CO.	RED OAK	3/6/2017	1722	Thunderstorm Wind	52
709091	MONTGOMERY CO.	GRANT	6/16/2017	2005	Thunderstorm Wind	56
710262	MONTGOMERY CO.	STANTON	6/29/2017	1754	Hail	1
751771	MONTGOMERY CO.	WALES	4/13/2018	1511	Hail	2
751788	MONTGOMERY CO.	VILLISCA	4/13/2018	1746	Hail	0.75
762121	MONTGOMERY CO.	WALES	5/29/2018	1540	Heavy Rain	
762115	MONTGOMERY CO.	STANTON	5/29/2018	1550	Thunderstorm Wind	56
762119	MONTGOMERY CO.	WALES	5/29/2018	1620	Thunderstorm Wind	52
762110	MONTGOMERY CO.	WALES	5/29/2018	1640	Hail	0.88
771254	MONTGOMERY CO.	COBURG	6/11/2018	1828	Thunderstorm Wind	52
771260	MONTGOMERY CO.	RED OAK	6/11/2018	1838	Thunderstorm Wind	50
774348	MONTGOMERY CO.	WALES	9/1/2018	522	Hail	1.25
774362	MONTGOMERY CO.	RED OAK MUNI ARPT	9/1/2018	2030	Thunderstorm Wind	55
774363	MONTGOMERY CO.	RED OAK	9/1/2018	2035	Thunderstorm Wind	56
815207	MONTGOMERY CO.	RED OAK	5/24/2019	732	Heavy Rain	
816609	MONTGOMERY CO.	WALLIN	5/24/2019	735	Heavy Rain	
815208	MONTGOMERY CO.	RED OAK	5/24/2019	742	Heavy Rain	
835541	MONTGOMERY CO.	GRANT	6/25/2019	2010	Hail	1.25
929231	MONTGOMERY CO.	STANTON	3/19/2020	1532	Hail	1.75
877683	MONTGOMERY CO.	STANTON	3/19/2020	1536	Hail	3
929232	MONTGOMERY CO.	STANTON	3/19/2020	1536	Hail	1.75

929233	MONTGOMERY CO.	VILLISCA	3/19/2020	1545	Hail	2
929234	MONTGOMERY CO.	TENVILLE	3/19/2020	1548	Hail	1
883028	MONTGOMERY CO.	RED OAK	3/19/2020	1553	Hail	2
883037	MONTGOMERY CO.	RED OAK	3/19/2020	1659	Hail	1.25
900013	MONTGOMERY CO.	RED OAK	6/9/2020	2015	Thunderstorm Wind	52
900015	MONTGOMERY CO.	WALES	6/9/2020	2016	Thunderstorm Wind	52
923601	MONTGOMERY CO.	RED OAK	10/11/2020	2210	Thunderstorm Wind	52
954804	MONTGOMERY CO.	GRANT	6/18/2021	2300	Hail	2
1006274	MONTGOMERY CO.	RED OAK	3/29/2022	1815	Thunderstorm Wind	61
1037029	MONTGOMERY CO.	WALES	6/14/2022	2340	Thunderstorm Wind	61
1037031	MONTGOMERY CO.	ELLIOTT	6/14/2022	2346	Thunderstorm Wind	61
1045949	MONTGOMERY CO.	RED OAK	8/27/2022	1729	Thunderstorm Wind	52
1052860	MONTGOMERY CO.	STANTON	9/17/2022	1830	Hail	1
1052861	MONTGOMERY CO.	RED OAK	9/17/2022	1830	Hail	1
1052862	MONTGOMERY CO.	STANTON	9/17/2022	1842	Hail	1.75
1052863	MONTGOMERY CO.	STANTON	9/17/2022	1843	Hail	1.75
1052865	MONTGOMERY CO.	STANTON	9/17/2022	1845	Hail	2.5
1052866	MONTGOMERY CO.	ELLIOTT	9/17/2022	1930	Hail	1.75
1052870	MONTGOMERY CO.	GRANT	9/17/2022	2122	Hail	1
1089220	MONTGOMERY CO.	RED OAK MUNI ARPT	4/14/2023	2114	Thunderstorm Wind	55
1097125	MONTGOMERY CO.	STANTON	5/7/2023	1941	Hail	1
1097127	MONTGOMERY CO.	STANTON	5/7/2023	2003	Hail	1
1107741	MONTGOMERY CO.	STENNETT	6/29/2023	722	Thunderstorm Wind	54
1111563	MONTGOMERY CO.	VILLISCA	7/12/2023	615	Thunderstorm Wind	56
1166176	MONTGOMERY CO.	ELLIOTT	4/30/2024	1505	Hail	1.75
1166177	MONTGOMERY CO.	WALES	4/30/2024	1513	Thunderstorm Wind	61
1166178	MONTGOMERY CO.	GRANT	4/30/2024	1526	Hail	1
1181071	MONTGOMERY CO.	RED OAK	5/21/2024	1332	Hail	1.25
1181288	MONTGOMERY CO.	WALES	5/24/2024	219	Thunderstorm Wind	60
1181290	MONTGOMERY CO.	ELLIOTT	5/24/2024	226	Thunderstorm Wind	50
1181291	MONTGOMERY CO.	ELLIOTT	5/24/2024	230	Thunderstorm Wind	65
1181292	MONTGOMERY CO.	VILLISCA	5/24/2024	237	Thunderstorm Wind	58
1206683	MONTGOMERY CO.	GRANT	7/10/2024	1322	Hail	1
1206684	MONTGOMERY CO.	COBURG	7/10/2024	1442	Hail	1
1206731	MONTGOMERY CO.	WALES	7/31/2024	1729	Thunderstorm Wind	51

Source: NOAA Storm Prediction Center

Tornado

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	MAGNITUDE	TOR_F_SCALE	DEATHS_DIRECT	INJURIES_DIRECT	DAMAGE_PROPERTY_NUM
10017010	MONTGOMERY CO.		5/8/1950	1920	Tornado	0	F2	0	0	0
10017053	MONTGOMERY CO.		6/27/1953	1645	Tornado	0	F1	0	0	25000

1001 9194	MONTGOM ERY CO.		4/25/1 957	1130	Tornad o	0	F0	0	0	25000
1001 9209	MONTGOM ERY CO.		5/25/1 957	2315	Tornad o	0	F0	0	0	25000
1001 9287	MONTGOM ERY CO.		5/4/19 59	2120	Tornad o	0	F1	0	0	25000
1001 9300	MONTGOM ERY CO.		5/10/1 959	1430	Tornad o	0	F2	0	0	2500
1001 5888	MONTGOM ERY CO.		8/6/19 60	2230	Tornad o	0	F1	0	0	0
1001 4407	MONTGOM ERY CO.		4/12/1 964	1650	Tornad o	0	F2	0	0	25000
1001 4413	MONTGOM ERY CO.		4/20/1 964	2200	Tornad o	0	F2	0	1	250000
1001 4511	MONTGOM ERY CO.		5/13/1 974	1630	Tornad o	0	F3	0	0	250000
1001 1749	MONTGOM ERY CO.		5/23/1 981	1432	Tornad o	0	F0	0	0	0
1001 5220	MONTGOM ERY CO.		5/1/19 83	1340	Tornad o	0	F1	0	0	250000
1001 4357	MONTGOM ERY CO.		5/20/1 987	2245	Tornad o	0	F1	0	0	250000
1001 4366	MONTGOM ERY CO.		5/26/1 987	1535	Tornad o	0	F0	0	0	25000
1002 6312	MONTGOM ERY CO.		7/25/1 990	1930	Tornad o	0	F0	0	0	250000
5695 942	MONTGOM ERY CO.	RED OAK	4/8/19 99	1338	Tornad o		F1	0	0	45000
5695 944	MONTGOM ERY CO.	VILLISCA	4/8/19 99	1354	Tornad o		F0	0	0	10000
5151 260	MONTGOM ERY CO.	COBURG	6/13/2 000	1526	Tornad o		F0	0	0	0
2027 2	MONTGOM ERY CO.	RED OAK	5/5/20 07	1940	Tornad o		EF2	0	0	0
3664 2	MONTGOM ERY CO.	STANTON	5/6/20 07	121	Tornad o		EF1	0	0	0
1552 37	MONTGOM ERY CO.	VILLISCA	3/23/2 009	1852	Tornad o		EF0	0	0	0
1552 36	MONTGOM ERY CO.	TENVILLE	3/23/2 009	1856	Tornad o		EF0	0	0	0
6243 18	MONTGOM ERY CO.	STANTON	4/27/2 016	1414	Tornad o		EF1	0	0	0
8615 54	MONTGOM ERY CO.	RED OAK	10/1/2 019	1425	Tornad o		EFU	0	0	0
1003 859	MONTGOM ERY CO.	HAWTHOR NE	3/5/20 22	1502	Tornad o		EF0	0	0	0
1181 075	MONTGOM ERY CO.	COBURG	5/21/2 024	610	Tornad o		EF0	0	0	0
1181 077	MONTGOM ERY CO.	RED OAK MUNI ARPT	5/21/2 024	1335	Tornad o		EF1	0	0	0
1188 213	MONTGOM ERY CO.	VILLISCA	5/21/2 024	1350	Tornad o		EF2	0	0	0
1181 302	MONTGOM ERY CO.	WALES	5/24/2 024	210	Tornad o		EF0	0	0	0
1188 228	MONTGOM ERY CO.	ELLIOTT	5/24/2 024	222	Tornad o		EF0	0	0	0

Source: NOAA Storm Prediction Center

Winter Weather

EVENT_ID	CZ_NAME_STR	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE
5542977	MONTGOMERY (ZONE)	3/24/1996	1700	Blizzard
5573225	MONTGOMERY (ZONE)	11/14/1996	1400	Winter Storm
5590567	MONTGOMERY (ZONE)	2/26/1997	1500	Winter Storm
5594755	MONTGOMERY (ZONE)	4/11/1997	600	Winter Storm
5634305	MONTGOMERY (ZONE)	3/7/1998	1600	Winter Storm
5688863	MONTGOMERY (ZONE)	2/22/1999	500	Winter Storm
5692872	MONTGOMERY (ZONE)	3/8/1999	0	Winter Storm
5167827	MONTGOMERY (ZONE)	12/10/2000	1900	Winter Storm
5167723	MONTGOMERY (ZONE)	12/16/2000	200	Winter Storm
5231943	MONTGOMERY (ZONE)	2/8/2001	1400	Winter Storm
5232076	MONTGOMERY (ZONE)	2/23/2001	1300	Winter Storm
5278736	MONTGOMERY (ZONE)	1/30/2002	1200	Winter Storm
5338587	MONTGOMERY (ZONE)	1/15/2003	1600	Winter Storm
5343654	MONTGOMERY (ZONE)	2/14/2003	1730	Winter Storm
5330592	MONTGOMERY (ZONE)	12/9/2003	1000	Winter Storm
5381247	MONTGOMERY (ZONE)	1/3/2004	2300	Winter Storm
5381357	MONTGOMERY (ZONE)	1/25/2004	500	Winter Storm
5384619	MONTGOMERY (ZONE)	2/1/2004	0	Winter Storm
5384652	MONTGOMERY (ZONE)	2/5/2004	0	Winter Storm
5433039	MONTGOMERY (ZONE)	1/4/2005	1400	Winter Storm
5496094	MONTGOMERY (ZONE)	3/21/2006	400	Winter Storm
10822	MONTGOMERY (ZONE)	3/1/2007	600	Blizzard
10852	MONTGOMERY (ZONE)	3/2/2007	900	Blizzard
61884	MONTGOMERY (ZONE)	12/1/2007	400	Ice Storm
138999	MONTGOMERY (ZONE)	12/18/2008	1800	Winter Storm
200619	MONTGOMERY (ZONE)	12/7/2009	2300	Winter Storm
200629	MONTGOMERY (ZONE)	12/8/2009	2300	Blizzard
202626	MONTGOMERY (ZONE)	12/24/2009	200	Winter Storm
202665	MONTGOMERY (ZONE)	12/24/2009	2200	Blizzard
202736	MONTGOMERY (ZONE)	1/6/2010	730	Winter Storm
202744	MONTGOMERY (ZONE)	1/6/2010	2100	Winter Weather
265150	MONTGOMERY (ZONE)	12/11/2010	1100	Winter Weather
267244	MONTGOMERY (ZONE)	1/9/2011	800	Winter Weather
270529	MONTGOMERY (ZONE)	1/31/2011	800	Winter Storm
270581	MONTGOMERY (ZONE)	2/1/2011	0	Winter Storm
356324	MONTGOMERY (ZONE)	2/4/2012	0	Winter Storm
431478	MONTGOMERY (ZONE)	3/10/2013	1600	Winter Weather
481158	MONTGOMERY (ZONE)	12/21/2013	2300	Winter Weather
486833	MONTGOMERY (ZONE)	2/4/2014	1000	Winter Weather
550830	MONTGOMERY (ZONE)	1/31/2015	1400	Winter Storm

552126	MONTGOMERY (ZONE)	2/1/2015	0	Winter Storm
786751	MONTGOMERY (ZONE)	11/25/2018	635	Blizzard
801478	MONTGOMERY (ZONE)	1/12/2019	725	Winter Storm
801482	MONTGOMERY (ZONE)	1/22/2019	0	Winter Storm
805216	MONTGOMERY (ZONE)	2/19/2019	1800	Winter Weather
808681	MONTGOMERY (ZONE)	2/23/2019	1200	Blizzard
877560	MONTGOMERY (ZONE)	4/16/2020	1300	Winter Storm
928366	MONTGOMERY (ZONE)	12/29/2020	400	Winter Storm
934501	MONTGOMERY (ZONE)	1/15/2021	0	Blizzard
934502	MONTGOMERY (ZONE)	1/15/2021	100	Blizzard
934597	MONTGOMERY (ZONE)	1/25/2021	700	Winter Storm
1067714	MONTGOMERY (ZONE)	12/21/2022	1400	Winter Weather
1081982	MONTGOMERY (ZONE)	2/16/2023	230	Winter Storm
1158335	MONTGOMERY (ZONE)	1/8/2024	700	Winter Storm
1158415	MONTGOMERY (ZONE)	1/11/2024	1800	Winter Storm

Source: NOAA Storm Prediction Center

Appendix E: Section V Appendices

Local Capabilities

Montgomery County

	Date/Time	Location
Council Meetings	Every Tuesday/8:30a.m.	Montgomery County Courthouse

Utilities and Services

Service	Provider
Electricity	MidAmerican Energy, Southwest Iowa REC
Gas	MidAmerican Energy, Alliant Energy
Water	Municipal City, Southwest Iowa Rural Water
Phone Services	Multiple Available
Law Enforcement	Montgomery County Sheriff's Office, Red Oak Police Department
Fire Protection	Local Fire Departments
Cable/Internet	Multiple Available
Warning System	Montgomery County AlertIowa Mass Notification System
HAZMAT Assistance	Local Fire Departments, Environmental Solutions, Inc
Gas/Fuel	Multiple Available
Grocery/Convenience Store	Multiple Available
Trash Service	Multiple Available
Landfill	Iowa Waste Systems, Inc. – Montgomery County Transfer Station

Library	Municipal City
Recycling	Multiple Available
Public Transit	SWITA
Emergency Medical Services	Local EMS Agencies
Medical Clinic/Hospital	Montgomery County Memorial Hospital
Tornado Shelter	N/A

Plans/Ordinances

	Yes/No	Year Approved	Comments
Comprehensive/land use Plan	Yes	12/2024	
Capital Improvement Plan	Yes	Yearly	5 Year Plan
Local Emergency Plan	Yes	2010	Updated Annually
Economic Development Plan	Yes		Montgomery County Economic Development Committee
Transportation Plan	Yes		SWIPCO
Flood Mitigation Assistance Plan	No		
Zoning Ordinance	Yes		
Restricted Residential District Ordinance	No		
Subdivisions Ordinance	No		
Floodplain Ordinance	No		
Building Permit Ordinance	Yes	1991	
Building Codes	No		
Tree Trimming Ordinance	No		
Nuisance Ordinance	No		
Storm Water Ordinance	No		
Drainage Ordinance	No		
Historic Preservation Ordinance	No		

	Yes/No	If yes, with who?
Mutual Aid Agreements	Yes	Multiple Agreements (i.e. Fire Protection, Emergency Services, Mental Health Transportation, Housing, etc.).
NFIP Participant	No	

Boards/Staff/Departments

	Yes/No	Title	Comments
Building Code Official	No		
Building Inspector	No		

Public Works Official	Yes	County Engineer	
NFIP Floodplain Administrator	No		
Zoning Commission	Yes	Zoning Administrator	
Board of Adjustments	Yes		
Nuisance Abatement Official	No		

Elliott

	Date/Time	Location
Council Meetings	2nd Monday of the month @6:30 pm	Elliott Community building

Utilities and Services

Service	Provider
Electricity	MidAmerican
Gas	MidAmerican
Water	City of Elliott
Phone Services	Griswold Communications
Law Enforcement	Montgomery County Sheriff's Department
Fire Protection	Elliott Volunteer Fire Department
Cable/Internet	Griswold Communications
Warning System	Emergency Management System
HAZMAT Assistance	Emergency Management System
Gas/Fuel	
Grocery/Convenience Store	
Solid Waste Removal	
Landfill	Montgomery County landfill
Library	Elliott Public Library
Recycling	City of Elliott
Public Transit	
Emergency Medical Services	Elliott First Responders
Medical Clinic/Hospital	
Tornado Shelter	

Plans/Ordinances

	Yes/No	Year Approved	Comments
Comprehensive/land use Plan	No		
Capital Improvement Plan			
Local Emergency Plan			
Economic Development Plan	No		
Transportation Plan	No		

Flood Mitigation Assistance Plan	No		
Zoning Ordinance	No		
Restricted Residential District Ordinance	Yes	2013	
Subdivisions Ordinance			
Floodplain Ordinance	Yes	2013	
Building Permit Ordinance	Yes	2013	
Tree Trimming Ordinance	Yes	2013	
Nuisance Ordinance	Yes	2013	
Storm Water Ordinance	Yes	2013	
Drainage Ordinance	yes	2013	
Historic Preservation Ordinance			

	Yes/No	If yes, with who?
Mutual Aid Agreements	Yes	Red Oak

Boards/Staff/Departments

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

Grant

	Date/Time	Location
Council Meetings	2nd Monday of the month 7pm	Grant Fire Station

Utilities and Services

Service	Provider
Electricity	Alliant Energy
Gas	None, private LP tanks
Water	SWIRWA
Phone Services	Griswold Communications
Law Enforcement	Montgomery County Sheriff's Office
Fire Protection	Grant Volunteer Fire Department

Cable/Internet	Griswold Communications
Warning System	Montgomery County EMS
HAZMAT Assistance	Montgomery County EMS
Gas/Fuel	
Grocery/Convenience Store	
Solid Waste Removal	Septic tanks
Landfill	
Library	
Recycling	
Public Transit	
Emergency Medical Services	Grant First Responders/Griswold Rescue
Medical Clinic/Hospital	Montgomery County Memorial
Tornado Shelter	

Plans/Ordinances

	Yes/No	Year Approved	Comments
Comprehensive/land use Plan	No		
Capital Improvement Plan	Yes		
Local Emergency Plan	Yes		
Economic Development Plan	No		
Transportation Plan	No		
Flood Mitigation Assistance Plan			
Zoning Ordinance	No		
Restricted Residential District Ordinance	Yes		
Subdivisions Ordinance	No		
Floodplain Ordinance	Yes		
Building Codes			
Tree Trimming Ordinance			
Nuisance Ordinance	Yes		
Storm Water Ordinance	No		
Drainage Ordinance	No		
Historic Preservation Ordinance	No		

	Yes/No	If yes, with who?
Mutual Aid Agreements	Yes	Multiple

Boards/Staff/Departments

	Yes/No	Title	Comments
Building Code Official	No		

Building Inspector	No		
Public Works Official	No		
NFIP Floodplain Administrator	No		
Zoning Commission	No		
Board of Adjustments	No		
Nuisance Abatement Official	Yes	Mayor	

Red Oak

	Date/Time	Location
Council Meetings	1st and 3rd Mondays at 5:30pm	Fire Station

Utilities and Services

Service	Provider
Electricity	MidAmerican
Gas	MidAmerican
Water	City of Red oak
Phone Services	Century Link/FMTC
Law Enforcement	City Police and Mont CO Sheriff
Fire Protection	Red Oak Fire Department
Cable/Internet	Mediacom/FMTC/Century Link
Warning System	Sirens
HAZMAT Assistance	Red Oak Fire Department
Gas/Fuel	Multiple Locations
Grocery/Convenience Store	Hy-Vee/Fareway/Casey's/Cubby's/Dollar Tree/Dollar General
Solid Waste Removal	Private Haulers-Batten, Town & Country and Shen Sanitation
Landfill	Mont Co Transfer Station and Loess Hills Landfill
Library	Red Oak Library
Recycling	Drop off bins Washington Street
Public Transit	SWITA
Emergency Medical Services	Red Oak Fire
Medical Clinic/Hospital	Montgomery County Hospital
Tornado Shelter	None

Plans/Ordinances

	Yes/No	Year Approved	Comments
Comprehensive/land use Plan	Yes		
Capital Improvement Plan	No		
Local Emergency Plan	Mont Co		
Economic Development Plan	No		
Transportation Plan	SWIPCO		

Flood Mitigation Assistance Plan	Yes		
Zoning Ordinance	Yes		
Restricted Residential District Ordinance			
Subdivisions Ordinance	Yes		
Floodplain Ordinance	Yes		
Building Permit Ordinance	Yes		
Tree Trimming Ordinance	Yes		
Nuisance Ordinance	Yes		
Storm Water Ordinance	Yes		
Drainage Ordinance	No		
Historic Preservation Ordinance	Yes		
Landscape Ordinance	Yes		
Mutual Aid Agreements	Yes		

	Yes/No	**If yes, with who?**
Mutual Aid Agreements	Yes	

Boards/Staff/Departments

	Yes/No	**Title**	**Comments**
Building Code Official	Yes	SWIPCO	
Building Inspector	Yes	SWIPCO	
Public Works Official	Yes	Chris Baird	
NFIP Floodplain Administrator	Yes	Lisa Kotter	
Zoning Commission	Yes	Lisa Kotter	
Board of Adjustments	Yes	5 Member Board	
Nuisance Abatement Official	Yes	John Bruce, Interim	

Stanton

	Date/Time	**Location**
Council Meetings	2nd Monday at 5:00 pm	Stanton City Hall 310 Broad Ave

Utilities and Services

Service	**Provider**
Electricity	City of Stanton/Southwest Iowa REC
Gas	MidAmerican Energy
Water	City of Stanton
Phone Services	FMTC

Law Enforcement	Montgomery County Sheriff's Department
Fire Protection	City of Stanton
Cable/Internet	FMTC
Warning System	Sirens activated by Montgomery County
HAZMAT Assistance	Montgomery County Emergency management
Gas/Fuel	Casey's
Grocery/Convenience Store	Casey's
Solid Waste Removal	Town & Country Sanitation/Southwest Sanitation
Landfill	Montgomery county Landfill
Library	City of Stanton
Recycling	Page County landfill
Public Transit	SWITA
Emergency Medical Services	City of Stanton and Red Oak Fire and Rescue
Medical Clinic/Hospital	Montgomery County Memorial Hospital
Tornado Shelter	Viking Center

Plans/Ordinances

	Yes/No	Year Approved	Comments
Comprehensive/land use Plan	Yes	2013	
Capital Improvement Plan	No		
Local Emergency Plan			
Economic Development Plan	No		
Transportation Plan	No		
Flood Mitigation Assistance Plan	No		
Zoning Ordinance	Yes	2019	
Restricted Residential District Ordinance	No		
Subdivisions Ordinance	Yes	2019	
Floodplain Ordinance	Yes	2019	
Building Permit Ordinance	Yes	2024	
Building Codes	Yes	2024	
Tree Trimming Ordinance	Yes	2019	
Nuisance Ordinance	Yes	2019	
Storm Water Ordinance	No		
Drainage Ordinance	No		
Historic Preservation Ordinance	No		

	Yes/No	If yes, with who?

Mutual Aid Agreements	Yes	Surrounding fire departments, Red Oak Ambulance, Montgomery County Sheriff

Boards/Staff/Departments

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

Villisca

	Date/Time	Location
Council Meetings	3rd Tuesday at 5:30pm	Villisca Community Building

Utilities and Services

Service	Provider
Electricity	Villisca Municipal Power Plant
Gas	Alliant Energy
Water	City of Villisca
Phone Services	FMTC & Mediacom
Law Enforcement	Montgomery County Sheriff
Fire Protection	Villisca Fire Department
Cable/Internet	FMTC & Mediacom
Warning System	Montgomery County Emergency Management
HAZMAT Assistance	Council Bluffs Fire
Gas/Fuel	Casey's General Store & NEW Cooperative
Grocery/Convenience Store	Casey's General Store & Dollar General
Solid Waste Removal	City of Villisca Sewer
Landfill	Page County Landfill
Library	Villisca Library
Recycling	City of Villisca by Page County Landfill
Public Transit	SWITA
Emergency Medical Services	Villisca Ambulance
Medical Clinic/Hospital	Villisca Family Health Center & Villisca Medical Clinic
Tornado Shelter	Basement at City Hall

Plans/Ordinances

	Yes/No	Year Approved	Comments

Comprehensive/land use Plan			
Capital Improvement Plan			
Local Emergency Plan			
Economic Development Plan			
Transportation Plan			
Flood Mitigation Assistance Plan			
Zoning Ordinance	Yes	2017	
Restricted Residential District Ordinance	No		
Subdivisions Ordinance	Yes	2017	
Floodplain Ordinance	Yes	2017	
Building Codes	Yes		
Tree Trimming Ordinance	Yes	2017	
Nuisance Ordinance	Yes	2017	
Storm Water Ordinance	Yes	2017	
Drainage Ordinance	Yes	2017	
Historic Preservation Ordinance			

	Yes/No	If yes, with who?
Mutual Aid Agreements	Yes	Red Oak, Clarinda and Corning

Boards/Staff/Departments

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

Red Oak CSD

	Date/Time	Location
School Board Meeting	3rd Wednesday at 5:30pm	2011 N 8th St

	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?
The district has adopted an emergency alert system (i.e. Pikmykid) that provides all staff a virtual panic button that raises a silent alarm that is sent to administration, law enforcement, and first responders. It activates and sends a customized checklist for each staff member to follow in an emergency.

Are there any emergency preparedness related plans that your school has in place?
The Red Oak CSD has developed an emergency operations plan in collaboration with district personnel, county emergency management, fire, law enforcement, and other stakeholders. This plan provides guidance for response to likely threats and hazards, including biological release, bomb threats, fire, hazardous spills, intruder or hostage situation, lethal assailants, tornados and other threats.

Boards/Staff/Departments

	Yes	No	Comments
School Nurse	X		
School Resource Officer			
School Counselor	X		

Any additional staff with special training?

Stanton CSD

	Date/Time	Location
School Board Meeting	2nd Wednesday at 5:30 pm	STEM Room-High School

Services

Service	Yes	No	Comments
Tornado Shelter		X	Use Viking Center 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?

_____
_____
_____
_____

Staff

	Yes	No	Comments
School Nurse	X		
School Resource Officer		X	
School Counselor	X		